Theme: Basic Science/ Biomedical Teaching & Assessment

Accepted as: Short Communication

Paper no. 001
So What? Exploring learners' integration of basic and clinical sciences during clinical rotations

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Background Learners often struggle with integrating knowledge from different sources and synthesizing in a way that creates deep and durable learning (1,2). The purpose of cognitive integration is to "achieve a conceptual, cognitive connection between different types of knowledge" and is essential for performance in professional activities (3,4). As more US institutions are shifting required licensing examinations, such as the United States Medical Licensing Exam (USMLE) Step 1, to post-clinical phases of training, there is an urgent need for revisiting the basic and health systems sciences throughout the clinical phase of training. To address this, many institutions have incorporated "back to the basics" didactic sessions throughout the clinical phase to promote retention of basic science concepts (e.g., acid base, salt water balance, etc.) in preparation for these board exams. The science of learning, however, provides robust support for the use of active learning strategies, such as the generation effect, elaborative interrogation, collaborative testing, and contextual variation to support long-term retention and transfer. In an effort to promote the use of evidence-based learning strategies, we designed an integrated sciences curriculum to be implemented longitudinally across the clinical phase that incorporated best practices in teaching and learning to support the use of effective learning strategies and promote meaningful integration of the sciences in clinical practice.

Methodology We developed a curriculum for sessions that incorporated key instructional strategies that have been found to support cognitive integration including collaborative testing, contextual variation, and elaborative interrogation. At the end of each clinical block, students were required to complete a "Principles in Action" written assignment. The goal of this assignment was to promote cognitive integration by having students examine and elaborate on a basic science principle to one of their personal clinical experiences. Students provided a brief synopsis of a patient case, explained the clinical concept and underlying basic science principle that were involved in the case, and then examined how the basic science principle impacted patient care or their next steps in management.

In this study we used a rubric to assess students' responses in terms of: clarity of explanation of the principles as they relate to the clinical concepts; integration of explanation with experience; and description of the impact of the principle on next steps in management or patient care. After reviewing the responses as a whole, we used a grounded theory approach to analyze the written responses as it provides a detailed and systematic method of analysis as well as the ability to explore the data and allow issues to emerge (Jones and Alony, 2011). Student responses to the prompt related to cognitive integration ("So What? Explain how the basic science principle impacts patient care or your next steps in management of the patient.") were analyzed through inductive coding of responses using constant comparison method (Glaser and Strauss, 1967). Data was separated into discrete "incidents" (Glaser and Strauss, 1967) or 'units' (Lincoln and Guba, 1985) and sorted into categories and themes were identified.

Results The results identified several themes from a process perspective including that true integration inside a learner's head may not be reflected through current assessment practices. We also found that integration is enhanced when students are engaged with applying their learning to relevant topics. Additionally, in reviewing responses from a content perspective, students whose responses reflected deeper levels of integration demonstrated a better understanding of key features of the underlying basic science concept and how it informs next steps in care and management.

The next step for data analysis is to look for correlation between depth of response and performance on standardized exams as well as clinical evaluations.

Discussion The findings from the current study further our understanding of instructional and assessment strategies in promoting cognitive integration. The findings highlight key areas that should be considered when developing curriculum that aims to support integration. We found that we needed to provide direct and explicit expectations for students to pay attention to basic science principles in practice and to "unpack" or reflect on the role the principles played in disease and patient care. By providing deliberate practice with this, we hope that students will begin to notice these principles in action as they progress through their training.

The findings also revealed that we have opportunities to better support and enhance integration by providing faculty and resident development. The more our students can see and hear this type of thinking being modeled by the teams they work within the clinical setting, the easier it may be for them to apply this thinking to new contexts and future practice.

Future research will explore if there is a relationship between student performance on the principle in action write up and standardized exam performance as well as clinical evaluations. Further research should be pursued to determine the most effective methods of assessment to support and enhance integration. Development of a rubric to assess cognitive integration through multiple modalities is needed to effectively measure this important concept.

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Theme: Basic Science/ Biomedical Teaching & Assessment

Accepted as: e-poster

Paper no. 002
What Can Workplace-based Assessment Data Tell Us about Student Engagement with Clinical Skills?

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Background Clinical placement is an important aspect of medical education. During placements students complete workplace-based assessment (WBA), which provide valuable data for educators to understand student engagement. We describe methods to analyse formative WBA data for clinical skills. We focus on Year 1 medical students, who only start to develop self-regulation skills, and it is crucial to support them effectively during placements.

Methodology We used WBA data of Year 1 cohorts across three years (16/17, 17/18, 18/19), comprising of: clinical skill title, assessor role, location, timestamp, feedback, and student comment. To assess the feasibility of a data-driven approach on this type of data we used readily available methods: feature engineering, process mining (ProM), and text analytics (scattertext).

Results (1) Across all year groups, diagnostic procedure skills (blood pressure) were completed most frequently, followed by consultation skills (history, communication). Number of skill categories increased in later years, from mostly diagnostic procedures in 16/17 to other categories such as infection prevention, clinical management, and professionalism.

(2) All groups showed a spike in the number of completed assessments near the end of placement when students were reminded to complete their WBAs. Students in primary placement tended to start completing WBAs later than those on secondary placement.

(3) The range of assessor roles showed a decrease in 18/19, while the frequency of peer assessment increased.

(4) Students showed very diverse pathways of choosing clinical skills. Most common subprocesses focused around basic clinical skills i.e. pulse, blood pressure, temperature, respiratory rate.
(5) All year groups used similar language, relating to either the clinical domain (temperature), or the learning process (practice, confident, competent). The latter category can be used as an indication for reflective practice.
Discussion There are both pedagogical and methodological implications to our work.
The data-driven approach can help clinical educators to better understand engagement with WBA. For example, we found that engagement varies between year groups, despite the similarity in curriculum and placement settings. We also observed lower numbers of assessments for the first few weeks in primary care placement compared to secondary care placement. We hypothesise that variation in the induction which introduces the WBA system might be a factor. This can be assessed and, if appropriate, changed by the clinical educators.
In terms of methods, we established the feasibility of applying process mining and text analytics in the context of clinical skills education. Process mining is commonly applied to fine-grained processes (e.g. hospital event logs, MOOC activity traces). Our data is much coarser, as WBA were usually completed on weekly placements. Hence the focus is on patterns in the order of events. This can help clinical educators understand how students choose to progress their assessments, which can inform the formulation of curriculum. We also showed that even very short texts (e.g. student comments) can be used for text analytics. Our solution was to aggregate responses and analyse themes for the cohort. Following on from this project we can involve different stakeholders and discuss barriers to writing longer reflections.
Overall, we urge involving different stakeholders (students, educators, clinicians, administrators) to interpret the results from this type of data-driven analysis. There might be environmental or pedagogical factors influencing a given pattern, and contextualisation is crucial to obtain reliable insights. The data-driven approach also facilitates iterative evaluation, as any introduced changes can be monitored using new incoming data. An iterative and multidisciplinary approach to data-driven analysis of WBA data can lead to improvements in clinical skills education.

Theme: Clinical Skills

Accepted as: Oral Presentation in Parallel Session

Paper no. 003
The effectiveness of technology-enhanced simulation in teaching digital rectal examination: a systematic review narrative synthesis

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Background Digital rectal examination (DRE) is a challenging intimate examination to learn. The objective of this study is to synthesise evidence regarding the effectiveness of technology-enhanced simulation training for acquiring DRE skills.
Methodology EMBASE, Medline, CINAHL, Cochrane, Web of Knowledge (Science & Social Science), Scopus and IEEE Xplore were searched; the last search was performed on April 3, 2019. Included studies were original research studies evaluating technology-enhanced simulation to teach DRE. Reviewers evaluated study eligibility and then abstracted data on: methodological quality, participants, instructional design and outcomes, and used a descriptive synthesis to summarise methodology, participants, instructional design and outcomes.
Results 863 articles were screened; 12 were eligible, enrolling 1,507 prequalified medical/clinical students and 20 qualified doctors. Of these, four were randomised controlled trials (RCT), two were non-RCT with two or more groups, one was crossover with randomisation, four were single-group pretest-posttest studies and one used a single-group post-test design. The outcomes of interest divided into five categories: acquisition of clinical skills (measured in five papers), acquisition of knowledge (three papers), learner satisfaction (four papers) and confidence (five papers), and learner anxiety and comfort levels (four papers). Quality was assessed using a version of the Medical Education Research Study Quality Instrument (1) modified as follows: (i) an evaluation of risk of bias for randomised controlled trials, (ii) level of detail of description of participants, (iii) assessment of robustness and degree of simulation fidelity of the assessments used to collect objective data and to evaluate learning when measuring outcomes.
The median overall quality score (QS) was 48% (range 27-62). The highest median QS was 73% (33-80) for data analysis; lowest median QS was 20% (7-40) for the validity of the instrument. Six papers scored more than 50% of the maximum score on overall quality.
Discussion Technology-enhanced simulation training is associated with improved DRE skills and may facilitate the transfer of skills that are challenging to learn. Enhanced feedback at the end of training appears to improve learning. Most studies assessed learning but none assessed impact on behaviours in clinical setting or patient care.
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Theme: Clinical Skills

Accepted as: Short Communication

Paper no. 004
Gender Bias in Obstetrics & Gynaecology Clinics for Medical Students – Is it a Thing of the Past?

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Background Obstetrics and Gynaecology is traditionally perceived as a difficult placement for male students with gender bias being a well-documented phenomenon. Anecdotally such a bias does not appear to be present within our clinics as observed by the doctors, however if asked, students often feel the gender bias persists. We therefore decided to formally assess this to see if it is present.
Methodology The 2017/2018 and 2019/2020 cohorts of 3rd/4th year graduate entry medical students at Swansea University undertaking their five-week Obstetrics and Gynaecology placement were asked if they had been declined entry to a consultation or if the patient had declined examination by the student. The number of times and the gender of the student were collected and collated into an excel spreadsheet. Patients attending Gynae clinic were asked to complete a written questionnaire regarding their perception of students.
Results Within the 2017/2018 cohort, responses were recorded for 57 students. 11/23 male students were declined entry into a consultation on at least one occasion during their placement compared to 11/34 female students. Using chi-squared statistical analysis a non-significant p-value of 0.24 was obtained. 4/23 male students were declined permission to examine a woman on at least one occasion during their placement compared to 16/34 female students. A non-significant p-value of 0.31 was obtained. 89% of patients said they would agree to be seen by a student. 77% said the gender of the student would not affect their decision and 47% would not allow a student to examine them internally, largely due to fear of pain or anxiety.
This data is currently being collected for the 2019/2020 cohort and the combined results will be presented.
Discussion Students are excluded from both consultations and examination of patients at the patient request. However, there was no significant statistical difference between male and female students. So, a student bias remains however there is no gender bias.
The current data set support these findings and strengthen the study by doubling the student numbers while continuing to find no statistical difference between male and female students. This data will be disseminated to the medical students.
We already know that overwhelmingly women like to help to train future doctors and their reasons for declining their involvement in their care is commonly due to a fear of pain or anxiety. During this academic year, there were posters in the waiting room displaying the results from the previous year in which no women who were examined by a student were caused pain. We will try to increase the size of these posters and post an infographic with the appointment letter to see if this increases the uptake of student presence and participation further.
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Theme: Clinical Skills

Accepted as: Short Communication

Paper no. 005
Improving postgraduate Otology using cadveric temporal bone course in Mekele General Hospital: Ethiopia

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Background Background: In otology, cadaveric temporal bone dissection is a widely recognised method of developing basic skills before performing cortical mastoidectomy on patients. A number of educational tools have been developed for assessing competence in temporal bone dissection and have been validated for use in developed countries.
Objective: To assess progression and surgical competence in performing cortical mastoidectomy in a newly established temporal bone laboratory in Mekelle, Ethiopia.
Methodology Method: A cadaveric temporal bone course was taught at a tertiary referral centre (Ayder Comprehensive Specialised Hospital) in June 2019 and again repeated in November 2019. A prospective study was conducted using the Iowa Temporal Bone Assessment Tool (ITBAT). This tool was selected for its feasibility in limited resource settings. A starting score of 25/25 is awarded for opening the antrum and facial recess, points are then deducted for errors in dissection. Completed dissections were assessed by two otology specialist.
Results Results: A total of 8 residence were assessed in the June cohort followed by 12 in November. Novice residents' mean score was 19/25 compared with senior residents' 21/25. Inter-rater reliability was good Rs=0.80 p=0.017.
Discussion Conclusion: This cohort study has demonstrated that the ITBAT can suitable for use in low-resource settings. Objective assessment demonstrates high level of skill amongst senior Ethiopian residents trained in cortical mastoidectomy.

Theme: Clinical Skills

Accepted as: Short Communication

Paper no. 006
Sponge-Elastoplast Kit: A low fidelity model for basic suturing skills training

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Background Basic surgical skills form the stepping-stone in any surgeon's career. In addition to the theoretical knowledge, achieving an ideal wound closure requires experience with practical aspects. Repetitive practice allows medical professionals to develop their confidence and improve their skills with time (Liddell et al., 2002). Thus, simulation models for practicing suturing for cutaneous wound closures are an integral part of medical training. This in turn leads to better outcome in real time for patients (Brown, 2013). Multiple simulated models exist today for this purpose, but some models can be expensive and others impractical to use in day-to-day practice (de Montbrun and MacRae, 2012). Studies show there is not much significant difference in training outcomes after practicing on either high fidelity models or low fidelity models (Denadai, Oshiiwa and Saad-Hossne, 2012). For instance, high fidelity models such as chicken skin, pork belly slice or beef tongue pose certain risks that limit its wide usage in clinical practice (Denadai, Oshiiwa and Saad-Hossne, 2014).
Our study was a workshop based evaluation of a low-fidelity and inexpensive suturing training model that can be created using materials found in any operating theatre or emergency department, and which can be used multiple times, named the 'Sponge-Elastoplast' model.
Methodology We constructed a bench top model using elastoplast (clinical adhesive tape) and sponge from a surgical scrubber. We then compared its feasibility for training purposes through a suturing skills workshop aimed at foundation year doctors.
Results Ten participants completed the questionnaire with a vast majority of positive ratings for the sponge-elastoplast model (91%). The model was found to be durable and effective for practicing suturing skills, with average score of 6.1 and 6.4 respectively. Passage of the needle was rated higher than passage of the suture (6.1 vs 5.6), and both knot tying and wound edges opposition were rated highly (6.1 and 5.9, respectively).
Least rated physical property of this mode was the cheese-wiring effect, where the suture cut-through the wound edge, with a positive rating of 4.9. The number of sutures performed and the time required per suture was better in the sponge-elastoplast model.
Discussion Our model is easily constructed and reusable, allowing for its use in low recourse areas.
Some points of note:
1. Simulation based training for basic surgical skills has been shown to effectively improve clinical care provision.
2. Simple inexpensive models likes the Sponge Elastoplast model can be very useful for emphasising repetitive practice for suturing skills improvement.
3. Our Sponge Elastoplast Model is made with readily available materials in the hospital, can be reused and is animal friendly.
4. Sponge elastoplast model can be a good alternative in developing countries with limited resources.

The simplicity of this model's structure and how quickly it can be made allows medical students or junior doctors to practice and refresh their suturing skills in a prospective manner in the hospital environment or at home.
Furthermore, this suturing model is inexpensive to construct, but is durable and can be used multiple times, which is ideal for suturing skills training courses in developing countries where resources are limited (Campain et al., 2018).
Being affordable and animal friendly, this model can be an alternative to more expensive simulation models, particulary for developing countries.
I would like conduct workshops aimed at more experienced professionals so that proper assessment of the DIY kit can be done and improvements for the model undertaken.

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Theme: Clinical Skills

Accepted as: Short Communication

Paper no. 007
Suture, Interrupted: A pilot study of teaching surgical skills by same-level peer-assisted learning in early clinical medical students

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Background Amongst medical students, peers teaching peers happens more frequently than formal peer-assisted learning (PAL), with self-chosen study groups and debriefing over lunch prevalent methods of learning amongst clinical students [1]. The breadth of knowledge taught throughout the curriculum, combined with varied clinical placements, means that medical students often have equivalent but diverse understanding allowing for teaching within their peer groups. Furthermore, the peer teacher can create an environment that leads to open and easy feedback due to the flat hierarchy, maximising free expression [2]. Other evidence-based benefits, such as motivation to participate with responsibility to their peers, improved confidence and self-efficacy, and an aid to navigating placements [3], have been found.

Teaching surgical skills can be a challenge given the practical nature and frequency of these skills being entirely new to the students. Our cohort represent newly-clinical medical students to whom the theatre environment is mostly novel. It is recognised that procedural skills can be taught by peers, including same-level peers, with outcomes at an equivalent level as with expert tutors [3][4], even including complex laparoscopic suturing [5]. Here we developed a system of same-level PAL using advance organisers as guides developed by a clinical teaching fellow tutor to teach basic surgical skills and etiquette, with the hypothesis that this would improve student self-efficacy, remove embarrassment, and encourage student engagement in the theatre setting.

Methodology A cohort of approximately 40 fourth-year medical students from the University of Oxford across 4 clinical blocks will be recruited. Half are provided with one of five topics, listed below, regarding common early surgical skills. The students are split into pairs, and then the topics allocated at random via sealed envelopes.

Topics:
-Theatre etiquette and safety inc. the WHO checklist
-Scrubbing up (gloving and gowning)
-Wound management
-Knot tying
-Simple interrupted suture

The envelopes include the topic heading, several short learning points that should be included to guide the students that have had little to no exposure to surgical skills previously in the style of advance organisers, as previous study of PAL has identified its pitfall in allowing misdirection of learning. They are instructed to deliver a short presentation in any media of no greater than 5 minutes, with or without an accompanying resource, and are given one week to prepare.

The remainder of the session is spent consolidating their knowledge with practice under supervision of a clinically-expert tutor at the two procedural skills of knot tying and simple interrupted sutures.

This will be compared with the remaining half of the cohort of students, who will receive standard surgical skills teaching delivered in small-group tutorial-type format on the same 5 topics.

Students will complete a questionnaire focussing on self-efficacy, confidence, comfort in asking questions and the giving and receiving of feedback, and enjoyment of the tutorial format.

Results At the time of writing, the pilot is yet to be run with the students; data collection is expected to be completed by May 2020. Our hypothesis is that using PAL will enhance the learning of basic surgical skills through activation of social learning, and preparation of the students' knowledge bases prior to the session. This will be seen in improved self-efficacy as well as improved confidence and comfort in giving feedback compared with the control group. We will also assess students' attitudes towards peer-assisted teaching as the tutor.

Discussion Due to lack of data, at time of writing, conclusions cannot yet be drawn. We will consider and present here the potential factors influencing student outcomes from both the same-level PAL group and the control, as well as discuss any emerging ideas from the pilot.

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Theme: Clinical Skills

Accepted as: Short Communication

Paper no. 008
Using Simulation-Based Mastery Learning at a Scottish national bootcamp, to facilitate attainment of Internal Medicine Training procedural skill competencies

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Background Competence in invasive procedural skills is required to progress through postgraduate medical training. UK postgraduate core medical trainees previously recently reported the challenge of finding opportunities to achieve their curricular skill requirements, identifying it as a barrier to their global development (1).

All UK junior medical trainees began a new national curriculum, Internal Medicine Training (IMT), in August 2019. The curriculum mandates a range of procedural skill competencies which require evidence at simulation-laboratory level by completion of the first year (2). In Scotland, a novel IMT Bootcamp was conceived and implemented, embracing simulation methodology to address many of the new curricular requirements. Approximately one third of the IMT Bootcamp is dedicated to procedural skills.

Simulation-Based Mastery Learning (SBML) is a well established methodology in educational literature, facilitating the acquisition and maintenance of procedural skills (3). The principles of SBML were employed and a new SBML pathway created. Every Scottish IMT trainee engaged with this SBML-pathway throughout the bootcamp, covering lumbar puncture, ascitic and intercostal procedures.

Although SBML has a strong evidence base, this is predominantly in American learner populations. The following is a description of the innovative skill pathway that was developed, as well as the data gathered, to improve our understanding of the educational impact of SBML on UK medical trainees.

Methodology One hundred and six five postgraduate trainees began IMT in Scotland in August 2019. All trainees were invited to attend a three-day bootcamp within a six month period from August 2019 to January 2020. All learners engaged with the novel, enhanced SBML pathway, which entailed online pre-learning video and written resources, peer-assisted deliberate practice and subsequently tutor-facilitated simulated performance, feedback and assessment. This was also enhanced by being delivered as pairs of learners to one tutor per model.

Data were gathered about learners' learning objectives, prior skill exposure and skill-specific confidence levels (pre and post-intervention). Quantitative, checklist-based simulated skill performance data were measured for all skill sessions and qualitative data relating to their experience of the pathway were captured for thematic analysis. Three months following bootcamp attendance, qualitative data will also be gathered from a proportion of learners relating to the impact of SBML on real life procedural experiences.

Results Our preliminary data show the IMT trainees cited procedural skills as their dominant learning objective prior to the bootcamp. The vast majority of learners achieved the desired level of simulation-based performance.

Learners report increased skill-specific confidence levels. Skill-specific confidence levels were also increased for procedural skills not actually performed at the bootcamp.

Additional mixed-methods data will be presented to support these findings.

Discussion The authors are unaware of any precedent for utilising SBML for a national postgraduate initiative. This novel bootcamp SBML pathway afforded an excellent opportunity for all Scottish IMT trainees to begin development of multiple procedural competencies in a safe environment. Learners are then encouraged to perform the skills in a clinical situation under direct supervision.

Interestingly, confidence levels were also increased for specific procedural skills not actually performed at the bootcamp, suggesting the acquisition of new, transferable skills via this methodology.

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Theme: Clinical Skills

Accepted as: e-poster

Paper no. 009
Should ultrasound-guided vascular access be included in undergraduate training?

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Background Gaining peripheral vascular access is a common task for newly qualified doctors and is a required competency outlined by the General Medical Council. (1) Despite being trained to perform this essential skill at medical school, the vast majority of newly qualified doctors will occasionally come across patients in whom they are unable to site an intravenous cannula. In these situations, ultrasound-guided peripheral vascular access (UGVA) could provide a useful next option prior to seeking senior support.

The Royal College of Radiologists have actively encouraged the increased use of ultrasound training in undergraduate medical teaching. (2) In 2019, Swindon Academy ran a successful undergraduate ultrasound symposium for medical students from Bristol Medical School. (3) The majority (23/25) of the students who took part reported that UGVA was the most useful technique they were taught.

These findings have led to the design of a new multi-station 'Introduction to Ultrasound-Guided Vascular Access' course for final year medical students.

Methodology A survey of junior doctors at the Great Western Hospital was circulated to gain understanding of how frequently they require help with cannulation, previous ultrasound training at medical school, and how useful they thought training on UGVA would be.

All final year medical students undertaking their final 'Preparing for Professional Practice' placements at Swindon Academy (n = 35) will be invited to attend the course. The 45-minute course will consist of sequential stations:

- Basic principles of ultrasound and instruction in using the machines
- Using ultrasound to Identify and distinguish vascular structures on live models
- Ultrasound-guided vascular access using artificial models
- Objective assessment of skills (OSCE station)

Teaching will be provided by consultant colleagues with an interest in ultrasound use and regional anaesthesia together with clinical teaching fellows.

Participants will be asked to complete a post-course questionnaire and the results from this will be presented along with the outcome of the OSCE.

Results Our data supports anecdotal evidence with 100% of respondents having to ask colleagues for help with cannulation. This is a monthly occurrence for 66.7%. Only 11.1% of those surveyed had received ultrasound training at medical school.

This group of junior doctors support the view that learning UGVA would be useful prior to starting the Foundation Programme. Respondents report a mean 8.7/10 when asked to what extent they agreed it should be taught to students.

The course is scheduled for late January 2020 and data from the post course questionnaire and OSCE station will be analysed shortly after.

Discussion The survey we have conducted supports the view that junior doctors frequently require senior assistance gaining peripheral vascular access and that they believe it would have been useful to have been taught UGVA at medical school. UGVA is a skill which few doctors have been trained in prior to starting their clinical work but could reduce dependence on seniors and hasten and improve clinical care. There is a clinical need to train doctors early in their career in how to competently perform this skill. Building on previous work done at Swindon Academy, this course aims to prove that final year medical students are capable of learning to perform UGVA and that this training can be effectively delivered through a short, structured and practical session as described.

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Theme: Clinical Skills

Accepted as: e-poster

Paper no. 010
Use of a novel Simulation-Based Mastery Learning pathway to improve Central Venous Catheter insertion in a UK critical care environment

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Background Central Venous Catheter (CVC) insertion is a routine clinical skill within intensive care units (ICU). Despite being frequently performed, it is recognised to be a high risk procedure, with numerous potential complications [1]. Significant morbidity and mortality can be attributed to complications of CVC insertion, alongside increased healthcare costs and length of hospital stay [2].

In our clinical environment, the traditional approach to learning the skill of CVC insertion was "see one, do one", which involved complete novices beginning their practice on real patients, many of whom would already be critically unwell.

Simulation-Based Mastery Learning (SBML) is a robust, evidence-based teaching methodology, designed to improve the acquisition of procedural skills, with the aim of supporting all learners to achieve an agreed standard. The vast majority of the SMBL literature comes from the USA learner population [3]. SMBL has been shown to reduce CVC-associated complications in USA Intensive Care environment [4]. Its effectiveness in UK-based postgraduate learners is unclear.

The NHS Lothian Mastery Skills Pathway is an educational, quality assured, patient safety initiative which has been designed to promote high-quality training and safe, effective patient care for high-risk procedural skills. This pathway enhances the established SBML approach, through pre-learning (online reading and video resources) prior to tutor-facilitated deliberate practice in a simulated, safe environment. Learners then proceed to simulated performance, feedback and checklist-based assessment. When learners have met the required standard, they are then advised to proceed to directly-supervised clinical practice.

We aimed to examine how attendance and participation in the Mastery Skills Pathway for CVC insertion impacted on real-life performance in skill-naïve healthcare professionals.

Methodology We prospectively collected data regarding all CVC insertions within two large university teaching hospital ICUs, over 30 day period (September 2019). Data collected included grade of healthcare professional, number of previous CVC insertions, attendance at a CVC Mastery session, insertion time (minutes), number of needle punctures through skin required for vessel puncture, and early complications (including arterial puncture/pneumothorax/arrhythmia/bleeding and procedural failure). Statistical analysis was performed using SPSS (paired t-test) with significance set at p 0.05.

Results There were 45 line insertions within our ICUs in this period. 35 (77%) of line insertions were performed by healthcare professionals who had previously attended a CVC Mastery session. Amongst inexperienced practitioners (those with 15 line insertions), CVC Mastery attendance was associated with a reduced number of attempts for venous puncture (mean 1.11 vs 1.67; p = 0.009), but there was no difference in the procedural time (29 min vs 29 min; p= 1.0). Only two

complications were recorded; a transient arrhythmia during wire insertion and bleeding at the point of insertion; these occurred with equal frequency between the group who had previously attended mastery and those who had not.

Discussion SMBL is an established methodology for skill acquisition in the USA. Our work, using an enhanced SMBL pathway, evidences its impact in a UK-based critical care learner population. Participation in a Mastery Skills Pathway session for CVC insertion was associated with a reduction in the number of punctures required for venous cannulation during supervised clinical practice. Multiple skin punctures have previously been established to correlate with complication rates, including arterial puncture and pneumothorax [5]. Further prospective work with a larger sample size is required to establish if the Mastery Skills Pathway reduces the rate of serious complications during CVC insertion.

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Theme: Clinical teaching fellows

Accepted as: Oral Presentation in Parallel Session

Paper no. 011
Exploring the clinical teaching fellow role using a modified rich pictures format

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Background Previous research has revealed many challenges related to working as a clinical teaching fellow [1]. However, an in depth analysis of the lived experience within these teaching posts will help educationalists and clinicians more fully understand this rapidly emerging role.

Rich pictures format has been described as a free-form investigation tool [2] and according to Checkland (cited by Berg and Pooley [2]) it has the potential to free up new possibilities in expression. It involves drawing icons, pictures, boundaries and speech bubbles to represent a scenario [2]. The format was modified in this study to only allow the use of pictures as allowing icons and speech bubbles was felt to potentially reduce creativity in the exercise. This study involved teaching fellow participants using the drawing of pictures to represent their thoughts and experience on the teaching fellow role with the aim of facilitating deeper reflection.

Methodology An interpretivist stance and phenomenological approach was taken to attempt to gain insight into the participants' experiences in the role. A convenience sample of three clinical teaching fellows who were based within the trust were approached and asked to be part of the study.

The participants were asked to consider: "What is a teaching fellow?" and "What is it like to be a teaching fellow?" Flip chart paper and pens were provided and they were asked to record their experiences on the paper using only pictures (a modified rich picture format). The facilitator left the room at this point but their conversation was audio recorded. Afterwards, the facilitator returned to host a debrief session in which the teaching fellows explained their drawings. This session was also audio-recorded. A transcript of the debrief session was analysed to explore content and themes. This data was then cross checked with the audio recording taken during the drawing phase to check for any additional content or themes.

Results Along with listing the formal tasks associated with the teaching fellow role, the teaching fellows used dramatic imagery to convey their emotions and experiences over the year. One example was the use of an electrocardiogram (ECG) trace with a run of ventricular fibrillation to depict the unpredictable moments of high stress during the role. This was illustrated by another participant by the drawing of a soldier. This participant stated "it's like warfare".

The pressure around making judgements on the performance of students was depicted by one participant as a drawing of scales and an executioner. This participant stated that it was like "passing a sentence on a student" when making assessment decisions. Another participant drew a drawing pin dripping with blood to depict the feeling when required to issue a professionalism incident notification (PIN) form for inappropriate professional behaviour.

There was also documentation and discussion using multiple images around their own development and reflections as they progressed throughout the year. Other themes visited included exiting the treadmill of medical training, feeling vulnerable and appraised from student comments on feedback forms, a reflection on the spiral curriculum, the mixed emotions of the role, going on a personal journey and the student journey.

Informal feedback at the time of the study was that the teaching fellows had enjoyed the exercise.

Discussion Using the modified rich pictures format appeared to have freed the teaching fellows up to think more deeply about their role and the teaching fellows were able to probe beyond their day to day tasks to analyse the emotional experience of the role, the feelings of intense pressure and responsibility at times and their own reflective journey as doctors and learners.

This approach appeared to be a highly successful method to reflect on the teaching fellow year in a deep yet non-threatening way. This format could also be considered for debrief in other areas of medicine and medical education.

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Theme: Communication Skills

Accepted as: Oral Presentation in Parallel Session

Paper no. 012
Communication skills training for postgraduate doctors: the positive impact of dedicated postgraduate training

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Background Effective communication is the cornerstone of doctor-patient interactions. When communication is ineffective, not only is it a major source of complaints (1)(2) but patient care and doctors' wellbeing can be affected.(3)(4) There is evidence that effective communication can be taught (5) and of a real need for this teaching.(6)(7)(8) Clinical communication skills training (CST) is now a mandatory component of undergraduate medical curricula in the UK.(6) However, there is a recognised need to develop communication skills in the postgraduate setting to enhance trainee capability and refine skills for specific scenarios.(5)(7)(9)(10)

This study assesses the impact of a CST course designed for postgraduate doctors which aimed to enhance communication skills, in particular communicating in difficult scenarios.

Methodology In March 2019 a one day pilot communication skills course (PC) was held at the west London site of a large NHS Foundation Trust to establish optimal course design. Candidate places were advertised locally. Attendance was voluntary and free. Pre- and post-course questionnaires were used to collect feedback on the day.

In September 2019 a one day full communications skills course (FC) was held on the same site. Places were advertised regionally, with attendance and feedback as previous.

Both courses were designed with a morning of preparatory presentations and discussions, and an afternoon of simulated patient interactions. Each candidate led one simulation which was followed by a post-event debrief led by faculty with constructive group participation.

The morning focused on: preparing for and structuring communication; recognising verbal and non-verbal cues; and challenging scenarios such as breaking bad news (BBN), angry patients/relatives (AP), distressed patients/relatives (DP) and disclosing medical error (DME). The afternoon simulated scenarios were BBN, AP and DME. This structure aimed to encourage practical application of knowledge and offered multiple teaching modalities to create a high intensity intervention which has been shown to be effective.(11)

Course faculty included postgraduate education fellows and consultants and clinical nurse specialists in care of the elderly and palliative care.

Results 13 doctors in total attended the courses. The PC was attended by 4 doctors and the FC by 9 doctors of the following grades: FY2 (n=3), core training (n=1), junior clinical fellow (n=5), specialist training (n=2) and senior clinical fellow (n=2). A range of medical and surgical specialities were included.

Almost 50% of candidates highlighted the desire to improve communication skills in difficult scenarios (50% PC, 44% FC) as a reason for attending the course.

Candidates' skills in BBN, AP, DP and DME were assessed pre- and post-course using a 5-point Likert scale scoring 1 for 'no confidence' to 5 for 'very confident'. Virtually all domains showed large improvement in median ratings: BBN increased +0.5 (PC) and +1.0 (FC); AP increased +1.5 (PC) and +1.0 (FC); DP increased +1.5 (PC) and remained static (FC); and DME increased +2.0 (PC) and +1.5 (FC).

Furthermore, attendees reported improved understanding of preparing for and structuring communication (75% PC, 33% FC) and communicating in difficult scenarios (50% PC, 67% FC).

Discussion This study adds to a growing body of evidence for a need for CST in postgraduate education, and highlights communicating in difficult scenarios as a key training need.

This study outlines an effective, evidence-based model for delivering CST in the postgraduate setting. Combining preparatory presentations with simulated patient interactions led to large increases in confidence and improved knowledge of communicating in difficult scenarios.

These initial data are promising and suggest the course is a valuable addition to postgraduate training. Further courses will be developed to further evaluate this model, with the hope it will set the standard for other units.

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Theme: Communication Skills

Accepted as: Oral Presentation in Parallel Session

Paper no. 013

Experiences of developing in-situ Palliative simulations in the Emergency Department

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Background Emergency Medicine (EM) is a unique speciality often meeting people at the worse moments of their life. Death is an everyday occurrence, and with that comes the skills needed to talk to patients and families about when their end of life may be nearing, what treatments may or may not be beneficial and whether cardio pulmonary resuscitation is suitable. These conversations can be very challenging for all concerned, including junior doctors. The Royal College of Emergency Medicine's guidelines suggest doctors need to have the skills to talk to these patients. Therefore, we felt we needed to develop a series of realistic EM in-situ simulations for our staff to learn and practice on.

Methodology We created 3 simulations designed to enable junior doctors to have difficult conversations with patients who are approaching the end of life in the ED. Scenario 1 was the end of life patient with COPD who was not for further interventions. Scenario 2 is of a very frail patient with multiple comorbidities with another pneumonia. Scenario 3 revolved around a massive upper gastro intestinal bleed with known oesophageal cancer. These simulations were tested in-situ in the ED over several months and the feedback collected from all team members.

Results These simulations were trailed over January – March 2019 as part of our weekly in-situ simulation. 20 people took part in the above simulations. All had a doctor plus nursing support. Feedback data was pooled from all the simulation sessions. 80% of people moved from being not confident or lacking in confidence too fairly confident or confident after doing the simulations. All participants felt their knowledge had increased significantly following the simulations. Positives described by participants include "Learning to recognise when CPR may be futile in patients and balancing delivering treatment and assessing futility of discussing of patients"

Discussion Written comments suggest that participants feel they would benefit from more teaching and exposure of this. We will continue to deliver and develop these scenarios.

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Theme: Communication Skills

Accepted as: Oral Presentation in Parallel Session

Paper no. 014

Parents and children providing feedback to medical students on eight-week paediatric placement: Quality improvement project from a district general hospital

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Background Generally medical students receive feedback from professional tutors during clinical placements. Opportunities to utilise the expertise of parents/children in providing bespoke feedback to medical students during placements are continually missed.

Our aim was to assess parental willingness to give feedback on professionalism and to apply the principle to medical students. We wondered whether the quality of students' communication and professionalism will be enhanced, by the introduction of a method of parents giving feedback to medical students during Child Health Placement.

Methodology Using the Plan-Do-Study-Act (PDSA) methodology, we asked parents and children on the paediatric ward whether they were willing to provide

feedback to medical students after any clinical encounter. A paper-based parental feedback was introduced.

Students voluntarily approached parents/children after completing a history taking and examination asking them to complete a form with a rating system focusing on professionalism, communication and a free text for more in depth feedback.

Clinical tutors collated the forms and gave bespoke feedback to students either instantly or during progress review meetings. Students completed a short survey of their experience at the end of their placement.

Results Most of the parents 96% (48/50) were willing to complete feedback for medical students.

During first phase (2018-19 academic year), most of the students 82% (73/96) participated in the process. Two forms per student was completed on average. Mean score was 4.9/5 across the questions on politeness, interest in child, putting child at ease and listening. 86% of the students agreed that this sort of feedback encouraged professionalism and explanation of condition to children and would recommend it to future students.

Discussion We have demonstrated that the introduction of a parent/child feedback system for medical students in paediatrics is possible, acceptable and useful to medical students on placement. It has potential to improve confidence and trust between medical students and parents given the understanding that feedback will be provided at the end. This ensures appropriate communication and enshrines expected professionalism during clinical encounter. Other expected benefit to the students include the practice of communication and explanation of medical conditions and management plans without jargons. We propose that feedback should be sought from children, parents and patients throughout medical training not just for consultant grades. These in our opinion are also tutors albeit non-professionals, who can and should provide valuable teaching and learning opportunities to students in their training.

Theme: Communication Skills

Accepted as: Oral Presentation in Parallel Session

Paper no. 015
'Sharp Scratch!' Patients as lay educators - exploring medical student perspectives of developing communication during procedural skills

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Background In the UK, changes in health care services and patient expectations has driven the inclusion of patients in medical education activities with the aim of developing doctors that are more patient-centred (1,2). There is a growing body of literature describing the importance of involving patients in medical education and various roles have been described including direct contact with students to integrate clinical and communication skills. Clinical communication is an essential component of undergraduate medical education in the UK and these skills are used in the explanation of procedures. Whilst integration of procedural and communication skills is presumed and encouraged with simulation teaching using mannequins, the communication aspect can still be neglected (3,4,5). Involving patients in procedural skills training has been found to help students improve communication and provides authenticity to encounters, helping students integrate these skills and develop a holistic approach (6,7). This study explores the perceptions of students regarding communication with patients during practical procedures and if interactions with lay educators, who are former patients from the healthcare setting who have volunteered to participate in medical education, can contribute to students developing effective communication.

Methodology An interpretivist paradigm was presumed and qualitative methodology was used. Clinical year medical students at Barts and The London participated in focus groups, which consisted of two parts. These took place before and after participating at a Patient forum event, which involved students demonstrating practical procedures to observing patients who were lay educators that provided feedback to the students after the demonstrations. The focus groups were recorded and transcribed. These transcriptions were analysed using thematic analysis (8). Emerging themes demonstrated the complexities and multidimensional nature of student perceptions of communication involved during practical procedures. During the inductive analysis, it became apparent that there was some overlap between the themes and so to review this further I used a model of learning described by Illeris (2004) (9) to provide a theoretical lens to analyse the findings.

Results Two focus groups were conducted at separate Patient forum events. Analysis of the data showed that student perceptions of communication during practical procedures were related to the content of the communication, the incentives of the student and the interactions during the practical procedures. Students found conversations with lay educators useful for developing effective communication during practical procedures.

Discussion The pedological aspects of procedural skills teaching are considered with the addition of patient feedback to develop the integration of clinical and communication skills. Communication aspects of procedural skills teaching needs to be developed. Students and patients value effective communication during practical procedures and appreciate the integration of these skills. Strengths in communication included application of behavioural process skills and showing confidence. Challenges in communication related to consent, complexity of procedure and causing patients pain. The clinical environment allowed students to be part of the medical team, developing their learning and practice of procedural skills and communication, but feedback from patients was limited. Patients as lay educators can supplement the learning and integration of communication in practical procedure teaching. Direct feedback from patients provided depth and richer learning experiences for students, supplementing both formal and informal medical curricula. This aids the transition of practising skills in the classroom to clinical placements with improved communication, confidence and implications for patient safety.

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Theme: Communication Skills

Accepted as: Short Communication

Paper no. 016
Debates; A Neglected Tool in Medical Education

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Background Debates are formal arguments in which two sides assume a supporting and opposing stances to a specific issue or topic. By presenting their arguments, each side attempts to influence the audience (Fluharty & Ross, 1966). Fallahi & Haney (2007) found that use of debates to discuss controversial issues in Psychology was easier for students that traditional open group discussions. In nursing, debates have also been used effectively for addressing ethical issues in practice, in addition to professionalism and leadership (Garett, Schoener, Hood, 1996).

We introduced the use of debates as an educational tool in the schedule of 4th-year medical students from Queen Mary University of London on 5-weeks clinical placements at North East London Foundation Trust with the following aims:

1. Internalise new knowledge by using it to synthesize arguments.
2. Develop communication skills: empathy, dealing with conflict, public speaking & confidence.
3. Develop critical thinking skills: defining problems, assessing credibility, challenging assumptions & prioritizing relevant points.
4. Improve attitudes towards Psychiatry by examining personal & public misconceptions.

Methodology

1. A question bank of selected debate questions was collated.
2. Students are given an introduction to debates.
3. Students have 4 weeks for preparation.
4. Each pair of students debate while the rest represent an interactive audience.
5. The activity ends with open group discussion, then an anonymised qualitative feedback of the students' experience.

Results At the time of submitting this abstract, we had only run this activity with a single batch of 8 students. But, by the time we will present at the conference, we will have had 4 more groups of students and a larger sample size. These are our initial results:

5 out of 8 students reported increased confidence.
4 out of 8 students reported improved presentation style.
6 out of 8 students reported improved critical thinking skills.
6 out of 8 students reported a positive change in their attitude towards Psychiatry.
5 out of 8 students reported finding the activity engaging and supported incorporating it into their MBBS curriculum.

Some of the students' comments:

Helped analyse personally held beliefs more critically.
No other use of debates in MBBS thus fair, it is enjoyable.
I think it is helpful in terms of engagement and learning from colleagues.
Realised I must consider both sides of the argument, nothing is black and white especially in psychiatry.

Discussion With the rapid change of economics, technology, access to information and the culture of learners every decade, faster than ever before, the need for active learning has increased to sustain these rapid evolutionary changes (Beichner, 2014). In 'Effective Learning in Classrooms' Watkins, Carnell & Lodge (2007, p.71) provide a comprehensive paradigm to define active learning which is three dimensional: the learner uses cognition to take in new knowledge then synthesise it into a behaviour which is further shaped by social interactions with others. Debates as an application of social constructivism learning theory fits this paradigm and represents the core principle of active learning as the learners form their knowledge through previously gained experiences then re-calibrate their views following the ensuing conflict (Alibert, 1988). Furthermore, Alen, Dominguez & Carlos (2015) found that the use of debates in education represents a nonconventional teaching strategy that elicits excitement in university students.

Our results above are in line with this revived view of education that is much needed in our brave new world. Thus, we have reached the following conclusions:

We included debates as a regular learning activity for the next batches of medical students.
We aim to incorporate debates in the undergraduate teaching program as an optional module.
We advocate the use of debates to improve attitudes towards mental illness & Psychiatry.

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Theme: Communication Skills

Accepted as: Short Communication

Paper no. 017

Experiences of a pilot course for advanced care practitioners in the emergency department to sign do not resuscitate forms for patients approaching the end of life

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Background Emergency Medicine (EM) is a unique speciality often meeting people at the worse moments of their life. Death is an everyday occurrence, and with that comes the skills needed to talk to patients and families about when their end of life may be nearing. The Royal College of Emergency Medicine's guidelines suggests health care practitioners need the skills to talk to these patients. Within our department, we have advanced care practitioners (ACP) working as independent practitioners. Theses ACPs come from a nursing, paramedic or physiotherapy background. They have had further masters level training to do this role. Our department advocates early conversations with patients who have a frailty score of 7, 8 or 9 as per the Rockwood frailty score. With our hospital supporting the signing of do not resuscitate forms by ACPs, provided they have had sufficient training. We developed a full day course which is incorporates some lecture-based teaching and then in-situ simulation within the emergency department. Our aim was to gather feedback to see what educational benefit this brought to our ACPs.

Methodology Following teaching around difficult conversations, do not attempt cardiopulmonary resuscitation and legal aspects we then gave the participants 4 in-situ simulations.

Results 9 participants completed the pilot course, none of which had, had formal training to have this type of conversation. This is despite these ACPs all having a minimum of 5 years post qualification. All felt their confidence had increased from no confidence to neutral or fairly confident. All felt this was useful for their training.

Discussion This course has provided our ACPs skills to have the conversation with patients. We will look to gather feedback at 6 months following the course to see how and if this has influenced clinical practice.

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Theme: Communication Skills

Accepted as: Short Communication

Paper no. 018

SimPall an in-situ simulation course on Palliative Care for the Emergency Department

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Background Emergency Medicine is a unique speciality often meeting people at the worse moments of their life. Death is an everyday occurrence, and with that comes the skills needed to talk to patients and families about when their end of life may be nearing. The Royal College of Emergency Medicine's guideline suggests doctors need to have the skills to talk to these patients. We developed a full day course called SimPall which is incorporates some lecture-based teaching, and then in-situ simulation within the emergency department. Our aim was to gather feedback to see what educational benefit this brought to our EM staff.

Methodology Following some teaching around difficult conversations, do not attempt cardio pulmonary resuscitation and managing palliative emergencies we then gave the participants all 3 of our in-situ simulations, in two groups. The participants were not aware of what simulations they got. The three simulations based on real ED patients were; Scenario 1 was the end stage COPD patient who is not for any further interventions. Scenario 2 is of a very frail patient, with pneumonia who has multiple comorbidities. Scenario 3 was a massive upper

gastrointestinal bleed with known oesophageal cancer. All participants were debriefed, and feedback recorded. All participants were offered the chance to discuss with a senior if they had any worries about the scenarios.

Results 13 people including doctors and advanced nurse practitioners attended the day. All were involved in each of the scenarios and their feedback was collated. Overall the feedback for all the simulations was positive. 76% of participants felt their knowledge had improved from lacking confidence to being fairly or very confident after the simulations.

Discussion Written comments suggest that participants feel they would benefit from more teaching and exposure of this. This day will be further repeated.

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Theme: Communication Skills

Accepted as: e-poster

Paper no. 019

Assessment of hybridised simulation for teaching non-technical procedural skills; a randomised control trial

Author(s): Dr Zachary Craft, Mr Keng Siang Lee, Dr Dale Thompson, Dr James Fenn, Dr Hannah Murray

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Background The General Medical Council's Outcomes for Graduates stipulates newly qualified doctors should be able to provide basic wound care and inject local anaesthetic at a level of competence that is safe to practice under direct supervision.[1] This includes the ability to explain the procedure, possible complications and risks, and gain informed consent.[1] University of Bristol (UoB) currently teaches such simple procedural skills on isolated part task trainers.[2] This provides the ability to teach technical skills in a safe, controlled environment that allows repetition of practice to the acquired competence eliminating potential harm to patients.[3,4] However, Kneebone et al. argues that this learning occurs in isolation from clinical context and neglects the essential interpersonal non-technical skills necessary for demonstrating procedural competence.[5]

To improve authenticity, Kneebone et al. pioneered a hybridised simulation model where part task trainers were attached to standardised patients (SPs) to allow students to align technical and non-technical skills within simulated scenarios.[6] Initial results reported favourably on this integrated technique because of increased realism leading to higher levels of participant engagement.[6] However, the authors argue that a more systematic approach is required to evaluate the benefits of hybridised simulation.[5,6]

The purpose of this study is therefore to assess the impact on procedural communication skills that hybridised simulation has in comparison to isolated part task trainers.

Methodology For phase one of this study, 18 UoB third year medical students will be taught basic wound closure with simple interrupted sutures and use of local anaesthetic on a bench top part task trainer within a clinical skills lab. This is reflective of current practice at UoB and will ensure opportunity for students to gain competence in the necessary technical skills.[2] Participation in this study will be entirely voluntary and will have no impact on academic progression or subsequent teaching if students decide not to participate.

The students will then be randomly allocated to one of two study groups for phase two. The control group of 9 students will be taught the non-technical skills required for basic wound closure and use of local anaesthetic before practicing these skills again on the same bench top part task trainer within a clinical skills lab. The intervention group will receive the same teaching on the non-technical skills but instead, they will practice these skills by performing wound closure on a part task trainer that is attached to a SP's upper limb. This will be mounted on a firm perspex backing to avoid inadvertent needle stick injuries during the procedure. The arm will be covered with a drape and patient reclined on a trolley in a simulated ward to improve realism.[5,6,7]

For the final phase, all 18 students will be assessed by blinded examiners on their communication skills during wound closure of a linear incision on a pad of simulated skin attached to a SP's upper limb. The assessors will be post Foundation Programme clinical teaching fellows with the necessary procedural skills. A 15 part score adapted from Kneebone et al.[7] will be used to assess communication skills that will be analysed to compare the two study groups.

Results This study will be conducted at the Royal United Hospitals Bath undergraduate academy starting in January 2020. The students will be at the academy for 16 weeks. The results from this study will be published at the 2020 ASME ASM.

Discussion This is a pilot study to investigate the impact of hybridised simulation on communication skills. A limitation to this study will be the small sample size. The results from this study will be reported to the local surgical lead to inform future teaching. Further conclusion will be drawn upon publication of results.

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Theme: Communication Skills

Accepted as: e-poster

Paper no. 020

The impact of teaching communication skills in a novel, high-fidelity, simulated on-call experience on student attitudes and self-efficacy

Author(s): Dr Louise Gurowich, Dr Alexandra Phillips, Dr Joshua Butler, Dr Rachel Nigriello, Dr Andrew Armson, Dr Nicholas Stafford, Dr Christopher Waters, Mr Kevin Jones

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Background Communication is a common thread in all aspects of practicing medicine. It may challenge us with difficult patients and complex colleagues, without pausing with concern for a doctor overwhelmed with tasks. However, health communication research has only colloquially considered the pressure of a doctor's working day and its impact on performance in difficult communication scenarios [1]. The General Medical Council's guidance 'Outcomes for Graduates' specifically highlights the need for new doctors to be able to "communicate clearly, sensitively, and effectively with patients", specifying difficult situations in which careful communication is required, such as conflict, death, or patients who lack insight [2]. Past educational research into communication skills training has shown evidence that experiential training gives better outcomes than instructional teaching, and that simulated patients elicit the same reactions as real patients in communication skills practice [3]. High-fidelity simulation in particular has shown improvements in self-efficacy in healthcare professionals in dealing with perceived "difficult" communication such as with patients with mental illness [4]. A simulated experience as a newly-qualified junior doctor has shown improvements in multiple skills required at graduation, but especially in the communication domain [5].With up to 42% of newly qualified doctors feeling unprepared by their medical school for their first clinical job [6], we designed a high-fidelity simulated ward cover on-call programme with 6 scenarios, including one difficult communication station using an actor, to assess impact of learning communication skills within a high-stress environment and its effect on self-efficacy.

Methodology Our cohort consists of 35 final year medical students from the University of Bristol in their Preparation for Professional Practice (PPP) placement at the Great Western Hospital, Swindon. The students will "act-up" as newly-qualified Foundation Year 1 (F1) doctors as part of a 3.5 hour simulated on-call. They will receive handovers via bleeps, and attend these calls within the setting of the Great Western Hospital, using an online resource to access simulated notes or imaging. They will complete a pre-test questionnaire using 4-point Likert scales and free-text boxes before the session begins. One task, which the students must prioritise appropriately, is designed to test their communication skills with an angry patient threatening to self-discharge. The students must identify that the patient is medically unwell and aim to keep them in the hospital for medical treatment. Following the session, the students will receive a semi-structured debrief from the actor, who is a clinical teaching fellow, before completing a post-test questionnaire assessing their self-efficacy at communication skills, as well as several other measures.

Results The timing of the students' PPP block requires us to collect data from January to March 2020. We will present whether the use of a simulated on-call to teach communication skills was beneficial on students' self-efficacy in difficult communication scenarios. Secondary outcomes will include the students' understanding of capacity, and preference of teaching method.

Discussion With limited data, we consider that from the understanding that simulation and experiential teaching methods improve outcomes for communication skills [3], we can hypothesise that high-fidelity on-call simulations such as ours, that improve the realism of a scenario by asking students to respond when busy with tasks of varied clinical need, will improve self-efficacy. We consider that this may only be suitable for final-year students who have existing exposure to difficult communication, as the high-stress environment and distractors may reduce ability in students without pre-existing basic instruction. Communication skills require practice and to address problem-solving skills [3], both of which are tackled by our project.

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Theme: Communication Skills

Accepted as: e-poster

Paper no. 021

Write or Wrong: Ward round documentation and the importance of clinical coding taught with video simulation

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Background As the General Medical Council (GMC) highlight in their Good Medical Practice [1], the clinical records we keep as doctors must be "clear, accurate, and legible" to ensure good handover of patient information, identification of unwell patients, and smooth flow of patients through the hospital. This is vitally important on ward rounds; a daily task for junior doctors, and yet previous work has found medical students to be woefully prepared for ward rounds, particularly in the domain of documentation [2].

Additionally, clinical coding and its relevance to medical students is often under-represented in the curriculum, with indications that even as doctors we are often inaccurate coders due to lack of awareness [3][4].

Implemented here is a teaching session using video-simulated ward rounds to improve documentation teaching for clinical medical students.

Methodology Our teaching session was delivered to 19 third-year and 35 fifth-year medical students from the University of Bristol, and 9 fourth-year students from the University of Oxford, chosen for either their new immersion in the clinical environment (3rd years, 4th years), or proximity to starting as foundation doctors (5th years).

Students documented two video-simulated ward rounds, created in 2016 at Great Western Hospital, one medical and one surgical patient, which included an observation chart. They were then delivered a novel tutorial on correct documentation. This included an introduction to clinical coding and its role, of which elements were adapted from teaching materials provided by the Great Western Hospitals Clinical Coding department. The videos were repeated, and students attempted to document the ward round again.

A mark scheme created using guidance from the GMC [1], MDU [5], and RCP [6], was produced, and all documentation marked according to this ensuring accurate medical information.

The same two videos were shown to 9 clinical teaching fellows (CTFs) ranging from 3 to 6 years post-graduation, and their documentation marked by the same scheme.

Results At the time of writing, data collection is still ongoing for the remaining academic year.

Of 51 students who fully completed the questionnaire, 36 students (71%) had documented on a ward round before, of which 25 (69%) were fifth year students, with 7 students overall documenting over 10+ times. Only 6 students, including only one 3rd year, reported that they felt "confident" documenting in ward rounds prior to the teaching session.

The initial results collected from 62 students across two teaching sessions are demonstrated below.

-Surgical Ward Round: Mean student score improved from 15.48 to 21.03 after teaching, with a mean improvement of 5.55 (95% CI 4.79 and 6.31, $p = 0.0001$). By comparison, the mean CTF score was 23.6.

-Medical Ward Round: Mean student score improved from 14.19 to 18.89 after teaching, with a mean improvement of 4.69 (95% CI 3.97 and 5.42, $p = 0.0001$). By comparison, the mean CTF score was 20.

The students in their final clinical year had higher pre-test scores with means of 11.2 vs 16.2 for final year and first clinical year students respectively in the medical scenario, and 11.1 vs 16.4 respectively for the surgical round, likely reflecting their greater exposure to ward rounds.

Comparatively, 38 students (75%) felt "confident" to document during a ward round after the teaching session, and all students agreed they understood clinical coding and its relevance to them. Students demonstrated clear interest and learning from the clinical coding segment with written feedback.

Discussion With their improved confidence after the teaching session came significant improvements in the students' documentation, particularly in recording patient and family discussions as well as general legibility and organisation. Their increased awareness of clinical coding was also seen directly in improved clarity in the documented ward rounds.

Acknowledgements: Dr J Ford for creation of the video-simulations.

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Theme: CPD

Accepted as: Oral Presentation in Parallel Session

Paper no. 022
Development of the Cards for Change: A tool for using behavioural science in CPD

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Background The purpose of much of CPD is to change health professional practice. From behavioural science, there are a number of theories and taxonomies of behaviour change. These can help understand and enhance practice change as a result of CPD. The BCT Taxonomy v1 (BCTTv1, MIchie et al, 2013) is one of these - there are 93 BCTs grouped into 16 domains. For example, the BCT "self-monitoring of behaviour" is in the domain "feedback and monitoring". Each technique has a specific definition that distinguishes it from the other techniques. The BCTTv1 has increased consistency in the language used to describe the 'active ingredients' of interventions to change behaviour.
We realised that it was very difficult for our educator colleagues to translate the scientific definitions of each BCT into a technique that could be added to education to encourage practice change. We also realised that experts in the BCTTv1 often struggled to translate the BCTs into feasible, acceptable activities.
Methodology We were asked by health professional educators to help them to use behaviour change techniques in their training courses, to increase the chances that their training will lead to practice change. We therefore decided to develop the Cards for Change, a pack of 40 playing cards, to assist educators in learning about and using behaviour change techniques.
We brought together health professional educators and health psychologists to discuss each BCT and how it could be used in education; including the following design principles i.e., that the resource had to be mobile, exciting, professional, aesthetically pleasing, creative, plain English to ensure accessibility for people without high levels of psychological or scientific literacy, based on educational theories. Following printing and dissemination of the cards, we designed an evaluation which we sent to all those who had requested packs of cards.
Results We have had requests for 444 packs, from 280 researchers, practitioners, health workers and educators across 25 countries in five continents and distributed a further 400 packs through invitations to speak in national and international organisations. Forty-two people have completed the evaluation to date and reported usage includes: A university R+D team helping researchers plan impactful interventions. Universities using them to educate future health psychologists in how to design effective training. Pharmacists in Uganda using them to train leaders to influence change in antimicrobial stewardship.
Discussion The Cards for Change are acceptable and useful to multi-disciplinary clinicians and educators. We are now planning for publication in a peer-reviewed journal, and working with colleagues to produce versions in other langauges and for more specific purpose (eg smoking cessation)

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Theme: CPD

Accepted as: Short Communication

Paper no. 023
How to create an irresistible peer group

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Background After training, many GPs have approached us, wanting to form young practitioner educational groups but not sure how to get started. As recent First5 leads (CG, LY, UC) in two very different areas of the UK, we have met many of the challenges they face. We have each created or been part of sustainable groups: a Skype life after VTS group which has continued on a monthly basis for 8 years while participants span three continents (MF, CH, RE, HA-H), the Scottish Deep End group (UC, LY), and an active WhatsApp group of previously unconnected people which is now self-moderating (CG). We have run interactive sessions using insights from education theory, public speaking, social media, and experience to help people create effective peer groups utilising technology.
Methodology We will conduct semi-structured interviews with the organisers of peer groups to identify features of success.
Results We will conduct thematic analysis and present the findings.
Discussion We will discuss how the themes relate to existing literature.

Theme: CPD

Accepted as: e-poster

Paper no. 024
"Apply your own oxygen mask before helping others" – Balint groups as method of fostering wellbeing and reflective practice amongst undergraduate medical students in a UK based Intensive Care environment

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Background It has been recognised that Intensive Care Units (ICU) are a challenging learning environment for undergraduate medical students, and may present their first exposure to complex ethical decision making and distressing morbidity and mortality (1,2).
The use of reflective practice techniques including Balint methodology have been shown to enhance empathy and improve the wellbeing of medical students and other healthcare professionals (3). Despite this, they remain rare out with a general practice or psychiatry setting, particularly for undergraduates.
Formal University of Edinburgh feedback identified that a lack of pastoral support in the face of exposure to distressing circumstances continued to be an issue for students attached to the critical care unit.
As such, we aimed to develop and evaluate the implementation of a wellbeing intervention, specifically using Balint methodology, for undergraduate medical students within a UK based ICU environment.
Methodology Final year medical students at the University of Edinburgh rotating through their critical care attachment attended a Balint session during their week-long attachment to ICU. The sessions were facilitated by clinical teaching fellows (with backgrounds in ICU and psychiatry). All facilitators had undergone additional Balint leader training through the UK Balint Society. These pilot sessions were held over an eight week period between November 2019 – January 2020.
The Balint groups were conducted in line with Balint society guidance; first, the leader invites a student to share details of a clinical case. After clarifying factual questions, the student who has brought the case is asked to sit back and listen to the group discussion. Group discussion may involve group members challenging others thinking, exploring feelings, and sharing anecdotes for context. Following the group discussion the student who brought the case is invited back into the group and is invited to comment on the discussion had by other team members.
Following the conclusion of the session students were asked to complete anonymised feedback. A Shortened Warwick-Edinburgh Mental Wellbeing (SWEMWBS) assessment, a validated research tool to assess mental wellbeing, was collected to provide a baseline level of mental wellbeing for participants. A combination of quantitative (Likert scoring) and qualitative data was collected regarding the student's opinions on Balint as a tool for stimulating discussion, alongside the perceived benefit for patients.
Results 27 final year medical students attended Balint sessions during the pilot period. All (100%) of students either agreed or strongly agreed that sessions had led to stimulating discussion. 25 (92%) of students agreed or strongly-agreed that what they had learnt during Balint would help their patients. In addition, 20 students (74%) agreed or strongly-agreed that the Balint session had changed the way they thought about themselves and others.
Qualitative feedback was overwhelmingly positive. Themes emerging from qualitative feedback included an appreciation that emotional reactions to challenging cases were normal; that the session had provided a space to think and discuss, alongside an appetite for inclusion of Balint in other undergraduate modules.
Discussion The capacity for reflective practice is seen as an essential characteristic of competent professional practice(4). In this pilot project, we demonstrated that Balint groups offered undergraduate medical students the opportunity

to openly explore the challenging cases that stay with us as doctors, and to explore the complex emotions that we can experience in our roles as healthcare professionals. Further work is required to assess their impact on the mental wellbeing of undergraduate medical students.

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Theme: Cross cutting theme Faculty development, CPD, Postgraduate education and e-learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 025
So much more than GOFO (go away and find out): The explicit development of Self-Directed learning

Author(s): Dr Linda Jones, Dr Qabirul Abdullah
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Background Dundee's CME has international faculty development at the heart of its Postgraduate Certificate/ Diploma/Masters programme. In response to students' voices we developed a module, Self-Directed Learning (SDL); linking theory to practice. Recognising how diverse needs of students could not be met without an unsustainable breadth of module choice, (small classes not economically viable) we co-created a 20 credit module which allows individuals to set their own speciality or context specific learning goals. Here we challenge assumptions, that merely expecting students to direct their own learning or as cynics suggest "Go away and find out" (GAFO) is sufficient . Whilst, the more common, self-regulated learning (SRL) requires students taking responsibility for and regulation of learning behaviours set by institutions or teachers, SD Learners diagnose their own needs; formulate goals; identify resources/strategies and evaluate learning outcomes (Saks and Leijen 2014).

We addressed the paradox of teaching and assessing SDL by blending and assessing module and personal learning goals; integrating learning from experience; observation and student negotiated learning opportunities. Assessment is by an evidence-based reflective portfolio allowing "learners to reflect on their progress, diagnose learning needs and create learning plans, all elements of SDL" (Schaik et al 2013).

Our innovation report will share the design thinking underpinning the initiative, CPD activities and evaluation findings arguing that SDL is a valuable component of professional and faculty development requiring explicit promotion.

Methodology This current (ongoing) qualitative and (descriptive) quantitative evaluation utilises the CIRO (Context, Input, Reaction and Outcome) model. Evaluation questions were: what is working, why and how is the input working, stakeholder perceptions of cost/benefits of the module immediately post and 6+ months after completion. How might we enhance the module for both face to face and distance learners. Documentary evidence of performance outcomes, from albeit small numbers of participants through two modalities, online distance and face-to-face was analysed. Methods were thematic analysis of focus group discussions and documentary analysis triangulated with Likert scale evaluations.

Results Preliminary results suggest: Positive local impact on 3 generations of stakeholders, CME faculty, module participants and their students, the next generation of health care professionals. Verbatim quotes within portfolios and evaluation illuminate value e.g. "Module was very creative, teaching theory of SDL and having us apply the process in our various roles with relevant topics of interest. It has helped me become a more conscious learner which I hope to convey to me trainees." (X, non-UK, distance learner) Likert scale descriptive statistics showing performance outcomes and impact at point of exit and 6+ months

Discussion We position our evaluation in the context of published discourses e.g. concurring with Reid and Usherwood (2002) findings – SDL facilitation was more enjoyable but required faculty to develop student goal setting capacities and extensive discussion time So much more than GOFA!. Like Schaik, Plant & O'Sullivan (2013) we believe tensions between mentors' beliefs, approaches and perceptions of students' SDL skills, need to be addressed through explicit "faculty development and institutional culture change for successful integration of SDL in medical education" (ibid).

Our evaluation enable us to recommend faculty development activities designed to promote understanding and application of SDL theories and practice and personal goal setting. Our students (themselves faculty in international settings) are becoming self-directed learners capable of developing SDL capacities in their learners. We would welcome the opportunity to disseminate and discuss our strategy for use in other settings.

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Theme: Curriculum Planning

Accepted as: Oral Presentation in Parallel Session

Paper no. 026
A scoping review of health professional curricula: Implications for developing integration in pharmacy

Author(s): Aisling Kerr, Hannah O'Connor, Paul Gallagher, Teresa Pawlikowska, Judith Strawbridge
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Background Integrated undergraduate health professions curricula aim to produce graduates who are prepared to meet current and future healthcare needs. Integration is advocated by pharmacy regulators as the perceived optimum way of preparing students for first registration as pharmacists. Integration can be described by model of integration; horizontal, vertical or spiral, themes for integration or by integrative teaching and learning approaches. Harden's integration ladder[1] has been operationalised by The General Pharmaceutical Council as three levels: "fully", "partially" and "not integrated" curricula[2]. This scoping review aimed to explore health professions education literature to inform the design of integrated pharmacy curricula. This review asks: what is meant by integration in health professions curricula?

Methodology The Arksey and O'Malley scoping review framework was utilised[3]. Ovid MEDLINE, EMBASE, Scopus, Web of Science and ERIC were searched for studies published up to May 2018. Research papers were eligible for inclusion if they described curriculum integration in undergraduate health professions curricula. Models of integration, themes for integration, teaching and learning approaches and level of integration were defined to support data extraction.

Results 9345 studies were identified and 136 were included. 12.5% of included studies included a definition of integration. The majority of studies described horizontal integration (n=87). Various teaching and learning approaches were described, including experiential (n=43), case-based (n=42) and problem-based (n=38) learning. Systems-based teaching (n=56) was the most common theme reported. The majority of curricula were classified as "partially integrated" i.e. levels 5-7 on Harden's ladder (n=101). 81 studies reported perception outcomes. Only three studies reported outcomes beyond perception. Reported outcomes were mostly positive and included knowledge gains, increased appreciation of relevance, increased motivation and improved communication. Increased stress, difficulty understanding basic concepts and time constraints were also reported.

Discussion Various themes for integration and integrative teaching and learning approaches are used. A lack of evidence for integration remains due to reliance on perception data. There is a need for integration to be explicitly defined by curriculum developers and researchers. Attention should be given to model, theme, teaching and learning approach, level of integration and outcomes.

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Theme: Curriculum Planning

Accepted as: Oral Presentation in Parallel Session

Paper no. 027
Accountable Feedback Sessions: An innovative approach to improve feedback for teachers

Author(s): Dr Philip White
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Background Most curriculum evaluation in medical education is gathered through anonymous online feedback post completion (1). Due to administrative practicalities, students may provide feedback up to several weeks later. Feedback may vary in usefulness (2). An anonymous online platform can be used as an opportunity to complain, or focus on narrow or difficult-to-change areas of the course (3). Students may perceive feedback to have less direct benefit for themselves given its posthumous nature, so be less inclined to engage in the evaluation process. Further, there is limited opportunity for teachers to respond to students regarding unrealistic suggestions for improvement, and may have unclear ideas as to whether negative comments from a loud minority is shared by all (4).
The author introduces a model of 'accountable feedback', aiming to give teachers a structured method of course evaluation that may address these issues.
Methodology Accountable Feedback Sessions (AFS) took place on the last day of curriculum delivery. This was trialled on three groups of final years (n=36) and four groups of third years (n=25). All participants were MBBS students at Newcastle University.
Students were given access to two colours of post-its and instructed to write down >=1 positive aspects of the curriculum delivery on one colour. On the other colour they had to write >=1 aspect that could have been improved, but had to include a suggestion for how this could realistically been achieved. Post-its were stuck anonymously on a board. Teachers thematically grouped the post-its and discussed them in turn. Students could comment on any post-it if they agreed or disagreed, but did not have to say which feedback was theirs. If a solution was felt to be unrealistic, teachers opened this up for suggestion or clarified why something could not be changed. At the end, a list of action points based on the feedback was created.
Students filled in a mixed quantitative and qualitative questionnaire gathering their opinions on the AFS or comparing this with other evaluation methods.
Results Students reported as follows: (A= agree or strongly agree, N= neither agree/disagree, D= disagree/strongly disagree).
Feedback had been more honest (A=67%, N=22%, D=11%) and more helpful (A=86%, N=12.5%, D=1.6%) than anonymous methods. Students reported increased trust towards the teacher (A=84%, N=16%) and felt more trusted (A=84%, N=17%, D=1.6%). Students reported some improvement in understanding the purpose of learning aims and activities (A=79%, N=20%) with greater reported confidence to approach similar material as a result (A=85%, N=15%).
Qualitative data highlighted that students felt feedback was more meaningful due to more open discussions with non-defensive/non-judgemental teacher response. Previously developed rapport with the teacher was enhanced. Students were more likely to suggest ideas if examples were given of how previous feedback had been acted on. Students appreciated elaborating on feedback given and discussing this with the teacher as a group. This method was preferred to online feedback for all the above reasons.
Discussion The author attempts to put forwards a practical model for gathering feedback that may improve teacher-student trust, usefulness of feedback given and student engagement. Pilot data indicates that this method would be worthwhile testing and evaluating elsewhere. It may have benefit for teachers who wish to gain specific feedback into multiple areas of a course part way through delivery or when a second cohort will undertake the same curriculum immediately afterwards.
Millar & Rogers (5) suggest that when teachers provide students with more control, this builds trust. AFS allows teachers to do so whilst modelling vulnerability and openness, which – so long as agreed actions are acted upon – may further improve trust (6) and act as a positive role model for students.
AFS may be best suited to class sizes under 30 where an element of rapport is already established.

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Theme: Curriculum Planning

Accepted as: Oral Presentation in Parallel Session

Paper no. 028
An evaluation of simultaneous student selected components (SSCs) in a novel longitudinal placement

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Background Longitudinal Integrated Clerkships (LICs) are growing in uptake as a curricular approach in medical education (1). A key reason is that they promote longitudinal and integrated learning between specialities which improves knowledge retention when compared to block placements (2). The Newcastle University MBBS programme is introducing an LIC to all 370+ year four students from September 2020; making it the largest LIC worldwide (to the best of our knowledge). Students will undertake simultaneous placements in General Practice, Medicine and Surgery over nine months.
To inform the development of the future LIC, Longitudinal Student Selected Components (LSSCs) were offered to year four students. Fourth year students routinely undertake three sequential six-week SSCs; in the LSSCs they undertook these simultaneously over 18 weeks. Students were timetabled two sessions a week in each of their chosen specialities and one session a week to attend a group tutorial. Remaining sessions were timetabled for self-directed learning (SDL). 9 students and 26 supervisors, from General Practice and secondary care specialties, took part.
The aim of the evaluation was:

1. To understand the perceptions of students and clinical supervisors undertaking LSSCs, including what worked well and what challenges they faced.
2. To create practical recommendations to inform the development of the year four LIC at Newcastle University.

Methodology A qualitative methodological approach was chosen to explore participants' perceptions. The LSSC students were invited to attend focus groups in weeks 1, 9 and 18 of the LSSC. Nine attended the first and eight the second and third. Supervisors were invited in weeks 1 and 18 to take part in interviews (face-to-face, telephone or online teleconferencing) or complete an online questionnaire. A variety of mediums were offered to supervisors for pragmatic reasons to work round their clinical commitments and enable maximum participation. Nine supervisors took part in week 1, whilst eight took part in week 18. All focus groups and interviews used a semi-structured approach.
Approval was granted from the Newcastle University Ethics Committee. All participants provided written consent. Interviews and focus groups were audio-recorded. AD and HC thematically analysed the data to identify similar and contrasting themes through the time-course of the LSSC. Practical recommendations were created.
Results 12 themes and 30 recommendations were identified. Themes identified were: students building relationships with patients; students integrating into the department/team; the student-supervisor relationship; developing clinical knowledge and skills; the link between specialties; flexibility; variety; group teaching; preparing for life as a doctor; assessment; conflict between different groups of students; preparation of supervisors for students.

Discussion Results have highlighted key recommendations, including:

1. Publicise this novel LIC to primary and secondary care staff, patients and students to increase interest and support.
2. Provide preparatory materials for supervisors/students which explain the aims and neuroscience theory underpinning LICs. To increase accessibility to these materials they could be provided through a variety of mediums, e.g. online tutorials and face-to-face sessions.
3. Incorporating a group tutorial provides valuable peer support and the opportunity for students to learn from peers and develop additional non-clinical skills.
4. Encourage students to follow-up patients they have seen to develop longitudinal relationships, e.g. using SDL time effectively and permission to follow-up patients by telephone.
5. Assign students to their supervisors as early possible to start their student-supervisor relationship sooner.

The evaluation has been written as a report for the curriculum working groups at Newcastle University Medical School. Findings will generate discussion and support the development of the planned LIC for September 2020.

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Theme: Curriculum Planning

Accepted as: Oral Presentation in Parallel Session

Paper no. 029

Varied approaches to Quality Improvement (QI) in core medical undergraduate curricula; evaluation and experiences from two large UK medical schools

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Background The General Medical Council's (GMC) 2018 "Outcomes for Graduates" is the latest document on core competencies and requires newly qualified medical graduates to "apply the principles and methods of quality improvement to improve practice…including seeking ways to continually improve the use and prioritisation of resources" (GMC, 2018) There appears to be widespread limited knowledge of how Quality Improvement (QI) training for undergraduates is incorporated into UK core curriculae, perhaps driven by the undersupply of UK based literature on the topic. Indeed, when The Health Foundation produced a useful summary of the evidence for QI training in undergraduate and postgraduate curricula (2012) (The Health Foundation, 2012), The University of Dundee was the only UK example of QI training presented in the report at undergraduate level. Since 2012, there have been a few UK medical schools that have reported on the limited inclusion of QI training in a clinical context within their medical undergraduate programmes (Jackson et al 2018, and Wylie et al 2017) with the exception of The GKT School of Medical Education at King's College London who in 2019 reported on QI projects for 398 students (Martin et al 2019). This oral presentation will outline the different models utilised at two large UK medical schools and provide evaluation data to illustrate how variability both in the duration of reported Quality Improvement Projects (QIP) and structure of placements at these Universities impacts on QI learning outcomes and project impact.

Methodology We will compare and contrast QIP models of the undergraduate medical programmes at The GKT School of Medical Education at King's College London and The University of Manchester, present evaluation data and discuss the advantages and challenges of these differing approaches.

Results Two tables (emailed as unable to add data in table format) have summarised QIP models utilised at The GKT School of Medical Education at King's College London and The University of Manchester, QI learning outcomes and project impact:

Table 1: Key differences in QIP module design and delivery at both institutes

Table 2: Measures of QI science learning and impact of projects at both institutes

At GKT year 4 students undertake a 6 month longitudinal module, completing a QI project in a clinical setting with 4 hours protected time per week. This is a must pass component of year 4. At Manchester both Year 4 and 5 students complete a full-time 4 week-long summatively assessed module, undertaking a QI project mostly in clinical settings.

Quantitative evaluation data reveals that both models enabled the development of QI skills, sufficient time was allocated to complete QI activities and QI activities enabled students to complete their required respective assessments. QIPs at both institutes were linked to sustainability outcomes. However, a longer duration of group projects at GKT inevitably provides more chance for iterative QI and therefore opportunities for impact.

Discussion The different models utilised at two large UK medical schools provides a large body of implementation data to illustrate how variability both in the duration of reported Quality Improvement Projects (QIP) and structure of placements at these Universities has no significant impact on QI learning outcomes. Additionally, QIPs can be clearly linked to sustainability outcomes irrespective of the models utilised. However, the advantage of a longer project duration increases the likelihood of measurable impact.

Further evaluation work is required at The University of Manchester to explicitly explore QI related student learning outcomes. However, an obvious challenge to this will be robust, mass-scale training of hundreds of assessing QIP supervisors who themselves will not have received QI Science training unless specifically sought out at postgraduate level. Supervisor training needs have also been identified by GKT for further development.

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Theme: Curriculum Planning

Accepted as: Short Communication

Paper no. 030

The development of a national consensus for teaching social prescribing across medical schools in the UK

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Background Social prescribing (SP) enables healthcare professionals to refer patients to a link worker, to co-design a non-clinical social prescription to improve their health and wellbeing. [1] It is critical medical schools teach the doctors of tomorrow about SP, to ensure they are aware of it regardless of their final specialty; improving both their patients, and their own wellbeing. We conducted a scoping review to see what is currently known about SP in UK medical school's curriculum. The three research papers and two guidelines identified demonstrated that the extent social prescribing features in medical school curriculum is wide-ranging, with no consensus on what it is and where it belongs in the curriculum. Therefore, our aim was to develop a national consensus for teaching social prescribing in UK medical schools.

Methodology Via the Social Prescribing Student Champion Scheme, [2] a national survey was disseminated across UK medical schools to evaluate student perceptions and preferences on SP teaching. The results were assessed using qualitative thematic analysis. A national focus group composed of key academics, clinicians and various stakeholders then reviewed and discussed the student preferences.

Results Five main themes were highlighted by 613 students representing all UK medical schools: timing, delivery method, style, content and assessment. Both survey respondents and focus group members emphasised the need to reframe values and perceptions in pre-clinical years followed by practical hands-on placements in SP to develop knowledge. A variation in teaching styles is recommended to suit all UK medical school curriculums. Regarding the content of teaching, integration of SP teaching with sociological determinants of health is suggested,

as well as a focus on the practicalities of recognising patients that can benefit from SP. Crucially, both groups highlighted the need to formally assess this concept to consolidate SP learning.

Discussion A comprehensive report was developed based on both student preferences, stakeholder's comments and current SP teaching throughout the UK. Recommendations include integrating the SP teaching with other 'person-centred' teaching in pre-clinical lectures on sociological determinants of health and in later years within GP placements, as well as formally assessing SP. This report aligns with the General Medical Council's current outcomes for graduates and provides flexible recommendations on integrating SP into current UK medical school curriculums.

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Theme: Curriculum Planning

Accepted as: e-poster

Paper no. 031
Modernising the UK's Radiology Training Curriculum

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Background There has been a global movement towards Competency Based Medical Education (CBME) in postgraduate medical training [1]. In the United Kingdom (UK) the General Medical Council (GMC) has stipulated all speciality curricula need to incorporate generic professional capabilities by 2020 [2]. The Royal College of Radiologists (RCR) harnessed this as an opportunity to rewrite the Clinical Radiology Curriculum. CBME curricula are written with the end outcome in mind [3]. This research aims to define the capabilities required of a consultant radiologist working in the National Health Service (NHS) to inform the rewriting of the RCR Clinical Radiology Training Curriculum. Curriculum design processes are often for rather than involve students/trainees [4]. This enquiry is unique as the research central to curriculum development was performed and documented by a trainee.

Methodology Policy analysis provided a sound understanding of the drivers for curricula change. Literature review substantiated the need for modern and UK based research. Evaluation of existing global radiology curricula further supported the need for original research to explore the capabilities required of a consultant radiologist working in the NHS. Qualitative methods were used to explore the question "What are the capabilities required of a consultant radiologist?". This included: focus group discussions with trainers and trainees followed by interviews with leaders in radiology education, radiology management and referrer groups (including primary and secondary care).

Results Focus groups data was mapped directly to the GMC's "Generic Professional Capabilities (GPC) framework" to kickstart the curriculum rewrite project. Interview data informed the distillation of twelve high level competencies in practice that form the core of the new RCR Clinical Radiology curriculum.

Discussion This work is the first to formally explore the capabilities required of a radiology consultant working in the NHS. The results have guided and shaped the development of an outcomes-based curriculum for radiology training in the UK. Future work includes the implementation of the new curriculum which is due to launch in the latter half of 2020. Competency-based training promises to de-emphasise time-based training and promote greater flexibility [5]. Following curriculum implementation, future research will aim to evaluate the impact of the new curriculum with a particular focus on establishing whether de-emphasis on time-based training is deliverable/delivered.

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Theme: Curriculum Planning

Accepted as: e-poster

Paper no. 032
Training tomorrow's doctors: the impact of a Student Selected Component in Global Health during medical school

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Background Several works by students, health professionals and expert panels highlight the importance of global health education (GHE) for training tomorrow's doctors (1-8). Yet, to date, there is limited literature investigating the impact of GHE on student's postgraduate career development, and the development of standardised GHE in UK medical schools has been an arguably slow process. At Newcastle University, a Student Selected Component (SSC) in Global Health was established in 2006, following a student's request, and has since become increasingly popular (9). This project seeks to follow up students who have undertaken the Newcastle University medical school SSC in Global Health over the last decade, in terms of how the SSC has impacted their experience as practicing clinicians and postgraduate career development.

Methodology We developed an electronic survey targeted at Newcastle Medical School alumni who have undertaken the SSC in Global Health. The surveys included questions about specialty choice, postgraduate qualifications, extracurricular activities, international work and the influence of the Global Health SSC on their clinical practice and careers. A total of 74 past SSC participants were identified between 2006-2017. Survey data were gathered from alumni through the Newcastle University Alumni and Supporters network and social media.

Results Thirty-seven of 72 students, who had undertaken the Global Health SSC, responded within the allocated time. Twenty-five (71.4%) respondents stated that the SSC had influenced their clinical practice and 16 (45.7%) believed it had influenced their career choice. Twenty-two (59.5%) had undertaken an intercalated degree programme, of whom nine (24.3%) did a Masters programme specifically in Global Health. Four (10.8%) and two (5.4%) participants completed a Masters degree in Epidemiology and Control of Infectious Diseases respectively, both key themes within GHE. Since completing medical school, four of 35 (11.4%) respondents indicated that they had completed, or were in the process of doing, postgraduate study related to global health, of whom three (8.6%) specified undertaking a Diploma in Tropical Medicine and Hygiene (DTM&H) and one (2.9%) studying a Masters degree in Public Health. Another ten (28.6%) participants reported they were considering pursuing a postgraduate qualification related to global health in the future. Five (14.3%) had worked outside the UK, whilst 19 (54.3%) were considering working abroad in the future, with most referring to work in humanitarian or low resource settings and international GHE programmes.

Discussion Students who participated in an SSC in Global Health at Newcastle since 2006 reported that the experience had helped inform both their career choice and subsequent clinical practice. While a causative relationship cannot be inferred, SSC Global Health alumni are likely to pursue further global health opportunities as well as obtaining postgraduate degrees and participating in international health work. These results indicate that inclusion of strong Global Health modules in the medical curriculum can significantly influence the academic and clinical career choices of students. Medical schools that endeavour to produce graduates, motivated to tackle the global health challenges of our society should champion comprehensive global health modules for students.

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Theme: Curriculum Planning

Accepted as: e-poster

Paper no. 033
"What makes a Model Prescriber?" A Documentary Analysis

Author(s): Usmaan Omer, Professor Gabrielle Finn, Professor Martin Veysey, Dr Paul Crampton
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Background In recent years, the authority to prescribe medications in medical practice has expanded to include pharmacists, nurses and Allied Healthcare Professionals (AHPs), collectively known as Non-Medical Prescribers (NMPs)(1) (2). As a result, the quantity of guidelines describing appropriate prescribing practice has increased. However despite this, the literature notes a lack of consensus regarding the overall qualities of a good prescriber(3). The aim of this study, therefore, was to attempt to define what would make a model prescriber in medical practice, regardless of professional background.
Methodology We conducted a documentary analysis of UK-based and international prescribing practice guidelines. These guidelines were obtained through internet searches. Data analysis was conducted through a constructivist grounded theory approach to allow for concepts to emerge from the data itself without the use of a pre-defined categories. Sentences and phrases were coded based on any description pertaining to active prescribing practice or improvement of it. Emerging codes and categories were checked, re-checked and compared to one another through the constant comparison method of Glaser and Strauss(4). After theoretical saturation of the codes and categories was reached, these were clustered into axial codes, further combined into substantive categories and finally theoretically sorted.
Results A total of 13 guideline documents, nine UK-based, two Australian-based, one New-Zealand-based and one European-based were analysed. Overall, four core categories of a model prescriber in practice were identified;
-Knowledgeable: including that of disease, drug properties and mechanism of actions and how to appropriately apply knowledge to the individual patient;
-Safe: in relation to appropriate drug quantities, appropriate prescription-writing, appropriate treatment-monitoring; awareness of potential errors and adherence to protocols;
-Communicative: with both patients encountered in practice and with colleagues who are part of the wider prescribing team;
-Maintaining Development: through enhancing knowledge and skills, being able to think critically when evaluating knowledge-bases and adapting to technological advancements aimed at improving prescribing practice.
Discussion Prescribing practice guidelines are applicable to all prescribers, regardless of country of origin and professional background. As these four categories were created through analysing prescribing guidelines across different countries and professional backgrounds, they can serve as a definition of a high-level prescriber. Thus, they could be used as an additional tool by prescribing educators to evaluate the extent to which their curriculum develops the core qualities needed by their students to be high-level prescribers in practice. Although all four categories are important, the guideline documents collectively indicate that safety is the most important for a prescriber, since prescribing errors are predominantly due to lapses in prescribing safety(5).
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Theme: Disrupting Medical Education

Accepted as: Prestigious Oral Presentation

Paper no. 034
A pedagogy of uncertainty: opening up fissures in the competence paradigm

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Background There is an uneasy relationship between certainty and uncertainty in medical education. Learning to embrace uncertainty is supposedly medicine's 'signature pedagogy';[1] yet contemporary medical education is often closer to a pedagogy of certainty. To improve patient safety, educators train and test standardised competences under carefully controlled conditions. They boil even uncertainty itself down to epistemic (cognitive), moral (ethical), and metaphysical issues [2] that can be taught and tested reliably out of context. This is self-defeating because clinical contexts create much of the uncertainty that causes harm.[3] Prescribing insulin for hospitalised patients is positioned at this fault line in the competence paradigm. It is: uncertain because insulin has a narrow therapeutic window; mostly delegated to Foundation Trainees (FTs); very susceptible to context effects. It causes widespread, severe harm, which shows no signs of improving. [4] My research questions were: what clinical uncertainties confront FTs, and how can we address these?
Methodology Setting: Northern Ireland (NI) since 2016 (ongoing)
Study design: Design-based research,[5] guided by implementation science,[6] involving the Health Board, Deanery, all five Trusts, both Universities, and the training programmes for FTs and medical students
Intervention design: I designed a pedagogy of uncertainty by identifying best theory and evidence about: clinical uncertainty;(eg [2]) causes of errors; ways of implementing change;[6] and improving prescribing behaviour.[7] We progressively developed and implemented: 1) A reflective tool to help FTs: identify the unique pathophysiological and social circumstances that confront them; reflect in action, recognise the limitations of their current capability; recruit help when needed; plan ahead; follow through the consequences of their actions; and learn by reflecting on action. 2) A case-based discussion (CBD) format in which a nurse, doctor, pharmacist, or person with diabetes empowers an FT to reflect on a prescribing experience; 3) Faculty development procedures. This programme of pedagogic change is described at [8]
Evaluation: Qualitative analysis of 113 trainees' accounts of challenging experiences of prescribing insulin;[9] and 255 FTs' free text responses to an evaluation questionnaire.[10]
Results The dilemmas discussed in CBDs were much more often social than ethical ones or lack of knowledge as taught and tested by medical schools. The deficit that caused uncertainty was of a contextualised and social type of knowledge. Typically, multiple social factors interacted in complex ways to cause uncertainty. These factors included: how to resolve tensions with nurses; whether to call for help from busy peers and aloof seniors; how to involve patients; how to get practical information. These dilemmas engendered strong emotions by challenging FTs' professional identities.
Free text responses showed a widespread lack of social support,[10] which resulted in an unreflective type of experiential learning. Participants learned to respond to indeterminate situations by 'getting by' rather than responding thoughtfully to uncertainty.
Discussion As in the EQUIP study,[3] it was social uncertainty that FTs found most challenging. Unlike the decontextualized problems that medical schools teach and test, indeterminate problems emerging from clinical contexts caused uncertainty and potential or actual harm. Uncertainty was unavoidable and there

was rarely a 'right' answer. There has been avid uptake of this disruptive pedagogy. It is now used to educate all professions that prescribe insulin in NI (including pharmacists, nurses, and dentists), and has been awarded several national prizes and endorsed by international audiences. People's appetite for a social pedagogy that challenges the individualism of competence-based education is evidence of paradigmatic fissuring. My pedagogy prototypes an alternative paradigm.

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Theme: Disrupting Medical Education

Accepted as: Prestigious Oral Presentation

Paper no. 035
Call To Action: How to transform UK healthcare environments to support doctors and medical students to care for patients

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Background In 2018 the General Medical Council commissioned Professor Michael West and Dame Denise Coia to carry out a UK-wide review into factors impacting on the mental health and wellbeing of medical students and doctors, and to propose possible practical steps for vital improvement.

Stress and burnout have been shown to negatively impact quality of care for patients as well as doctors' short and long term health, both psychologically and physically. Prioritising wellbeing of doctors and students is crucial to ensure workforce sustainability through recruitment and retention, and to facilitate an open learning culture that is conducive to delivering quality care. National NHS survey data suggests a high prevalence of stress and burnout amongst trainee doctors, and that half of secondary care doctors in England are considering leaving their roles[1].

Methodology This review focuses on primary prevention of stress and burnout through promotion of wellbeing. This was achieved through reviewing the literature and existing models, collating examples of good practice across the UK and analysing data from surveys of doctors, students and healthcare professionals. In 2018 new questions on wellbeing and burnout were included in the annual National Training Survey, providing high quality data on all UK trainee doctors – a cohort of over 75,000 responses[2]. Through this, as part of the review team, we established the prevalence of reported stress and burnout in UK doctors, and the impact that this has on training and the delivery of quality care. To understand core themes in greater depth, interviews and focus groups were conducted with a wide variety of doctor and student contributors. This enabled a better understanding of priority areas to address, and measures that have already had a positive impact.

Results The report highlights the risks associated with the current state of wellbeing among doctors and medical students, and the potential that this has to impair the quality and breadth of care that the NHS is able to deliver. Furthermore, the report suggests that there is a significant risk to the health of doctors related to the levels of stress. The diminished ability of doctors to deliver a quality service places them at risk of moral injury. To promote wellbeing and optimise patient care, doctors and medical students highlighted three core needs that are imperative to meet:

A Autonomy/ Control – the need for control over our work lives, acting consistently with our values.

B Belonging – the need to feel connected to colleagues around us and to feel valued, respected and supported.

C Competence – the need to experience effectiveness and deliver valued outcomes of high-quality care.

Many hospitals, organisations and individuals were found to already be actively promoting wellbeing through a broad range of innovative programmes of work, such as increasing work flexibility and building supportive cultures of learning. The report made eight recommendations for prioritised action.

Discussion The detailed practical proposals from this review provide a road map to health service leaders facing challenges of developing healthy and sustainable workforces by identifying causes affecting wellbeing, considering their consequences and proposing solutions.

Our aim is that our health services are a model for creating compassionate work places that promote learning and wellbeing. Burnout and stress affect all doctors globally. This review offers a practical approach to prioritising the 'ABC' core needs, which may be transferrable beyond the UK. By addressing the 'ABC' we will better serve the needs of our patients and communities, but the significant shift required to deliver this requires urgent action at all levels. Examples of inspiring work across the UK demonstrate the ability of individuals to make change that impacts greatly on the lives of others, but to scale this up we need everyone, the systems we work in, and the patients we work for, to hear the call to action.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 036
5 years of Welsh-medium medical education: "Iechyd Da!

Author(s): Awen Iorwerth, Owain Williams, Buddug Eckley, Erin Ifan, Dr Alun Owens, Sara Whittham, Dr Rhian Goodfellow
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Background Generations of Welsh doctors have been trained in Cardiff to serve the Welsh population's needs. Before 2015, however, there was no emphasis on the language of healthcare. Any Welsh provision in the training or delivery was haphazard and reliant on enthusiastic individuals. Following devolution, Wales became responsible for its own policies on education and health and the focus changed to developing a high quality workforce to fulfil the needs of a bilingual nation. According to ONS in March 2019, nearly 900,000 are able to speak Welsh and the Welsh Language Measure of 2011 meant Welsh was to be treated no less favourably than English.

Previously, students from Welsh-medium education (26% of all Welsh schools) were arriving in medical school fluent and confident in Welsh but shy and insecure speaking English in public. By the time they graduated, their professional Welsh fluency and confidence was lost. It was their anxiety and their feedback in 2013 which triggered this new direction. Following research and consultation, it was concluded that, Cardiff University needed to make "opportunities available for Welsh speaking students to complete a part of their training in Welsh, systematically throughout their education, placements and personal support."

With the appointment of a Welsh-medium clinical lecturer under a scheme by Y Coleg Cymraeg Cenedlaethol (a federal university established in 2011 to work with Welsh universities to develop Welsh-medium courses and resources), Cardiff University was able to offer Welsh-medium provision, concentrating on small group learning, personal tutors, communication skills and Welsh examination papers. In 2015, we welcomed the first 4 Coleg students (who received Incentive Scholarships of £500 per year for studying at least a third of the degree course in Welsh). In 2019-20, there are 24 scholars in the first year.

Methodology The data surrounding the academic performance of Welsh speaking students have been analysed and reviewed regularly. Electronic questionnaires have been used to gather data. Semi structured focus groups for each year group were organised and manual thematic analysis of results was underpinned by a social constructionist epistemology.

Results Null hypothesis - Performance of Welsh medium educated students is worse than the their cohort. The evidence refutes this - this group of contextualised students performed as well as their cohort. With growing confidence in their performance and identity, there is increasing recruitment of all Welsh domiciled students.

Discussion This educational development has been rich in positive results in a short period of time. Our students have developed mentoring and school liaison projects for their Self Selected Components (SSC) and presented their work in Welsh. These projects won the main prize in the annual Cymdeithas Feddygol (Welsh medical society) conference and the innovation in science in the National Eisteddfod. These students are also involved in Welsh-medium medical education research. This vital research is to continue with the intention of establishing a higher degree in minority language medical education.

We now have a second clinical lecturer and part time educators in the team. We have forged links with medical students from other universities and international links with the Basque Country, Canada and Ireland. We are aiming to host a conference for medical education in minority populations.

The evidence is incontrovertible now that patient care is safer in their mother tongue, especially in paediatrics, mental health and care of the elderly. It is wonderful therefore that this recent development is innovative educationally, gives status to Welsh-medium education, eases the anxieties of students but most importantly contributes to improving the healthcare of our bilingual nation.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 037
Accessible Associations; Memory Techniques in Medical Education

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Background Students are often taught myotomes and nerve territories but seldom know them. Techniques used to great effect by 'memory competitors' to associate random words or numbers are well suited to such tasks and under-used in Education. Evidence is increasingly becoming available that confirms the efficacy of some of these techniques, and they are being increasingly employed by medical students.

Spaced Retrieval practice is the most prominent memory technique. Spaced retrieval is well evidenced to be a highly effective learning technique (Roediger and Butler, 2011), and is heavily used by memory competitors.

Sensory associations, usually visual and auditory, are another paramount tool of memory competitors, but are either viewed with trepidation by, or are unknown to, many learners.

Spatial associations can be created easily using pre-made visual associations by visualising each image association in a corner of a known room. This technique is known as the 'method of loci' or 'memory palace' and is used extensively by memory competitors for most impressive feats of memory.

The utility of translating number and word information into sensory associations is not unique to memory techniques for competitions; Dual Coding is a teaching technique, which has an evidence base (Paivio, 2006), where information is presented in more than one sense, such as image alongside audio.

A current theory of learning called the Multimodality Principle of Cognitive Load would suggest that Dual Coding and mnemonic associations using both visuospatial and auditory information might work by allowing utilisation of both of these types of working memory, and may even reduce the overloading of each type (Castro-Alonso and Sweller, 2020).

There is evidence that the method of loci is a technique that can be effectively trained in naïve individuals (Qureshi et al., 2015; Dresler et al., 2017). The technique has been well received in opinion as well as learning result when taught to medical students (Qureshi et al., 2015).

With some knowledge of these techniques and existing research, a logical aim is the production of learning resources to exploit these techniques as effectively as possible to improve student learning.

Methodology Applying sensory associations of rhyme (auditory) and visuals, a set of resources was created for the learning of myotomes and nerve territories essential to limb examination. The resources included slides to go alongside small group teaching, and group and self testing resources.

The resources will be made available to more Medical Students in their Final year and to some in their third year of study. The students will be taught using the material mostly in small groups.

Evidence of learning effect is to be used to support and guide the development of the example resources in the trial area of myotome and nerve root learning. Gathering of myotome and nerve root learning scores tested in a written test format is ongoing, and will incorporate up to 50 student results pre-intervention (before the development of new resources), and 43 post-intervention.

Written feedback on student reactions to the resources will be sought.

Results Informal verbal feedback indicates a good acceptability of the resources so far by non-tested groups.

Post-intervention testing will commence in February.

Full formal results will be available before July 2020.

Discussion Knowledge of the basics of mnemonic techniques used in competitions can be correlated with current literature on learning to produce teaching and learning resources with great promise.

There is reason to believe that applying a radically different evidence-based teaching approach using sensory associations and the method of loci might be very effective in improving student learning.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 038
Approaching Medical Education training in the North East North Cumbria differently leads to more medical faculty: The FAIMER:KEELE:HEE NE collaboration

Author(s): Tricia Campbell, Namita Kumar, Gemma Crackett, Alyson Williamson, Janet Grant
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Background Health Education England North East and North Cumbria (HEE NE) is passionate about developing clinical trainers and encouraging international opportunities. In September 2016 they collaborated with the Foundation for Advancement of International Medical Education Research (FAIMER), Keele University and the Centre for Medical Education in Context (CenMedic) to offer an exciting medical education opportunity to Doctors in training in the North East and North Cumbria.

Between September 2016 and 2019 HEE NE have funded over 80 Doctors in Training through a postgraduate qualification in Health Professions Education: Accreditation and Assessment. 81 doctors completed a Postgraduate Certificate, 33 a Postgraduate Diploma and 9 a Masters.

The aim of this study was to evaluate how this course has influenced trainees to partake in teaching and educational roles. The secondary objective was to ascertain whether the course offered a cost-effective solution for HEE NE

Methodology Using the Bristol Online Survey system, a survey was sent out to trainees that had commenced the FAIMER course between September 2016 and September 2018. The survey was open for a 2-week window. It consisted of 16 questions and took 10 minutes to complete.

Results The survey had a response rate of 46%. 'The course helped affirm my desire to teach' 73% felt that the course empowered them to teach and at the time of the survey 97% were involved in medical education, 47% that they were more involved than prior to the course.'The course has empowered me to work towards a formal educational role in the future' 90% of trainees felt that the course prepared them for a role as a clinical educator. 47% had taken up a leadership role since starting the programme, and 97% of those that aren't in a leadership role aspire to be one in the future.'I am hoping to undertake a more substantial role in the region later this year with regard to implementing the new RCoA curriculum, which I wouldn't have done without the course.' 57% of trainees are now involved in organising formal teaching programme, and half of those individuals wouldn't have done this prior to the course. 17% are now involved in curriculum design, 86% wouldn't have been prior to the course. 20% are involved in healthcare education research, 97% wouldn't have been prior to the course.'The course was worthwhile because it made trainees feel valued' 90% felt that the course was beneficial to them as individuals and to the North East as a region.

Discussion Through collaboration between FAIMER, KEELE University and our local postgraduate dean, HEE NE have provided their doctors in training with an opportunity to develop as clinical educators. Trainees that have undertaken the FAIMER programme are more engaged with teaching, more likely to be in a formal education or leadership role and they feel empowered to be involved with curriculum design and institutional change.

International collaborations are facilitated through an online forum. Trainees can discuss the application of newly learned skills with doctors from around the world. They can exchange experiences and are encouraged to see healthcare delivery in different contexts.

Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 039
Cardiac Arrest Club. Escaping the sim suite – using a point of care cardiac arrest simulation to teach CPR

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Background Foundation year 1 doctors are routinely part of the hospital cardiac arrest team despite often having little exposure during their training(1). Early, effective CPR with high quality chest compressions and early defibrillation are proven to be key factors influencing survival from cardiac arrest (2)(3) however junior members of the cardiac arrest team are often less efficient at achieving these goals (4)

Previous data from this hospital indicated that during a 'surprise' cardiac arrest simulation these tasks were done slower than during a 'scheduled' simulation (5). We intend to gather more data to investigate this and to extend this project by moving the surprise simulation to a point of care setting, with the simulation occurring within the hospital rather than the simulation suite. This simulated experience, which may happen in a location unfamiliar to the students, is intended to more accurately reflect the 'on-call' experience of an F1 doctor. The intention is to improve the fidelity of the simulation to the circumstances in an actual cardiac arrest and to build student confidence in being part of a cardiac arrest team.

Methodology 35 medical students will take part in cardiac arrest simulations, both as part of a 'surprise' point of care simulation and during scheduled simulation teaching. Students will carry a bleep during the day of their surprise simulation and will be expected to respond as if they were on-call. Simulations will be filmed and key events time stamped, including: time to recognition of arrest, time to CPR, time to pads on, time to first shock delivered. Approximately half the students will take part in their scheduled simulation before the surprise simulation, and half after. Where possible the teams remain the same for both simulations.

The manikin used for point of care simulation will allow us to record depth and rate of chest compressions, as a measure of CPR quality. Other outcomes we intend to investigate include leadership, team working, use of handover tools such as SBAR, student experience and student confidence.

Ethical approval has been sought.

Results Last year's data demonstrated that tasks were generally performed slower in the surprise cardiac arrest than in the scheduled one, though was insufficiently powered to reach significance at the P 0.05 level. Students reported increased confidence at participating in a cardiac arrest team following the surprise simulation and highlighted the experience of teamworking as a vital one. We intend to build on this data as described above.

Discussion This group has already shown that 'surprise' simulation of cardiac arrest is effective at building student confidence and provides valuable experience of the F1 on-call job. Our project intends to improve the fidelity of the sim by moving to a point of care, within hospital location. We hope to demonstrate that this provides a valuable learning experience for the students and will prove beneficial in terms of building confidence. Furthermore by recording data on timeliness and effectiveness of CPR we intend to determine whether students behave differently in a surprise, point of care environment to within the more familiar confines of the sim suite, and thus identify whether there are educational needs not being met by the more traditional approach to teaching immediate life support and CPR.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 040
Cardio Games – May the Stethoscope be Always in Your Favor

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Background The learning of cardiovascular physical examination is a challenge in medical teaching. Gamification is a motivating pedagogical strategy for the development of creativity, critical thinking, and competences. It is defined as the use of game mechanics, their elements, strategies and logic to motivate actions and solve complex real-life problems. In order to engage students to use gamification elements, semiology professors developed "Cardio Games", a competition devised to deepen and improve the learning of physical examination, and which gives students the opportunity to teach and learn in a fun and innovative way. "Cardio Games" has been implemented as an extra, non-mandatory, activity for the students enrolled in the physical examination class of a medical course in Curitiba (Brazil), and is at its 9th edition. The mean of this study was to evaluate the impact of this activity in knowledge acquisition and motivation.
Methodology Through creative activities such as role playing, dancing, and film creation, each student group shows signs and symptoms of cardiovascular diseases, while the other student groups in the audience attempt to discover the pathology. The performance is assessed by a group of judges made of professors and medical doctors of various clinical specialties, as well as by musicians and actors. After the performances, rounds of questions are asked to the audience regarding the anatomophysiology of the disease as well as general semiology. Scores are ranked by rubrics assessment and there are prizes for first places, best song, best acting, and the edition's highlight. Student participation was an average of 99%. In the last edition, a pretest, posttest and questionnaire were applied before and after the competition, consisting of questions about physical examination, anatoclinical examination, and questions in Likert scale about the participating students' impressions.
Results Student's knowledge acquisition was significant for all questions with an increase from 33 basis points to 59,7 points and with a p 0.02. Eighty-eight per cent of students report better integration of all students in the class after the competition; eighty-two per cent report increased motivation to study semiology; eighty-five percent report that the game contributed to developing creativity; and ninety-eight per cent considered the activity fun. The results of this innovative activity are also perceived by students and teachers from subsequent years who report better student confidence in patient care in hospitals and outpatient clinics and better skills in the discipline of cardiology.
Discussion Games or the use of their dynamics get and hold students' attention and motivate them by bringing something that traditional lectures cannot: broaden the learning spectrum beyond memorization and isolated transmission of information. Through them, as in other active methodologies, the student is confronted with problem situations, and to solve them the students need to be active in building a solution.
In order for gamified activities to be meaningful, they must motivate students to overcome an abstract challenge, defined by clear rules and a dynamic and interactive environment, with immediate feedback for each action, and importantly, whose results can be quantified.
"Cardio Games" has proven to be an innovative and effective teaching strategy, utilizing elements of gamification, bringing creativity and active learning together and placing the student at the center of the process. The interpersonal interaction and contextualized learning, with elements of the doctor's and patients' day-to-day work, systematizes and concretizes the acquired knowledge in gamification activities. The stimulating creativity required in the game for problem solving helps to prepare the future doctor for complex care challenges.
In addition, working with colleagues and other teams develops professionalism and interpersonal communication. Compliance with the rules creates a sense of respect and commitment. The challenge imposed strengthens the development of strategic thinking and decision making. The fun produced demonstrates that it is not necessary to suffer to learn. In conclusion, gamification is shown to be an effective pedagogical strategy that raises and promotes commitment, motivation, creativity, development of teamwork skills, and knowledge acquisition.
Key Topic: Gamification, semiology, learning, active methodology, creative intelligence

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 041
Confusion, fear, and anxiety. Using rich picturing and phenomenology to disrupt educational scare tactics

Author(s): Dakota Armour, Frederick Speyer, Richard McCrory, Gerry Gormley, Peter Maxwell, Martina Kelly, Tim Dornan
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Background Intravenous fluid therapy (IVFT) is one of junior doctors' commonest tasks. The incidence of harm per unit volume prescribed is low but IVFT can cause potentially fatal volume overload, electrolyte or acid/base disturbances, and cerebral oedema. Undertreatment is also harmful. Undergraduate education has to help students learn to perform this 'mundane' task routinely in the chaotic circumstances of practice without causing harm. Our scoping review (1) showed little research about how students learn IVFT so we posed the question: how do students experience IVFT education?
Methodology Northern Ireland is an informative setting since the death of five children from hyponatraemia between 1995 and 2001 made IVFT a major patient safety concern. We invited students in pre-qualification assistantship placements to participate in a rich picturing exercise. They depicted their experiences of IVFT and then described these experiences in focus group discussions. Drawing on Moustakas' approach to hermeneutic phenomenology, the research team helped the first author engage reflexively with the data and: 1) Write comments about the pictures, first without, and then with reference to transcripts. 2) Thematically code the pictures and transcripts. 3) Identify participants who exemplified distinct patterns in the pictures. This produced a composite thematic analysis of all participants and a detailed textual description of five key participants, who exemplified distinct patterns of experience.
Results A convenience sample of forty participants participated in eight focus groups. Participants found OSCE examinations unrealistic, felt inexperienced, and felt they were progressing too slowly towards being able to give IVFT in real practice. Their pictures and interview transcripts described many negative emotions and few positive ones. The dominant emotions were confusion, fear, and anxiety. Confusion resulted from contradictions between disconnected experiences of IVFT teaching, variability between specialities, and differences between what guidelines said and what clinicians did. Fear resulted from a relentless emphasis on risk and harm, particularly relating to giving potassium and causing hyponatraemia. Participants were anxious because they doubted they would be capable of giving IVFT when they became junior doctors.
Discussion A phenomenological analysis of focus group discussions, which used rich pictures to elicit students' experiences of preparing for practice, showed how an undue emphasis on risk and harm caused strong negative emotions. Behaving safely requires several things: being aware of potential harm and capable of preventing it; being confident in one's ability to act as required; and having realistic expectations of good outcomes. Over-emphasising the potential risk of a routine and usually safe task, these data suggest, had negative effects on students' capability to be safe and effective junior doctors. That would not matter so much if they could be sure of having readily accessible, at-elbow support to IVFT after they qualified, but our research shows that even safety-critical tasks are often undersupervised. This leaves junior doctors to 'get by' rather than learn a balanced approach to risk and benefit. (2) We suggest that educators should present ways of achieving this balance carefully and realistically, building students' capability to perform routine practice safely rather than eliciting potentially disabling negative emotions. Further research into patient safety education

could usefully draw on how theories of 'psychological safety' could help doctors learn to behave safely.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 042
Disrupting curriculum design to take on the rising challenge of multimorbidities: #HealthinSchools

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https://youtu.be/itmIzsKC544

Background With rising multimorbidities, health promotion is an important part of undergraduate and postgraduate curricula. Yet, studies have not explored pedagogical approaches to its' delivery. The CMO's BMJ editorial states that "multimorbidities are a series of largely predictable clusters of disease in the same person". This called upon study conducted with stakeholders (GMC, AoMRC, UKFPO, HEE) explores experiential learning as a pedagogical approach to develop trainee skills in: identifying clusters of disease and delivering effective health education messages to improve physical and mental health.

Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 043
Evaluating the process of designing new escape rooms

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Background Escape rooms are an innovative teaching method within medical education, offering the opportunity to incorporate game mechanics into clinical training. Participants solve puzzles and complete team-based activities, in order to 'escape' from a simulated scenario. Escape rooms have a number of potential benefits to participants, including developing technical and non-technical skills. However, the process of designing rooms has not been previously considered. As escape rooms become more widely used, it is important to appreciate the complexity of designing rooms. There are a number of factors relevant to the successful design of escape rooms, which warrant further consideration.

Methodology A fifteen question survey was distributed to colleagues who have each designed and implemented at least one escape room over the past year. This included clinical teaching fellows, in addition to senior nursing and medical colleagues, with the rooms covering a variety of medical and surgical topics. The survey consisted of multiple choice, Likert scale and free text questions concerning the design process.

Results Of the seven respondents, none had attended a medical escape room prior to designing their own. The respondents gave their enjoyment of the process a mean score of 8/10, with 10 being very enjoyable, and all would consider designing an escape room again. The majority (5/7) ran a pilot of their escape room, most often to peer groups. The time requirement to design a room ranged from half an hour to more than 6 hours, with the modal resource cost £10-£20. Common pitfalls included difficulty identifying puzzles of the correct difficulty level, and ensuring there was a linear process incorporated within the scenario. The mean score for the difficulty of designing a room was 5/10, with 10 being very easy. Successful tactics included running ideas past a colleague, and incorporating a number of easier puzzles to maintain momentum. Upon reflection, respondents recognised the importance of creating an instruction manual to aid set-up, and utilising peer review of puzzle ideas.

Discussion Designing an escape room can be a positive experience, with high enjoyment scores suggesting the experience can be rewarding. The resource cost was acceptable, signifying that rooms can be run with minimal equipment. However, the design process can be fairly time-intensive, potentially due to using a pilot run to test the implementation of the rooms, and it can be challenging to design a room containing suitable puzzles. Peer review and pilot runs are key methods to ensure puzzles appropriately challenge participants. Organisation is important, for both ensuring a linear path through the tasks, and documenting the escape room plan to ensure consistency. Escape rooms offer an exciting opportunity to teach certain topics, although they can be complex to design. This survey shows that escape rooms can be successfully developed at low cost, with several key factors contributing to a successful design process.

Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 044
Exploring the role of social class in medical students' social networking practices: A qualitative study looking at the experience of medical students from working-class backgrounds

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Background This exploratory study looked at the importance of medical students' class background within the context of their peer relationships, specifically focussing on those coming from a working-class background. Medicine, has been described as a discipline in the 'grip of the middle-class' (Spence, 2008)- to the extent that application/entry rates are overwhelmingly dominated by a middle-class cohort. In the UK, this over-representation has remained temporally constant (McManus, 2004), even in the face of diversification by gender, ethnicity and age (Milburn, 2012). Despite all of this, there is little within the existing research on how class impacts on students' relationships- this is the research 'gap' that this study addresses. From this, it aims to contribute to the wider discussion about students' sense of belonging in medicine and higher education more broadly.

Methodology 19 interviews were conducted (and thematically analysed). Participants came from a single medical school and all self-identified as 'working-class', volunteering themselves following an open invite via email. The interviews looked at (a.) the means through which social class was described (b.) the situational contexts that rendered class relationally important (c.) possible relationships with gender, ethnicity and age and (d.) the ways in which the medical school impacted class identities.

Results Education, family, income, opportunities/experiences and locality were the main ways social class was considered within the context participants' relationships- both in academic and non-academic contexts. Working-class students associated (and felt closer to) other working-class students mostly lectures and GP/clinical placements- although the reasons differed across different academic settings. More frequently, class identity, as a factor for whom students had relationships with, was most poignant in non-academic settings. Participants differentiated themselves from middle-class peers who they considered as having more 'posh'/'expensive' interests, cultivated before entering medical school but also actively promoted by the medical school. Despite this, for some, the separate identity of the medical school, when posited against that of the wider university (both geographically and by curriculum), meant that participants felt a degree of relatability with other medical students. Although this was comparatively more 'cold' than their more intimate relationships and in most cases, meant that class' importance was latent rather than diminished. Ethnicity was particularly important for some of the participants, to the extent that it was indiscernible from class background.

Discussion Generally, the way participants spoke about their class identity (via education, family, locality and income) showed a strong element of continuity with the quantitative markers used in much of existing literature on applicant/entry rates. This suggests that these studies are using (and looking) at issues that students consider important to their class identity on a more subjective level. Hobbies/interests is relatively more novel, not looked at in the applicant/entry literature and also interesting as it shows how class' importance can come into play once students enter into medical school. It also shows that whilst some students may be able to integrate as 'learners' this process may be limited only

to the academic side of medical school. Equally, many may even disassociate with their peers as learners- as shown by the way in which many feel their class placed them at an advantage when it came to GP/clinical placement. Interestingly, this runs counter to the idea that working-class students in university will, due to their minority status, succumb to a 'deficit model' (Stevenson and Lang, 2010) where the feel or experience disadvantage. Medical schools should continue to frame themselves as distinct (geographically and via curricula), encouraging a discipline-specific identity than that cut across class boundaries

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 045

Female Nurses Interactions with Female Trainee Physicians – Undermining or a Professional Identity Crisis?

Author(s): Sue Jones, Laura Delgaty
Corresponding Author institution: Newcastle University

Background Since the Royal College of Physicians were established, over 500 years ago, the professional identity of the physician has been recognised and defined. The last 30 years has seen increased feminisation of the medical workforce with gender parity in medical schools but only 33% of consultant physicians are female (1 – 3).

Nursing was only recognised as a profession in the 1850s following Florence Nightingale and Mary Seacole's work in the Crimea. Today it remains a female dominated profession but over the last 30 years nurse training has moved from hospital based diploma to a university degree course (4). The traditional doctor-nurse relationship of 'dominant-subservient' (5) has changed as nurses have taken on more tasks previously only performed by doctors (6).

This study ascertained the perceptions of female trainee physicians (FTP) on their interactions with nurses in a hospital setting and how it impacted on their work.

Methodology Feminist methodology (FM) and Critical Theory were applied. The principal investigator (FCP) undertook self-reflection on her career journey to date and her perceptions of working with nurses

All FTP working in a single hospital Trust were invited to participate in the study by the FCP. Both Health Education England North East and the Trust agreed the study and proposal was approved by Newcastle University Research Ethics Committee.

FTPs completed a demographic questionnaire and underwent 1:1 digitally-recorded Problem Centered Interviews (5) with the FCP. In line with FM, dialectic method and identification with the participants was used in addition to a reflective diary of each interview.

The interviews were initially transcribed using Temi on-line software (6) and then subjected to content and thematic analysis. The interview data were compared with the FCP's reflections.

Results Of the 26 trainee physicians working in the Trust 11 were FTP (6 HST & 5 CMT). 3 HST and 3 CMT aged 25 – 34 years participated. All were White British UK graduates with one Asian Pakistani non-UK graduate. The 52 year old FCP was a white British UK graduate who had been a consultant since 2002.

Participants reported numerous examples where female nurses had treated them differently to their male peers. Female nurses exhibited a number of negative behaviours including: ignoring FTPs instructions regarding patient care, being more friendly to male doctors and allowing them to 'flirt with them'. The nurses also overrode FTPs decisions in public, made FTPS do everything themselves but helped males and demonstrated bullying behaviours. In contrast male nurse were noted to be respectful and to treat all doctors equally. This was in stark contrast to the interactions that the FCP had with female nurses which were universally positive.

FTPs were aware that some FCPs 'got on well' with female nurses but were concerned that female nurses preferred and respected male consultants more than females.

Discussion The study demonstrates a worrying trend towards female nurses undermining and bullying FTP but it only provides the physicians perspective. Further studies are needed to ascertain the nurses' perspective on how they are treated by FTP. The study design did not seek the views of male trainee physicians, but they did appear to receive more co-operation from nurses than their female peers. There did appear to be a reduction in undermining behaviour as the trainees became more senior, but they were uncertain if this was just that they had 'stopped noticing'.

The changing roles of nurses and the increased feminisation of the physician workforce has changed the dynamics in the workplace but it has not improved the relationships between the two professions. This is a worrying situation that needs further evaluation

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 046

Firm Foundations: Reclaiming the traditional role of junior doctors in the support of postgraduate medical education

Author(s): Dr Edward Miles, Dr Layth Tameem, Dr Mark Eveleigh, Dr Adam Malin, Dr Hiu Lam, Dr Jane Thurlow
Corresponding Author institution: Health Education England, South West

Background Doctors in training learn through a process of Legitimate Peripheral Participation (LPP) in the activities of an established Community of Practice (CoP) in medicine (1). In their original description of such Situated Learning (2), Lave and Wenger described three roles integral to this process: Old-timers, the established CoP; Newcomers, at the start of their training; and Journey-folk, all those in between. This last group, relative Old-timers to the Newcomers (and vice versa) perform crucial roles within the CoP. Through role-modelling and the telling of "war stories" to their junior colleagues, they are integral to drawing Newcomers towards fuller participation in the CoP; meanwhile, as they themselves progress towards full membership, they act with increasing autonomy and contribute to shaping the future of the CoP (2,3). In the early part of this century, in a considered effort to improve medical training, the fundamental unit of post-graduate medical education transitioned away from the firm, towards individual pairings of trainees and their Educational Supervisors (4). The unintended consequence of these changes was to remove junior doctors from LPP in the formal support of their colleagues. The effect of Modernising Medical Careers (MMC) (5) was to delete the Journey-folk from the CoP which supports postgraduate medical education. We sought to redress this through the formation of the Well and Resilient Doctors (WARD) Network across the acute hospitals of the Severn Deanery, in Health Education England South West (HEE-SW).

Methodology We produced seven teaching sessions, aligned to the GMC's Generic Professional Capabilities Framework (6), on practical topics pertinent to Junior Doctor Wellbeing. These sessions were targeted primarily at Foundation Year (FY) 1/2 doctors, although the learning outcomes were appropriate for all training grades. We recruited teams of post-FY junior doctors to facilitate these sessions within the scheduled FY1/2 teaching of their hospitals, collecting evaluation feedback at the end of each session. In collaboration with the established pastoral support teams within each trust, the local WARD teams were also asked to

advertise their availability as a complementary avenue for junior doctor support. In partnership with the HEE-SW Professional Support and Wellbeing (PSW) service, we provided basic training in the skills of Coaching and Mentoring for the senior trainees within each WARD team, to better prepare them for this role. Our volunteers were surveyed to assess their experiences of participating in this project.

Results The WARD network was launched in August 2019, with 140 junior doctors volunteering across all nine hospitals of the Severn Deanery; to-date, a total of 66 doctors have received the training provided by the PSW. At least one WARD teaching session has been delivered in each trust, with more planned in the coming weeks and months. Data collection for both the FY teaching evaluation and WARD volunteer feedback is ongoing. Initial responses from both groups are positive, with the latter reporting improved opportunities for participation in the support of their colleagues. So far, WARD teams have interacted with sixteen individuals facing significant challenges at work and/or in their home lives, in addition to many more informal support encounters.

Discussion The GMC report that the majority of fitness to practice issues arise from deficiencies in domains of the Generic Professional Capabilities Framework (6). Supervising and supporting colleagues forms an important part of these capabilities but, following the reforms of MMC, junior doctors are excluded from formal LPP in such activities. We have shown that a region-wide, collaborative, trainee-led wellbeing network (WARD) can be used to disrupt this status quo, enabling junior doctors to undertake meaningful support of their colleagues, better preparing them for full participation in the CoP of postgraduate medical education on completion of their training.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 047
Gaming the system: a pilot randomised controlled trial of games-based learning to teach dermatology to medical students

Author(s): Alexandra Phillips, Bethany Ferris, Kevin Jones
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Background Skin disease constitutes a colossal health and financial burden. Affecting up to 70% of people worldwide (1), pervading every medical and surgical specialty and encompassing thousands of diagnoses, it is a specialty that every clinician can expect to encounter during their career. Despite this, dermatology remains neglected in undergraduate medical education (2) with over 50% of medical students in the United Kingdom perceiving their dermatological training as inadequate (3). To address this deficit and maximise the impact of the training provided, innovative methods of teaching dermatology to medical students are required. Games-based learning (GBL) has been reported as a popular teaching method in other specialties, although its efficacy remains to be established. We have designed a pilot randomised controlled trial of GBL to teach dermatological terminology to medical students. Recruitment and data collection is ongoing.

Methodology In our pilot session, 8 third year medical students from the University of Bristol were randomised to receive either a 1-hour GBL session (intervention) or a 1-hour didactic tutorial (control) on dermatological terminology. The session was a compulsory part of their timetable but participation in the research was voluntary and informed consent was obtained. The GBL session contained three games: Bingo, a 'guess the dermatosis' game and dermatology Articulate©. The didactic tutorial used Powerpoint© slides with pictures of dermatoses and an explanation of terminology used to describe these. Both sessions contained identical images and the same terminology was covered. All students were provided with a standard glossary for reference during the sessions. Before and after the sessions they completed an identical 10-question test, with each question requiring them to select 3 terms from a list of 10 to describe an image of a dermatosis to generate a score out of 30. The pre- and post-test scores were linked through an anonymisation number for comparison. Our primary outcome was the difference between pre- and post-test scores. Anonymous feedback was obtained from the students via an online survey. Ethical approval for this study was obtained.

Results The results from our pilot session demonstrated a 12.5% increase in the post-test score for the GBL session, compared to a 10.8% increase for the didactic tutorial. Due to the very small sample size for this session, a p-value was not calculated.

Our qualitative feedback was positive with students describing the games as fun, engaging and confidence-boosting. They also found the didactic tutorial to be very useful.

Discussion These preliminary results indicate that GBL is an effective method for teaching dermatological terminology to medical students, although our study has a number of limitations. Our sample size is limited at present due to timetable restrictions over the last semester. Recruitment and data collection are ongoing with a target sample size of 40 students to allow for the application of statistical tests. There is a potential conflict of interest, as the tutors for both the GBL session and for the didactic tutorial are involved in this research. We have used anonymous feedback to ensure that the students perceive their tutorial to be of equal or higher quality to their regular tutorials, to verify that the didactic session is a valid control.

If our final results demonstrate superior learning from GBL when compared to didactic tutorials, this would support the introduction of such sessions into undergraduate medical curricula. Due to the positive feedback received from the students regarding their enjoyment of GBL, demonstration of non-inferior learning outcomes would also be an indication to consider incorporating this into undergraduate training. Areas for further research include the use of GBL in dermatological disciplines other than the use of terminology and description of skin lesions, and studies to establish which forms of games are the most effective.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 048
General Practice – Escaping the Consultation Room!

Author(s): Dr Kevin McConville
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Background The focus of this research concerns itself with staff and student's perceptions in constructing a General Practice 'Escape Room' Game. It aims to concentrate on the barriers and enablers that make an 'Escape Room' concept work in practice. The key research question being asked will be 'What are staff and student experiences of creating and participating within a GP Escape Room environment?'

Methodology The study will be conducted using an Action Research (1) approach. The game construction is being finalised and will be run as part of an embedded curriculum programme in March 2020.

Results Cycle 1 will examine staff perceptions of constructing and running this session combined with a cohort of BMSs Medical Education students who will also

be facilitating this work. Cycle 2 aims to video capture the Year 2 medical student's immersion in the experience as well as ask them to complete an end of game evaluation (n=180 students)

Discussion The relevance of the findings will be discussed with particular reference to curriculum building activities and learning that 'disrupts' normal approaches seen to date. Conclusions regarding the construction of 'escape room games' will be provided including future research recommendations.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 049
How do newly qualified doctors experience transition to practice in regard to their professional identity? An interpretative phenomenological study utilising participant-voiced poetry

Author(s): Megan EL Brown, Gabrielle Finn, Amy M Proudfoot
Corresponding Author institution: Hull York Medical School

https://youtu.be/Sp-pflZ-EXY

Background Becoming a foundation year one doctor (FY1) marks a significant professional identity transition, warranting study. One-to-one phenomenological interviews were undertaken with 7 foundation doctors. Using a double-hermeneutic approach, 4 themes were identified. A participant-voiced research poem, using participants' own words, was created for each subtheme to deepen analysis and display results. Identity is discussed positively, involving transformative learning; and negatively, where doubts arise from transient rotations and mismatch between personal and system life philosophies.

Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 050
'Is there a doctor on board?' – preparing students for life as a doctor beyond the clinical environment

Author(s): Laura Powell, Michael Casey, James Close, Maddison Gronager, David Haydock, Caitlin McNeill, Philip Davies, Abigail Samuels
Corresponding Author institution: Gloucestershire Academy

Background Medical emergencies are not confined to the clinical environment, with 88% of doctors reporting to have offered off-duty emergency assistance to the public(1). Although the General Medical Council states doctors have a moral obligation to offer assistance(2), UK medical courses are not required to provide teaching on ad hoc emergencies(3).

This study aims to address this gap in the curriculum and improve students' knowledge and confidence managing ad hoc out-of-hospital emergencies.

Methodology University of Bristol medical students attended simulation teaching on common out-of-hospital emergencies including a myocardial infarction on a plane, a motorcyclist with a head injury and an adult choking in a restaurant. Participants had to lead a team of mock lay members of the public and be resourceful with limited equipment. The ethics and law surrounding Good Samaritan acts was also covered. Participants completed pre- and post-session questionnaires.

Results 13 students were enrolled of which 2 (15%) felt medical school had prepared them to deal with out-of-hospital emergencies. Confidence managing such emergencies improved with 1/13 (8%) feeling confident before, and 11/13 (85%) feeling confident after the teaching.

All participants found the session enjoyable, useful and relevant and agreed this should be in the curriculum.

Discussion There is a demand for teaching on Good Samaritan acts at medical school, and this simulation teaching may improve students' knowledge and confidence dealing with such events. This is the first evaluation of an ad hoc emergency simulation session for medical students; where the clinician is without equipment and a trained team.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 051
Keep calm and carry… the bleep - medical student stress during simulated cardiac arrest

Author(s): Joshua Butler, Andrew Armson
Corresponding Author institution: Great Western Hospital

Background Attending cardiac arrests is an accepted duty of working as a junior doctor (1) yet is often a source of stress and anxiety. Previous work done at Great Western Hospital simulating 'surprise' cardiac arrests revealed themes of anxiety amongst students (2). The extent to which stress in this context impacts upon performance, however, is unclear. Some stress may improve CPR performance and learning (3) but too much may hinder it (4). Previous studies have indicated a benefit from performing simulation at point-of-care in reducing stress and improving team performance (5). In this small, prospective observational cohort study, we aim to assess the relationship between stress and performance during simulated 'surprise' cardiac arrest scenarios in the higher fidelity point-of-care environment.

Methodology 35 Students will take part in surprise, point-of-care cardiac arrest simulations. Students will carry a bleep during the day of their surprise simulation and will be expected to respond as if they were on-call. Students will complete a questionnaire assessing their anxiety, concerns and confidence at 3 time points: before the simulation, immediately after and a week later. Questionnaires have been adapted from the validated Stanford Acute Stress Reaction Questionnaire (6). Students' heart rate will be monitored at rest, during the day of the simulation and during the scenario to investigate the impact of different aspects of the simulation on this physiological surrogate marker of stress (7).

Simulations will be filmed and key events time-stamped, including: time to recognition of arrest, time to CPR, time to pads on, time to first shock delivered. The manikin used for point of care simulation will also provide data on depth and rate of chest compressions as a measure of CPR quality. We will assess and compare whether psychodynamic and physiological measures of stress affect the quality of CPR and consider whether there is a differential psychodynamic impact of the simulation on individuals who have report baseline levels of stress.

Confounding factors that influence stress and heart rate will be taken account of including medication use, caffeine intake, baseline physical fitness, prior experience of cardiac arrest. Secondary outcomes include leadership, team working, use of handover tools such as SBAR and student experience.

Ethical approval has been sought.

Results Results are currently pending.

Although not questioned directly, anxiety was highlighted as a strong theme from our group's previous data (2). Almost all students cite an element of 'fear', 'anxiety' or 'apprehension'. 100% of students, however, report increased levels of confidence after the session and comment that the session is 'useful practice for the future'. Some students even propose strategies to overcome these emotions; for example, 'consciously trying to stay clam'. These elements will be explored in this study further, as described.

Discussion This group has already shown that surprise simulation of cardiac arrest is effective at building student confidence in this context. Until now, we had

yet to consider how acute stress may impact on quality of CPR even in this simulated context. Students clearly perceive cardiac arrest scenarios as stressful but, importantly, students viewed this positively. Perhaps it is the perception of stress and reflection on the event which influences confidence and learning. Our project intends to further elucidate the extent and character of this anxiety and whether the quality of CPR is influenced by acute stress levels. There may be an argument that repeating high fidelity arrest simulations may reduce anxiety and improve CPR quality for future simulations and, crucially, in real life. On a wider scale, this work may have implications for considering methods to help students manage stress and anxiety.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 052
Learning through disruption: the power of 'inconvenient' emotions in surgical training and practice

Author(s): Arunthathi Mahendran
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Background "It is 3.37 AM and Mr. Cunningham, the recipient of a liver transplant, lies on the operating table, abdomen sliced open. On the prep table, a blue tub holds his shiny new liver. I pack his belly with pristine, crisp swabs–the whites of which instantly disappear, drenched in a deep crimson hue. I glance at the rising tide of blood in the upper abdomen; a concave hollow, occupied until a few minutes ago by a cirrhotic liver—ugly, rotting, bulbous flesh. I say nothing. My eyes dart to the raw tissues, planning where my hands must go to mop and stem the bleeding. I keep going—this is not what I'm here to do, I think, increasingly angry and irritated. I didn't come here to watch this man exsanguinate to oblivion! And yet, at 3.40 AM, here I am."

Surgeons frequently grapple with the 'messy' reality of clinical practice, thus encountering the emotional dimension of learning. As in the above interview excerpt, potent odours, graphic images and life-altering situations elicit strong sensations and responses, triggering a world of affects and senses that construct the lived experience for that surgeon.

This research study hypothesised that affective responses to uncertain surgical events can precipitate ontological and epistemological growth of the surgeon, signifying how professional practice becomes meaningful and relevant. It asks: what are the pedagogic implications of affect for professional surgical practice.

Methodology A phenomenological study examined experiences of training and practice through individual interviews with seven surgeons across specialties. The interviews focused on experiences of clinical events that affected them and that proceeded to transform their practices of thinking and doing. A theoretical framework using Foucault's method of 'genealogy' and Whitehead's theory of 'experience' was constructed to analyse these interviews and explore the emerging themes. This method helped illuminate aspects of learning and practice that are presently obscured, neglected or underexplored by traditional pedagogic practices and research paradigms within surgical education.

Results Standard surgical training can be ruptured by unexpected circumstances that initially raise affective rather than cognitive responses. In such encounters a clinician may experience moments of rupture precipitated by these affective flows: she is 'slowed down', her trajectory disturbed as unanticipated events force her to respond, act and think in ways that exceed the approved teachings and formal guidelines. Such learning exceeds an emotional awakening to practice; it occurs prior to cognition and works against the current tendency for medical education to describe learning as a rational process best informed by guidelines and logical thinking.

Discussion The affective dimension has important implications for how clinicians learn and construct meaning. The realities of actual encounters do not diminish the structured programmes of training but highlight the importance of developing pedagogies that are sensitive to the emotional dimension of clinical relations and practice. In such instances, it is not uncommon to dwell on these intensities of affect: 'what do I do here? how must I think or act? how do I carry on?' Whilst these emotional states can be overwhelming and therefore considered by the profession as 'inconvenient emotions', crucially they constitute how a particular experience becomes meaningful and relevant to the individual, beyond the usual focus on technical expertise or clinical outcome. Cultivating and supporting affective engagement with clinical events is a way of being accountable for whatever emerges from the uncertainty of clinical experience. It may also prove a better strategy for preparing professionals for the complexities of real practice over mandatory regulation.

In conclusion, this study advocates for and justifies an approach to clinical practice that recognises and integrates productive ruptures in practice and their affective consequences.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 053
Less Than Full Time Working (LFTW) – a Modern Practice Stuck in the Past

Author(s): Sue Jones, Laura Delgaty
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Background The last thirty years has seen increased feminisation of the medical workforce and today up to 50% of medical undergraduates are female. Only 33% of consultant physicians are female in contrast to primary care with 48% women. Core Medical Training (CMT) has 53% women but there is marked gender imbalance within individual Higher Speciality Training (HST) programmes. (1 – 3)

This study sought the perceptions of female trainee physicians (FTP) on LFTW and contrasted them with those of senior female consultant physician (FCP) who began her medical training in the 1980s.

The study challenged the traditional belief that LFTW is just for women with childcare responsibilities (4) and explored the reality of LFTW for 21st Century Physicians.

Methodology Feminist methodology (FM) and Critical Theory were applied. The principal investigator (FCP) undertook self-reflection on her career journey to date and her perceptions of LFTW.

All FTP working in a single hospital Trust were invited to participate in the study by the FCP. Both Health Education England North East and the Trust agreed the study and proposal was approved by Newcastle University Research Ethics Committee.

FTPs completed a demographic questionnaire and underwent 1:1 digitally-recorded Problem Centered Interviews (5) with the FCP. In line with FM, dialectic method and identification with the participants was used in addition to a reflective diary of each interview.

The interviews were initially transcribed using Temi on-line software (6) and then subjected to content and thematic analysis. The interview data were compared with the FCP's reflections.

Results Of the 26 trainee physicians working in the Trust 11 were FTP (6 HST & 5 CMT). 3 HST and 3 CMT aged 25 – 34 years participated. All were White British UK graduates with one Asian Pakistani non-UK graduate. One FTP was not in a relationship and two had additional carer responsibilities. One HST was LFTW and another was planning to return LFTW after maternity leave.

The FCP was in a long term relationship without carer responsibilities and had never been LFTW. In her early career LFTW was very unusual. She had experience of facilitating LFTW for trainees when she was a CMT training programme director.

LFTW is becoming more accepted but men wishing to undertake LFTW were often 'vilified' and discouraged from considering it. The insistence that LFTW required the same frequency of renewal of mandatory training was cited as 'unfair' and put undue pressure on individuals.

Some participants were resentful of their LFTW colleagues who were, at times, perceived to be working less effectively. There was a trend to delay LFTW until completion of CMT due to logistics of professional exams and shorter placements. Running training programmes for LFTW is challenging and the trainees get much shorter contact-time in individual placements which can negatively impact workplace dynamics.

There was acceptance of LFTW for childcare but other reasons, such as mental or physical health were not widely recognised. Participants were aware of colleagues who had left medicine for health reasons and had not been offered LFTW.

Discussion The participants and FCP's perceptions on LFTW are generalisable as they represent different experiences of the practice. The increasing acceptance and uptake of LFTW is encouraging but the belief that it is mainly for childcare is disappointing. There is increased recognition that LFTW can help reduce 'burnout' amongst doctors (7) but employers do not seem willing to embrace it. Training programmes and mandatory training requirements need to change to improve the working environment for LFTW individuals. LFTW also needs to be more openly discussed to help those who are working full time to appreciate and understand the practice.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 054

Mass Concurrent Augmented-Reality Escape Rooms for Team-Based Clinical Diagnosis

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Background Clinical diagnosis is taught in class, in practice, and with simulated patients. In the workplace, diagnoses are made often in a team, consulting varying information, sometimes under time pressure. The time-bound, team-based, problem-solving experience can be seen as similar to an escape room. Escape room format is considered an innovative learner-centred way of learning (1). Can it be an effective, authentic, fun way to learn clinical diagnosis?

A staff-student group designed a mass concurrent escape room – running in many rooms to accommodate maximum participants - in which the object was not to escape but to save the patient. An app with augmented reality (AR) capability was created to guide and offer data to solve the case. These escape rooms ran as a workshop for the NMRC Conference in November 2019. We share the pilot findings.

Methodology Students designed the workshop by researching the chosen condition Reactivation Histoplasmosis, its causes and presentation. Five clinical roles - consultant, nurse, pharmacist, microbiologist, junior doctor - were planned for participants; the app shared different information to the different role-holders. Additional props included patient letters, test results, guidelines, and a locked box holding the diagnosis. Student actors were trained: patient and relative. An app 'Medical Escape Rooms' was programmed in Unity, and distributed to participants. The app was used also to read QR codes, revealing clues. Participants were randomly assigned a room, with sixteen rooms running in the morning of the conference and eight in the afternoon. Students filled in paper feedback forms on the learning value of the workshop.

Results Approximately 120 students participated, of all study years and from nine different UK medical schools. N=86 shared feedback. 97% of respondents said the escape room workshop could be a useful educational tool. 93% of respondents found it enjoyable. Participants were asked to rate the workshop from 1-10 in terms of being helpful to improve skills in the following – listed with mean of participants' responses 1)Team-building: 7.65, 2) Understanding other medical disciplines: 7.24, 3) Critical thinking: 7.63, 4) Working under pressure: 8.0, 5) Medical knowledge: 6.99, 6) Time management: 6.81.

In the morning, the app server struggled with the load, so no group was able to complete the case. Despite this, participants were visibly engaged in solving the case and went as far as they could using other clues. By afternoon, the server had been upgraded and all ran smoothly. Three of the eight afternoon escape rooms solved the case; teams with higher-year students seemed to have an advantage.

Discussion Despite initial problems, this use of escape room for medical learning was rated overwhelmingly positively for both enjoyability and education value. The highest-rated element was that of working under pressure. The escape room's ability to teach team-building and critical thinking also scored highly. These findings imply this escape room can successfully help students learn clinical diagnosis skills.

Escape rooms for medical learning is not new, but our study progresses the issue in significant ways: 1) High numbers. The Medical Escape Rooms app provides structure to run many rooms concurrently. 2) Flexibility. The app can accommodate different scenarios easily. 3) An authentic clinical challenge. Many escape rooms use health-related topic puzzles, with clues to solve to escape or open a box (2) (3). The point of this escape room is to save the patient in a complicated clinical case. 4) Different clinical roles in every room. Each participant had to well perform a different role to save the patient, encouraging inter-professional teamwork and critical diagnosing. This scenario could also potentially be used to focus on inter-professional team-building, or patient safety and human factors. All of these are potentially positively disruptive ways to learn clinical diagnosis skills.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 055

Neurodiversity in Medicine: Qualitative study exploring the perceptions of neurodivergent doctors regarding their university medical education

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Background In 2019 the British Medical Association (BMA) outlined their "Equality Matters" campaign, stating that organisations rooted in inclusivity are more

productive and with equality, every medical student can progress and achieve their potential. Whilst literature has many studies dedicated to equality, there is none regarding neurodiversity in medical education. Furthermore neurodiverse individuals are known to experience increased prevalence of depression and anxiety, and there is an excess mortality in autistic individuals in part attributed to suicide (Hirvikoski et al 2016). By ignoring this valuable intersection of the medical profession, not only is the medical profession poorer as a result, but we are letting down our autistic colleagues. By first listening to autistic voices, then understanding the challenges faced, we can begin to pave the way in medical education providing the foundation for our diverse physicians of the future.

This paper aimed to explore neurodiverse doctor's perceptions of the inclusivity of medical school.

Methodology Using convenience sampling, neurodivergent doctors were contacted via a social media support group (n=30) and invited to participate in a semi-structured survey to explore perceived barriers and facilitators affecting their time at medical school. Doctors with both a formal diagnosis and a self-described diagnosis were included. Data was analysed using content analysis.

Results A total of 30 doctors were included, from a spread of 15 specialities, graduating between 1990 and 2019. Of the sample, 90% stated they struggled at university due to their neurodiversity. Only 15% felt medical school staff understood with less than a third informing their tutor. None of the group had attended a support group, the reason in 90% because one didn't exist. 80% described social isolated, and a similar group reported their neurodiversity negatively impacted on their wellbeing at medical school. All participants felt including neurodiversity in the curriculum would be helpful.

Discussion Three themes emerged from the analysis of the results. Firstly, the inflexibility of medical training to support learning differences was highlighted, with participants reporting either no adjustments or blanket adjustments not tailored to their specific learning needs. One doctor reported that although they had been given extra time at the end of each exam, this was not a reasonable adjustment they required, and no discussion was had to ascertain an adjustment which would help. A majority of participants described challenges faced in small group teaching; bursting out with an answer and interrupting colleagues or remaining quiet to avoid this happening. Alongside this, anxiety experienced in small groups was reported to eclipse participants learning outcomes from the sessions.

The second theme was regarding negative attitudes from staff and students, 10% of the sample specifically reported bullying from staff and other students regarding their neurodiversity. Participants reported being singled out in lectures and small groups. One doctor reported quietly stepping outside of a small group to deal with sensory overload and social burnout only to be publicly chastised by the seminar lead, demonstrating a lack of understanding of the challenges neurodiverse students face.

Greta Thunberg, climate activist recently controversially described Asperger's as her "superpower". Interestingly, all but one participant was able to highlight a specific feature of their neurodiversity which benefited patient care, most commonly including hyper-focus and lateral thinking.

In conclusion this study has highlighted the lack of support neurodiverse doctors face during medical school and themes of inequality, bullying and misunderstanding. It also highlighted the importance of the strengths many neurodiverse doctors bring to the profession and the benefits of encouraging this. Further work is urgently needed in this area to guide innovation for inclusivity.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 056

PEM Adventures: interactive evidence-based narrative learning utilising technological quizadry

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Background Using stories in learning makes it relevant, in a far more powerful way than teaching facts alone. This makes sense neuroscientifically: put someone through a functional MRI machine and read them a story about football and the motor cortex activates as if they were kicking the ball themselves; read them a story about perfume and the olfactory cortex lights up (1). Mirror neurons, nerves that help us learn and adapt, translate the story, helping the brain to act as though it were an active participant (2).

In 2016, the American College of Emergency Physicians randomised clinicians to receive one of two newsletters, one embedding a guideline in story vignettes, the other containing guideline summaries. Clinicians who'd received the story newsletter were far more likely to engage with the guideline than those who'd received the standard newsletter (3). Stories can improve knowledge translation in medicine: embedding learning into a story puts it into a context that is relevant and is more likely to be remembered. This is Narrative Theory.

We set out to develop a new form of practice-changing and practice-challenging medical education based on Narrative Theory: PEM Adventures, an interactive case-based learning modality linking acute paediatric stories with recent publications and guidelines. Cases are designed that require rapid decision making, curriculum mapped to meet the audiences' learning needs. In the ethos of the 'Choose you own adventure' children's books, cases progress until a decision needs to be made. Using live-voting technology at conference level, or via discussion and collaborative decision making in small group tutorials, the learners progress the case by deciding the next investigation or management steps. Eventually the cases lead to an article or guideline relevant to the audiences' learning needs.

Delivered at two international emergency medicine conferences in 2018 and 2019, and in small group teaching at both undergraduate and postgraduate levels, we looked to validate PEM Adventures as an education and knowledge translation tool via an on-line questionnaire.

Methodology An on-line questionnaire was shared with learners asking them to rate their agreement on Likert-scales regarding: session engagement and learning. To assess knowledge translation, responders were asked whether they felt their clinical practice would change as a result of the session. Free text boxes to collect qualitative data were also given. Follow-up surveys after 3, 6 and 12 months have been sent assessing change in clinical practice and retained learning.

Results To date we have received 180 responses from consultants to undergraduates. Mean scores on 10-point Likert scales regarding: design are 9.5; new learning are 8.9 and regarding knowledge translation are 7.8.

We are currently collecting data from respondents at 3, 6, 9 and 12 months after their PEM adventures session. So far 100% of respondents have reported a change in their clinical practice, both in terms of their general approach to managing acutely unwell children and management of specific conditions.

Qualitative feedback has been incredibly positive. Three themes have emerged: its interactivity engaging the audience in a safe way; its relevance; and its entertaining nature. We have promoted the social media hashtag #PEMadventures and have been overwhelmed by the response we received in reviews (4) and on Twitter.

Discussion PEM Adventures is continuing to evolve. We have been invited to headline at two conferences in 2020, have recorded a podcast (5) and are collaborating with the paediatric FOAMed site www.dontforgetthebubbles.com to create an on-line PEM Adventures platform.

Our results validate the theory that medical educators can engage with audiences using the power of narrative. From undergraduate to consultant level, combining storytelling with active, safe, participation makes an educational session incredibly powerful. This is how we can create incredible learning moments.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 057
Preparing for disruption: Stakeholder analysis of an undergraduate digital health curriculum

Author(s): Georgina Neve, Dr Sonia Kumar, Dr Molly Fyfe
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Background In recent years there has been exponential growth in digital technologies for healthcare and digital health technologies are often seen as solutions to an overstretched health system. These include new ways of remote consulting (video or online) and patient self-monitoring technologies such as wearables and apps. Future, and current doctors will need to become competent in working alongside digital health technologies in daily practice. However, there are clear gaps in the undergraduate medical curricula regarding digital health.
Methodology To explore the digital health curricular gap, we conducted a stakeholder needs-assessment drawing on both medical educators' and students' perspectives.
Thirty primary care educators attended a workshop to establish educators' perceptions of the future direction of digital health and how best to prepare both themselves and students for this. We compiled emergent themes and ideas for where training needs lie.
To ascertain the student perspective, we designed a new module 'Digital Health Futures' (DHF) which was attended by nine self-selecting third year medical students. This module is designed to expose students to the wider aspects of the digital healthcare movement. At the end of the module, students presented their ideas for possible digital health curricular innovations designed to sit within their undergraduate medical programme. We collated student feedback on their broader views on digital health in medical education and ideas for introducing it into the curriculum.
Results The educators focused on risks and challenges of digital health and training needs, this included a need for training in digital communication skills and interpreting app-derived data and evaluating such technologies. There were concerns raised about access, workload and ethical issues including safeguarding. Educators highlighted that these should be covered in the medical curriculum and recommended development of specific digital health competencies.
The students enrolled on DHF expressed the importance and significance of this topic to all medical students, not just the self-selecting students. Students described how they were aware that digital health was already in place in the healthcare setting but that they felt unprepared and ill-equipped for working in a digital NHS. The students presented inventive and original curriculum innovations for digital health providing key insights into what students want their curriculum to focus on. The innovations included incorporating digital health as a vertical curriculum theme throughout their degree programme for example communication skills using digital technology. Students also described specific 'deep dive' modules for different year groups including app evaluation and critique in early years through to design of their own digital health technologies in final year. Thus, by qualification all students would be more confident and better prepared to work within a digital NHS.
Discussion There is a gap in the undergraduate medical curriculum with respect to digital health. Undergraduate educators and students highlighted this gap and we have presented some student-led ideas of how this urgent training need could be addressed during the medical school curriculum.
A strength of this needs assessment is that it presents two perspectives, both educator and student. DHF is one of the first modules that we know of to address digital health within a primary care context in the medical degree and to examine students' perspectives. Further research could also explore an important third perspective, the patient perspective, gathering important information of how best clinicians can support patients in this new digital age.
This assessment frames how digital health teaching could be incorporated into the undergraduate medical curriculum, allowing us to adequately prepare our future workforce for the opportunities and challenges of working in an era of digital health.

Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 058
Pre-prescribing: changing the object of prescribing education

Author(s): Eleanor McCrystal, Hannah Gillespie, Helen Reid, Neil Kennedy, Tim Dornan
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Background Improving prescribing safety is a challenge for undergraduate medical education. Foundation trainees (FTs), who write most prescriptions, too often make errors (1). Presuming that preparing students for practice can make FTs safer practitioners, medical schools have intensified their teaching and skills training. They have tended to defer, even reduce, students' involvement in practice. There is a lack of evidence that this improves prescribing safety. We know that the chaotic conditions in which doctors often practise are a prime cause of errors so it is logical to strengthen practice-based patient safety education. We followed an approach pioneered in Edinburgh and Keele Medical Schools, where students write medication orders for real patients, in context, using coloured labels or ink to identify these as 'pre-prescriptions', which must not be enacted until countersigned by a qualified prescriber. Our research question is: how does pre-prescribing affect the system of prescribing education?
Methodology The conceptual orientation was towards activity theory and experience-based learning, the methodology was design-based research, and the methods were qualitative. During pre-qualification assistantships in 2019, 80 students pre-prescribed in four Northern Irish hospitals. With ethics approval, the first author recruited a purposive sample of key stakeholders: 3 senior doctors, 1 allied health professional, 2 administrators, and 2 students. She conducted minimally structured telephone interviews, asking participants to describe their experiences of changes that resulted from the intervention. She recorded interviews, transcribed them verbatim, re-read them in their entirety, and then coded them thematically. She used three levels of activity theory (actions, goals, and the object) to organise the findings (2). Her co-authors helped her respond reflexively to the data.
Results Participants reported strongly positive experiences of the intervention, which created tangible changes at all three levels of activity (2). At the action level, students had opportunities to participate actively, not just observe or rehearse authentic patient care. Clinicians facilitated students' learning by supervising and supporting them, not just 'teaching' them. At the goals level, students aimed to become skilled and knowledgeable, not just be signed off. At the object level, students described being intrinsically motivated to become doctors who could care safely for patients, not just successful students who fulfilled curriculum requirements. Participants had negative experiences too: these were mostly related to implementing curriculum change rather than pre-prescribing per se.
Discussion This analysis shows how a relatively simple intervention, implemented without new funding by motivated researchers and teachers, expanded the object of prescribing education from meeting curriculum requirements to caring safely for patients. All stakeholder groups want the intervention to be repeated on a larger scale in 2020, which shows how activity theory can help educators design curriculum interventions that have impact and are sustainable. It did this by identifying contradictions inherent in a curriculum design that presupposes students can be prepared for work without contributing to work. Pre-prescribing released stakeholders' intrinsic motivation to meet an important social need, as opposed to the extrinsic motivation of satisfying regulators. Pre-prescribing, on this evidence, is a pedagogy that makes students' and teachers' motivations, associated goals, and actions more likely to educate safer, more independent prescribers.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 059
Reaching out: Small group motivational conversations as a novel outreach method in widening access to medicine

Author(s): Catriona Boyd, Miran Faily, Charles Maxwell-Armstrong
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Background The socioeconomic disparity within the medical school cohort is extensive (1,2). Evaluating and developing outreach sessions is essential to overcome this inequality and make medicine an accessible career to all. Historically, 'hands-on' practical sessions are used to impress and inspire potential medical students and have been shown to increase application rates (3). There is currently no evidence in the literature surrounding the efficacy of small group motivational conversations and the benefits of an alternative, 'softer', approach in overcoming barriers and raising aspirations towards medical school, despite being deemed effective in many other fields. The objective of this study was to compare the effects of small group motivational conversations versus practical sessions, assessing their ability to increase Year 12 students' confidence in applying to medical school and in overcoming barriers towards applying.
Methodology A preliminary questionnaire was completed by 83 Year 12 students, to establish the perceived barriers to medical school and hence tailor the outcomes measured following the intervention. 'Lack of confidence' was identified as the second biggest barrier to applying (after examination results) and, hence, this was one specific focus of the pre- and post- intervention questions. Year 12 students were randomised into one of two 35-minute sessions. The practical session comprised 5 clinical skills stations which students rotated through; the small group motivational conversations were established from an evidence-based model. Students then swapped and experienced the other session. Students were asked before and after each session, 'How confident do you feel about applying to medical school?', giving a confidence score out of 10. Pre-session and post-session median confidence score difference was measured and a Wilcoxon Signed-Rank Test measured significance. Post-session, participants were asked how much they agreed with the following statements, giving a score from 1 to 10: "This session has helped me understand there are barriers to medicine", and "This session has helped me overcome barriers when applying to medicine". Mann-Whitney U test was used to assess significance between median scores, comparing the two sessions. Only questionnaires of those meeting the inclusion criteria of having a 'widening participation' postcode and the predicted A level grades that would allow entry to Nottingham University's medicine foundation course, were analysed.
Results A total of 53 questionnaires were included. Small group motivational conversations saw an increased median 'confidence' score (LQ, UQ) from 6.00 (5.00,7.00) to 7.00 (6.00,8.50) (p 0.05); practical sessions saw an increase from 6.00 (5.00,7.00) to 7.00 (6.00,8.00) (p 0.001). "This session helped me understand there are barriers to medicine" scored a median of 8.00 (7.00,10.00) and 7.00 (6.00,8.00) for the small group motivational conversation and practical session respectively (p 0.01). "This session has helped me overcome barriers when applying to medicine" scored a median of 7.00 (6.00,8.00) for the small group motivational conversation and 6.00 (5.00,7.00) for the practical session (p 0.05).
Discussion Both sessions were equally effective in increasing students' confidence in applying to medicine. Small group motivational conversations were shown to be more effective in improving students understanding of the barriers to applying and how to overcome them. We provide a novel insight into the use of small group motivational conversations in this setting, which is yet to be explored in the literature. This study provides evidence of the value of a more personal, human approach to widening participation outreach which warrants further exploration. The importance of developing optimally effectively widening participation work cannot be underrated; we must strive to produce a medical workforce as diverse as the population it serves.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 060
Reflections of a novice researcher: How medical schools do a disservice to students by neglecting qualitative methodologies

Author(s): Glen Davies, Joslan Scherewode, Dr Alison Ledger, Dr Valerie Farnsworth
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Background Qualitative research helps improve the quality of healthcare (1) by exploring patient experiences in depth. However, in our experience as medical students, teaching on qualitative research has been sparse, limited to very few lectures in earlier years with little follow-up. This was in contrast to the repeated exposure we had to quantitative research throughout the 5 years of medical study. When given the opportunity to conduct a research project of our own design, we decided to take advantage of this chance to develop our understanding of qualitative research. We designed a study using qualitative methodologies in order to experiment with new methods and become more familiar with narrative research approaches in particular. We used this study to apply and evaluate the skills in qualitative inquiry that we now believe medical school should provide.
Methodology We aimed to explore medical students' applications of music in relation to their studies. The first stage involved reviewing and experimenting with different data collection and analysis methods presented in the literature. We identified narrative inquiry as an approach to address our research question, deciding to try out three narrative analysis methods (2-4). We applied these methods to interview data collected for the research question, comparing them by their utility for collecting, coding, analysing data, and presenting our findings. Our work was consistently reviewed and guided by our supervisors. As we redrafted the study report, we were able to develop an appreciation of our ingrained reliance on positivist research principles. To underpin this process, we kept a reflective log on working with these methods and this type of data for the first time. After bringing together our study data, methodological review and reflections, we were able to share and develop conclusions regarding our prior exposure to qualitative work.
Results Significant amounts of reading were required to make our procedural decisions. Alien concepts such as positivism versus constructivism were difficult to appreciate. We expected to adhere to a specific protocol developed before data collection, rather than allowing the data to inform our analysis and being flexible in our analytic approach. We initially approached our data as if analysing quantitative results, bogged down with concerns about interpretive authority; we were preoccupied with the ideal of "emotional distance" in the interpretation of our own data. We therefore perceived that medical school had not adequately prepared us for qualitative inquiry. Previous training had focused on standards of evidence based medicine: Instincts to gather reliably large datasets to produce generalisable laws; to ensure repeatability in interpretation between two researchers and removing traces of ourselves from the process; and to deny the participant the right to provide insight into the data they provided. We realised we had been introduced to qualitative research methods, but not the philosophy.
Discussion Our discussion will highlight that not only was education in qualitative research neglected in our medical training, but our quantitatively-focused curriculum had instilled in us habits that acted as obstacles to effective application of the qualitative methods we eventually used. It is our conclusion that through research, reflection, and discussion with supervisors who are experienced in qualitative methodologies, medical students gain valuable research training. We provide our insights with regards to some possible 'threshold concepts' which should be part of the medical school curriculum (e.g. the definition of 'truth', interpretive authority, small samples sizes, repeatability, generalisability). Quantitative research is vital in guiding clinicians, but if the heart of

medical practice is the patient experience, educating us more thoroughly on qualitative designs could equip us to research and understand this area.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 061
Resuscitation for Medical Disciplines (RMD): Multi-site model for peer-led BLS certification in Higher Education Institutions

Author(s): Sarah Allsop, Submitted on behalf of the RMD Collaborative Group
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Background RMD (Resuscitation for Medical Disciplines) is a scheme for training and certifying undergraduate healthcare students in Basic Life Support (BLS) delivering European Resuscitation Council (ERC) BLS Provider and Instructor courses. Run since 1995 as an internal only scheme at the University of Birmingham College of Medical & Dental Sciences (1-3), in 2017 the RMD scheme was expanded to a second site at Bristol Medical School. The scheme not only offers high quality basic life support training, but builds a community of practice within an institution between staff and students as an educational teaching, learning and research-based initiative. The opportunity for students to gain qualifications as BLS providers and Instructors within the first two years of study is of benefit not only to the institution, but to the community and the individual.

Methodology The proposal for second site implementation was planned with the ERC to run as a pilot project with their oversight. An experienced group (3 postgraduate & 7 undergraduate members) formed the RMD Bristol organising committee with 40 healthcare student instructors, selected for their prior experience in basic life support training. The first RMD Bristol instructor training weekend, delivered by RMD Birmingham faculty, ran in Autumn 2017; this repeated in 2018. Six BLS provider courses ran during the pilot period between 2017-2019.

Results Nearly 600 undergraduate students were successfully ERC qualified at Bristol during the pilot: 525 BLS Providers and 60 BLS Instructors. Student instructors gained opportunities to teach, manage, assess and train others, aligned with GMC professional development learning outcomes. Increased confidence in skills was seen in students over and above that with the previous BLS training model, which offered minimal contact time and no opportunity to gain qualifications. Thematic analysis of feedback data shows the scheme is well received by the students, citing excellent instruction, value in gaining life saving skills and also the opportunity to meet their peers from higher years.

Discussion The original RMD Birmingham scheme is recognised and supported by the ERC. The success of the pilot at RMD Bristol confirms proof of concept that this model for large-scale, affordable, student peer-led BLS courses can be transferred to another higher education institution. Learning from the pilot project reported to the ERC and Resuscitation Council RC(UK), includes details of the high-quality delivery of training, governance and oversight of a new faculty, and outreach support of programme development. The model disrupts the usual format of BLS training in standard undergraduate medical school delivery, which is often only minimal exposure to these skills until much later in the course. The RC(UK) is currently considering recommending the RMD model for training and certification of undergraduate healthcare allied students across the UK. At the current time two further universities are already investigating the model for implementation at their institutions. Acknowledgements: Thanks go to all faculty across RMD Birmingham and RMD Bristol teams.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 062
Re-thinking theory as a vector for discussing difficulty in medicine

Author(s): Dr Helen Bintley
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Background Discussions about 'difficult subjects' in healthcare are tough and for this (amongst other reasons) difficulty can be left unexplored and unchallenged. I define 'difficult subjects' as those topics not often talked about in healthcare including those surrounding equality, diversity and inclusion as well as moral injury and burn out. Limited conversation and training about difficulty in this context appears to be having an effect on healthcare provision (Dogra et al 2015) and physician wellbeing (GMC 2019), and interventions put in place to tackle difficulty have little evaluative data to support their use (Woolf et al 2017). As such in this presentation, which represents my emerging PhD thesis I explore how theory might guide a change in perspective on this issue and enable the silenced to be heard in medical education.

Methodology I use theories of complexity, inter-subjectivity and inter-objectivity to explore the possibilities of enabling meaningful conversations about difficulty with medical professionals in the UK. In particular I consider post-structural (Foucault 1969), post-human (Barad 2003) and entanglement (Benjamin 2004, Haraway 2016) theories as ways of tackling this subject within this population. The use of positivism, the biomedical model and non-intersectional approaches are challenged and the importance of reflexivity is also discussed.

Results Taking into consideration context, space and place I argue for the use of a dynamic approach that reflects the complexity and uncertainty of discussing difficulty in medicine. I therefore argue for an inter-objective lens and the use of a tentacular, entangled approach drawing on the concept of the ' third space' (something outside of the you-me interaction that enables a change in perspective on the you-me interaction). Within this I argue for an ethnographic, intersectional transdisciplinary methodology (Bintley and George 2019) as a way of appropriately creating dialogue about difficulty.

Discussion To discuss my findings I use two examples from my research, which use intersectional transdisciplinary methodology to explore difficulty in medicine. Explaining and using Haraway's concept of tentacularity, Benjamin's concept of the 'third space' and Nicolescu's concept of transdisciplinarity I demonstrate how theory can be used to enable difficult conversations in online (Bintley and George 2019) and face-to-face educational contexts. In these examples I highlight the advantages of embracing complexity but also the challenges of doing so in terms of resources, medical curriculum alignment and on-going support.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 063
Sexism & Sexual Harassment by Patients – Why do Female trainee Physicians Accept it as Normal Practice?

Author(s): Sue Jones, Laura Delgaty
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Background Sexism and sexual harassment by patients towards female healthcare professionals has been recognised for many years (1 – 3). Males are the most common perpetrators of such behaviours and young female doctors are the group most likely to experience this (3).
This study ascertained the perceptions of female trainee physicians (FTP) on their experience of sexism and sexual harassment by patients. The study also sought to investigate how FTP dealt with patients who demonstrated this behaviour.
Methodology Feminist methodology (FM) and Critical Theory were applied. The principal investigator (FCP) undertook self-reflection on her career journey to date and her perceptions of working with nurses
All FTP working in a single hospital Trust were invited to participate in the study by the FCP. Both Health Education England North East and the Trust agreed the study and proposal was approved by Newcastle University Research Ethics Committee.
FTPs completed a demographic questionnaire and underwent 1:1 digitally-recorded Problem Centered Interviews (4) with the FCP. In line with FM, dialectic method and identification with the participants was used in addition to a reflective diary of each interview.
The interviews were initially transcribed using Temi on-line software (5) and then subjected to content and thematic analysis. The interview data were compared with the FCP's reflections.
Results Of the 26 trainee physicians working in the Trust 11 were FTP (6 HST & 5 CMT). 3 HST and 3 CMT aged 25 – 34 years participated. All were White British UK graduates with one Asian Pakistani non-UK graduate. The 52 year old FCP was a white British UK graduate who had been a consultant since 2002.
FTPs reported that some patients preferred a female doctor and were glad to be treated by them. FTPs enjoyed being able to put patients, usually female, at their ease and felt being a female doctor was a very positive thing. Being valued for both their status and their gender was a rewarding experience. This however was in contrast to the numerous episodes of sexism and sexual harassment they recalled all instigated by men.
Being called 'nurse' or being told that 'young women could not possibly be doctors' were common themes. Sexual harassment by male patients usually occurred when FTPs were performing procedures on their own such as cannulation. Such procedures are not deemed intimate and would not require a chaperone. None of the FTPs reported that they had challenged any of these behaviours or formally reported it. They felt that to have done so would have negatively impacted on the 'doctor-patient relationship' and that they just had to 'put up' with it and felt it was 'normal'.
The FCP had experienced 'mis-identification' as a nurse but was not affronted by it in the same way the FTPs were. In her early career she had some sexual harassment from male patients but had challenged it at the time and reported it.
Discussion This study demonstrates a worrying acceptance of sexual harassment by male patients towards FTP who seem ill equipped to challenge it. The fact that they felt affronted by being called a nurse is interesting and is not something that their male counterparts experience. This demonstrates that many patients still perceive medicine to be male profession despite the increased feminisation of the medical workplace (6). Undergraduate and post-graduate medical training programmes should incorporate strategies on how to react to such behaviour and not normalise it by over emphasising the sanctity of the 'doctor-patient relationship'.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 064
Social media guidance and education for medical students: A tale of where the gaps lie

Author(s): Catherine Hennessy, Prof. Claire Smith, Dr. Sue Greener, Prof. Gordon Ferns
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Background Medical students must develop social media professionalism due to the serious implications of inappropriate use of social media, including doctors losing their medical registration. How to best help students develop social media professionalism so that they can actively use social media as future doctors is still being understood by educators. This project explored how medical students use social media, how their use and behaviour on social media has changed since starting medical school and what factors contribute towards students developing an understanding of social media professionalism.
Methodology Individual interviews were conducted on Year 1 (n=12), Year 3 (n=9) and Year 5 (n=10) students at Brighton Sussex Medical School (BSMS). Ethical approval was granted from the Research Governance and Ethics Committee at BSMS and informed consent was received from all participants. Thematic analysis was carried out on interview data, facilitated by NVIVO software.
Results Use of social media: Medical students across all years reported using Facebook, Instagram and WhatsApp to communicate with friends and family. However students (particularly Year 1 students) use Facebook for keeping updated and including in medical school events (social and educational). This is a result of student being added to a year group page on Facebook by the medical school year representatives. In Year 3 students begin to use the Facebook year group page for organising extracurricular teaching sessions and by Year 5 the year group page is described as being used mostly for exchanging medical education resources. Year 5 students described WhatsApp as being a vital part of how medical educators particularly clinicians communicate and organise daily tasks with students. Year 5 students reported that email is rarely used in the clinical setting and that if they did not use WhatsApp or have smartphone they would miss out. Many of the students are aware that doctors use WhatsApp routinely on the wards to discuss the management and they describe feeling uncertain about how much this aligns with guidance from governing bodies, however they report that because everyone else is doing it, especially senior doctors, they would do the same to avoid being disruptive. Students report observing how their peers and seniors use and behave on social media as a gauge for professionalism, including using WhatsApp to communicate about patients with colleagues.
Before starting medical school medical students are highly aware of their social media behaviour and online footprint due to factors including: online safety talks received at school; being friends with family members on social media and warnings from parents about behaviour; rumours that medical schools search their social media presence during selection; and press reports of medical students getting expelled due to social media misconduct. Professionalism talks given at medical school cause students to become highly aware of the high standards of professionalism expected of them and that their social media (mis)behaviour can affect the reputation of the medical profession. These factors result in students using social media conservatively to avoid posting anything that could be perceived as unprofessional. Students report being extremely aware that social media posts that they share having the potential to "come back and bite" them in the future.
Discussion Students report using social media conservatively partly due to the warnings they receive from the medical school directors about the risks of using social media, however at BSMS Facebook and WhatsApp are widely used for communicating and networking about medical school activities. The majority of students report that they would miss out if they did not use Facebook and WhatsApp at medical school. These are mixed messages from the medical school at BSMS and raises questions regarding the guidance and training provided to medical students around social media.

Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 065
Technology Enhanced Cognitive Scaffolding (TECS) An Innovative Pathology Education – One man army!

Author(s): Shashidhar Venkatesh Murthy, Prof. Komatil Ramnarayan
Corresponding Author institution: James Cook University

Background In 2005, when I joined James Cook University, a rural medical school in regional Australia as a single full time academic pathologist, challenges were daunting for any academic. How to create interest and teach complex laboratory intensive subject to large cohort of medical students in distant clinical placements!. But support and encouragement by clinical colleagues & administration motivated me to innovate!. I believe, unique and strong pathology centred medical curriculum and teaching innovations have made our young and remote medical college one of the top in the nation!

Methodology Special feature of our innovation is strong pathology and basic science integration into clinical teaching through clinical cases with innovative interactive online teaching with continuous student monitoring, assessment and support. Students have 24/7 access to resources, teaching and consultation with staff.

This interactive presentation demonstrates several successful tools in teaching pathology including laboratory and microscopy skills developed over a decade of experimenting. I call this "Technology Enhanced Cognitive Scaffolding". During this talk I will share my experience of challenges and tools developed with focus on clinically applied teaching of pathology to students placed in remote rural clinical places.

I will demonstrate how clinical learning can be enhanced through integration of basic sciences in clinical settings. I will be demonstrating how easily complex laboratory skills of pathology such as gross specimen and microscopy can be delivered digitally online and how staff can monitor attendance and student learning. Also system allows for early identification of student with difficulty. Innovative use of social media has enabled 24/7 support for students even in remote locations. The system also allows for reaching students in remote locations without internet connection.

Innovation is using several educational principles including Blended Learning, Clinically Integrated learning, Case based learning, Adaptive learning & principles of Heutagogy.

Results Results show the significant improvement in student participation, motivation and learning compared to pre implementation of innovations. Student feedback is strongly positive and changes are implemented every year following student feedback.

Note: These innovations have won several university and Australian National Teaching awards. But the best reward is positive student feedback.

Discussion Encourage audience to present their questions & challenges for solutions.

Discussion points

- How students feel about online teaching?
- How to address issues of isolation, anxiety of learning?
- Can technology give "human" aspect of teaching?
- How can you teach practical skills online?
- Can technology detect & adapt to student needs?
- Does technology replace academic teachers?
- What is the future for traditional tertiary education?

More questions welcome…

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 066
The Lifestyle Conversations Project. Medical students activating patient self-care during clerking consultations

Author(s): Prof Trevor Thompson, Dr Ashish Bhatia, Dr Claire Rafferty, Iain Broadley
Corresponding Author institution: University of Bristol

Background Some of our most pressing health issues are preventable and even treatable through lifestyle interventions - see for instance DIRECT trial in T2DM [1]. NICE guidelines [e.g. 2] advise lifestyle interventions but students (and doctors) lack training in such practices.

In the Lifestyle Conversations Project (LCP) students find out about patients' self-care/lifestyle situation and, where appropriate, make gentle and evidence-informed nudges toward better health-related behaviours.

Lifestyle Conversations are in two halves. The first is the receiving of the "Lifestyle History" and the second is "Activation Talk" with various actions by the student to inform and encourage the patient in the direction of self-care activation.

The UK GMC back such training in "Outcomes for Graduates", stating graduates should "Support and motivate the patient's self-care by helping them to recognise the benefits of a healthy lifestyle and motivating behaviour change to improve health and include prevention in the patient's management plan" [OFG 14m].

LCP is designed to discover best practice in the design and delivery of such consultations through training medical students and then learning from their experience with implementation.

Methodology Twelve medical students in the University of Bristol have been recruited to LCP. They will be trained in the following elements:

1. Developing an appropriate "frame" e.g. respecting autonomy and believing in their patients
2. Receiving the Lifestyle History - especially the opening question "how do you currently look after your general health?" And learning specific questions around sleep, diet, physical activity, drugs and alcohol etc.
3. Understanding the different elements of self-care activation including the nuanced tasks of motivational interviewing.

Having had the training in Lifestyle Conversations the students will then practice Lifestyle Conversations in the following settings

1. Friends and Family
2. Members of our Patient and Public Involvement Groups (PPI)
3. Within special consultations on the wards
4. In normal "clerking consultations"

Data will be generated as follows:

1. Audio diaries and contemporaneous notes by students
2. Focus group of all participating students
3. Interviews with members of our PPI cohort

Recordings of audio diaries and focus group discussions will be transcribed into text and subject to thematic analysis (on-going)

Results On submission of this abstract, only pilot data has been generated and analysed. This shows students are enthusiastic to attempt lifestyle conversations. They find the transition from "normal" clerking to the Lifestyle History difficult. They find it difficult to keep to time when there are many elements of the Lifestyle History to cover. They feel under-skilled to provide suitable nudges. They see confidence grow through practice. They felt that the Lifestyle Conversation heralded a different style of relationship with patients in which they had a more active role.

Discussion Students will be trained in conversations in the following areas: 1. Diet 2. Physical Activity 3. Sleep 4. Emotional Wellbeing and 5. Drugs and Alcohol. Activation skills include 1. Encouraging a patient to monitor a health condition especially with the use of health-related apps (sleep, diet, exercise, headache) 2. Connecting to web and community resources (e.g. Park Run) . 3. Sharing knowledge on lifestyle issues 4. Helping the patient get motivated to make important changes.

By the date of ASME in July we will have a clearer idea on how best to have Lifestyle Conversations and how to implement the LCP with our full cohort in

2020-21 academic year. In particular we seek to disrupt the tired idea of the "Social History". We think students can, through their clerking consultations, play an active role in patient care.

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Theme: Disrupting Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 067
"There's no 'I' in MDT!" Do Nursing and Medical Students learn better when together in Clinical Simulation?

Author(s): Rebecca Hair, Rosalind Thompson
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Background An area of growing research is the use of clinical simulation in healthcare for Inter-Professional (IP) learners, with a particular focus on learning outcomes relating to non-technical skills (Ferri, 2018). Recent studies have found there are valuable improvements in attitudes and confidence when groups from the multidisciplinary team (MDT) come together (Hamada,(2019); Jakobsen, 2018). The importance of this is highlighted by the development of the Standards of Best Practice for IP education (INACSL, 2016). Royal Papworth Hospital (RPH) has developed a student programme with a focus on IP simulation, aiming to develop IP relationships and measuring how this impacts learners' outcomes. RPH have been delivering simulation training for some years, but this year shows significant improvement in developing a multidisciplinary simulation faculty. Increased staffing has brought together the clinical education department and undergraduate medical education. Following the recent move to the Cambridge Biomedical Campus the hospital has begun providing placements for final year medical students, leading to development of a simulation programme which meets their learning outcomes & has allowed opportunity for IP working. Funding for the medical student programme was used by our Trust to employ medical education fellows, who joined with a Physiotherapist, Nurses from the clinical education team & an Advanced Nurse Practitioner to form the core of the IP simulation faculty. Funding has also been employed to resource the programme with technology & debriefing training so that hi-fidelity simulation with excellent debriefing is provided as standard.

Methodology 12 weekly 2.5 hour IP simulation sessions are planned between January & March 2020. At the time of submission we have facilitated the first of these sessions, with 2 nursing students & 3 medical students at each session. We are administering pre- and post-simulation questionnaires, asking students to self-assess confidence in their technical and non-technical skills using a 5-point scale. Participants also rate their experience of the sessions in a further questionnaire designed to elicit whether we had successfully created a "safe container for learning" (Rudolph, 2014).

Results Example feedback includes:"It was a really fantastic way of practising skills & working in an MDT during a critical situation, 10/10 would do it again", "It worked well to have doctors & nurses together - we need more MDT work during our training, it's central to our jobs & we don't actually get any experience of it until working. The lack of this probably doesn't help doctor-nurse relationships & team spirit".

Initial results show increased confidence particularly in non-technical skills – with an increase in self-assessed confidence (averaged across all domains) between 0.33 and 1.25 points. Unanimously they rated as "strongly agree" items including "the focus was on learning and not on making people feel bad about making mistakes" & "participants could share thoughts & emotions without fear of being shamed or humiliated". Additionally, all students stated they would be fairly or very confident to take part in more IP simulation in the future. More sophisticated analysis will be possible as further data is collected- we are aiming to collect 60 sets of questionnaires across the first 12 sessions.

Discussion Faculty perceived the first sessions to go well. The scenarios used for the sessions have been adapted from those used previously with medical students alone. It was noticeable that adding nursing students (rather than a 'plant' faculty member as a nurse) added a layer of complexity & unpredictability to the simulation. This was felt to be positive as it enhanced the fidelity of the simulation to real-life communication, non-technical challenges & provoked excellent discussions during debriefing. Future applications include examining whether IP simulation changes participants' perceptions of each other's roles in a way which is likely to enhance good MDT practice.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 068
A double-edged sword: Does anonymity affect honesty in student evaluation?

Author(s): Dr Philip White
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Background The role of anonymity in student evaluation of curriculum is not necessarily as clear-cut a case as we may like to think. Most feedback is collected anonymously, due to research that indicates anonymised feedback is more honest (1,2). However, many of these studies are limited in generalisability to medical education by using non-medical student participants or focusing purely on teacher ratings rather than course evaluation. A more recent study (3) looking at nursing students' evaluation of a course found that positive/negative responses between anonymous and non-anonymous feedback was comparable, with non-anonymous groups providing more detailed feedback.

The impact of time on these results cannot necessarily be predicted either – the effects of rapidly shifting internet culture is still unclear. There was reported a significant rise in internet 'incivility' between 2010 and 2016 across social media spheres (4), which may be reflected in student behaviour in online anonymous forms. For example, student evaluation within Newcastle Medical School over recent years has been noted to contain comments that border on unprofessional with little that can be clearly acted upon.

I conducted a randomised-control trial to see whether anonymity had any effect on student evaluation, to see whether there are grounds to trial removing online feedback anonymity to improve the professionalism and helpfulness of student responses.

Methodology The study was carried out on two groups of third-year medical students at Newcastle University (n=58) who had undertaken the same one-day teaching programme with the same faculty. Standard evaluation forms with an ordinal rating (poor, satisfactory, good, excellent) and free-text comments box per session were either anonymised (A) or non-anonymised (NA). These were shuffled and distributed randomly to students who filled in the questionnaire before being informed about the purpose of the study and given an opportunity to withdraw by scrubbing their names from the top of the sheet in the NA group. The averages of each category across all sessions in both groups were taken and expressed as a percentage of the total responses. Free text comments were analysed on the basis that they were either positive/negative/neutral and on whether they were 'useful'. This was determined by whether the comment could be used constructively by the teacher to change or keep a specific aspect of the lesson based on the feedback, or whether it offered insight into why something worked well or poorly.

Ethical approval was gained from Newcastle University.

Results Seven students in the NA group withdrew to the A group leaving totals at 22 and 36 students respectively. There was no clear difference in how positive/

negative the feedback was between the two groups (poor: 0.7% NA, 0.8% A, satisfactory: 5.2% NA, 4% A, good: 42.2% NA, 48.7% A, excellent 52% NA, 54.2% A). The only difference in the quality of the feedback was that the NA group were slightly more likely to give more detailed or neutral feedback than the A group.

Discussion Whilst this is a relatively small study, the results mirror those found with the nursing student evaluation of curriculum (3), rather than those found by researchers looking purely at teacher ratings. This raises the question as to whether there is an advantage of having the traditionally anonymised over non-anonymised student evaluation with regards to curriculum evaluation rather than teacher evaluation. With the potential side effects of anonymity including unhelpful and unprofessional responses, medical schools could consider how the evaluation process will be managed. Further research into the effects of non-anonymity in feedback could be undertaken, with changing the anonymity of the feedback process considered as a tool to address unprofessional responses.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 069
A realist evaluation of medical student 'purple pen transcribing' in clinical practice – the impact of the pharmacist in learning to prescribe

Author(s): Radha Sharma, Dr Ruth Kinston
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Background Newly qualified doctors feel poorly prepared to prescribe despite being responsible for writing over 50% of hospital prescriptions. Errors occur in 8-15% of the prescriptions they write. The majority of errors are minor or identified and rectified before harming patients (1-4). Critical resources in the prescribing process are pharmacists, who check prescriptions to ensure that they are clear, legal and clinically appropriate (5) .

In 2014 Keele University introduced the purple pen transcribing intervention. In essence, the intervention permits final year medical students to engage with whole task prescribing for patients in the clinical environment (6). Patient safety is maintained by the use of a Standard Operating Procedure (SOP), whereby all transcribed drugs are checked and countersigned by the clinician responsible for the patient's care, and strict governance procedures.

Evidence suggests that medical undergraduates view pharmacist-led interprofessional education positively. A survey of pharmacists described their positive perception of involvement in medical student training though it also highlighted a need to develop strategies to expand and maximise the benefits of their role in safe prescribing (7). This study seeks to understand the contexts and mechanisms through which ward pharmacists engage with the undergraduate transcribing scheme to support medical student learning to prescribe safely.

Methodology This study forms part of a realist evaluation of the purple pen transcribing intervention. A purposeful sample of clinical pharmacists will be interviewed using focus groups. Data will be analysed using realist methodology. We will test our provisional middle-range theories (MRTs) in light of the pharmacist data and present our refined programme theory model.

Results Our provisional MRTs suggest medical student engagement with prescribing tasks is predominantly motivated by internal contexts such as the desire to become proficient, safe prescribers and a desire to contribute to patient care. These internal contexts trigger mechanisms, such as an enhanced sense of capability and professional identity formation, to reinforce engagement and learning. Corrective feedback from healthcare professionals triggers reflection and identifies propensity for error which results in the adaption of practice ahead of independent prescriber status, although hierarchy and prescribing norms may still subvert learning. These MRTs shaped our Initial Programme Theory (IPT). Using the pharmacist's data, we hope to identify demi-regularities and use retroductive theorisation to further develop our IPT, with focus on how pharmacists facilitate this whole task learning.

Discussion Research has demonstrated the benefits of pharmacist guided learning in the teaching of prescribing in undergraduate medical education (8,9). The use of whole task learning through the purple pen transcribing intervention provides an opportunity to describe the crucial contexts and mechanisms through which clinical pharmacists help undergraduate students participate in prescribing in clinical practice.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 070
Breaking the taboo: Safe Sex and Healthy Relationships teaching for Year 1 Medical Students

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Background The taboo of openly discussing sex beyond conception and disease ignores the complex role sexual relationships play in our student's lives, especially when students first attend university. Sexual Health teaching at the University of Bristol (UoB) Medical School is not covered until the 4th year of study and focuses primarily on disease and pregnancy.

A UoB survey on student sexual health showed 36% of students identified as virgins when starting university, and only 35% felt they had previous adequate sexual health education. In addition, only 34% of students had teaching on consent and 24% on healthy relationships(1). It is worth considering how this data would look for LGBTQ+ students, especially students questioning their sexuality, who are coming from countries where same-sex and other Queer relationships are illegal, punishable by imprisonment or death.

In 2001 a Department of Health report acknowledged that part of the reason for clinicians not addressing sexuality and sexual health in consultations was down to 'inadequate, patchy or absent sexual health training in undergraduate curriculum(2) and medical students feel underprepared to have these discussions(3).

The purpose of this teaching was to provide inclusive safe sex education, covering same-sex relationships, healthy relationships and consent. Beyond our duty

of care for our students, it is our hope that improving student knowledge about their own sex lives will, in turn, improve their confidence and knowledge when discussing these topics with patients.

Methodology The teaching session was delivered over the course of 4 hours, with three 45 minute sessions plus breaks. The focus of the sessions was as follows:

1. Safe Sex – inclusive safe sex education and students were provided with a bag of safe sex products to take home.
2. Consent – case studies exploring diverse and nuanced cases of consent, using sexual assault stories they may hear from a peer.
3. Health Relationships – how we define a healthy relationship, what makes an unhealthy relationship and what bias about types of relationships do we have.

The session was evaluated using an anonymous online survey which gathered free text feedback from students on what they found useful, why it was useful, and what they would change.

Results The survey response rate was approximately 20% but many students were highly reflective, giving the authors a lot of data to work with. The free text survey is in the process of being thematically analysed. Current themes that are emerging are reflected in the following observations:

- Validation – students who identified as LGBTQ+ felt validated to have their sexual identity positively discussed in a way in which had never occurred during their safe sex teaching in secondary school.
- Discovery – students report discovering new terms and a greater understanding of healthy relationships
- Empowerment – students felt empowered by the discussions around consent
- Timing – the importance of breaks, especially before and after the session on consent
- Adult learning – using interactive formats and providing safe sex tools to leave helped create an environment where they felt treated as adults

Discussion The analysis of these themes is still ongoing, and the themes may well evolve and change. It is clear there is a significant and positive emotional impact on for many students, especially LGBTQ+ students who have never had education inclusive of their needs. The literature clearly identifies a deficit of knowledge surrounding consent and healthy relationships, and we argue this teaching intervention is helping to addresses this. We aim to use our thematic analysis to show the significant impact addressing this deficit in knowledge and experience can have on Year 1 medical students. It is the authors hope that by presenting this work we can begin to create a community that focuses on a supportive and inclusive dialogue with medical students around sexual health and healthy relationships.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 071
Case Study: The GP Education Scholarship – Is this the future for undergraduate teaching in Primary Care?

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Background The UK requires approximately 50% of qualifying doctors to enter General Practice (GP) as a career to meet its current healthcare demands (1). Studies have demonstrated that medical students who spend more time in GP placements are more likely to go into GP training as a specialty (2) and GP recruitment would benefit from high quality student placements in GP with exposure to positive role models (3), who have the time to teach them in the workplace (4). However, with staff shortages, increasing service demands and financial restrictions, GP practices are under pressure to provide medical student placements (5). A proposed solution to this is the GP Education Scholarship, a year-long innovative programme for a final year GP trainee (GPST3) in the Severn Deanery to spend a dedicated part of their training delivering local medical student teaching in Practice.

Methodology The GP Education Scholar was allocated a dedicated half day per week to undertake medical student teaching in General Practice. The teaching was delivered in concordance with the University's medical student curriculum and timetable. The Scholar delivered teaching sessions independently and in collaboration with GPs in surgery. In order to meet GP training requirements, the Scholar extended their GPST3 training by 1 month to cover their time out of practice which was funded by the hospital. Qualitative semi-structured interviews were conducted by the author with GPs and medical students about the benefits and disadvantages of this role. Thematic analysis (6) will take an inductive approach to analyse the narrative that links primary care teaching in the context of medical education in GP. Coding will be discussed by the research team to aid reliability and validity of results.

Results Preliminary high order themes generated have indicated that a GP scholar facilitates learning and benefits medical student placements. Further analysis and coding will follow on completion of interviews. Axial coding tree will be developed to form a cohesive thematic narrative and illustrated by infographic.

Discussion The GP Education Scholarship programme has benefits for medical students, GPs and the Scholar themselves within primary care. The Scholar helps to overcome GP surgery staffing and resource limitations with an extra doctor available to teach in the practice allowing local surgeries to offer more student placements. It also provides medical students with exposure to a positive role model in primary care, who is still within the GP training process themselves and who may have a better understanding of students' needs, and to someone with dedicated time to teach with fewer other commitments in the surgery. It benefits the Scholar by creating an opportunity for them to develop their teaching experience during their GP training. A possible disadvantage is that medical students are taught by a less experienced clinician in the Surgery, however this could be overcome by GPs having input into student teaching through a supervisory role or delivering sections of teaching themselves. The GP Education Scholarship programme has scope to be expanded in other surgeries and is proposed as a possible solution to meet the increasing demand for primary care placements for medical students.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 072
Day Of The Dentist - A Practical Insight Into The World Of Dentistry

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Background Day Of The Dentist (DOTD) is a novel, one day interactive and practical workshop curated to provide prospective dental undergraduate students an opportunity to develop a broader understanding of the demands of a career in dentistry. DOTD has been developed by The Wisdom Tooth: Teaching Courses for Dental Professionals, a teaching organisation that delivers lecture-based and practical teaching for dentists and dental care professionals.

It is increasingly more challenging for prospective dental undergraduates to attain meaningful work experience opportunities in general dental practice. DOTD

has been curated to provide an invaluable and rare opportunity for those considering a career in dentistry to gain hands-on experience in performing procedures commonly undertaken in general dental practice.

DOTD employs lecture-based teaching but places heavy emphasis upon practical teaching. Delegates are given the opportunity to perform dental fillings, suturing, dental impressions and dental scaling upon prosthetic jaws. All delegates are closely supervised by a qualified dentist and receive tailored feedback in line with their performance throughout the day. Furthermore, there is ample opportunity for delegates to ask questions pertaining to dentistry, enhancing their comprehension of the realities of the career.

By placing an emphasis on practical teaching, DOTD provides a well-rounded approach to providing a greater insight into the dental profession. Consequently, this provides an improved foundation upon which a decision regarding future career choices can be made by prospective dental undergraduates.

Methodology DOTD is curated, organised and delivered by a minor oral surgery specialty registrar. DOTD is advertised through established relationships between The Wisdom Tooth and schools and colleges throughout the United Kingdom.

Delegates register upon DOTD through an online link provided on all advertising communications. Spaces are limited to 10 delegates per workshop. All delegates must be aged between 15-18 years.

Teaching is lectured-based and practical. Practical elements include the placement of dental composite restorations, performing dental scaling, taking dental impressions and suturing all upon prosthetic dental jaws.

Following the immediate conclusion of the workshop, delegates are offered the opportunity to provide a voluntary recorded testimonial regarding their opinions of DOTD. Additionally, delegates are given the opportunity to provide voluntary feedback on the Wisdom Tooth Trustpilot page.

Results Two cohorts of DOTD have been delivered. In total, DOTD has been attended by 14 delegates. Of these 10 (71%) were female and 4(29%) were male. 7 (50%) delegates were in school Year 12 or equivalent and the remaining delegates were in school Years 10 – 13. All delegates have provided voluntary online responses of which 13 have rated DOTD a 5/5 star rating as per Trustpilot rating criteria. The remaining review has reviewed DOTD with a 4/5 star rating. Four delegates have voluntarily provided video testimonials all speaking highly of their experience during DOTD.

Discussion Preliminary evidence suggests this novel approach to providing prospective undergraduates further insight into the career of dentistry is required and well received. DOTD demonstrates that the success of this teaching model is not dependent upon taking place in a dental setting provided it is conducted by experienced dentists who closely supervise attending delegates. Such an approach is necessary to broaden all prospective dental undergraduate's understanding of dentistry, enhance their expectations of the career and augment the knowledge base upon which a better-informed decision regarding career choices can be made. Further workshops are planned required to gain a better understanding of how this teaching model may be further refined and developed to more effectively facilitate learning for those considering a career in dentistry.

Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 073

Disrupting medical education through ward cover simulation - medical student stress during simulated ward cover on-call

Author(s): Andrew Armson, Joshua Butler, Alexandra Phillips, Louise Gurowich, Rachel Nigriello and Christopher Waters

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Background On-call shifts form an essential part of the junior doctor role (1) yet are often a source of stress and anxiety (2). Although final year students shadow junior doctors doing these shifts, students do not undertake them independently until after they have qualified. Simulated on-call sessions may better prepare students for this role and reduce their anxieties around it (3). We aim to assess acute stress, attitudes and confidence in relation to on-call shifts before and after a simulated ward-cover session.

Methodology 35 final year Bristol University medical students will undertake a three-hour simulated on-call shift. Students will complete a questionnaire assessing their anxiety, concerns and confidence at 3 time points: before the simulation, immediately after and a week later. Questionnaires have been adapted from the validated Stanford Acute Stress Reaction Questionnaire (4). Levels of self-reported stress markers will be statistically compared across the different time points to determine if the simulated on-call is an effective means of reducing anxiety and improving confidence relating to on-call shifts.

Ethical approval has been sought.

Results A pilot study of 12 candidates has taken place with pre- and post-simulation questionnaires. Although not questioned specifically, anxiety was a theme that was strongly highlighted. One student mentioned that experience 'the stress [of the simulation]' was the most useful aspect of the session. Others highlighted that having to perform tasks 'under pressure' with distractions in a 'realistic' environment was highly beneficial. Self-reported confidence to undertake a ward cover on-call shift increased from mean 3.1 to 6.5 (/10) before and after the simulation, respectively. These elements will be explored further in the context of stress and anxiety.

Discussion As medical students transition to become junior doctors, novel ways to improve confidence and reduce anxiety need to be implemented. Simulated on-call sessions offer students an opportunity to experience the time-pressures and stresses of this role in a controlled and safe environment (5,6). Initial results suggest that students were affected by the stress of a simulated on-call session but that this was viewed positively. The data does not yet quantify the level of this stress, how this was varied across students and importantly if the session directly reduced their anxiety. The completed work will elucidate this. With the knowledge that there was a marked increase in self-reported confidence before and after the session, it could be hypothesised that on-call ward cover simulation is an effective method of improving confidence and possibly reducing anxiety and for final year medical students within this context.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 074

Disrupting the hidden curriculum in Core Surgical Training

Author(s): Amelia Amon, Nora Tester, Charles Zammit

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Background Core surgical training (CST) is a 24 month programme that is designed to convey a broad surgical knowledge and skills base, relevant for a variety of specialties. The training programme consists of a series of placements that allow exposure to multiple disciplines as well as the culture and work ethos of their communities of practice.

To guide core surgical trainees' learning, the Joint Committee on Surgical Training (JCST) mapped assessment and competency requirements of the programme in the core surgical curriculum document. (1) However, in addition to the document's detailed learning objectives, the trainees' professional development is also influenced by their learning environment. (2) Social and relational aspects, as well as a place's work culture significantly contribute towards the development of a surgeon from trainee to expert status. (3) These influencing factors form part of the 'hidden curriculum' and addressing them requires a concerted support effort by the multi-professional training community. (4)

Methodology In this poster we summarise our activities aimed at improving the learning environments affecting core surgical trainees at the Trust. As a first step

we identified our target areas and resolved to focus our work on developing support networks for trainees and co-designing additional practise opportunities with and for them. We measured the impact of our efforts by monitoring the indicators 'Supportive Environment', 'Educational Governance' and 'Curriculum Coverage' in the annual GMC Survey. Additionally we collected oral and written feedback.

Results To help trainees progress through their placements at Brighton and Sussex University Hospitals NHS Trust (BSUH), whilst coping with rotational transitions and work pressures, we set up a support network led by the BSUH medical and surgical education governance team. The network has a dedicated support officer and functions as a focal point for trainees, supervisors, BSUH trust staff, and the regional Health Education England branch. The stakeholders meet regularly as a group, as well as individually to ensure trainees have suitable training opportunities and progress appropriately. A peer-to-peer buddying scheme provides additional support.

Feedback from the trainees indicated that due to work pressures some were losing out on valuable training opportunities. We invited trainees to identify areas for simulation-based training and organised training sessions in cooperation with them. The sessions were opened up to trainees in the Kent, Surrey and Sussex region and included interview preparation for trauma and orthopaedics specialty training as well as advanced surgical skills training for open and laparoscopic surgery.

We evaluated our work using the results of the GMC survey 2019 and, results release dates permitting, we hope to be able to also include the figures of the 2020 survey. The three indicators that we observed improved, two of them significantly above the national average: Educational governance increased from 67.42 to 78.03 out of a total score of 100; Supportive Environment rose from 62.27 to 79.09 out of 100. Adequate Experience increased from 70.23 to a score of 80.68 out of 100, but remained below the national average.

Discussion We set out to improve the training experience for core surgical trainees at BSUH by targeting specific factors influencing the hidden curriculum. In a concerted effort between trainees, trainers and medical education staff, we built a community for CST at BSUH that now provides a focal point as well as a support structure for its stakeholders. The network significantly improved communication flow, which was particularly effective in easing the rotational transitions. It was also instrumental in identifying and developing simulation-based practice sessions that added to the workplace based training opportunities.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 075
Disrupting the thought process: participation in a simulated on-call as a method of teaching prioritisation to final-year medical students

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Background Clinical reasoning is an essential competence for doctors (1), of which the prioritisation of clinical tasks is one of the most vital forms. However, studies have shown that final year medical students are often underprepared for prioritising their clinical workload as junior doctors (2). While many methods can be employed to teach this key skill, such as tutorials or written exercises, clinical prioritisation is most frequently required in busy and pressured situations which are poorly replicated by these methods.

Virtual on-call simulations have been used by several medical schools to teach a variety of skills to final-year medical students (3). We have designed a simulated on-call session to reproduce as closely as possible the context and contents of a real medical ward cover shift, with the aim of establishing its utility as a method of teaching prioritisation to final year medical students. We have implemented this within the hospital environment in order to maximise fidelity.

Methodology 35 final year medical students on their Preparation for Professional Practice (PPP) placement from the University of Bristol will undertake a 5-question prioritisation task. Each question contains 5 brief clinical scenarios which the students will rank according to the order in which they would see the patient. The ideal answer for each has been established by consensus opinion of a focus group of CT1 – ST3 grade doctors. The correct answers will not be revealed to the students nor will the scenarios be discussed. They will then undertake a 3.5-hour session comprised of a simulated on-call and debrief. The student is initially handed over several tasks, then is bleeped with further tasks as the simulation progresses, including one acutely unwell patient scenario performed as a high-fidelity clinical simulation and one communication skills station with an actor. Tasks are intended to test all aspects of medical education including prescribing, data interpretation, documentation, assessment of the deteriorating patient and advanced communication skills. They will then have a semi-structured debrief where they will be given the chance to reflect on how they prioritised tasks during the simulation.

At a week interval following the session, the students will undertake the same 5-question task and the results will be analysed to determine if there is a statistically significant improvement in score between the pre- and post-session tasks. Ethical approval has been granted.

Results Due to the timing of the PPP placement, we are collecting data from January to March 2020. We will present results that demonstrate whether participation in a simulated on-call improves student prioritisation of tasks. Secondary outcomes include students' perception of their confidence in clinical prioritisation, as well as other qualitative feedback.

From our two pilot sessions, attended by 12 students in total, we found that confidence in prioritisation increased by a mean of 3 points on a Likert scale of 1 to 10, from 3.75 to 6.75.

Discussion Limitations of our study design include our relatively small sample size and the limited number of questions included in the pre- and post-session prioritisation tasks. The latter was intended to maximise student participation and attention during the task.

The NHS has come under increasing strain in recent years, with staff shortages and an ageing population both contributing to large workloads for junior doctors. This can be particularly apparent during on-call shifts when there are fewer staff in the hospital. Prioritisation skills are key to enable junior doctors to cope with this increased workload and are therefore likely to be integral in the retention of medical staff, as well as in patient safety. If this study demonstrates that participation in a simulated on-call shift improves the ability of final year medical students to prioritise clinical tasks, it would support the introduction of similar schemes into all final year medical curricula.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 076
Equipping healthcare students with the communication skills to discuss FGM in the clinical setting

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Background Female Genital Mutilation (FGM) is a practice that has affected an estimated 137,000 women in England and Wales [1]. 20,000 girls in Greater Manchester alone are at risk [2]. In 2014 UK medical students backed a BMA vote for FGM to be a compulsory component of the undergraduate curriculum, yet little has changed despite prevalance of these issues in the news and media [3]. Few medical schools have integrated this into their curriculum formally and instead

the reliance lies only on a BMA elearning module devised in 2015 [4]. This led to student initiatives on FGM education, such as a workshop delivered to the University of Manchester healthcare students. This was designed by final year medical students and foundation doctors and delivered by the Manchester Obstetrics and Gynaecology Society and local FGM charity NESTAC.

Methodology The two hour workshop involved two lectures and two role-play clinical scenarios. A pre and post intervention questionnaire was completed for participants self-reported Likert competency levels. This covered knowledge of FGM and UK law, how to discuss FGM with patients and who to refer to if you are concerned about a patient and FGM. The scenarios gave the opportunity for students to play (partially scripted) two clinicians, an expectant mother who had undergone FGM, a patient at risk of FGM. There was then opportunity for facilitated open discussion on the challenges these scenarios presented and peer to peer feedback. This portion of the workshop was led based on Balint group techniques. Communication skills tutors and FGM law experts led the didactic portion of the workshop and medical students led the role-play portion.

Results Student participant profile- 8 medical, 4 midwifery, 8 nursing, 1 psychology and 1 undisclosed. All 22 forms reported a workshop like this should be made mandatory for healthcare students. The midwifery and nursing students (12 participants) reported they had formal teaching on this topic as part of their degree but in a lecture format not a communication workshop. No medical students reported any prior knowledge of this topic.

Of medical student participants 75% reported the workshop increased their confidence to a level where they could communicate with a patient about FGM.

50% of student participants reported they would now know what to do in a clinically if a patient presented with a type of FGM. The remaining 50% of students reported they would only feel confident after experiencing this as a qualified practitioner.

100% of participants reported that they found the role play scenarios useful to test their knowledge on FGM.

Discussion FGM communication competency was significantly increased in medical students by this workshop. It was also clear from facilitated discussions with participants that this style of teaching on FGM had not been delivered to any healthcare students at the university. We propose, based on feedback, it is in both patients and students best interests to have FGM communication and management formally taught. Our intervention is inexpensive to recreate and beneficial in areas with high FGM statistics. This design is translatable for both undergraduate and postgraduate healthcare education. It is important we also bear in mind that students that train for healthcare profession roles in an area with low FGM prevalence are likely to at some stage of their training or working life move to practice in an area with different levels of FGM both within the UK and internationally.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 077
Escaping Traditional Simulation with Gamification: Is it Supported by Educational Theory

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Background Simulation in medical education is widely used and has been demonstrated to improve both technical and non-technical skills[1-3]. The emerging field of gamification, the addition of game play elements to non-game settings, increasingly used in education and starting to be used in medical education[4-5]. Combining traditional simulation (TS) and gamification into medical Escape Rooms (ER) has been used in Nursing to good results[6-7] but is yet to be adopted in medical education. ERs are traditionally done in small groups locked in a room tasked with a series of small puzzles that lead to further puzzles eventually leading to a solution and 'escape' from the room. We conducted a pilot study to create ERS for 4th year medical students based on existing curriculum simulation themes of sepsis, post-operative bleeding, trauma, burns and communication in the theatre environment. We wanted to base these on current evidence for ERs design and accepted educational theory to ensure the creation of educationally robust ERs.

Methodology A review of available literature on current evidence and methodologies in designing medical ERs and their educational background using a PubMed search using the term 'escape room'. Identifying key adult educational theories that might direct design and creation of ERs.

Results Eleven papers were identified, one was discarded as not relevant[10], abstracts and full papers were included. Six of the ten published only qualitative data[5,11-15], and four both qualitative and quantitative [16-19] only one paper[19] referenced a 'Game Guide' available on request, but as yet have not responded. Although all studies published equivocal or improved scores in measured parameters post-ER there is no evidence for methodology and design of ERs.

The design of ERs is predicated on the use of small puzzles to build a larger picture or complete a sequential clue chain. Important principles of adult learning, andragogical theory[20], describes the need to know why something is being learnt and have it of immediate value, adults also learn experientially in a problem-solving manner. ERs are by design problem solving, with immediate value delivered b task completion and progressing through the whole room; perhaps better than TS in that students often feel like they aren't 'progressing' through the simulation if there is no immediate feedback from the facilitator or 'patient'. Less structured simulation can be better and allow self-directed learning b moving through well-known areas with speed and concentrating time on areas of less confidence.

Kolb stated, "Gaming requires students to be active participants in learning, reflect on their performance while considering their strengths and weaknesses, and plan future actions accordingly"[21], describing an experiential cycle of Experience, Reflection, Conceptualisation and Experimentation[22]. The crucial nature of the cycle is the repetition with newfound information or understanding and applying it to see change in the student's surroundings. This is demonstrated in TS with any intervention done to the patient followed by a change in observations, the drawback being in a non-linear simulation with multiple students, cause and effect become muddled so incorrect conclusions are drawn that need to be addressed in the debrief[23]. ERs can be designed in a more linear model, if puzzles can only be solved the correct way, actions are immediately linked to consequences; indeed puzzles can be designed to be unsolvable until later in the ERs so students can be forced with each new piece of information to re-evaluate and re-test against previously discovered information.

Discussion ERs are supported by well accepted educational theory, and if these are considered during design, should be able to deliver robust educational goals. The more directed, linear design may lend itself to early years training or medical school, rather than more specialist areas where TS allows for more open simulations. In the pilot students reported improvement in use of A-E assessment following ERs as they found the structure forced them to proceed only when each section had been completed, rather than when they felt they lacked knowledge to proceed. Evidence also suggests incorporating other game mechanics such as leader boards, may improve engagement and motivation. The major pitfall of use of these techniques is their temptation for over-use, sacrificing learning objectives for the sake of the game, something that should be considered during their design.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 078

Exploring the barriers and facilitators to the integration of planetary health into the undergraduate medical curriculum: A mixed-methods study of the perceptions and attitudes among students and educators at the Royal College of Surgeons in Ireland

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Background Background:Since the 19th century global warming has occurred at a rate and extent which exceeds any other global warming event of the last 2000 years (1) An article published in Nov. 2019 in Nature Magazine (2) argues that the world is in a state of "climate emergency" and that if the future global temperature rise is not limited to 1.5 degrees then we will have reached an irreversible "tipping point" leading to catastrophic environmental and health effects. Climate change is not just an environmental issue but a health issue. In acknowledgement of the interface between environmental change and human health, there is an increasing international mandate to integrate themes of sustainability, climate change and ecological instability into the medical curriculum.

Planetary health is a burgeoning field which encourages "evidence-based policies to promote human health and prosperity while preserving the environment which allows us to thrive". It is a field which relates to the "interdependence of human health, animal health and the health of the environment" (3). For the purposes of this study, I am using it as a term that encompasses the areas of sustainable healthcare, climate change, ecological instability and global warming referenced in the literature.

Purpose:

This project aims to investigate the barriers and facilitators that exist with respect to the integration of planetary health themes into the undergraduate medical curriculum at the Royal College of Surgeons in Ireland (RCSI). This will be achieved through a mixed-methods study exploring the perceptions and attitudes that exist among medical students and clinical educators towards the teaching of planetary health, at the site. Further to this, I will seek out experts' perspectives within the field of medical education from other education institutions in Ireland on these issues, through an educator's workshop taking place in March 2020.

Methodology A mixed-method research methodology will be used to gain the breadth and depth of the barriers and facilitators that exist with respect to the integration of planetary health themes into medical curriculum. The research methods of this thesis will consist of 4 components; a literature review of undergraduate medical teaching related to planetary health themes; a quantitative survey - administered to undergraduate medical students at all stages of learning at RCSI – which will seek to measure the attitude and awareness of study participants towards planetary health issues; concurrent to this I will be recording the salient points from a workshop running in March titled "Teaching Climate Change in the Undergraduate Medical Curriculum", this will be attended by experts in the field of medical education; followed by interviews with educators at RCSI who have an active role in medical curriculum delivery and/or content creation.

Results Data processing for the project will begin in March 2020, following the March clinical educator's workshop. The data from the questionnaire administered to undergraduate students will also be processed during the months of March and April. The Semi-structured interviews with clinical educators will be held in April/May. The analysis of data will have yielded results for discussion at the ASME conference, June 2020.

Discussion Recommendations:

The climate emergency and the potential disease burden secondary to planetary health issues necessitates action. In order to meet the challenge of a changing environment and its deleterious health effects it is essential that we equip our future physicians with the knowledge and skills necessary to champion the causes of sustainability and planetary health as part of their undergraduate medical curriculum. To this end, it is necessary to explore the barriers and facilitators which currently exist towards this action.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 079
Gamification in the context of social interaction: Using Medical 'Articulate' and 'Charades' to aid revision and enhance learning

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Background Gamification has been shown to be successful in medical education. (1,2) Charades is a game which first originated in 18th century France and 'Articulate' is a board game based on the ability to describe terms originally released in 1992. However, they can be adapted as an educational tool incorporating peer learning. Furthermore, they can be adjusted to various levels of knowledge combining fun, competition and team working. Social constructivist theory first proposed by Vygotsky (1932) (3) promotes the idea that social interaction aids development and that cognition is a product of socialisation and social behaviour. Its main components include social interaction, an intermediary zone of proximal development (ZPD) based on intrapsychological factors and a more knowledgeable other (MKO). These components were used to formulate a charades based revision session to create a peer learning environment where the students could utilise problem solving skills and team work in a social setting to progress to a level of competency through learning based on the scaffolding provided by Case Based Learning (CBL) sessions to improve their knowledge.
Methodology This was a teaching intervention that was evaluated through assessment and feedback. The project was piloted with a group of third year medical students who were divided into teams in the revision session. The rules of the game were based on a combination of principles of Charades and Articulate.
Using this format, the students were given a term/diagnosis/finding and asked to provide clues to their principal member using lateral explanations/terminology but without using the word itself. Each student was given 60 seconds but this was reduced by 10 seconds if their team members used the actual term given. The team with the maximum number of correctly identified terms won. All terms were extracted from existing work the students had written in their shared CBL portfolio.
Knowledge based assessments (KBA) were used to determine baseline knowledge prior to the revision session and assess learning gained from the revision session 11 days later. A 5 point Likert scale was used along with open comments to gain feedback from participants.
Results The initial pre-session knowledge based assessment (KBA) average score in the form of multiple choice questions was 53%. A post revision session KBA 11 days later was comprised of new questions based on terms used during the revision session as clues and this yielded an average score of 86% which confirmed that learning had occurred whilst using the same questions as the initial quiz lead to an average increase to 63%. The feedback questionnaire also revealed that all 100% of the participants agreed that they found this motivating and engaging, enjoyed this form of revision and would like to participate in this in future. They also agreed that this helped them to identify gaps in their knowledge. Further feedback stated that it was "a fun way to learn as it utilises everyone's knowledge to collectively learn", "engaging" and that they enjoyed "the group work" which points to a social constructivist approach.
Discussion Charades is an effective tool for identifying knowledge gaps and aiding learning in surgical and medical education and supports the use for gamification as a learning tool. It further supports the theory of the practical applicability of Vygotsky's social constructivist components and thus recognising the role of ZPD and MKO through the medium of social interaction to aid learning (3). This project can be further developed to assess/revise multiple topics and can be adjusted to varying levels of complexity and will be expanded to assess its usefulness for other topics at an undergraduate level.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 080
Help I'm an ICU doctor get me out of here..

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Background Junior doctors rotate between hospitals and departments on a frequent basis and need to be able to provide safe and effective care from the first day in their new rotation. Good, timely local induction helps with this, however junior doctors are still required to familiarise themselves with a large amount of information, in a new environment whilst working with a new team. Trainee feedback on our induction process is that it is adequate, but whilst it is felt to be comprehensive we were concerned that it had become impersonal and risked information overload. We wanted to improve knowledge retention and promote team building.
Escape Rooms are immersive adventure puzzle games that have increased in popularity over the past decade. Players solve puzzles to solve codes used to unlock a series of boxes within a fixed time frame to 'escape' the room. They have previously been used in secondary education[1], nursing[2] and medical student[3] teaching. We designed a medical escape room based on a fictional patients admission to intensive care
Methodology This low fidelity scenario runs inside an ICU side room on the second day of the junior doctors placement after formal induction on the first day. This clinical setting helps familiarise junior doctors with the bed space, paperwork and ICU geography and they work together to find clues, interpret clinical data, and calculate risks to safely guide the admission of a patient with type 1 respiratory failure to the intensive care unit. These clues help unlock a series of four boxes to move the scenario forward with a maximum of 1 hour to 'break out'. The tasks and clues reinforce both factual information (scoring systems, drug doses, extensions and bleeps) and attitudes (MDT working, consultant support, human factors and fatigue)
Results We use a simple feedback form at the end of each simulation to collect immediate feedback from participants
Mean score (out of 10) have been high.
Usefulness 9
Content 9.5
Relevance 9.25
Overall experience 10
Trainees found the session engaging, enjoyable and useful.
Interestingly verbal feedback from trainers and other staff has also been very positive- consultants on the unit found it useful to have a self sufficient learning session and depending upon the number inductees have run it either with the full group or as a parallel session to create smaller group sizes to allow more 1 to 1 teaching with difficult topics.
Discussion This novel approach to induction has been well received by our trainees, currently we have evaluated learners reaction and satisfaction, in future we would like to assess the higher levels of Kirkpatrick's evaluation model by accessing knowledge retention and behavioural change.
There is also scope to run similar sessions more focused on specific aspects of clinical care, to run inter professional scenarios with the wider multidisciplinary team or to use this technique in other clinical areas.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 081
How 'purple pen transcribing' operates in clinical practice and the role of a junior doctor when learning to prescribe: a realist evaluation

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Background Newly qualified doctors feel ill-prepared to prescribe despite being accountable for writing over 50% of hospital prescriptions. Errors occur in 8-15% of the prescriptions they write; the majority of errors are identified and rectified before harming patients (1-4). Preparatory exams such as the Prescribing Safety Assessment (PSA) are unable to assess the practicalities of a prescribing process within an authentic clinical environment due to the multifactorial nature of the practice (4-6).

In 2014 Keele University introduced the purple pen transcribing intervention. In brief, the intervention permits final year medical students to engage with whole task prescribing for patients in the clinical environment under supervision by qualified doctors and strict governance procedures. Previous research suggests medical students view the purple pen transcribing scheme positively (7).

Newly qualified medical graduates enjoy and increasingly engage in teaching medical undergraduates, however, they admit a need for familiarisation with 'real' clinical environments when learning to prescribe as an undergraduate (8,9). As such, this study seeks to understand the contextual factors that influence how the purple pen transcribing intervention operates, and the contexts and mechanisms through which junior doctors support these medical students in learning to prescribe.

Methodology This study forms part of a realist evaluation of the purple pen transcribing intervention. Two sets of data will be collected:

- A purposeful sample of final year medical students for direct observation, using a standardised direct observation form, during purple pen transcribing episodes.
- A purposeful sample of foundation year doctors for semi-structured interviews.

Data will be analysed using realist methodology. We will test our provisional middle-range theories (MRTS) in light of the collected data and present our refined programme theory model.

Results Our provisional MRTs propose that whole task prescribing increases student accountability. These internal contexts propel professional discourse and constructive feedback endowing a platform for students to learn through error and begin sculpting a junior doctor identity. Failure to challenge dictation and hospital hierarchy however, may still limit learning. These MRTs shaped our Initial Programme Theory (IPT). Using the collected data, we hope to identify demi-regularities and use retroductive theorisation to further elaborate our IPT, focussing on the barriers and facilitators to undergraduate transcribing within a clinical environment and the involvement of junior doctors within this.

Discussion Research has advocated a need for undergraduate prescribing training to parallel with the reality of the task in practice (9,10). The use of whole task learning through the purple pen transcribing intervention provides an opportunity to observe the essential contexts and mechanisms through which undergraduate students learn to prescribe in practice.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 082
How can we evaluate medical education resources published on social media?

Author(s): Dr Lauren Jackson
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Background Social media is an integral aspect of many medical students lives. Studies estimate that over 90% of medical students use social media platforms daily [1-2], with many students citing this as their primary source of information [2]. Social media has proved an excellent resource for creating and sharing educational content. Commonly referred to as the Free Open Access Medical Education (FOAMed) Movement, it has rapidly grown in popularity amongst students in recent years. The open-access nature of social media means that users act as real-time peer reviewers, facilitating rapid updates and corrections. Importantly this process empowers learners to contribute to an ever-expanding knowledge base, something once strictly reserved for educators. Educational content published through social media has proved challenging to evaluate, as it is difficult to characterise the user base of many online platforms. Much of the current evidence for and against its use within medical education is supported by anecdotal evidence, and site derived analytics. The impact a resource has is often attributed to the number of hits, likes or followers. Although this is merely a reflection of traffic through the site and cannot estimate how many times a resource has been read and understood. As the creator of The Little Medic (@the_littlemedic), an Instagram account set up to distribute my hand-drawn revision notes to my peers, I decided to use this as a tool for exploring whether it was possible to evaluate the resource beyond basic site analytics.

Methodology Using the Instagram analytics tool data was gathered regarding the location and age range of people who follow @the_littlemedic. Although using the Instagram analytics tool it is not possible to evaluate the proportion who are healthcare students or professionals. Exploiting the Instagram "stories" feature, followers were asked questions regarding their location and the subject which they are studying. The aim of this was to glean both data regarding the user base but also whether it was possible to exploit a feature such as Instagram "stories" to further evaluate a social media derived educational resource.

Results Location and age-range data were gathered using the Instagram analytics tool in January 2020 from the Instagram account @the_littlemedic. Of a total of 8017 followers, 1362 (17%) were located in the United States, 1042 (13%) in the United Kingdom and 561 (7%) in Mexico. With regard to age-range, 4480 (56%) were aged 18-24 years old and 2645 (33%) were aged 25-34 years old. Using Instagram stories the following data were gathered by asking followers to state their location and subject studied. Of 8017 followers, 1169 viewed the stories and 79 responded. Twenty-eight (35%) of those who responded reported they studied medicine. Other subjects included nursing, midwifery and physiotherapy. Seven (8%) were located in the United Kingdom, other locations included India, Chile, Argentina and Ukraine.

Discussion This small study illustrates that by using tools such as Instagram "stories" it is possible to glean further quantitative data regarding the participants who are interacting with social media based medical education resources. Although to gain further insight there is a need to explore student's experiences when using social media as an educational resource beyond quantitative exploration, and superficial site derived data and anecdotal evidence. So, as educators, we understand and can support students and staff alike in the evaluation and incorporation of social media resources within teaching and learning. This should be considered essential if medical education is to keep abreast with current learning trends.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 083
How often would GP trainees teach medical students and does this match their realistic availability?

Author(s): Dr Sabia Dayala, Dr Eleanor Lister, Dr Tal Wasty
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Background There has been a recent surge in published literature on the inclusion of GP trainee doctors in medical student teaching programs. Near peer teaching from this workforce has multiple benefits including role-modelling, a better understanding of the students learning objectives and scope to discuss career pathways with junior doctors who have more social and cognitive similarities to medical students than tutors who completed training many years ago (Thampy et al 2019). Earlier research identified that approximately 60% of GP trainees are involved in some teaching (Halestrap et al 2011, Williams et al 2012). However later work which explores finer detail has demonstrated that over 91% of GP trainees reported no or only occasional involvement during GP training posts and over 80% wished they had more undergraduate teaching opportunities (Marshall et al 2015). This is despite the development of teaching skills being recognised for several years as a professional competency in the Royal College of General Practitioners' (RCGP) training curriculum and is maintained in its latest iteration (RCGP 2019). One of the identified barriers through qualitative studies to GP trainee involvement in teaching has been a lack of capacity (Thampy et al 2013, Harrison et al 2019). However, the literature lacks quantitative studies to specifically identify GP trainee availability in the (highly likely) ongoing climate of competing priorities. This small scale survey quantifies for the first time the availability of a cohort of GP trainees to teach, providing undergraduate medical curriculum planners with valuable insights.

Methodology GP trainees in Years 1 and 2 of the training programme at South Manchester (North West Deanery) were asked to complete a brief electronic survey of quantitative and qualitative questions to explore their interest in teaching medical students, their ideal level of involvement and their realistic availability for medical undergraduate teaching.

Results 21 GP trainees completed the electronic survey. 81% of respondents were interested in teaching medical students. The majority of respondents, 76%, wished to teach at least once a month. This figure matched their capacity to teach with 71% stating they could realistically teach at least once a month. The most frequent response to both willingness and capacity to teach was once a month.

Qualitative data corroborated GP trainees' interest in delivering structured teaching sessions for medical students, organised by medical programs of Universities.

Discussion The findings from this small scale survey has added quantitative data to the literature underpinning near peer teaching of medical undergraduates by GP trainees. The majority of respondents considered themselves to be realistically available to teach medical students once a month, despite conflicting priorities. Confounding factors of this survey are non-differentiation in the question design between teaching delivery within the clinical or classroom setting. We also acknowledge the small cohort size of early and mid-years GP trainees who train in a diverse range of posts within both primary and secondary care settings. Additionally, due to variability in training programs across the UK, GP trainee availability may differ not only within deaneries across their local training programs but also nationally across deaneries. The take home message for medical program curriculum planners is that as key stakeholders, local GP trainees should be consulted to quantify and negotiate their availability in conjunction with training program directors. This is essential if we are to fulfil aspirations of maximising this valued resource that is currently underutilised. The findings also contribute to the debate on whether GP trainee involvement in structured teaching on undergraduate medical programs should be mandated as one route to fulfil professional competency in teaching as outlined by the RCGP training curriculum (Alberti et al 2019).

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 084
Intercalated medical education graduates: Education champions fit to challenge clinical teaching traditions

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https://youtu.be/pRvyv54AMq8

Background We present research findings about lasting impacts of medical education intercalation and propose graduates later become education champions. We went beyond previous evaluations of medical education intercalation at single institutions, following up Cardiff and Leeds graduates now working clinically in the NHS (8 trainees FY2-CT2). Trainees' perceptions of educational impact on clinical practice were explored through interviews and thematically analysed. We concluded theoretical understanding leads graduates to question teaching practices and adopt new approaches to learning and assessment.

Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 085
Mindfulness In Medicine: Not an Optional extra

Author(s): Wendy Leadbeater, Alveena D'Souza, Naomi Matthewman, Bishoy Hanna-Khalil
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Background Numerous studies have shown high rates of stress, anxiety and burnout amongst medical students, and a recent survey by the General medical council involving 70 000 doctors in the UK showed that a quarter of Junior doctors felt a high degree or very high degree of burnout (1). Mindfulness based

programmes have shown to reduce levels of perceived stress (2), increase levels of perceived resilience (3) (4), and have been taught at a number of medical schools in North America and Australia for many years (2). A recent audit identified that 80% of medical schools in the UK had a mindfulness component as part of their course, although this was generally in the form of elective modules (5). Aston Medical School has developed a mindfulness-based health programme delivered to all first year medical students as a compulsory core part of their curriculum, and this study investigated student perception of stress management and lifestyle behaviours before and after the programme.

Methodology The Health and Wellbeing module at Aston Medical School was developed from the Health Enhancement Programme delivered at Leicester medical school. A series of lectures provided the background explaining the programme, followed by 5 small group compulsory sessions over 8 weeks on the topics of: Introduction to Health and Wellbeing, Nutrition, Exercise, Intercultural communication and Connectedness. Mindfulness based activities were delivered in each session including mindful mediation, a mindful walk and mindful eating. Students were also encouraged to complete 5 minute daily mindful activity outside of these sessions.

Students were invited to complete pre and post questionnaires including a perceived stress scale and adapted lifestyle assessment. Recruitment into the study was not compulsory and written consent was taken from participating students. The results of the survey were anonymous, but each student created a non-identifiable unique code which allowed data to be compared for each student.

Results Initial analysis of results are promising with students enjoying the programme and having reduced stress on the perceived stress scale after completion of the programme. Further analysis is still being completed, including on qualitative statements from students.

Discussion Although, a number of medical schools in the UK do have elements of mindfulness as part of their curriculum, this is generally offered as an elective course (5), or to targeted students who have been recommended the intervention by their personal tutors (3). The Health and Wellbeing module at Aston Medical School is fully integrated into first year curriculum and is compulsory for all students. It also links, where relevant, to topics covered in the Physiology module of the medical course. Feedback from Aston medical students is that they enjoyed the practical aspects of the course and this builds on previous research that students enjoy hands on experience practising a number of different coping methods (6). In addition, initial results of this study show that a mindfulness based programme can reduce stress and improve wellbeing amongst first year medical students, which adds to the increasing body of evidence that mindfulness is beneficial in reducing levels of perceived stress amongst medical students (2).

Although encouraging, a limitation of the study is that it analysed student's perception of stress before and immediately after the programme, and it is not known if this translates to ongoing reduction in stress, later on in the course and once qualified as a doctor. Further work needs to be done in this area.

It is unlikely that there is a single solution to the current burnout rate amongst junior doctors (1), but it is clear that change is required, and mindfulness is an avenue which a number of medical schools are exploring to improve wellbeing in their students. The introduction of the Health and Wellbeing programme into the core curriculum disrupts the norm.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 086

Shaking up the social programme at Swindon Academy: an extracurricular method of improving education and mental health for medical students

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Background Medical students are well-recognised as a population at increased risk of poor mental health (1), the effects of which can include withdrawal from medical school (2), burnout and suicidal ideation (3). Social support and extracurricular activities have been identified as a protective factor for poor mental health amongst students (4,5). In the United Kingdom, medical programmes often involve clinical placements at hospitals which are geographically remote from their parent University. Medical students undertaking these 'peripheral' placements are unable to access their usual social support networks and therefore may be at increased risk of mental health problems, which can have a negative impact on their education as well as their general well-being.

Methodology A social programme was established to offer subsidised extracurricular leisure activities to 3rd, 4th and 5th year medical students at the University of Bristol who had placements varying from 6 to 16 weeks at the Great Western Hospital, Swindon. Medical students were contacted with a survey via email prior to arrival at the hospital to vote upon a range of activities that were deemed practicable by faculty. The social programme consisted of weekly football, netball and badminton, monthly quiz and pizza nights and several one-off events such as a Laser tag trip, a cinema outing, a board games night and a Halloween party. At the end of their placement an online survey was administered to 89 students via email. Participation was voluntary and all responses were anonymous. Informed consent was embedded within the survey, and all respondents gave consent for the use of their data.

Results Of n = 89 students, n = 43 (48%) completed the survey. 51% of these students had participated in netball, 26% in badminton and 100% in the monthly quiz and pizza night. On a Likert scale from 1 (strongly disagree) to 5 (strongly agree) all students agreed that the social programme had made the placement more enjoyable, with a mean score of 4.88. 84% of students agreed (21%) or strongly agreed (63%) that the social programme had helped them to make friends during the placement, while 93% agreed that it had helped them to maintain good mental health with a mean score of 4.56. 93% also agreed (16%) or strongly agreed (77%) that the programme had contributed positively to their education overall during the placement. We received highly positive qualitative data, indicating that the students found it was a 'great way to de-stress' and that it 'made the world of difference to general wellbeing to continue engagement with the placement'. Another recurring theme was the sense of 'community' that the social programme introduced into the placement.

Discussion These results, together with the extensive qualitative data collected, demonstrate unequivocally that the students highly valued the introduction of a social programme while on peripheral placement away from their usual campus. The most popular events were a monthly quiz and pizza night, a Halloween party and weekly netball.

There are some limitations of our study; a relatively small sample size and the single centre from which students were recruited may impact the external validity of these results. However, given the highly positive impact on a number of important endpoints (such as student mental health and education) and the lack of any identified negative effects, medical schools in the UK should consider establishing similar programmes for all students on peripheral placements. Possible barriers to implementation include the financial cost and having faculty available out-of-hours to run the events. We recommend a survey distributed to students before arrival at the placement to ascertain which activities are likely to be sufficiently popular to justify funding.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 087
SLE appointments – improving efficiency for observed formative assessments

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Background Increasing healthcare demands are adding to already recognised tensions between education and service[1]. This is reflected by the key recommendation in the GMC Caring for doctors, caring for patient's report[2] - for system leaders to improve programmes of assessment "to ensure early and ongoing formative assessment".
Currently, structured formative assessments for doctors are achieved through supervised learning events. The validated miniCEX[3] represents one tool to deliver feedback as a powerful influencer on learner development[4], but at the perceived 'cost' of removing the observer from clinical duties. A recent expansion in education fellow roles has helped to support direct observation of trainees. We therefore wanted to understand the efficacy of our role on the local junior doctor population and to improve our effectiveness.
A survey of foundation doctors (n=39) 2 months before their ARCP was conducted to determine the frequency and nature of supervised learning events they perceived were available to them. These results indicated challenges of achieving the miniCEX, over CbDs and DOPS and that there was a skew towards opportunities being available fortnightly or less.
Methodology Given the distribution of foundation doctors across a split site district general hospital and variable availability of trainees and fellows, meeting this demand required an innovative education platform. Utilising a web-based sign up system, trainees were provided with opportunities to book 30 minute focussed interventions with a postgraduate education fellows at mutually convenient times to achieve learning needs pre-established by the learner– 'SLE appointments'.
A notification period of 48 hours was requested for medical topics and 5 days for other specialities. The service was piloted for the month of May as a proof of concept, during which 12 appointments were completed. Feedback was sought from trainees and fellows to reflect the acceptability of the system, nature of the learning achieved and quality of assessment.
Results This initial pilot of 'SLE appointments' recorded high satisfaction across both trainees and fellows, on the basis of wide range of availability, topic flexibility and addressing needs outside of current speciality rotations. Furthermore given sufficient time and focus on feedback, themes suggesting trainees recognised the value of the miniCEX as a formative learning tool when used correctly emerged.
Further descriptive data of trainees signing up to use the service as well as comparisons between before and after using SLE appointments to obtain observed learning opportunities will be presented alongside free text comments from fellows.
Discussion There are currently no systems to support the delivery of targeted education by trainers or to make learning opportunities explicit for individuals or small groups. This may reflect a growing recognition of informal workplace learning and use of entrustable programmable activities. However, the adoption of an SLE appointment system alongside this may have a future role in meeting educational needs by targeting limited resources.
We feel this intervention disrupts medical education by firmly placing the junior doctor in charge of their own learning. Such as miniCEXs' on medicine optimisation with a Parkinson specialist nurse or achieving DOPS outside assigned specialities, e.g. cardioversion lists. By enabling doctors to select convenient times and topics we feel this has a wider potential to facilitate interprofessional learning and widen career exploration.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 088
Surgical Escape Rooms: A Novel Approach to identifying and addressing Resilience and Academic Buoyancy

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Background Traditional Simulation is useful practice for real life scenarios whilst Surgical Escape Rooms (ER) assess other elements. In 2015, the US Department of Health and Human services defined Resilience as the "ability to withstand, adapt to, and recover from adversity and stress". It is difficult to find an all-encompassing definition of the word but it is a term that has gained traction across all levels of education and careers. Whether it is intrinsic or a trait that can be acquired and developed remains a topic of debate. Several attributes have been associated with resilience. Dr. Susan Kobasa, a leading psychologist, identified three traits – challenge, commitment and personal control as being essential in developing resilience whilst Dr. Martin Seligman found that permanence, pervasiveness and personalization were also essential in building resilience (1). The role of resilience is especially important in areas of high stress and workload such as medical school, junior doctors and certain specialties deemed demanding. Resilience contributes to physical and emotional wellbeing as well as the development of coping strategies. Consistent short-term Academic Buoyancy levels can have an impact on long-term levels of Resilience.
Methodology Two groups of 4th year medical students were given the validated Brief Resilience Scale (BRS) and the Academic Buoyancy Scale (ABS) before and after. The first group completed the Surgical ER whilst the second group completed a Surgical Simulation. During the ER session, participants were assessed by multiple, independent assessors on 4 parameters - participation, objective display of frustration/stress, interaction with the team and definitive decisions taken. These were then correlated with their initial self-assessments scores.
Results The ER group ABS Scores improved (3.45 to 3.8; Range 0-4) whilst BRS scores decreased (4.5 to 3.9; Range 0-5). The Simulation group ABS scores decreased (3.4 to 2.9) whilst BRS scores improved (2.9 to 3.2). Scores became more polarised across all groups overall. It was also noted that participants who scored low on the BRS/ABS displayed lower levels of participation, team interaction and fewer definitive actions taken but also displayed fewer indicators of overt stress in comparison to their higher scoring counterparts.
Discussion Multiple scoring systems have been published to date – each of which assess different aspects of resilience however, researchers have not been able to directly measure resilience but rather inferred via observation of examples of positive adaptation (2-6). The rationale of this project is to establish if self-rating on resilience scoring system correlates with how individuals perform in a high stress situation requiring both teamwork and leadership as well as cognitive reasoning in the form of a simulated medical escape room. Escape Rooms are useful in challenging individuals to improve problem solving skills and encourage lateral thinking. It would be useful to incorporate ER's in the early stages of training to build confidence and reduce the immediate negative impact of Simulation at later stages. Monitoring certain parameters in ER participants can help identify low resilience levels and low academic buoyancy, both of which can have an impact on future careers. Early identification would allow methods and

assistance to be placed to develop resilience in these individuals. Further data collection is ongoing to expand the existing results.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 089

The Efficacy of Medicalised Escape Rooms in Preparing Final Year Students for Practice

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Background The GMC 2018 'Outcomes for Graduates' suggests that newly qualified doctors must "recognise the role of doctors in contributing to the management and leadership of the health service; learn and work effectively in a multi-professional and multi-disciplinary team; and communicate effectively, openly" [1]. However, studies have shown that many graduates lack in these non-technical skills [2-5]. Simulation is a well-established format for health care professionals that aids development of knowledge, technical and non-technical skills [6-8]. The emerging field of the gamification of education has proven to be beneficial in its ability to improve learning processes and outcomes by enhancing their motivation and engagement in learning [9, 10]. Medicalised Escape Rooms (ER) are a promising novel educational platform to further develop skills in leadership, teamwork and communication. This project followed on from a successful pilot study showing that ERs were equivalent to traditional simulation in developing knowledge and non-technical skills in a group of fourth year undergraduate medical students. We aimed to review the effect of medical ERs on the non-technical skills of final year medical students that are required by the GMC upon graduation.

Methodology Three medicalised ERs were designed and run for two groups of five final year medical students in their Preparation for Practice module. They were held in the simulation suite and had a moderator outside to provide further resources. Pre and post ER questionnaires were used to analyse non-technical skills. The TeamSTEPPS Teamwork Attitudes Questionnaire (T-TAQ) assessed self-reported aspects of team work including (a) team structure; (b) leadership; (c) situation monitoring; (d) mutual support and (e) communication. In addition, participants completed a locally constructed Likert scale questionnaire regarding communication and the Readiness for Interprofessional Learning questionnaire (RIPL). Mean scores were calculated and compared between before and after the ERs.

Results The results from the T-TAQ questionnaire showed an increase in the average score post ER of each domain of (a) leadership (4.65 to 4.77) (b) situation monitoring (4.55 to 4.68) (c) mutual support (4.3 to 4.7) and (d) communication (4.37 to 4.55). Particular improvements were noted in the field of mutual support where there was an increased score in the questions relating to offering help fellow team members on individual tasks (3.9 to 4.5) and on whether personal conflicts between team members affect patient care (4.1 to 4.6). However, there was a decrease in the post ER score in the questions regarding their views on overall team structure (4.65 to 4.63).

The results of the RIPL questionnaire showed an average increase of 0.2 post-ER. The most significant increase in post ER score (4.4 to 5), was for the question regarding whether for small group learning to work, students needed to trust and respect each other.

The locally constructed Likert scale on communication showed that 100% of students strongly agreed /agreed that communication skills were crucial to success in the ER; all team members were required to communicate to succeed in the ER; they felt comfortable to communicate with all team members irrespective of perceived hierarchy during the ER; ERs lend themselves well to improving communication skills; and that their communication skills were improved by the ERs. These results are pending further analysis to assess the fields which may be statistically significant.

Discussion Our findings suggest that students have improved their leadership, teamwork and communication skills. They also appear to have developed more positive attitudes to different professions and are thus more prepared for practice. This study adds further weight to the evidence that ERs are beneficial in improving student's abilities to meet their required GMC 'Outcomes for Graduates' with specific regard to leadership, communication and teamwork.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 090
The Misdiagnosis of Myocardial Infarction in Female Patients: Are Medical Educators Unintentionally Perpetuating Health Inequalities?

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Background A recent British Heart Foundation (BHF) briefing raised concerns that female patients who have a myocardial infarction (MI) receive poorer care and have poorer outcomes than male patients. Female patients were 50% more likely to be misdiagnosed than males [1]. The BHF highlight the potential role of public perception of MI as a 'man's disease' leading to reduced recognition of symptoms of MI [1]. We considered if this perception can be demonstrated in medical education. When designing educational materials, unintentional biases can be introduced when selecting patient protected characteristics for inclusion [2]. The educator's depiction of the patient population can deliver unintended messages to learners which contribute to a 'Hidden Curriculum'. A lack of awareness of this could lead to reinforcement of misconceptions with potential impact on patient care [3].

We aimed to investigate the depiction of the 'typical patient' with MI in Medical Education resources at NHS Lanarkshire (NHSL). In doing so we aim to also raise awareness of unconscious biases in Medical Education.

Methodology To identify resources where the aim was to teach about myocardial infarction we conducted a search of the shared "R" drive for NHSL's Medical Education Department using the following search terms: "ACS," "acute," "cardio," "cardiac," "chest pain," "coronary," "ECG," "heart," "STEMI," and "NSTEMI," "ischaemic heart disease," "IHD," and "MI". Any duplicates or resources not created by staff at NHSL were excluded.

Two researchers independently coded for the following characteristics: gender and diagnosis. They then discussed any discrepancies between their data - these were over ambiguity over diagnosis (if not explicitly mentioned in the resource) or due to human error in data collection. Agreement was reached in every case. Data was then analysed for correlations between gender, and diagnosis of patients represented in teaching materials.

Results The initial search revealed a total of 832 files on the R drive. After inclusion and exclusion criteria were applied, 31 files remained. There were analysed by researchers for case scenarios of patients with ACS: a total of 29 patients were identified. Our results showed that of the 29 patients, 5 (17.2%) of these were female, and 23 (79.3%) were male; one patient was given as either male or female.

Of the diagnoses recorded, 17.2% were coded as ST-elevation myocardial infarction (STEMI), 37.9% as non-ST elevation myocardial infarction (NSTEMI), 13.8% as ACS and 10.3% as myocardial infarction. The remaining 20.7% were either not clearly specified, or had a diagnosis such as unstable angina, VF arrest or acute ischaemic heart disease.

None of the patients diagnosed with a STEMI were female; 100% of female patients portrayed in resources had a diagnosis of NSTEMI.

Discussion Our findings show that the majority of patient cases used in MI teaching resources at NHSL are male. One might expect a higher representation of male patients given that it is widely known that male sex is a risk factor for ischemic heart disease [4]; in the UK incidence of MI is approximately 1:3 for female:male patients [5]. However, even considering these figures, female patients remain under-represented in the teaching materials analysed. By underrepresenting a patient group that is known to suffer adverse health outcomes, it is possible that we could unknowingly be perpetuating a health disparity. By developing our understanding of this "Hidden Curriculum," we have the potential to reduce these inequalities and improve patient outcomes.

Going forward, there are plans to design an intervention to help medical educators develop an awareness of their own unconscious biases when designing educational material.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 091
The use of high fidelity simulation to enhance student learning and experience

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https://youtu.be/pkfkeDnfiNQ

Background The video abstract explores the 'live' play major incident simulation that took place in September 2019. Seventy-seven third year medical students were included in the two hundred and fifty emergency service personnel to create a safe learning environment that enabled the students to explore and learn. Their experiences were analysed to demonstrate the benefits of this teaching method for their education and experience.

Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 092
The value of 'Psychological Contracting' with new medical students: co-production of a student guide to learning medicine

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Background The growing need to develop a more robust student experience in higher education generally, and medicine specifically, is becoming an issue of strategic importance. The rise of the Teaching Excellence Framework (and metrics such as the National Student Survey), burgeoning needs such as widening participation and the continuation of the workforce crisis has brought the importance of the student experience to the fore, and yet what we mean by 'the student experience', what real impact it has on learning or training, or how we benchmark quality or measure improvement in this elusive construct remain underexplored areas in current research.

The term 'Psychological contract' which was foregrounded in social exchange theory has become a staple in HR and employment literature and practice (Guest and Conway, 2002), and expounds that the tacit expectations that people have before and upon starting employment go on to have a strong bearing on their levels of happiness, motivation and performance in work (Rousseau, 1995). Breached expectations and contracts can cause withdrawal of effort, and foster negativity towards the employer (Morrison and Robinson, 1997). In re-evaluating the student experience, we decided to apply this construct with respect to negotiating students' expectations of learning medicine before they started, through the production of a Student Guide to Medical School.

Methodology To foster partnership and triangulation of perspectives, a first year student from Warwick Medical School was recruited to our first medical education internship in order to gain wide-ranging student input into the guide. A Qualtrics

survey (completed by n= 57 students) was used to explore how students perceive that they learn best in relation to different subject areas (e.g. biomedicine, clinical skills, anatomy) in addition to what their perception was of existing support structures. This was then calibrated by the student lead with input from key staff members and synthesised into a 23-page Student Guide.

Results The Student Guide produced, outlines expectations for learning engagement as well as ways to approach learning medicine from a near-peer perspective. The purpose was to 'nudge' students through making them aware of the pedagogical intent behind the use of certain modes of teaching (e.g. Case-Based Learning), in addition to triangulating expectations through sharing students' lessons from their own approach to learning. The guide was sent to all new students joining in 2019 and the initial feedback was that this was helpful and a useful resource to their learning (n=193). Anecdotal impacts have been observed, such as through improvement of formative assessments and stronger engagement with peer-teaching sessions. Faculty have noticed that students appear more confident in approaching them for answers to questions and are seeking support early. Whilst this is one small intervention, if Psychological Contract literature is to be borne out, expectation setting at outset can have wide-ranging impact across the duration of their studies.

Discussion Staff and students have perceived value and derived practical utility from this Student Guide. This emerging concept has raised questions about what the student experience is, the role expectation negotiation should play in students' learning and the intersection of between what learning should be versus what it is. For example, staff and students disagreed around what should be published in the guide around 'best approaches' to learning specific elements of medicine, and who is right? If students tell us that what we are attempting (however pedagogically and empirically sound) is not working, then surely (to paraphrase Einstein) therein madness lies in failing to adapt our approach? Psychological Contract thinking emboldens partnership working, dialogue and progressive and continuous negotiation of these 'contracts', particularly around challenging the two-way expectations that staff and students have of each other.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 093
Uncharted territory: How undergraduate health professions' students experience and respond to uncertainty

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Background Research indicates that an ability to cope with or "tolerate" uncertainty is an important attribute for health professionals, with benefits for their own health (i.e., reduced burnout, reduced work-related stress), and those of their patients (i.e., better communication, reduced medical error) (Bovier & Perneger, 2007; Cooke et al., 2013; Iannello et al., 2017).

As a result, there have been calls for greater attention to uncertainty within health professions' education (Simpkin & Schwartzstein, 2016; Ofri, 2017). This scoping review sets out to explore the literature, and create a map from which educators and researchers can better understand the current landscape around uncertainty in health professions' education.

Methodology This scoping review followed Arksey & O'Malley's 6-stage framework (2005), and integrated the methodology recommended by the Joanna Briggs Institute (Peters et al., 2017). Using a structured search strategy under the guidance of an academic librarian, the following databases were searched: MEDLINE, Embase, ISI Web of Science, PsycINFO, and CINAHL. In addition, a hand search of 14 health professions' education journals (including, but not limited to, Academic Medicine, BMC Medical Education, Medical Education, Medical Teacher, The Clinical Teacher), and reference lists was carried out. The reviewers used EndNote X7.8 (Thomas Reuters, New York) to import and organise the citations of studies yielded from the search strategy.

Results Through database searching, 4,641 articles were identified, and the hand search yielded an additional 97 articles. Once duplicate articles were removed, this resulted in 3,332 articles. Following title and abstract screening, 814 articles were subject to full text review, and 78 articles were chosen for data extraction. Preliminary findings reveal that articles tended to relate to study populations that concerned one (86%), or multiple professions (14%). Of the uniprofessional groups, the majority of papers related to research involving medical (67%) and nursing (27%) students, with the balance examining dentistry, midwifery and veterinary students. Initial findings indicate that undergraduate health professions' learners interact with uncertainty in somewhat predictable places, categorised by their nature (e.g., problem-based and workplace-based learning), and/or timing (e.g., entry into the university setting, transition into clinical work placements).

A variety of teaching and learning strategies, including simulation, mentorship and interaction with the humanities were highlighted as potential opportunities to support learning around the management of uncertainty, for undergraduate health professions' students. In addition, the review revealed important considerations for educators in scaffolding such learning.

Discussion This scoping review aims to map a preliminary landscape around how undergraduate health professions' students learn to engage with uncertainty in their professional practice. It is considered that this review highlights concepts, tools and strategies which may be useful to health professions' educators and will inform future research in this domain.

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Theme: Disrupting Medical Education

Accepted as: Short Communication

Paper no. 094
Virtual Reality (VR) Technology use in General Practice (GP) Training

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Background Virtual Reality (VR) is a form of simulation consisting of the development of a computer generated three-dimensional (3D) environment which can be interacted with to perform actions [1]. These interactions occur instantaneously in a time efficient manner making the learning more realistic [2]. Healthcare professionals are continually mandated to partake in training throughout their careers to uphold the highest of professional standards in providing competent and safe care to their patients [3]. VR has been used as a learning tool to enhance safety procedures in the airline industry [4]. The use of VR has the potential to create novel rare situations difficult to re-create in real life such as the optimisation of the emergency services response in the event of a national disaster [5]. Within healthcare, VR has been used principally in the training of practical procedures in secondary care [6-9]. Malpractice studies cite deficiencies in the management of acute emergencies as the major cause of medical error in primary care [10]. Acute emergencies often present earlier with undifferentiated symptoms to primary care as compared to secondary care in the disease trajectory [11]. Given this differing presentation a specific requirement for training in the management of acute emergencies arises for those working in primary care.

No studies exist researching the use of VR as a learning tool in the management of acute emergences in General Practice [12].

Methodology Research Question: What perceptions do GP educators have on the use of Virtual Reality (VR) Technology as a learning tool in the management of acute emergencies presenting in General Practice?

Methodology: Qualitative research with a phenomenological study design was conducted. 10 participants purposively recruited were GP Trainers in the Luton GP training scheme. Data was collected using face to face semi-structured interviews lasting approximately 30 minutes which were audio recorded and self-transcribed. Ethical approval was gained from the Institute of Health Research Ethics Committee at the University of Bedfordshire. Data was analysed using thematic analysis.

Results The themes of educational principles of VR as a learning tool, VR use in emergency and non-emergency GP scenarios and organisational implementation of VR were identified. Participants identified the strength of VR as a learning tool in its unique ability to create novel scenarios. VR being synonymous with gamification of education, its use for patient education and the financial investment in VR technology as a challenge to its implementation were articulated.

Discussion The finding that VR as a learning tool should include provision for learner feedback, integration into the overall curriculum delivery and for it to be tailored to the variation of learner competency levels is consistent with existing literature [13]. The view that for VR simulation activity to be utilised it must be accessible in terms of its location and for formal time to be allocated as per the trainer and trainee schedule has been previously noted [7]. Caution needs to be exercised in assuming simulation leads to improved clinical practice as for some trainees the simulated activity becomes their self-referential reality whereby learners learn to simulate rather than reflect on the learning to change clinical practice [14]. The challenge of using VR or artificial intelligence for communication skills training pertains to the difficulty in replicating the spontaneity and nuance of communication exhibited by simulated actors [12, 15]. This study is limited to the views of GP trainers in a single GP training scheme in the UK using semi-structured interviews as the single data collection tool.

GP educators identified various scenarios in which VR could be utilised as a learning tool to enhance GP training. Consequently, the development of educational resources using VR technology is recommended.

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Theme: Disrupting Medical Education

Accepted as: e-poster

Paper no. 095
Clinical Reasoning and Radiology : The Untapped Potential for Medical Students

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Background Modern clinical medicine is increasingly reliant on Radiology. It is important we teach our students the role it plays in the diagnostic process.

Almost every condition the medical student is expected to master has a medical image to accompany it, but it should not be the default investigation for every patient encounter. The combination of Clinical Stories with Radiology is a potent way to teach Clinical Reasoning.

We present our initial experience using Storyline© to interactively guide the student to work through a patient's presentation, clinical findings, investigations, imaging (where appropriate!) and results to arrive at a diagnosis.

Methodology A series of "real life" Neurological cases were used to create an interactive online study resource with Storyline© to enhance and augment the Neurology Clinical Block.

The student chooses the information they want eg clinical history, physical examination, as well as the next appropriate management step or investigation. They are guided through the diagnostic process with regular decision making - evaluating each test result and how the differential diagnosis is changed as a consequence. The choices they make is given immediate feedback.

The key investigation is CT brain. Students can take their time, reviewing the entire scan, repeatedly if required. They are then asked what it shows and what it mean.

Each case concludes with clinical management choices (why), a summary slide of the condition and 3 reflective questions.

These initial cases were all constructed together by a student and faculty member.

Results This learning resource has been extremely well received by students. Feedback comments include : "Good thinking about how the history/presentation can change when different or new factors were added into consideration"; "Good systematic approach to learning"; "Relevant to real cases + ILOs"; "Easy to know where to improve"

Discussion Clinical Reasoning has been linked with Patient Safety and is now mandated by the GMC to be included explicitly in the medical school curriculum. While it is ubiquitous to how doctors perform their job and arrive at the diagnosis, there is as yet no consensus on exactly how best to teach this important subject.

We present our initial experience of using Radiology together with computing software to produce an online, interactive learning resource to teach Clinical Reasoning. It has proved extremely popular with the students. The student co-author found the process very fulfilling - both in terms of medical education while preparing each case as well as in producing material for her peers. In addition, the addition of a student voice in the making of the material more relevant and student-centric.

Conclusion:

Radiology should be at the centre of teaching Clinical Reasoning to medical students. It can be harnessed to teach clinical reasoning in a fun, interactive way without excessive cognitive load.

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Theme: Disrupting Medical Education

Accepted as: e-poster

Paper no. 096
Escape room simulation: synthesising educational theory

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Background There is an increasing body of evidence suggesting escape rooms can be effective educational tools.(1–4) Escape room simulation (ERS) is a fusion of educational escape room and simulation. ERS can be used to teach students how to manage patients with life-threatening conditions. The aim of this study was to investigate what educational theories support ERS as a teaching method and explore the educational theories supporting a trauma call based ERS carried out by medical students and foundation doctors.

Methodology A trauma call based ERS was designed and then completed by two groups of fourth year medical students and one group of foundation doctors. The ERS involved a series of six linear puzzles; each designed to reveal important information and guidance on the management of trauma patients. The puzzles unveiled a narrative of a patient's journey through a trauma call and each puzzle unlocked a piece of equipment to be used in the final challenge, which was a simulated trauma call. The purpose of structuring the session in this format was to utilise the way stories are linked to memory by allowing the students to absorb the narrative of a similar trauma call through the escape room and then apply what they had learnt to the simulation, reinforcing the learning through repetition.(5) A "Google Scholar" search for peer-reviewed literature on educational theories was performed to investigate whether the practice of ERS in this format is supported by the literature.

Results Results from the search showed that ERS utilises multiple educational theories. Behaviourism is employed, as each puzzle that is completed unlocks a toolbox containing a "prize", thus rewarding the candidates.(6) There is constructivism as the participants build knowledge of how to manage a trauma patient as the puzzles are solved and build on pre-existing knowledge.(7) Social learning was observed to take place as the more experienced students imparted knowledge to others during the puzzles and the final scenario, also demonstrating Vygotsky's Zone of Proximal Development.(8) By treating the patient effectively within the final scenario, the candidates displayed an increased level of competence within Miller's pyramid.(9)

Discussion ERS synthesises and is supported by multiple educational theories. It is a teaching method far removed from old-style didactic teaching, disrupting the notion of traditional medical education. The ERS was well received by the students when surveyed after the session. A pre and post session MCQ demonstrated an improvement in student knowledge.

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Theme: Disrupting Medical Education

Accepted as: e-poster

Paper no. 097
Human Flourishing in Medical Education

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Background The concept of 'flourishing' originates in Aristotle's Eudaimonia and refers to a way a person lives their life ethically to meet its purpose, or 'telos'. It encompasses both wellbeing and ethical virtue(1, 2). Scholars in virtue ethics in medicine argue that it is a key responsibility of doctors to pursue the 'good of health' by the co-creation of flourishing narratives with patients through medical encounters. The cultivation of these skills is a form of phronesis, practical wisdom grounded in ethical virtue(3).

Professional documents such as 'Good Medical Practice' emphasise the importance of virtues such as honesty and integrity, as well as physician health, which relates to wellbeing(4). As such it demonstrates the importance of fostering flourishing practices in medical professionals. The General Medical Council's (GMC) report 'Caring for Doctors, Caring for patients' highlights the urgent need to support the wellbeing of doctors and medical students in modern medical practice. Mental health issues are the most common declaration to the GMC in UK Medical Graduates applying for registration, reported by 8% of all applicants(5). A British Medical Association review of the mental health of the medical workforce also found that 40.3% of the 1,400 medical students sampled currently suffered depression, anxiety, stress, emotional stress or a mental health problem affecting their study(6). It is difficult to say whether this is directly caused by medical training or other underlying problems but it emphasises the importance of supporting students in flourishing. However, there is a dearth of evidence exploring the role of 'flourishing' in medical education. In our research we will explore undergraduate medical students' experiences of flourishing.

Methodology A literature review of empirical research on flourishing in educational contexts will inform our research. We are exploring students' experiences of flourishing in medical education through in-depth narrative interviews with medical students at Barts and The London School of Medicine and Dentistry. Narrative interviewing helps us to understand the human experience(7). We are adapting Wengraf's Biographic Narrative Interpretive Method (BNIM) and will interview 6-8 students. BNIM interviews start with a Single Question aimed at Inducing Narrative (SQUIN) from which tailored follow up questions are crafted. This allows the interviewee considerable scope to shape their biographical account to include what is most important and meaningful to them (8, 9). We believe this is the first research study to adopt the BNIM method with medical student participants and as such presents an opportunity to explore the value and challenges of this methodological approach in this context. Our transcribed elicited narratives will be thematically analysed with close attention paid to the language students use to frame their experiences of flourishing.

Results Our empirical work is in progress and will be completed by June 2020. Our pilot interviews suggest that the BNIM approach allows rich narrative expression of students' lived experiences and offers potential for exploring the many meanings of 'flourishing' amongst this group. In this presentation we will share the key themes and 'storylines' that emerge from our analysis. We will interpret these findings with reference to the existing theoretical literature and consider how our findings can inform current debates on student wellbeing in educational policy and practice, including curriculum design and student assessment.

Discussion 'Caring for Doctors, Caring for Patients' states it's not only the responsibility of students but also the medical school to support student wellbeing(5). By exploring students personal experiences we will unpack what flourishing means to them and the potential implications for the development of learning environments that support flourishing.

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Theme: Disrupting Medical Education

Accepted as: e-poster

Paper no. 098
Instilling reflective practice – The use of an online portfolio in innovative optometric education

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Background At UCLAN we are breaking the mould and have developed a blended learning MSci optometry programme which is the first blended learning course in optometric education in the UK and the first to use a practice based online portfolio.
Optometry has traditionally been taught as a 3-year undergraduate programme. Upon successful graduation, students are required to complete a year in practice and meet the General Optical Council's (GOC) "ability to" core competencies. However, a recent study by the GOC found that 76% of students felt unprepared for professional practice with insufficient clinical experience and in response, the GOC is currently undertaking an educational strategic review.
To ensure the students receive high quality clinical experience in the workplace, we have developed an online logbook and portfolio. Students log their experiences, learning points and reflections. The portfolio is closely monitored both by the student's mentor in practice and by academic staff.
The content and reflections logged by the students then helps to drive the face to face teaching, small group discussions and clinical experiences provided by the university.
Methodology The portfolios were regularly reviewed from the start of the programme to monitor engagement, the range of clinical experience, understanding and student reflection. The information was used to improve and develop the on-campus sessions at the university and on-line learning material. We also reviewed the portfolio reflections to monitor how the on-line learning was being applied to their experiences in practice.
The portfolios were, in addition reviewed at the 3-month point by 4 members of academic staff independently for mid-module formative assessment and feedback. A portfolio marking rubric was developed and all portfolios were assessed independently by two members of the clinical academic staff and a sample moderated by two further markers.
The portfolios will be assessed formatively at the end of the module. The reflections, together with the range and number of experiences will be explored and compared with the student's summative performance in both written exams, OSCE's and continuous clinical assessments at the end of the module.
Results Analysis of the logbook enabled the students to drive the development of teaching clinical skills in the university clinics based on their experiences in practice. Initially, it was clear that many students found reflection difficult and so additional training was provided in the early weeks. Progression of reflective ability was evident and highlighted the use of a portfolio is an effective way to demonstrate learning.
Initial evaluation of the portfolio logs showed evidence that the students had seen a wide variety of clinical cases and pathology from very early on their studies, a far greater number than would be expected with a full-time university optometry course at this stage.
It was evident from the portfolio, that many students were able to integrate actual patient cases and experience with the online lectures. It highlighted common concerns and issues that could be addressed with additional online material or practicals. We also identified experience and keenness to learn in areas not due to covered until later in the course, this resulted in some changes in the order of teaching to enable the students to maximise their learning in the workplace.
Discussion Direct observation of eye disease and clinical cases in practice fosters deep learning and the use of an on-line portfolio can demonstrate that university based learning has been effective and applied to clinical practice. The use of reflection encourages further study and evidence-based practice. A blended learning format should not be seen as inferior to traditional approaches, coterie, the range of pathology seen and learning experiences are greatly enhanced. Continual monitoring of the student portfolios allows the university to tailor its programme to better meet student needs.
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Theme: Disrupting Medical Education

Accepted as: e-poster

Paper no. 099
Into the Wild: A Novel Wilderness and Expedition Medicine SSC

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Background For the past 6 years Swindon academy has run a unique SSC in Wilderness and Expedition medicine for 3rd and 4th year undergraduate students, providing hands on experience of medical care in remote environments. The GMC's 'Outcomes For Graduates' states students must 'demonstrate leadership and the ability to accept and support leadership by others' (1). The GMC guidelines on Good Medical Practice identify 'leadership', 'teamwork', 'situational awareness' and 'problem solving' as key skills required by a clinician throughout their career (2). We feel that experiential learning in the wilderness and expedition environment will promote the development of these skills which they can take forward into clinical practice, as well as provide insight into the huge variety and exciting opportunities that are on offer with alternative careers in medicine.
Methodology While in the UK they undertake preparatory simulations covering trauma assessment and medical emergencies.
Students are then taken in groups of between 12-24 to spend 7 days in La Clusaz in the French Alps, supervised by the Faraway Medicine team, a group of expedition and wilderness medics with extensive experience of providing medical cover in extreme environments. They participate in workshops covering trauma assessment with the C-ABCDE approach, leadership, wound closure and extreme environments. Students work in teams to manage emergency scenarios using high fidelity simulation with moulage to create life like injury, which they come across while trekking through the mountains. They also receive training in managing sports injuries. Feedback is gathered to assess the quality of the teaching provided using Likert Scales (1-5) and qualitative feedback statements are also collected.
Results Feedback from the course (n = 209) was very positive with 98% of students strongly agreeing that they had developed teamwork skills and other skills that would be useful in their future careers, and 92% of students strongly agreed that they had gained confidence in acting in a leadership role. The workshops were very well received with 98% of students rating them as excellent or very good. Of the 132 students attending the course between 2014-2016 – 100% felt they had learned skills they would use in their future careers and that they would recommend it to other students. Qualitative feedback highlighted the positive impact of the SSC with students saying they "thoroughly enjoyed and found extremely useful for confidence as a future doctor", it was the "best week of medical school" and thanks for "reigniting my enthusiasm in medicine". They really value 'learning how to deal with real life scenarios and the importance of teamwork and leadership'.
Discussion The wilderness and expedition SSC is now firmly established and has exposed students to the world of extreme medicine. We know it is not only a fun adventure for the students but also improves confidence, team working and leadership skills which they can build upon as they embark on their medical careers in the NHS.
It has encouraged students to consider traditional but undersubscribed careers like emergency medicine but also reveals the vast opportunities on offer with their medical degree, which can take them all over the world, to the highest mountains and deepest jungles. Demand for qualified expedition medics is growing as more adventurous and far-reaching expeditions reach the holiday market (3).
The opportunity to do something 'different' gave the students refreshed enthusiasm and motivation for medicine. We feel the transferrable skills learnt on this SSC have better equipped them for their work as NHS doctors but has also ignited

a desire to learn more about medicine in extreme environments and the highlighted the wonderful opportunities that a career in medicine can offer.

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Theme: Disrupting Medical Education

Accepted as: e-poster

Paper no. 100
Out of this world: The utility of an innovative virtual learning experience in teaching medical students about delirium

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Background Delirium is a serious, common and potentially preventable condition which is increasingly prevalent amongst elderly patients in hospital(1). Given how it can implicitly alter a patient's experience of reality it can be a difficult condition for even experienced staff to empathise with(2). Given this, it is clearly an important topic for medical students – but while 79% of medical schools teach relevant knowledge and skills, only 8% have intended learning outcomes relating to attitudes(3).

Here, we have trialled an innovative teaching programme based around a virtual computer-based tool – 'the Delirium Experience'. Online learning has been found to be beneficial in teaching on delirium(1,4). The delirium experience is an interactive programme designed to allow students to experience delirium from a patient's perspective, with the objective of encouraging understanding and empathy with patients they encounter on the wards. It also incorporates technical knowledge and skills. The programme was developed and supplied for this purpose by IJsfontein, a company specialising in digital learning software(5).

Methodology We ran a series of sessions on delirium with groups of fourth year medical students throughout the academic year. All students were undertaking a module in Elderly Care at the time, and these tutorials took place within the first week of their placement so all students would be at similar levels. We compared standard lecture-based tutorials with the 'Delirium Experience'. Before and after each session we collected standardised feedback from each group on their levels of confidence across various aspects of delirium – particularly focused around understanding and empathy with patient experiences. The session itself was structured along the lines of Kolb's stages of experiential learning(6). We also ran focus groups with participants from both arms to pick out further themes from their experiences.

Results Standard tutorials were run for 9 students, and separately trialled the 'Delirium Experience' with 10 students. Students were randomised into each group. Both sessions were designed to contain similar amounts of information, aiming to make the method of presentation the principal distinguishing feature. Pre-session results showed a variable baseline of knowledge, but most students lacked confidence in the area and significant anxiety regarding delirious patients was reported.

Post-session results to date are encouraging – with statistically significant increases in self-assessed understanding and empathy across both groups. This is significantly more marked in the groups who used the 'Delirium Experience'. A focus group involving those who participated fed back that they felt it aided learning and understanding in a different way to traditional teaching, and that the found experience was valuable. Additionally, when described to the focus groups who received standard teaching only, they felt it would provide a valuable different perspective.

Further sessions are organised with a further 10 students for each group, for a final total of 39 students across the groups.

Discussion We believe these results provides good initial evidence that innovative methods such as the 'Delirium Experience' and other virtual computer programs may have utility in increasing understanding and empathy relating to delirium amongst medical students studying Care of the Elderly. Further study in larger groups and different sites would be advised to confirm this, and this method could also be used to look at teaching other topics involving altered experience – such as dementia or psychosis. Further work could look to measure patient feedback or clinical outcomes for more objective evidence beyond student self-assessment. Further study could include current junior doctors or allied health professionals.

Overall, this is a novel teaching approach which provides innovative opportunities for students to learn about delirium from a different, patient-focused perspective.

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Theme: Disrupting Medical Education

Accepted as: e-poster

Paper no. 101
Service Learning : keeping it win/win and avoiding the snake pits

Author(s): Rachel Lindley
Corresponding Author institution: University of Manchester

Background Service Learning is a well established concept in education whereby participants combine academic learning, community involvement and practical experience. Numerous benefits have been recorded including improving students' academic learning and success, enhancing students' personal development, furthering students' social and intercultural understanding, strengthening students' career development and nurturing students' social/civic/ethical responsibility. A critical review of the pedagogy and delivery methods surrounding service learning projects raises concerns around ethics, power differential and social responsibility.

Three targets were noted for our medical programme in Manchester - 1 understanding real patients lived experiences, 2 developing teaching skills and 3 supporting young people with anxiety and coping skills. In order for healthcare students to gain holistic understanding of patients lives, it is important that they leave the safe haven of the campus life and go out into their local communities. Within our programme, we also recognised the power of peer:peer and near peer teaching, thus the need for our students to be practically skilled in how to teach from an early stage of their medical careers. Increased anxiety in young people, both in schools and Universities has been noted in national data and local direct experience.

With these drivers in mind a project was designed for medical students in Year 1 and 2 to teach a lesson on worry and relaxation in local secondary schools.

Methodology The project was evaluated qualitatively and quantitatively from the perspectives of the medical students, school students and the supporting lecturers.

Results Early results suggest benefits and potential challenges for all participants including medical students, school students and supporting academic staff. Evaluation data has been collated and will be presented in more detail. Project design, plan and management will also be shared.

Discussion Designing complex real world teaching experiences for healthcare students is not without challenge. Overall benefits seem to outweigh the risks and harm. There is significant risks of miseducative learning experience which undermine the planned outcomes. These risks of potential harm should not be underestimated as they may cause students to avoid teaching responsibilities and develop or entrench negative views on local populations of young people.

Risks can be mitigated by e.g. specific content developing medical students teaching skills, briefing before and de-briefing after the learning experience, long term commitment to meeting local schools healthcare needs.
Service learning presents a vital route for learning for all healthcare learners, but risks need to be considered to avoid harm.

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Theme: Disrupting Medical Education

Accepted as: e-poster

Paper no. 102
Sharp Scratch: The BMJ Student podcast shining a light on the hidden curriculum

Author(s): Anna Harvey, Laura Nunez-Mulder, Chidera Ota, Declan Murphy, Ryhan Hussein, Duncan Jarvies, Dom Byrne, Paul Simpson
Corresponding Author institution: The BMJ / King's College London

Background The hidden curriculum of medicine is the framework of customs, culture and unwritten rules that govern how medical students and doctors behave and interact.[1] The hidden curriculum has traditionally been 'taught' implicitly through example.[2] Some research has suggested that medical students would benefit from more explicit teaching of the hidden curriculum.[3]

Methodology In 2019 BMJ Student launched a podcast, Sharp Scratch, which addresses the hidden curriculum. Each episode brings together medical students, junior doctors and experts to provide practical and experiential advice. Topics from the first season include surviving a night shift, dealing with death and dating as a new doctor.

The podcast medium was chosen for several reasons:

-They are relatively cheap to produce, so the resource could be made available for free
-Podcasts can be listened to anytime and anywhere, so are good for students and juniors with varying and busy schedules
-The medium allows space to explore ambiguity and uncertainty in a way that written material cannot
-The ability to build 'parasocial relationships' with listeners, inviting them to feel part of the podcast team

Uniquely Sharp Scratch is fully run and editorially directed by students and junior doctors. Experts are invited into the student space, which flattens the hierarchy and allows natural conversations and reflections on tricky topics. This means students and juniors are in charge of the topics that are covered, drawing on their own experiences and those of their peers and colleagues, ensuring the topics are relevant and of interest. The panel was intentionally selected to be from diverse backgrounds and from across the country. Guests are sourced nationally and internationally.

The podcasts are published across all major platforms biweekly.

Results As of January 2020 19 podcasts have been published. Across the 19 episodes we have had over 60,000 listens. Our top episode has had over 5000 listens.

The podcast has had a positive reception, gaining 5 star reviews in the last eight reviews on Apple podcasts.

Listeners' comments include:

"Each episode is intentionally practical, as compared to only teaching what should be best practice - and each episode has "practice-changing" pointers. Bite-size, easy to listen - I wish I'd listened to this before starting clinical years…"

"The topics are very relevant and I wish I knew about them earlier on in medical school."

"Good to hear fears we have as medical students openly discussed."

"This podcast has been brilliant to give an insight to medical school as well as life as a junior doctor with all the topics that aren't normally talked about."

Students and juniors have also positively engaged with the podcast on social media. Some comments left on Twitter include:

"This is absolute gold. Will be recommending @BMJStudent #sharpscratch to 5th year medical students @QMULBartsTheLon when I teach on managing aggression & violence. Fantastic resource for starting discussions on hidden curriculum"

"Enjoyed this weeks podcast, really interesting hearing other's opinions on money management as a medical student"

The podcast has also been shortlisted for a Publishing Podcast Award.

Discussion Sharp Scratch has been established as an innovative and successful resource for exploring the hidden curriculum, evidenced by the levels of engagement with the podcast through listens, reviews and social media interaction. Future research might include qualitative analysis of what listeners learn from the podcast and why they find the resource so valuable. Future marketing efforts will aim to ensure the podcast is well known by medical students across the UK, and increasingly internationally.

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Theme: Disrupting Medical Education

Accepted as: e-poster

Paper no. 103
Surgical Education runs a-MOOC!

Author(s): S Rangarajan, A. Musbahi, Gopinath B
Corresponding Author institution: South Tees Hospital

Background Introduction: MOOCs (Massive Open Online Courses) have been changing the fabric of medical education over the last ten years[1]. They are perceived to be disruptive in their dismantling of the traditional methods of content delivery. Yet, MOOCS have proved to be unprecedented in their reach with some coursed reaching enrollment greater than 100,000[2]. Their offer of remote but flexible access and visually appealing content has been an integral part of their success. OpenupED is a platform that offers MOOCs in higher education to anyone interested and aims to meet their particular learning needs. In this paper we look at the use of MOOCs in a variety of settings in surgical education to assess if MOOCs have a role to play in future surgical education

Methodology Methods: We ran a search across websites offering MOOCs to the public such as Coursera, EdX, Udemy. A modified validated MOOC quality checklist (OpenUpEd) was used to score all the MOOCs into categories such as not achieved, partially achieved, largely achieved and fully achieved. We also looked at logistical parameters such as Country and University of Origin, number of applicants, cost, hours of study and rating and course related factors such as target groups, learning objectives, learning activities and feedback mechanism, workload and assessment.

Results Results: 11 MOOC courses were found from three MOOC providers using the search term "surgery" and "surgical". The average numbers of applicants were 12,410. The average hours of study required were 28 hours. The average rating was 4.7 from an average total of 169 raters. 6 MOOCs were provided free of charge to users. Three were targeted at patients and 3 were anatomy related MOOCs. Courses scored well in terms of online access, certification and workload. Courses scored poorly on interactivity, live events and differing levels of difficulty as well as assessment.

Discussion Conclusion: Not many surgical MOOCs exist and there is scope to expand their use, availability and quality to a variety of groups including patients, undergraduates as well as postgraduate surgical training. Additionally, further research is required to compare MOOCs with traditional approaches to establish their effectiveness as a surgical educational tool.

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Theme: E-Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 104
A Qualitative Exploration to understand the use of Social Media Medical Education for Learning by Emergency Medicine Doctors

Author(s): Sarah Edwards
Corresponding Author institution: Cardiff University and University Hospitals Leicester

Background Medical education is ever changing with greater resources for medical practitioners being available from more sources than ever. We have seen an explosion of free open access medical education resources (FOAMed) available to emergency medicine (EM) doctors. These FOAMed resources are often shared on SM in the name of medical education. Social Media Medical Education is up and coming and its role as an EM education resource is not yet fully understood. The aim of this work is to explore the reasons around the use of SM for learning by EM doctors. Objectives included trying to understand why SM was used for learning and whether it was used continued professional development (CPD).
Methodology 20 EM doctors from all grades, were recruited from one hospital. Semi structured interviews were undertaken to explore reasons behind the use of SM for learning. The semi structured interview followed the principles of a Critical Incident Technique (CIT). CIT allows researchers to examine behaviours in order to understand practices and systems changes that may need to occur because of it. Following this, interviews were transcribed and then thematically analysed. Ethics was granted by Cardiff University.
Results There were 20 participants from all grades. Twitter was the most popular platform; infographics were the most popular resource and 80% spent less than 3 hours per week on SM for learning. Key themes from the thematic analysis as to why EM doctors used SM for their learning included; wanting to keep up to date, ease of access, discussion around topics, bench marking current practice, community and recommendations. Only 10% used SM as part of their CPD and 65% stated SM had influenced their clinical practice.
Discussion With the rapid growth and uptake in SM use for educational purposes, it is vital that educators fully understand how it is being currently used. This will allow us to further grow and develop this exciting area, and maximise the educational impact on its users. Whilst this work focussed on EM doctors other work, with other specialities and groups of healthcare practitioners could help understanding in this area.
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Theme: E-Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 105
Knowledge translation and utilisation of Social Media Medical Education to Clinical Practice

Author(s): Sarah Edwards
Corresponding Author institution: University Hospitals of Leicester

Background We have seen an explosion of free open access medical education resources (FOAMed) on social media. With this, there is increasing use of these FOAMed resources to inform clinical practice for an array of specialities. There is little known about if this knowledge influences clinical practice.
Methodology 20 emergency medicine (EM) doctors from all grades, were recruited from one hospital. Semi structured interviews were undertaken to explore reasons behind the use of social media (SM) for learning and if they used the knowledge gained in clinical practice. Following this, interviews were transcribed and then thematically analysed. This work will specifically talk about the knowledge translation from FOAMed into clinical practice.
Results Of the 20 participants, 6 were consultants, 7 were registrars and 7 were SHO level. 13 of the 20 (65%) participants found that SM had influenced their clinical practice. This was from all grades from foundation year 2 doctors through to consultants. The resources utilised into clinical practice included management options of different conditions, guideline changes and human factors. The resources implemented included the REVERT trial about the modified valsalva manoeuvre for SVT.
Discussion With the rapid growth and uptake in SM use for educational purposes. It has become even more important we understand how this knowledge is being used and implemented. This work is one of the first studies looking at and trying to understand this knowledge translation into clinical practice from FOAMed. If social media is informing our clinical practice, we need to ensure that our students and doctors can distill and critically appraise this information. Further work is needed to see if this is happening with other specialities and in other centres.
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Theme: E-Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 106
Perceptions of mobile learning in medical education: a phenomenological study of medical educators and students at a UK medical school

Author(s): James Thomas
Corresponding Author institution: University of Nottingham

Background Smartphones and other mobile devices have been described as "disruptive" to education as they challenge traditional methods and sources of learning (Ntloedibe-Kuswan, 2014). In 2025 we will see the first students born after the advent of the smartphone arrive at medical school. Mobile devices will be a part of their educational and social experience. Educators need to be able to maximise the opportunities offered by mobile learning as well as meet any challenges.
Evidence suggests that educator and student engagement are crucial to the success of a mobile learning resource (Davies, Mullan and Feldman, 2017). Yet research into the perceptions of medical students in the UK towards mobile learning is limited to evaluation of a specific resource (Cole et al., 2017; Pickering and Bickerdike, 2016; Ravindran et al., 2014). There has been no study performed in the UK exploring the perceptions of medical educators toward mobile learning. The aim of this study was to explore the perceptions of UK medical educators and students towards mobile learning using the University of Nottingham as a case study.
Methodology Semi-structured interviews were conducted with 9 third year medical students, 4 clinical teaching fellows with day-to-day teaching duties and 5 senior medical educators with university roles in curriculum design, e-Learning

and assessment. Following transcription hermeneutic phenomenological analysis was performed for each participant and then each cohort.

Results Participants viewed mobile resources only as an adjunct to traditional teaching. Mobile learning was suggested as being best used for senior undergraduate students or in postgraduate education. Educators do not perceive all mobile resources to be of equal value and are particularly mixed regarding the use of social media in medical education. Students were only likely to use resources if recommended by an educator or peer. Educators were only likely to recommend resources they used themselves in clinical practice. Participants were concerned about fostering a reliance on mobile resources. Only one participant, a senior educator, suggested forming a focus group with students to discuss mobile resources.

Discussion Students value a cognitivist 'scaffolding' approach using mobile resources in relevant situations. Educator recommendation is key for students to choose to use a resource. Educators recommend resources they use in clinical practice. The concept of involving students in the process of creating mobile resources may not be natural to either students or educators.

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Theme: E-Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 107

Revising smarter: Using video conferencing to enhance exam practice for the Primary FRCA

Author(s): Dr Tobias Chanin, Dr Katherine Gillespie, Dr Daniel Wise, Dr Hannah Mulgrew

Corresponding Author institution: Liverpool University Hospitals NHS FT

Background The Primary Examination for the Fellowship of the Royal College of Anaesthetists (FRCA) is a challenging feat of mental endurance. The Structured Oral Examination (SOE) is one of the most feared components, as it requires eloquent and structured answers to difficult questions across the topics of Pharmacology, Physiology, Physics and Clinical scenarios. The key to success in this endeavour is practice.

The Mersey Video Viva Club (MVVC) was developed by a group of post-primary trainees to provide easy, convenient access to SOE practice. Most candidates quote a lack of time and opportunity as barriers to practice.

The MVVC arranges SOE practice with candidates via online video conferencing. The sessions are arranged at a time to suit the majority, facilitated by faculty members, all at no cost to candidates. The MVVC utilises peer to peer learning by randomly pairing candidates, and encouraging them to simulate the examination environment by asking each other questions in the exam format. Candidates can participate from wherever they are at the time of the session, as all they needed is a device with a webcam and internet access.

Methodology The first run of this program was limited to 15 trainees within our region, they were informed via email from the Head of school. In order to measure the effect of the programme, we asked candidates to complete online pre-, interim, and post-programme questionnaires. The primary outcome was whether members felt an improvement in their self-reported confidence (rated 1-10) overall, and in each specific topic-domain. Our secondary outcomes included whether participants found the programme useful, the best aspects of the course, and any unintended benefits.

Results There were 15 responses to the pre-programme questionnaire, and 14 to the post-programme questionnaire. Average number of sessions attended was 4 (range 1-6).

Participants pre-programme confidence ratings, regarding them being able to 'give a good SOE performance tomorrow', were on average 3.66 (range 1-7). The same question in the post-programme questionnaire had an average of 7.35 (range 6-8). Confidence scores in each of the 4 topic-domains improved, with pharmacology the most. 100% of candidates felt this method of revising enhanced their learning, with an overall usefulness rating of 8.5 (range 6-10).

Some of the qualitative comments we received:

'Fantastic way to engage with others who are revising…. Getting feedback from people you haven't revised with and to learn from them is invaluable'

'This was well run, extremely useful, and easily accessible when on call commitments made making time and accessing consultants difficult.'

We also asked for any other unforeseen benefits of the programme, one candidate highlighted that they met a 'viva buddy' whom they had practised with subsequently.

Discussion The MVVC has re-purposed multiple technologies, not originally designed as revision tools, to provide an effective way for candidates to revise for the SOE. We have done this in a way that engages trainees, allows equity of access, and is free at the point of use. We have since expanded the programme nationally.

Theme: E-Learning

Accepted as: e-poster

Paper no. 108

Can educational video be used as a tool to remove perceived barriers to learning in the theatre environment?

Author(s): Nicholas Stafford, Thomas Lyons, Robert Moynihan, Anushka Chaudhry, Christopher Jacobs

Corresponding Author institution: University of Bristol, Swindon Academy, Great Western Hospital

Background The theatre environment is often fast paced and busy, this can create an intimidating environment for medical students to enter. Thematic analysis of a focus group investigating perceived barriers to learning in the theatre environment highlighted the following Key themes:

-Not understanding the logistics of attending theatre is a barrier
-Students worry about not knowing theatre etiquette (where to stand, what not to touch etc.)
-Students are unsure of the roles of the wider MDT
-Students feel they lack certain clinical skills required to help in theatre
-Students would like to have more of a role in the team

An educational video filmed in theatres following a patient as they underwent their anaesthetic and surgery was made. The video focused on addressing the above key concerns with the aim of trying to improve the medical student's experience in theatre.

Methodology A video walk through of a patient undergoing a laparoscopic cholecystectomy was created with particular attention paid to the following:

-Logistics of a theatre day (Timings, appropriate dress)
-Tasks a student can do to help the team for example reading out the WHO checklists
-Manual handling
-Scrubbing up and sterile fields
-Roles of the wider MDT

The video will be shown to half of the fourth year medical students attending surgical rotations in Swindon between January and May 2020 (intervention group) whilst the other half of the year will complete the rotation without viewing the video. All students will complete an intrinsic motivation inventory (IMI) questionnaire at the end of their surgical or anaesthetic placement in order to assess their subjective experience during the placement. The results of the IMI along with the number of theatre sessions attended will be compared to see if the video has had an impact on students experience and attendance in theatre.

Results Feedback from the pilot group who have seen the first edit of the video was positive with students feeling like some of the barriers to learning in the theatre environment had been removed. Results will be available by the end of May 2020 and will be analysed and presented.

Discussion We aim to investigate the use of an educational video as a tool to assist in the removal of perceived barriers to learning in the theatre environment. Once constructed, the video can be shown repeatedly and added to e-learning material to be viewed as many times as a student wishes. This makes it an easily accessible, economical way to encourage medical students to make the most out of the valuable learning opportunities they may otherwise miss out on.

Theme: Equality, Diversity and Inclusivity

Accepted as: Prestigious Oral Presentation

Paper no. 109
Lessons learnt from tackling bias in Higher Education: Navigating white fragility, defensive dialogue and the loss of your own narrative

Author(s): Dr Joseph Hartland
Corresponding Author institution: University of Bristol

Background In 2019 the author ran an ASME pop-up event was titled "Exploring Unconscious Bias: developing teaching for healthcare faculty and students". This 45-minute session was an example of a new training scheme being implemented at the University of Bristol (UoB) Medical School that focused on equipping participants with skills to challenge unconscious bias and microaggressions in their own professional, educational and personal lives. This forms a significant part of the UoB Medical School commitment to addressing the BME attainment/awards gap and improving minority students' experiences.

One year on the author will be expanding on this pop-up event by sharing the lessons he has learnt during a year of training medical school staff. The author will discuss barriers to implementation and solutions others may consider when beginning this work in their own organisation.

The purpose of the presentation is as follows:

- Overview of the current "Bias and Bystander" training being run at UoB Medical School
- Summary of the barriers faced during the first year of implementation
- Discussing solutions to these barriers and how these can be implemented in other settings

Methodology For the last year, UoB Medical School has been providing training on unconscious bias, microaggressions and bystander skills to its staff. These sessions have been well received, with a further study taking place to review the impact on staff behaviour and attitudes. However, this is a challenging topic to teach, one that requires staff to be open to reflection and internal critique.

The challenges that have been faced during this year will be summarised, and the most significant difficulties highlighted for discussion. This presentation will share some of the solutions that have been generated, and these will be discussed in the context of wider educational theory. The primary focus is to consider how a teaching space that asks staff to examine their own internal bias can be made safe but remain challenging.

Results One of the primary barriers that have been encountered is the emotional and defensive response to discussions around bias and discrimination. These emotive conversations occur when staff feel threatened by the topic of discussion, and these behavioural justifications are often difficult to navigate.

One particular and well-recognised response to discussions around white privilege is that of "white fragility", originally coined by Robin DeAngelo and examined in their 2001 paper in the International Journal of Critical Pedagogy (DiAngelo, 2011). It is the specific defensive response that seeks to silence further discussions around individual and institutionalised racist behaviours.

However, defensive responses are not only limited to discussions around race and ethnicity, and the author will share experiences of navigating not only white fragility but other difficult conversations which can hinder the educational purpose of this training.

The final barrier to be covered will focus on the personal cost for trainer running this session. This is especially true when trainers teach about protected characteristics that relate to their own lived experience.

Discussion The purpose of this presentation is to highlight the barriers and solutions that exist when establishing an educational dialogue with staff in higher education establishments to challenge their own, their peers and their institutions' bias. As an out and proud gay man, the author will discuss the emotional burden on those delivering this training when their own narrative is challenged, highlighting the need for a support network for trainers with protected characteristics; be they Queer, BAME/POC, female, disabled or any other protected characteristic that shoulders this work

Closing this presentation the author will seek to inspire a conversation about how institutions can consider the wellbeing of their staff tackling these issues, presenting some ideas that have been generated through the last year of lived experience delivering this training.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Prestigious Oral Presentation

Paper no. 110
Optimising Simulation based medical education for differently-abled healthcare professionals

Author(s): Dr Nicholas Tovell, Dr Wesley Scott-Smith, David Halliwell
Corresponding Author institution: Brighton and Sussex Medical School

https://youtu.be/N9yuTMlFYVc

Background Simulation based medical education (SBME) is used extensively to train both undergraduate and postgraduate healthcare professionals

There is a paucity of evidence regarding the delivery of SBME to differently-abled healthcare professionals.

As a partially sighted anaesthetist, educator and SBME provider, I want to share my experiences of the challenges this modality of medical education can exert on differently-abled candidates.

I will propose a different protocol for disclosing disability in preparation for SBME activities and discuss reasonable adjustments for disabled candidates.

Theme: Equality, Diversity and Inclusivity

Accepted as: Prestigious Oral Presentation

Paper no. 111
Riding two horses: Gender inequalities, enablers and barriers to careers in clinical academia

Author(s): Gabrielle Finn, Amelia Kehoe, Paul Crampton, Paul Tiffin, Jimmie Leppink, John Buchanan, Brian Nattress, Jess Morgan, Dr Abisola Balogun
Corresponding Author institution: Hull York Medical School

https://youtu.be/PA0P6xRc5Yk

Background This study utilises 80 semi-structured interviews with doctors and dentists, from academic fellows to deans, to explore barriers and enablers to clinical academic careers. Inductive and deductive thematic analysis is ongoing. To date, participant discourse has centred on process driven barriers, identity, bias related to protected characteristics and highlighted examples of reverse discrimination. This research provides a vehicle to support minority groups to get off the sticky floor and smash through the glass ceiling.

Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 112
A narrow approach to widening participation? A critical analysis of "impact" in relation to Widening Participation efforts in medicine

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Background Widening Participation (WP) and Widening Access (WA) have become important matters over the decades for higher education, endeavouring to widen opportunities for students from disadvantaged backgrounds. This holds significance within medicine considering the diversifying patient-population, that has not yet been reflected within the practicing-workforce or student-population. Despite efforts towards improving this and increasing levels of WP activity, there is limited evidence-based knowledge as to how much of an effect this work is having. Our review further explores this.

Methodology A critical literature analysis was completed, ensuring a depth of study in relevant literature as well as a more comprehensive overview as to impact. Online searches with selected key words plus Boolean operators were conducted across one medical and 8 educational-databases, alongside important documents that had not entered commercial-publishing (known as "grey-literature").

Results Analysis exposed sporadic levels of impact within WP and it became clear there was a multifactorial foundation to this issue. The use of terminology with inconsistent definitions, even between well-established institutions, has led to

ambiguity and the interchangeable use of the terms WA and WP. This is despite WA actually being a singular division of the WP initiative. An absolute assessment of impact from WP or WA strategy cannot be rationally elucidated when there is no universal definition of what constitutes them. Another aspect lies in the lack of parity and clarity on choice of WP focus which results in the current discrepancy of efforts towards known WP barriers. This has led to a skewed interpretation of WP intervention and disproportionate focus on the issue of socioeconomic status, discounting other barriers such as ethnicity, disability and gender. There is also insufficient research and inadequate measurement of the WP initiative effects on individuals in and beyond medical school.

Discussion Despite substantial contact, there is a lack of evidence supporting positive long-term effects. Most likely due to misalignment of core ideals constituting WP and WA, along with limited literature availability, there becomes insufficient grounds to express any more than minimal impact produced by WP in medicine. This study calls for policy-makers to provide a clear, inclusive definition of what WP and success is, which would allow the community to conduct the much-needed empirical, longitudinal research. There should be a more equitable concentration of efforts towards barrier intervention and consideration of intersectionality of issues such as class, education, culture, sense of self and social identity. There also needs to be increased efforts in recruiting a more diverse set of applicants at the most initial stage to avoid continued selection from only the traditional applicant pool. With recent developments such as the new guidance on disability of medical learners and trainees from the GMC these improvements could work in conjunction with regulatory body goals.

After project completion these findings were used to source the ethos of the WHAM (Widening Healthcare and Medicine) group at the University of Warwick and allow a different strategy to widen the access pool as well as target participation in the element of WP. For example, the WHAM opening event was based on medical entrance exams and targeted solely graduates, in design, allowing for WP intervention at both the applicant (access) and student (participation) level. This was regarded with positive feedback from participants and continued events. WP is of critical importance to the medical sector not only in education but also practice, and as such the leading voices in medicine need to be aware of its current state. By doing so we would fundamentally serve the health of future populations, by enabling a wider populace to not only enter medicine but participate and flourish within it.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 113

Am I one of you? Exploring how being from a widening participation background influences medical students' perceptions of themselves

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Background Studies of pre-university students suggest that socio-economic inequality initiatives to increase the number of widening participation (WP) applicants to medical schools are unlikely to succeed, unless medical schools acknowledge 'the close link between self-esteem, personal identity and particular aspects of working class culture [1].' The Royal College of Psychiatrists writes that 'the prevalence of mental health problems in students will increase to coincide with the rise in WP students [2].' Health Education England has also stressed the importance of mental wellbeing in NHS employees in a recent 2019 document [3].

There are numerous studies of students' self-perception, self-esteem and personal identity at a pre-university level [1,4], but few addressing their time at university. This study was designed to explore the meaning participants' derive from experiences once at medical school and whether this impacts their wellbeing.

Methodology This is an interpretative study using the phenomenological methodology of IPA. Medical students who fit the Newcastle University WP criteria were purposively sampled and six 4th year medical students interviewed using semi-structured interviewing. The data was analysed through sustained engagement with the text [5], viewing the data through a psychology lens. Themes were extracted and iteratively connected and clustered for the first participant, before moving on to subsequent interviews [5]. NVivo was used for data organisation.

Results Three overarching themes emerged from the data; 'self-perception and forming relationships,' 'perceptions of others and sense of injustice' and 'perceptions of academia.'

Within the first theme; sub-themes of pride, relationships and mental wellbeing emerged. Within relationships, the majority of participants reported seeking relationships with students from similar backgrounds to themselves, other participants describe adapting to the "norm" of medical student culture. Several participants volunteer to work with WP students to "level the playing field." Strong themes of lack of belonging and poor self-esteem emerged within the mental wellbeing sub-theme, with a participant feeling "bottom of the pack." Participants perceived themselves to be more resilient than peers, partly due to overcoming "setbacks."

Within the second theme, participants described a sense of injustice. Several participants identified additional stressors that they felt their peers did not have; such as having part-time jobs or being a carer. A theme of resentment emerged in which participants described having less academic support, being unable to socialise in the same places due to cost and having to limit their electives. "Yes, I get really frustrated when they [non WP students] get everything given to them and I don't, and I work so hard, and it really really winds me up, it really does, and when they don't appreciate that some students don't have the same background as them either."

The third theme pertains to the participant perceptions of themselves academically. Several participants describe struggling in the non-clinical years, whereas in the clinical years; "that gap does close a little bit" and "now I've got the advantage." In a sub-theme of drive, participants describe a sense of self-discipline and a higher than average work ethic, with a fear of failing as they perceive the alternative to be an "average job."

Discussion Often people derive their sense of self from the social categories to which they belong [6]. If our sense of social identity is compromised, this can have negative psychological implications, such as a feeling of lack of belonging. This harbours negative effects on self-esteem, but conversely reflects a self-perception of high resilience. Acknowledging that being from a WP background impacts students self-perception and wellbeing, can aid universities in their understanding of the support that may be warranted to a heterogeneous student cohort.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 114
Building a diverse workforce: Diversity, Equity & Inclusion in undergraduate medical education

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Background The Extended Medical Degree Programme (EMDP) is a widening participation (WP) route into medical school addressing barriers faced by underrepresented groups, such as those from lower socio-economic backgrounds. Approximately 90% of EMDP students are from Black & Minority Ethnic (BAME) groups; 90% are 'first in family' to attend university', 100% are from grant-maintained state schools, predominantly performing at below the national average. Key entry challenges centre around the emphasis placed upon high academic achievement within a school setting, high achievement in prerequisite national admissions tests for medicine and access to relevant clinical work experience.
We examined the experience of EMDP students to inform the future development of the programme. Our overarching research questions were:
- To what extent have the aims of the programme been realised?
- What elements of the programme work well and why?
- What challenges exist and how can they be addressed most effectively, going forward?

Methodology A mixed-methods approach was employed which probed the experiences of students and key staff through a range of online surveys, semi-structured telephone interviews, and focus groups. In addition, institutional data were reviewed to identify trends in recruitment, impacts of financial support and completion rates.
During the study period, a representative sample of EMDP students (n=109; ~33%) and standard entry route students (n=219; ~15%) were surveyed. Additionally, qualitative interviews and focus groups were held with both EMDP and standard entry route students.
Results EMDP targeting & take-up: The EMDP's affiliated outreach programme was regarded by students as an important factor supporting entry into the EMDP, however, outreach to students from disadvantaged backgrounds remains challenging. There is a particular need to increase awareness about the outreach programme and the additional support provided upon entry to facilitate development of a medical career.
EMDP ethos, provision & support: Pastoral support from personal tutors and EMDP advisers was seen as positive. Students regarded the individualised approach to pastoral support as exemplary. Whilst some students felt the pace of the programme was challenging, others felt they would benefit from more clinically oriented content in the early years. Key pedagogical approaches found to be beneficial included small group teaching, peer support, ongoing mentoring and a programme-wide emphasis on building a sense of community and belonging amongst the EMDP cohort.
Student finance: Despite avenues of financial support, it appears that EMDP students experience financial problems, particularly in the clinical years due to the demands of the clinical educational environment.
Student satisfaction & attainment: The evaluation reported very high levels of student satisfaction – a key performance indicator within higher education in the UK. Completion rates are high (92%), with the majority of students (54%) entering general practice, supporting government-led strategy to diversify the medical workforce.
Discussion Continuing challenges: Understanding the complex dimensions of students needs merits further investigation. This will require the balancing of the national emphasis on increasing entry into higher education with the particular needs of WP students.
The evaluation reported very high levels of student satisfaction – a key performance indicator within UK higher education. WP within medicine remains a relatively new endeavour within the UK (the EMDP being the first of its kind to be established in 2001) and longitudinal research will be required in order to enhance the curriculum in mind of best supporting underrepresented students.
With the recent expansion of medical school places, and emphasis placed on WP within the sector, this evaluation evidences good practice and indicates that WP programmes such as the EMDP can successfully serve to diversify the medical workforce.

Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 115
Can qualitative research help us understand the challenges of understanding equity in Medical Education? A scoping review of the literature

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Background There are increasing national and international concerns about differences in both the extent and experiences of access to education and the educational outcomes of specific groups of medical students and doctors in training who are identified by their background characteristics, such as race, gender and socio-economic status [1, 2, 3]. These concerns are related to two main factors: (a) an increasing global focus on equal opportunities in education [4, 5]; and (b) an increasing recognition that a global medical workforce that is inclusive and has diverse background characteristics is essential for effectively responding to the complex future health and social needs of both individuals and populations. Qualitative research is an essential approach to understand the factors that enable and constrain fairness, with the intention to inform the improvement of fairness in medical education. The aim of the scoping review was to identify the extent, range and nature of qualitative research on the factors that enable and constrain fairness in undergraduate and postgraduate medical education.
Methodology A comprehensive search of the major databases in 2019 identified 72 relevant studies. Studies were analysed by a team of researchers to identify the focus on an aspect of fairness; the qualitative methodology and methods, including the data collection and analysis; the system level of the main recommendations for action; and the involvement of learners in the research process.
Results 72 papers were identified in total. Most studies were from the UK [n=27], US [n=22] and Canada [n=9] with smaller numbers from Australia, South Africa, Germany, Netherlands, Sweden, Austria, Brazil, and Greece. One of the studies had participants from two countries. Most studies had a focus on a single background characteristic and the 'local level' of medical education. The majority of studies focused on the 'local level' to identify the perceptions and experiences of medical students and junior doctors in training about entry and the curriculum (n=65). These studies mainly identified factors that constrained individual potential but there were three studies that had a specific focus on factors that enabled individual student success. Seven studies on basic medical education entry had a 'policy level' focus, including the tension between the political and legal directives and policies and their enactment by the medical school. The main recommendation for change was at the 'local level', with learner recommendations in only four studies. No studies were identified in which medical students and junior doctors in training were involved throughout the research process.

Discussion This scoping review has highlighted the challenge of qualitative research on fairness in medical education. A surprising lack of active collaboration with medical students and junior doctors in training was noted throughout the qualitative research process described in the studies, from initial setting of the focus through to making recommendations for change. This finding raises important questions about the extent to which medical education research can be considered to be 'socially just', especially since the positionality and theoretical perspective of the researcher may influence the focus and interpretation of the findings and these may not be congruent with the interests and priorities of the medical students and junior doctors in training. We recommend that medical education researchers critically consider their current approaches to qualitative research, including moving the focus from groups with specific characteristics to individual learners, or groups of learners; to focus on the broad socio-ecological system of medical education to understand the importance of the embedded subsystems; and to involve learners throughout the research process.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 116
Development of Representative Medical Leadership

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Background Gender parity at senior levels in healthcare organisations correlates with better outcomes across a range of measures including culture, behaviour and patient care. Despite women making up over three quarters of all NHS staff, they still comprise just 37% of senior roles.(1) NHS Employers advocates gender-specific learning in NHS training programmes to improve gender parity at senior levels. In order to be gender balanced, NHS Boards in England need another 500 women.(2) What is unknown is how women who have achieved significant leadership roles in medicine defined their enablers for leadership development. In 2017 we carried out 14 in depth semi-structured interviews with female medical leaders of national organisations. Key emergent themes were the importance of role modelling, mentorship and building confidence. This data underpinned our development of a programme to address women's underrepresentation in medical leadership.

Methodology We developed the Emerging Women Leaders Programme (EWLP) at the Royal College of Physicians (RCP) in 2018. This
programme included leadership training, mentoring and networking opportunities. A focus group
consisting of a female consultant physician, medical trainee and medical educationalist reviewed the research and identified
four key components that early career female consultants would benefit from in terms of improving
confidence, resilience and their leadership capacity within the system. We formulated educational
objectives for a programme involving a number of interactive workshops. We ensured that all fellows had
access to professional networking opportunities with both peers and national leaders, with access to
a range of national meetings. A mixed-method evaluation measured relevancy,
satisfaction and future recommendations which we used for thematic analysis.

Results After 9 months, the majority of the 12 inaugural fellows have undertaken enhanced leadership roles which they directly attribute to the support they have received and their progression through the programme. An end of programme yearbook and show-case event highlighted the leadership journey of the fellows. One fellow is now serving on the RCP Council as an elected regional representative.
Programme evaluations were highly favourable and commended the group interaction and energetic faculty cofacilitation with regular action learning sets that improved confidence levels. Narrative feedback acknowledged relevant content combined with practical opportunities to learn from others, helping provide greater clarity about their desired leadership path.

Discussion The impact of EWLP at an individual level is evident from the evaluation. In our long-term follow up, we are interested to assess systems impact by following the fellows' progression into senior positions.
EWLP blends original research with adult learning principles, with encouraging initial results. It provides a framework for the development of other programmes to address under-representation at a leadership level. For the 2019 programme we have reflected on our feedback, improving and expanding the programme in line with current demand. Our experience implementing EWLP and our commitment to promote inclusivity more widely at the RCP led to us to develop the Springboard to Leadership Programme in 2019 for all physicians with any protected characteristic. Follow-up will provide more comprehensive data that can be used to inform other organisational approaches to address intersectionality.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 117
Exploring perceptions of Widening Participation and diversity in a UK medical school

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Background The medical profession has historically been dominated by a 'social elite', disproportionately accessed by those from middle-class families, who have been privately or selectively educated(1). Medical schools have aimed to increase diversity by making significant investments in attracting and recruiting potential students from socially and educationally disadvantaged (Widening Participation) backgrounds. These investments are manifested in a wide range of institutional policies and practices which are often underpinned by a meritocratic discourse of social justice(2), although increased diversity has also been positively associated with numerous benefits to the learning experiences and professional practice of medics(3).
Despite these efforts, students from Widening Participation (WP) backgrounds continue to be under-represented in and are more likely to drop out of medical schools, raising questions about the effectiveness of current WP strategies(4). Research has largely focused on the recruitment of WP students(5); little is known about what stakeholders think about the impact of increasing diversity through WP on medical school learning experiences. Such perceptions may have implications for the effective implementation of WP policies, and therefore the retention and future recruitment of underrepresented groups.
This project explores staff and student perceptions of WP and diversity within a UK medical school, with a view to understanding how WP and diversity are experienced within the institutional medical school culture.

Methodology This was a single site exploratory study conducted at the University of Southampton, which has a number of undergraduate (UG) medical degree

programmes including a 6-year WP programme and a graduate entry programme. A qualitative approach was used with students from all UG programmes and staff being invited to take part in focus groups. Focus groups were held separately for the staff and for students on different programmes. The focus groups were digitally recorded and transcribed. Transcripts were inductively analysed within a constructivist paradigm; codes and themes were identified from these data. The data were further analysed through discussion within a qualitative research group.

Results Six staff members and forty-six students from the University of Southampton medical school took part in twelve focus groups. Early findings suggest that students and staff are generally positive about WP and have experienced numerous benefits of diversity during medical school. Students from underrepresented backgrounds are described as catalysing positive change and of possessing valuable forms of capital that enrich and enhance student learning. However, limited integration, perceptions of stigma and stereotyping, and a disconnect between rationales for WP and the impact of increased diversity within medical school reveal potential challenges for successfully embedding WP and inclusivity within the culture of medical education.

Discussion These findings echo previous research demonstrating the value of diversity in medical schools. However, the perceived relationship between diversity and Widening Participation is unclear. Despite producing successful graduates of medicine for almost a decade, some stigma and negative stereotypes about students accessing a medical degree through a WP route prevail, perpetuating barriers between traditional medical staff and students and their non-traditional peers. This suggests that further action is needed to foster a genuinely welcoming and inclusive environment for all students, which will enable the full benefits of increasing diversity within medical schools to be achieved.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 118
Gateway to Medicine Programmes: Disrupting and Diversifying, for better? An Examination of Student Experiences

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https://youtu.be/LJcXkPEOtUA

Background The experiences of students who participate in and complete Gateway to Medicine programmes are not well understood, despite these programmes having existed for almost two decades. Shedding light on the positives, negatives, and means by which these programmes may shape medical education is key, particularly with more institutions creating such programmes in recent years. This qualitative work surveyed and interviewed Gateway student participants at institutions across the UK to better understand the student experience of these diversifying programmes.

Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 119
Hierarchies and tribes: is it time to reconsider professional identity formation in health professional education?

Author(s): Kathleen Leedham-Green, Alec Knight, Rick Iedema
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Background Professional identity formation is a relatively new concept within medical education. The majority of literature has appeared since the Carnegie Foundation called for its inclusion into curricula on the 100th anniversary of the Flexner Report of 1910 [1]. This report called for faculty to hold students to high professional standards through role modelling and relationship building and suggested that curricula include symbolic rites of passage such as honour codes, pledges, and white coat ceremonies. Since then almost 200 articles have appeared in the medical education literature with a variety of stances and evolving interpretations. Our aim is to interpret these through a critical lens, with transformative implications for educational practice.

Methodology We conducted a scoping review of the literature on professional identity formation, and meta-thematic synthesis of the most recent papers by the eight most cited authors. We discuss these in relation to key concepts and theories from the fields of critical theory, sociology, psychology and organisational scholarship.

Results We present themes and examples from the literature relating to diverse schools of thought on the purpose and process of professional identity formation, alongside a critical analysis of some of the current academic discourses and recommendations for educators. Deductive arguments are presented inline with our results.

We question the educational benefits of espousing idealised professional identities, when the lived experience of learners includes needing to actively mitigate against professional tribes and witnessing the adverse effects of siloed working. We suggest that professional identity is an expression of hierarchy and power, particularly between professions and between those identifying as primary, secondary and community care professionals. Non-traditional students with different tangible social capital related to race, class or gender may find themselves deliberately or unconsciously included or excluded from the professional guidance and mentorship espoused by the Carnegie Foundation. We raise the question of whether professional identity genuinely transcends personal identity and why there are continued gender, race and class disparities between healthcare professions. In an era of identity politics we argue that those with multiple non-traditional characteristics may increasingly face intersecting and compounding disadvantages, exacerbated by cultures of inclusivity and exclusivity according to whether you are perceived to fit within historical professional norms. The cloak of professional identity may also be used to excuse collective behaviours that an individual would not be able to justify, leading to moral distress or injury. Fear of exclusion from a hierarchical closed community may prevent bottom up reform or even criticism of socially accepted but injurious practices. We also argue that the static nature of professional identities is related to an inertia in medical education and training and an inability to adapt to the role fluidity and technological advancements that are increasingly shaping clinical practice.

Discussion Our recommendations for educators include transforming education for professional identity formation from a backward looking practice that reenforces the status quo and potentially exclusionary social norms, to a more forward looking one: fostering a culture of criticality, social action and role fluidity to support much needed reform and a more sustainable future for healthcare.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 120
How do I stand out? - pupil evaluation of a widening access to medicine programme

Author(s): Jayne Garner
Corresponding Author institution: Edge Hill University

Background Widening access to medicine remains a key issue for medical educators, with most UK medical school now offering outreach work and programmes targeting a diverse population. As a new medical school, Edge Hill created a 5 day Widening Access to Medicine (WAM) programme for local year 12-13 pupils meeting under represented criteria to support them through the application process. This presentation provides insight into pupil experience on the programme from session evaluations and focus groups. This data also offers insight into pupil perceptions of studying medicine, their issues and barriers.
Methodology Voluntary anonymous evaluation forms from the 5 day programmes and focus group discussion about how the programme has impacted upon their career choice, confidence and understanding of studying medicine.
Results Pupils responded best to interactive sessions, and enjoyed clinical and simulated learning. While they understood the purpose of practical guidance on their UCAT/BMAT tests, UCAS form and interviews, they sometimes struggled with taught content and issues such as reflection and resilience. The programme overall helped those who did apply for medicine, but did present retention issues as pupils realised that medicine was not for them after all.
Discussion Pupils who applied for medicine and succeeded in getting interviews and offers credited the WAM programme for providing relevant information and experience. Pupils enjoyed the programme and gave constructive feedback, requesting more 'hands on' clinical experiences and talks from different medical specialty staff. Amendments to the programme have been made, and sharing wider discussion about what 'works' for these sessions can help broaden the outreach scope nationally.

Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 121
Locally employed doctors and simulation training: the importance and benefit of offering targeted training opportunities

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Background Locally employed doctors (LED) make up a significant proportion of the NHS medical workforce.(1) They are a highly diverse group of doctors from many backgrounds, and have often trained outside the NHS.(2) They bring a wide range of clinical experience, with some having held senior roles, but many are working in the NHS for the first time.(1) This can create specific challenges and educational needs. Furthermore, LED training opportunities within the NHS are variable and LED are not included in regional speciality training opportunities.(2) The west London site of a large London NHS Foundation Trust has many LED contributing to its medical workforce. Feedback suggested there was a need to increase and improve LED educational opportunities.
Well-designed simulation can contribute to safer clinical practice, but must be candidate focused to optimise efficacy.(3)
This study reports the findings of a learning needs assessment (LNA) for LED in our unit and the outcome of a resulting LED simulation study day (LS) which was designed to address the identified learning needs. The aims of the LS were to increase targeted educational opportunities for LED and to improve knowledge of specific clinical scenarios.
Methodology The LNA, conducted in September 2019 using an online questionnaire sent via email to all LED on site, highlighted simulation training as an area of training opportunity.
A half day LS was developed and run in October 2019. It used four simulation scenarios from an existing bank and offered a range of scenario complexity. Faculty included 3 education fellows, 1 A&E consultant and 2 simulation officers. Attendance was voluntary and free of charge.
Each LED led one simulation, allocated based on seniority and anticipated experience. A post-event debrief followed, led by faculty with constructive group participation.(4)
Course feedback was collected on the day using paper pre- (Pre) and post-course (Post) questionnaires including a 5-point Likert scale, scoring 1 for 'strongly disagree' to 5 for 'strongly agree'. This included a short Pre and Post assessment of clinical knowledge.
Results The LNA was completed by 13 LED (response rate 14.3%). 38.5% were based in A&E. Only 15.4% had access to simulation, and 69.2% requested better access to simulation training.
4 LED attended the LS. All were junior clinical fellows (75% A&E, 25% Ambulatory Care). NHS experience varied from 1 month to 2 years.
Median scores of candidates' knowledge of the reversible causes of cardiac arrest were 57% Pre and 88% Post. ABCDE assessment scores were 100% Pre and Post.
Confidence in managing cardiac arrests (MCA), assessing acutely unwell patients (AAUP) and managing acutely unwell patients (MAUP) was assessed Pre and Post using the described scale. 75% of candidates reported improvement in MCA, with 25% reporting improvement in both AAUP and MAUP. The remaining candidates maintained baseline confidence in all scenarios.
Post feedback was sought using the same scale. A median of 5 was given for: appropriately challenging scenarios, improved teamwork skills, improved communication skills and 'will apply learning to clinical practice'. A median of 4.5 was given for improved leadership skills.
Discussion Feedback was overwhelmingly positive. This may be due to the following reasons. A major strength of the course was its design around the LNA feedback. Small candidate numbers and high faculty ratio meant faculty could tailor scenarios and offer personalised feedback and teaching. On the other hand, small candidate numbers and voluntary attendance means the sample may have self-selected highly motivated LED. However, the improved clinical knowledge evidenced by the Pre and Post questionnaires, positive feedback and positive effect on confidence suggests further LED-specific simulations would be valuable. Further courses will be developed to assess the ongoing impact of targeted LED simulation.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 122
Trigger Warnings in Medical Education: Student Perspectives

Author(s): Maddison Gronager, James Close, Michael Casey, Laura Powell, Caitlin McNeill, David Haydock, Philip Davies, Abigail Samuels
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Background Medical students have higher rates of depression than age-matched populations(1), and mental health deteriorates over the course of medical training. The very nature of clinical medicine is such that students are likely to be confronted with stories of illness, suffering, and death, which may resonate with personal stories of trauma(2). An approach to preventing iatrogenic psychological trauma in higher education is the use of trigger warnings for students, which allows them time to prepare for confrontation with potentially disturbing educational material. A trigger warning is "a statement cautioning that content (as in a text, video, or class) may be disturbing or upsetting" (3)

The need for trigger warning systems in Medical Education is explored little in the available literature, and none of this from the medical student perspective. Through the use of a semi-structured survey, this research aims to explore medical students' understanding of trigger warnings, their perceived benefits and limitations, and the extent to which there is a place for them in undergraduate medical education.

Methodology The study will be commenced in January 2020. Students in their 1st, 2nd, and 3rd year of clinical practice will be invited to take part in an online, voluntary semi-structured survey, exploring their understanding of what trigger warnings are, and their relevance to medical education. Survey responses will be analysed thematically.

Results The results will be analysed once the data is collected, and will be available to present at the ASME conference in July 2020.

Discussion The use of trigger warnings in higher education has stimulated debate in the academic community, where educators note the delicate balance that needs to be struck between "caring and coddling", particularly in medicine (4). Comparing the views of educators available from the literature with the perspectives of medical students themselves may positively contribute to the discussion on how we can better support students who are confronted with difficult scenarios, while also preparing them to cope with these scenarios as an independent practitioner.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 123
"We're all like each other": Promoting a sense of belonging in Medical School

Author(s): Chloe Langford, Sally Curtis, Rebecca D'Silva
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Background In recent years the representation of some ethnic minorities and women with the field of medicine has increased substantially, however, low socio-economic groups remain under-represented. In order to address this a number of gateway programmes to medicine have been created. These programmes endeavour to recruit students based on academic potential, rather than prior academic attainment, and to support these students to ensure that they are not academically disadvantaged moving forward. However, there is evidence of differential attainment upon graduation from medical school between students on gateway programmes and their traditional entry counterparts . A way of reducing this may be to provide an inclusive environment in which all students can thrive; in order to nurture this, an intervention was devised incorporating feedback from students. This intervention comprised a series of workshops designed to promote a sense of 'belonging' and develop relationships with peers, as well as increase confidence and professional identity, all of which were identified by students as areas in which they felt they could benefit from support.

Methodology A qualitative approach was used to explore student perceptions of this support intervention delivered at the University of Southampton. Following completion of the workshops, focus groups were held with participating students to explore their experiences and consider ways to improve and adapt the sessions moving forward.

The focus group discussions were digitally recorded and underwent orthographic transcription and inductive thematic analysis was conducted on the first transcript by several independent researchers. The thematic codes allocated by these researchers were then reconciled and imported into NVivo for more comprehensive coding. The remaining focus group transcripts were then coded using the same nodes, with more being added when necessary, and a coding framework was developed. The final element of this analytical stage is a final pass of each transcript using the coding framework to ensure that no relevant utterances have been overlooked or double-counted.

Results Three focus groups were conducted with a total of 15 participants from the 6 year gateway programme at the University of Southampton. Initial results indicate that students felt that they benefitted from the workshops, and that they particularly helped with building confidence and increasing students' sense of belonging. In discussion of the benefits of the workshops, the strongest themes were peer support; graduate support; common bond with fellow BM6; BM6 identity and role models. Themes of a more individual nature such as resilience and writing skills generally had fewer mentions.

Participants claimed that engaging in discussion with peers helped them to feel less isolated, with one saying "I'm not the only one that feels the way I do […] that's the main thing that I got out of it". The other main benefit mentioned was the exposure to BM6 graduates, as speaking with those a few years ahead made one participant "feel as if they've made it from where you're from, so you can kind of make it too".

The emergent themes will be further analysed to illustrate their interrelationship and determine a broader picture of the student experience.

Discussion These initial results imply that the intervention has helped in developing relationships between students and providing a greater sense of belonging, and the benefits extolled by the participants substantiates the need for such an intervention. It is unsurprising that the students have identified the primary benefits as being the opportunity to engage in discussion with others; this is something which clearly needs to be facilitated with students on this programme, and potentially traditional programmes too.

Interventions such as these life skills workshops may contribute towards the development of a more inclusive environment, helping students to thrive academically, personally and professionally.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Oral Presentation in Parallel Session

Paper no. 124
Women in Medical Education: An Exploration of Female Educators' Narratives on Career Crossroads

Author(s): Osa Eghosa-Aimufua, Julie Browne, Katie Webb, Alicia Boam
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Background This project explores the experience of women in medical education, with a focus on points of change or crossroads within female careers. In recent years, clinical medicine as a whole has experienced a shift in gender, with a higher proportion of female graduates than male in the UK (1). Although women are more likely than men to show interest in a medical education career, they remain underrepresented in senior roles (2). Studies have found that women are more likely to change medical career paths and take career breaks than their male counterparts, however no research has been conducted to explore the experience of female medical educators in relation to these (3, 4). The current literature surrounding gender, professional experiences and medical education is limited. Specifically, studies have not sought to collate and present the personal experiences of women who have had, or hold a role in medical education and the factors that influence career decisions.

This mixed-methods study seeks to collate reflective accounts from female medical educators on a specific point of change, or career crossroads, to explore and identify:

- Trigger points within medical educators' decision-making in relation to their careers
- Factors that may advance or retard medical education careers
- The presence or absence and role of supportive factors, protective factors and the recovery or development from any associated career trauma
- The role of gender in career crossroads
- Perceptions of identity as a result of medical education career change

Methodology Participants were recruited through professional medical education networks of the Academy of Medical Educators via email and Twitter.
There were two main areas of data collection:
1. Structured online case reports which asked participants to write a short narrative on a crossroads in their career (n=75).
2. Narrative interviews exploring stories of women educators further (n=9).

This presentation will focus on data derived from the structured online case reports. Data will be analysed using a combination of narrative analysis and thematic analysis.
Results This study is ongoing, with the data analysis currently underway. We will present our findings at the academic meeting.
Discussion This study is ongoing, with the data analysis currently underway. We will present our findings at the academic meeting.
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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 125
An analysis of e-fatwas on tobacco inhalation: what can be learnt for the medical educator

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Background Muslim medical students often navigate the contemporary bioethical discourse through the lens of the online Muslim jurist. These jurists provide a moral assessment of contemporary bioethical issues and encapsulate this opinion in a Fatwa that is then posted online. The burgeoning phenomenon of e-Fatwas complicate the teaching of bioethics to an increasingly diverse medical student population, and they can form an element of the hidden curriculum in bioethics. Therefore, a systematic methodology that facilitates the summarisation of such e-fatwas is needed to enable educators to understand what Muslim medical students are exposed to online and to allow for such discussions to be brought into the classroom for consideration. This research aims to use a sample of e-Fatwas to describe juristic ethico-legal understandings of tobacco inhalation.
Methodology Using Google, 2,014 websites were obtained with the words Fatwa, online, Islam, question and answer, Fatwa bank, smoking, shisha and hookah. Of these, 50 were English, Sunni, and fatwa-banks. A twelve-term search string was then used to retrieve 267 fatwas on tobacco inhalation. Muftis' demographic characteristics were tabulated alongside their legal ruling regarding tobacco inhalation. The ethico-legal reasoning utilised in the fatwa was analysed to identify the major premise(s), minor premise(s) and scriptural evidence(s) employed.
Results Ninety-five unique e-fatwas discussed the ethico-legal ruling on tobacco inhalation, 72 of which issued unequivocal judgements. Fifty-four of these e-fatwas (75%) declared tobacco smoking to be haram, 10 makrooh (14%), and 8 makrooh tahrimi (11%). These assessments were derived from scriptural references in the Quran and Sunnah proscribing harmful actions. The ethico-legal device of qiyas was employed by making analogies to tayammum. Muftis enumerated harms of smoking to be of physical, psychological, environmental and economic in nature. Scientific evidence was rarely cited.
Discussion A systematic survey of e-Fatwas may provide an additional window into Muslim juristic understandings of health and bioethics and the scientific evidence quoted can facilitate the engagement of contextual experts. E-fatwas are accessible, systematically retrievable, diverse in their legal and theological representations, and represent potentially appropriate and nuanced scriptural references. Such a gateway into Islamic bioethics may enrich the broader bioethics curriculum in medical education, which is having to adapt to an increasingly multicultural patient and student population.

Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 126
Do we need to address the impact of socioeconomic status on UK medical students' career preference for surgery?

Author(s): Adil Rashid, Melissa Drake, Charles Maxwell-Armstrong
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Background The demographic background of UK surgeons has been regarded as unrepresentative of the medical profession, with females being significantly under-represented. This trend continues at the grassroots, with female medical students being less likely to opt for a surgical career. This study aimed to further understanding of socioeconomic background on medical student career preferences for surgery, to inform the development of widening participating strategies to increase diversity of the future workforce.
Methodology A validated, self-administered questionnaire was designed to capture data on the socioeconomic status and career preference of undergraduate medical students at Nottingham University. Participation in the study was voluntary and anonymous.
Results 523 students completed the survey (44.9% response rate) of which 106 students (20.3%) selected surgery as their first-choice career preference. Students favouring surgery were more likely to be male ($p = 0.001$), attend a private school ($p = 0.001$) and rank their parental occupation in the highest category ($p = 0.036$) in comparison to students selecting other specialities. Students selecting surgery are also less likely to want to work in a deprived area ($p = 0.010$). When choosing a career, students with a preference for surgery were more likely to value intellectual satisfaction and career prospects compared to the remaining students who were more likely to value patient contact and work-life balance (p 0.001).
Discussion To address the imbalance of medical students from higher socioeconomic backgrounds selecting surgery, widening participation strategies should be considered to encourage individuals from disadvantaged backgrounds to pursue a surgical career. This will help to develop a diverse surgical workforce reflective of the public's needs.
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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 127

From the sticky floor to the glass ceiling and everything in between: a systematic review of barriers and facilitators to clinical academic careers and interventions to address these

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Background In the UK, HEE's Integrated Academic Training (IAT) programme provides a strategic framework for the development of clinical academics: talented, research-focussed and expert doctors and dentists who will bring additional skills into the NHS for the benefit of patients. Data from the Medical Schools Council show that only 26.3% of clinical academics are female (1). Gender inequality within academic medicine and dentistry is a well-recognised issue, but one which is not completely understood in terms of its causes, or interventions to facilitate equality. This national cross funded systematic review aims to systematically identify, critically appraise, and synthesise the literature on facilitators and barriers to progression through a clinical academic career across medicine and dentistry. It will also explore existing interventions developed to increase recruitment and retention to clinical academic careers, with a particular focus on gender inequality. To our knowledge, this is the most extensive and comprehensive systematic review of the evidence in this field to have been undertaken to date.
Methodology The protocol for this systematic review was registered prior to commencing the work (https://osf.io/mfy7a). The search covered four databases (MEDLINE (including MEDLINE Epub Ahead of Print, MEDLINE In-Process & Other Non-Indexed Citations and MEDLINE Daily), Cochrane Central Register of Controlled Trials, PsycINFO, and Education Resource Information Center (ERIC)), reference lists, and forward citation searching. The review is in progress but will be completed at the time of the ASME conference. We are including studies of doctors, dentists and/or those with a supervisory role over their careers, with or without an academic career. Outcomes are study defined, but relate to success rates of joining or continuing within a clinical academic career, including but not limited to success in gaining funding support, proportion of time spent in academic work and numbers of awards/higher education qualifications, as well as experiences of professionals within the clinical academic pathway. Study quality will be assessed using the Cochrane risk of bias tool for Randomised Controlled Trials, the Newcastle-Ottawa tool for non-randomised studies, and the QARI tool for qualitative studies (2-4). Text mining within the Rayyan database has been trained using a subset of records and is now being used to support screening of the large number of records identified (5).
Results Results will be available at the time of the ASME conference. Key study characteristics and outcome data will be summarised in narrative and tabular form. We will synthesise data at individual, departmental and organisational levels, paying particular attention to gender, ethnicity, clinical specialty, primary vs secondary care setting, and academic field (e.g., laboratory based research, clinical trials, systematic reviews, other research methodologies). The conceptual contribution of each study will be explored in relation to the final synthesis. Following individual analyses of quantitative and qualitative evidence, we will combine the review to allow comparisons between the different findings and provide depth to the review.
Discussion This systematic review identifies and synthesizes barriers, facilitators and interventions addressing gender inequalities in clinical academia. Findings from the review inform the second stage of this study, which involves semi-structured interviews with a representative sample of individuals who have a clinical academic career and those who decided against it at any stage (also submitted for presentation at ASME). Our overall findings increase awareness of inequalities in clinical academic careers through informing clinical academics, regulators and funders of the issues involved, and potential interventions to counteract these. The work has clearly defined pathways to impact through collaborations with funders of clinical academic careers within the UK.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 128

Gender Diversity of Speakers at Regional Surgical Teaching Days

Author(s): Greta Mclachlan, Sophie Allen
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Background Intro: Thirty per cent of general surgical trainees are female in the UK. When looking at Consultants this drops to 12%. (1) With so few women being present at the top of surgical training, there are fewer women to mentor, role model and encourage trainees through, what can be grueling training posts. Could one of the reasons for the attrition rate of higher surgical trainees be a lack of visible women to role model onto? Mandatory regional training days offer a cheap and easy way to help breakdown the stereotype that to be a surgeon you should be a man. This review sought to access the gender of speaking slots at mandatory teaching days.
Methodology Methods: Review of gender of 9 mandatory regional teaching days for higher surgical trainees in one educational deanery in the UK was undertaken. The number of available speaking slots was reviewed and gender compared. If a speaker was talking more than once on the same day, only one slot was counted. Difference between surgical speaker and non surgical speakers was assessed. Industry staff were not counted.
Results Results: A total of nine different hospital days were reviewed across seven District General Hospitals and two Teaching Hospital. Across all nine days there were 59 available speaking slots, of which 47 (80%) were male speakers. However, if only surgical speakers were evaluated, there were 46 surgical speaking slots, filled by 41 male surgeons (89%).
Discussion Conclusion: If the adage you cannot be what you cannot see is true, training days could play a role in the feeling of belonging female surgeons will have not only to their specialty but to their region. A lack of belonging has been shown to affect doctors wellbeing, and contribute to burnout (2). If women don't feel like they belong in their specialty they could be more likely to leave for others more 'female friendly'. With decreasing numbers of doctors applying to

surgical specialties (3) and with more qualifying doctors being female, surgical specialties need to do more to attract women to surgery. Not only that but diversity is good for patient safety and healthcare (4), but with only 12% of general surgeons being women, more can be done at a grass roots level to role model and sign post that women belong in a 21st century surgical team. We would like to expand this work across more deaneries to learn how other areas of the country are tackling this problem.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 129
How being in the parenting role within the medical profession impacts engagement with educational events and opportunities

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Background It is increasingly accepted that doctors in training as well as those in more senior roles have a right to a private and family life and that this should not prove detrimental to their long-term progression within the medical profession. It appears that there are increasing rates of doctors having children which may reflect this expectation among younger cohorts. Discussions with colleagues has revealed that there is a perception among doctors who are also parents of dependent children that educational events on offer are often not parent-friendly. We aim to conduct a project that can identify barriers to attending educational events within the medical profession. We expect this to enable innovations to be identified that seek to remove or minimise these barriers and thereby reduce any disruption to ongoing medical education that parenting could otherwise represent.

Methodology We have sought preliminary data by sending out a survey to members of a Facebook forum for parents who are doctors to explore perceptions relating to education opportunities and how parenting impacts attendance and engagement.

Results We have received 56 responses and 93% of respondents feel that their parental role does disrupt their ability to attend educational events and only 20% reported attending educational events that are 'parent-friendly'. Only 4% agreed that there are sufficient 'parent-friendly' educational events on offer and none responded that they 'strongly agreed'. Moreover, over 80% of respondents answered that they would be 'interested' or 'extremely interested' in the creation of new 'parent-friendly' educational events within medicine.

Discussion We conclude that this preliminary data identifies not only perceived shortcomings in the provision of 'parent-friendly' educational opportunities, but also a strong demand for such provisions being made more widely available. Specific interventions that received strong interest in the survey included events having a creche available, events in which babies and children would be welcome and webinars or events being held at parent-friendly times. Furthermore, it appears there are certain examples of educational conferences or events that do specifically cater for parents or carers by providing, for example, play areas and large screens that project educational content such as lectures. An example of this is the 'GP Parents Conference' provided by the Royal College of General Practitioners. We aim to use the data generated by this project to work with medical organisations to provide parent-friendly platforms for the provision of medical education and examples such as the 'GP Parents Conference' could additionally serve as a model and an inspiration to make such events more widely available.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 130
Junior Emergency Medicine (JEM) update: A Widening Participation course using simulation-based education

Author(s): Navin Leanage, David Kloecker
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Background JEM is a two-day course utilising simulation-based education focussing around emergency and acute medicine for college students considering a career in healthcare. It has been running annually since 2015. Deficits in demographic groups exist in healthcare, and representation from doctors from a working-class background still remains low (1, 2). With this in mind we have continued a collaborative approach in widening participation between the University of Leicester School of Medicine and De Montfort University School of Nursing and Midwifery. The use of simulation education is well documented in medical training. A literature search using Education Resources Information Centre (ERIC) and terms including "simulation", "medical" and "training" produced 250 results. However, when using the terms "simulation" and "widening participation" on the same engine only 1 result was produced as of January 12th 2020.

Methodology JEM uses blended learning with plenty of evidence in undergraduate and postgraduate education supporting the methods used. Our evaluation highlights key points that we feel are important for any prospective healthcare student, including whether there is an influence on their insight into their chosen career. Our evaluation uses a five-point scale completed by every delegate, upon which they receive their certificate of attendance. Evaluations are filled out anonymously. Further pre- and post-course evaluations were collected regarding confidence, motivation, understanding of admission, understanding of the clinical environment and understanding of JEM. Free text comments were used to provide personal feedback to facilitators and organisers.

Results In 2019, 57 delegates from the East Midlands took part in JEM and filled out our evaluation forms. Confidence about going to study their course of interest went from 67% in agreement pre-course to 88% post course. Motivation to do well in studies increased from 89% to 100% in agreement post-course. Understanding of admission increased from 72% to 91% in agreement post-course. Understanding of the clinical environment increased from 68% to 95% of delegates stating an improvement post-course. 100% of our delegates agree that JEM has helped prepare them for applications to healthcare. 98% of our delegates agree that the simulations we used gave them insight into their chosen career.

Discussion Through evaluating JEM we are proud to show such positive results particularly in motivating a niche population. The use of simulations remains a strong point and main focus of JEM. Although as mentioned there is good evidence of its use in improving medical training, its use in widening participation displays a very limited exploration. Widening participation is clearly of interest to many as the results of our literature search indicate. Our evaluation does have limitations. JEM is a free-to-attend course and to ensure a high level of inclusivity we accept that some students are unable to attend both days. Moving forwards we are aiming to evaluate JEM further by paying closer attention to the use of simulations in widening participation.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 131
Removing the binary: The undergraduate medical curriculum needs to become transgender inclusive

Author(s): Virginia Dale

Background Discrimination against transgender people still remains, despite great strides that society has made. Ignorance is one of the breeding grounds for discrimination and stigma, and it exists even within the medical profession.

Education could be one of the key ways of removing ignorance and making sure that doctors are treating their transgender patients appropriately [1]. The medical curriculum needs to adapt to ensure that doctors are graduating not just with a strong scientific foundation but also with a degree of cultural competence enabling them to meet the health needs of all their future patients.

Methodology Surveys were completed to identify Swansea University Medical Student's self assessed comfort with, education about and understanding of Transgender patients. Survey questions were based on a Likert scale from 1 to 5; analysis was conducted with paired T test. The intervention was a 2 hour lecture given by a provider of specialist GP services, a researcher specialising in aging within the transgender community, and a transgender activist.

Results The completed response rate was 72%, with seven surveys having to be discounted due to non-completion. There was a statistically significant change in the responses to four of the six questions examining comfort with, education about and understanding of transgender patients ($p \leq 0.05$). Respondents demonstrated increased levels of comfort with the idea of seeing transgender patients for both gender and non-gender related issues, as well as increased self-determined levels of understanding around issues faced by transgender people. Respondents had a reduced need for further education on gender issues in medicine, however there was not a statistically significant change in the desire for this topic to be part of the medical education curriculum as this mean was maintained at above three out of five.

Discussion A few hours of education can increase the knowledge base, resulting in significant changes in students comfort with, education about and understanding of transgender patients. Medical students are the doctors of tomorrow, therefore the curriculum they are taught should include exposure to and education about the range of patients they are likely to encounter. This study is small, relies on self-assessment, and is likely impacted by selection bias as the intervention (lecture) was not compulsory. However the results are in keeping with the current literature which determines that including specialised education in the curriculum is key in reducing the inequities in healthcare suffered by transgender people [2].

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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 132
Shadow the Student – A Widening Participation Initiative at Lancaster Medical School

Author(s): Kristen Davies, Salma Mahmoud, Sally Lawrence, Brandon Smith
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Background Acceptance into medical school remains a fiercely competitive process. As well as entrance examinations, students are required to have undertaken relevant work experience in order to gain insight into the medical profession. Opportunities to gain the relevant work experience may not be equally accessible to all students interested in applying to medicine. Accordingly, one of Health Education England's strategic goals involves 'increasing collaborative approaches in supporting widening participation (WP) initiatives, including outreach activity' (1). Often, prospective medical students gain experience by shadowing consultants or senior doctors which may be known through family members. Whilst this experience allows prospective students to gain insight into the medical world, it does not necessarily reflect the experience which prospective medical students are signing up for

Methodology In line with the goals of Health Education England, Lancaster Medical Society (MedSoc) established the role of a WP officer onto the undergraduate committee with the goals of increasing awareness of WP and create a WP initiative for the local area. This initiative involved inviting Year 12 students, from a WP background, to shadow 5th year medical students from Lancaster Medical School on a medical or surgical ward. Following the shadowing period, the WP students were surveyed about their experience on the programme.

Results Two local students attended the shadowing period across four days at the Royal Lancaster Infirmary, Lancaster. Each student was provided with a workbook and mentor during their shadowing time. Their time was divided between shadowing the 5th year medical students on the wards, in addition to sessions on 'Ethics and Medicine' and the importance of reflection delivered by fellow medical students and faculty members. Travel and food costs were covered by the trust and the university. Post programme questionnaires found that both students found the experience incredibly useful, they felt more confident about applying for higher education and had improved awareness around what is expected in higher education. Qualitative feedback found that the students enjoyed having a medical student mentor, as they felt more at ease in the hospital environment, and having a workbook, as it help contextualize their learning.

Discussion This WP initiative is the first to our knowledge which has involved prospective medical students formally shadowing current medical students. Our programme has found that the Year 12 students who participated in the programme are more confident about what is expected in higher education in addition to applying for a university place. Alongside the trust and the university, we hope to run the programme with more participants in the future.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 133
Teaching Pride: Increasing medical student confidence in understanding and meeting the needs of LGBT+ patients

Author(s): Sarah True
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Background A Stonewall report* found that 15% of Doctors were "not confident" in understanding and meeting the needs of LGBT+ patients. This may be explained by an inconsistent curriculum for LGBT+ related education across UK medical schools. Salkind et al (2019) explained the importance of embedding teaching into the curriculum and detail an innovative programme delivered at University College London. This programme is very different to the educational opportunities available for the students at the medical schools I work with as a teaching fellow.

Methodology Inspired by the programmes available at other institutions and supported by teaching materials kindly shared by the UCL team we have begun to integrate more education about LGBT+ patients into teaching for two local medical schools. The first intervention we have made is to introduce a 90 minute workshop delivered to small groups of 8 students. This has been incorporated into an existing sexual health study day. The workshop uses a case based discussion to explore sexual orientation, gender identity and LGBT+ healthcare needs. Data collection aimed both to collect supporting evidence for the intervention and to monitor changes in attitudes as a result of the intervention. Students were asked to report if they had received any formal LGBT+ specific teaching during their medical degree and what that entailed. Change in attitudes of the students was evaluated with a pre and post intervention questionnaire to assess confidence, using a scale of 1-10.

Results There were 50 responses from final year students at two medical schools. The requirement for this intervention was supported by the finding that 26% of final year students reporting they had received no specific teaching on LGBT+ health needs during their time at medical school. The intervention was found to be successful in increasing confidence of students as a result of this workshop. A statistically significant increase in confidence was demonstrated in each domain by paired t-test analysis. Student reported confidence to use appropriate terminology to describe sexual orientation increased from a mean of 6.56 to 8.52 ($p=0.0001$) and to describe gender identity increased from a mean of 6.20 to 8.28 ($p=0.0001$). Students reported an increase in confidence to sensitively discuss these issues with their patients from a mean of 6.06 to 8.24 ($p=0.001$).

Discussion The finding that 26% of students felt they had not received any specific teaching on LGBT+ health needs may authentically reflect the curriculum but also may suggest that students do not recognise they are being taught a topic without explicit signposting. This study has demonstrated that the intervention of a 90 minute workshop can increase medical student confidence about the healthcare needs of LGBT+ patients. These initial findings support extending this workshop further, for example by introducing the simulated cases or an

expert patient panel. The ultimate goal is to integrate the inclusion of LGBT+ education within the curriculum and also promote a consistent approach across all UK medical schools.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 134
The enablers and obstacles in developing an innovative Foundation Year for Medicine

Author(s): Dr Peter Leadbetter, Dr Simon Watmough, Dr Jayne Garner, Professor Kevin Hardy
Corresponding Author institution: Edge Hill University

Background A joint initiative from HEFCE/HEE, published in October 2017, invited HEFCE-fundable Higher Education Institutions to bid for the expansion of undergraduate medical education places. A bid from Edge Hill University was submitted for the development of a new medical school with a successful outcome.

The Government's priorities included widening participation and improving access to medicine, so that the medical workforce is more representative of the population it serves. Hence, a key component of the proposal for undergraduate medical education was the development of an innovative Foundation Year for Medicine programme for identified under-represented groups. Consistent with this ethos the programme aims to raise aspirations for local students and to support widening access students in the transition to Medicine.

The Foundation Year for Medicine programme is innovative as it directly aligns to the curriculum and philosophy of the MBChB programme, and hence the General Medical Council's Outcomes for Graduates[1]. The Foundation Year for Medicine is leading change and innovation, and has a number of distinctive features including:

- Supporting recruitment of those from non-traditional and underrepresented groups, enabling individuals to join the EHU undergraduate medical programme (MBChB).
- Allowing local students who aspire to study medicine the opportunity to gain insight into medicine and meet the national standard academic level to progress to the medical programme.
- Consistent with the University Vision the programme will harness creativity, knowledge and commitment by incorporating a range of innovative approaches with an experienced and multi-disciplinary team.
- Substantial involvement from service providers, service uses/carers in programme design, delivery and assessment.
- Adopting an innovative non-modular framework and curriculum, allowing for the integration and holistic view of health grounded in the local community.

Methodology Document analysis (such as validation documents), evaluations and narratives will explore the challenges and opportunities in developing an innovative curriculum that specifically focuses on widening participation students.

Results Key themes and areas to be discussed in the presentation include:

- Student demographic and background characteristics
- Student perspectives related to transition into Higher Education & Medicine
- Service user and placement provider input into the design and delivery of the programme
- Innovative approaches

Discussion The presentation will conclude by exploring how the policies and procedures implemented as part of the Foundation Year for Medicine support the development of the MBChB programme.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 135
The tattooed doctor: quantifying public perceptions

Author(s): Adam Spence, Kevin McConville
Corresponding Author institution: University of Dundee Medical School

Background Tattoos are surrounded by stigma (Larsen, Patterson and Markham, 2014); the way in which one views a tattoo affords the potential to alter their perception of an individual. The practise of tattooing has become significantly more mainstream over the last four decades (Mun et al., 2012), and with this cultural shift there has been a heightened interest in examining patient perceptions of tattooed healthcare providers. Previous research has explored medical school staff and student perceptions of tattoos, and revealed key emergent themes (Callaghan and McConville, 2018).

Prior research has explored medical student and medical school staff's perception of doctors with tattoos (Callaghan and McConville, 2018). Given the lack of clarity on this subject from the General Medical Council (GMC) (GMC; 2013, 2016, 2016, 2018) and local National Health Service (NHS) boards, as well as the absence of the wider population's perceptions of this area, this project will examine public perceptions of doctors with tattoos. More specifically, this research seeks to determine if the themes that emerged from the previous evidence are also applicable to the general public. These themes include the nature of the tattoo, professionalism, freedom of expression and difference in perceptions among varying age groups. In addition, differences in parameters, such as participant gender identification and whether they possess a tattoo, will also be explored within the themes outlined above.

Methodology A quantitative approach which utilised an online questionnaire was undertaken. The questionnaire comprised of 10 questions relating to tattoos and tattooed doctors, 3 demographic questions (age, gender identity, tattoo presence) and one additional free-text question for any other comments on the topic, which were used to supplement previous findings. The Statistical Package for the Social Sciences (SPSS) (IBM, 2019) was used to determine any statistical significance between the demographics.

Results The themes emergent in the previous research by Callaghan and McConville (2018) including the nature of the tattoo, freedom of expression and differences between age groups were apparent through this research. Professionalism was highlighted, however, the sample did not identify a tattoo as a hindrance to the professionalism of a doctor or a barrier to the formulation of the patient-doctor relationship. Statistical significance was determined between the results of varying age ranges and those who reported to being tattooed or not, while differences between gender identities were deemed statistically insignificant.

Discussion The sample largely agreed with the themes found in previous work. The nature of the tattoo, which encompasses its' location and content, was identified as a determinant in the perception of the tattooed individual. The theme of 'freedom of expression' was also apparent, with much of the sample agreeing that doctors should be permitted to express themselves freely by obtaining a tattoo. Overall, the sample did not feel that a tattoo affected the professionalism of a doctor. However, many of the free-text responses commented on this being situation-dependent, reflecting on the lack of context surrounding the tattoo in question; a limitation of this work. The results surrounding the demographic analysis are in keeping with findings from previous literature. They highlight what has already been suggested: that tattoo perceptions differ among ages and those with tattoos or not, and that gender identity plays no significant part in one's perception of a tattooed individual, or indeed tattoos as a whole.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 136
Understanding medical students perceived prejudice on clinical attachment

Author(s): Alexander Henson, Julie Dovey, Jonathan Rees, Bethany Brockbank, Luke Rutter, Abhishek Oswal, George Taylor, Sarah Clements, Charlotte Hayden
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Background Prejudice is unfortunately still commonly seen in healthcare settings[1]. Current evidence has predominantly focused unilaterally on healthcare professional's prejudice towards patients. The impact of senior colleagues' negative prejudices and stereotypes, along with restricted peer-peer interaction caused by cultural isolation has been associated with the attainment gap of black and minority ethnic (BAME) students [2]. Following multiple anecdotal reports of students at the receiving end of perceived prejudice from patients whilst on their clinical attachment in our busy, ethnically diverse inner-city hospital, we are now interested in the impact of patient's prejudices towards staff. A meta-analysis of doctors in training, including medical students, found that 59.6% reported some form of harassment, with 21.9% coming from patients. It identified that after verbal harassment, gender and sexual discrimination was most common (49.8% and 33.3%, respectively), followed by racial prejudices (27.3%)[1]. Only 2 of the 59 included studies were from the UK, with neither investigating medical students. Recent studies have identified that over half of students receiving discrimination did not know where to seek help[3]. Various barriers to seeking help have been identified including fear of reprisal, and the acceptance that mistreatment is a norm in medical culture[4].
There is a paucity of data relating to medical students perceived prejudices in the UK whilst on clinical attachment. Specifically, we are interested to what extent do medical students perceive prejudice, where these negative experiences are coming from, and if the students feel empowered to tackle these situations. Ultimately, the aim is to develop preventive strategies to improve the experience of medical students in clinical training.
Methodology Ethical approval has been submitted to the University of Bristol's faculty research ethics committee for the project. Using convenience sampling (based in our hospital), we will send out an online questionnaire to 88 third year students on clinical attachment quantifying their experiences of perceived prejudices and qualifying the nature of these experiences or the type of prejudice they have faced. This data will be collated and will then lead focus group discussions of 6-12 students, with a trained facilitator to explore the student's perceptions on prejudice in the clinical environment and how it affects their learning, wellbeing and sense of belonging to the profession. We will use the focus groups to identify the students perceived barriers to both reporting and accessing support networks. Thematic analysis will then be utilised to identify key themes, identifying a target for future intervention or further investigation.
Results Data collection is currently ongoing for this project.
Discussion Our hope is that we can use the collected data to better understand to what extent a sample of UK medical student's perceive prejudice and discrimination whilst on their clinical attachment. There is a clear lack of research in this area that is vital to address in order to improve the experience of students. We hope to better signpost students to appropriate support who may be victims of prejudice.
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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 137
Women Speakers in Healthcare: disrupting healthcare events

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Background Women comprise the majority of the health and social care workforce in the UK, yet occupy approximately 41% of seats on NHS organisational boards and remain significantly underrepresented in senior leadership positions across the sector [1]. Conferences, unfortunately, find themselves, more often than not, with a "manel" (an all-male panel of speakers), or a very gender-imbalanced lineup. The proportion of women speakers at medical conferences has increased during the last decade, but women continue to be significantly underrepresented [2]. Conferences are unrivalled opportunities to showcase diversity, for networking and as a lever for cultural and organisational change. Representation at healthcare events is important for gender equity, role modelling and for fostering a sense of belonging, to whichever speciality you are part of. Women Speakers in Healthcare (WSH) was co-founded by five NHS healthcare professionals, with a vision to ensure balanced gender representation at all healthcare conferences and events. Here we describe our process and audit the first nine months of activity.
Methodology WSH is actively promoting and raising the profile of women speakers by:
1. Creating and maintaining the UK's largest database of women speakers in healthcare, from all backgrounds and professions;
2. Providing development and training opportunities to inspire and enable women
3. Engaging women speakers and male allies through networking and collaboration.

Women speakers nominate themselves or others via a speaker nomination form. Event organisers contact WSH to request women speakers using a speaker request form; we identify and facilitate a direct connection to the event's organiser.
We have audited our first 9 months of activity by accessing the number of signups on our database, number of twitter followers and the number of medical specialities signed up to the database. As well as rates of self identification, which includes, LGBTQ and BAME.
Results At the time of submission 9 months post inception, WSH has 536 women speakers signed up to the database and 2345 Twitter followers. WSH has facilitated, 13 events, with 34 requests (including ongoing requests). WSH welcomes all forms of speaker diversity and self-identification. Our database includes speakers who identify as transgender, BAME, LGBTQ+ and disabled. In regards to specialities on our database, they are varied including; patients, managers, acute medics, public health doctors, nurses, pharmacists and general surgeons. WSH's facilitatory role ensures that the model is scalable, maintains the authenticity and autonomy of speakers and we believe this approach could be replicated to promote speakers from other underrepresented groups. We strongly encourage women speakers and supporters to "lift as we climb", by nominating other women speakers to join the database during the signup process. We are actively engaging with male allies through social media and a "male allies" database.
Discussion We cannot be what we cannot see. Therefore educational events must endeavor to showcase our diverse healthcare workforce, to help address the disparity between healthcare leadership diversity and workforce diversity. This is one of our primary aims of WSH. To be able to achieve this, we will continue to grow the database, to facilitate further speaker-event organiser connections. We would like to offer bespoke development and coaching sessions for women speakers. WSH want to make it easy for event organisers to find women speakers. They

exist. They are willing and able. Our database and rapid growth is testament to that.

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Theme: Equality, Diversity and Inclusivity

Accepted as: Short Communication

Paper no. 138
Is medical school a level playing field? The importance of educational background on OSCE performance for first year medical students

Author(s): Angharad Price, Mansor Rezaian
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Background The Browne Review stated that graduating from university places young people on a trajectory of increased employment, higher earnings as well as reducing the likelihood of health-risk behaviour (1). Despite access to higher education improving, it is essential that help is given to young people to ensure they succeed in their degree (2). This is important as it has been shown that cognitive ability does not vary due to your educational background (3). This is seen specifically in the Kings College extended medical degree programme; where those who did not achieve the entry grades for medicine still succeeded in medical school when provided with the resources they needed (4). A recent documentary brought to light a noticeable difference in the self-confidence of individuals dependent on their educational background. This is where those independently educated have higher self-confidence and in the example given, led to them being more successful securing jobs (5). This research will use the observed structured clinical examination, OSCE, as it hopes to highlight if this is assimilated in medical students. It will focus on the initial transition of students into medical school as opposed to the general trend of research being based over the whole course (6, 7). This is because although much work has been done in widening participation into university, retention of students is still an area of improvement both nationally and in the 2019-20 Queen Mary report (2, 8). Therefore, looking at the results of 1st year medical students could be imperative in understanding why 50% of those who do not complete their medical degree leave before the start of their second year (9).

Methodology This will be a quantitative study using multiple linear regression. It will use school names to find out, using the government database; the school type, number of students staying in higher education and % overall rate of absence. The school type will be used as this underpins the study. The number of students staying in higher education will be used as not only does staying in higher education lead to better prospects, but is an area the government is encouraging (1, 10). Overall rate of absence will be chosen as higher rates have been found in lower-socioeconomic schools due to a decreased value on education (11). The dependent variable, first year OSCE has been chosen as it is a new style of exam for all students. This information will be analysed to establish whether OSCE performance has a relationship with educational background using null and alternative hypothesis.

Results Although no analysis has been done yet, past studies can be used to suggest potential findings. One study, using school characteristics, indicated that state school students are twice as likely to graduate in the top 10% of their medical school compared to private school students (6). Whereas, when socioeconomic information is used it shows conversely that if you come from a higher socio-economic background you are 3.4% less likely to drop out, 5.3% more likely to graduate and 3.7% more likely to graduate with a 1st or 2:1 (7). Hence, as this study focuses on the former, it could be hypothesised that state-educated students will perform better.

Discussion Reasons for state-educated students to perform better is that they have developed more resilience and motivation to use the resources that become open to them (6). But equally, they underperform compared to their privately educated peers due to becoming acutely aware of their social class and having a reduced self-efficacy.(12). Therefore, this study hopes to act as a springboard to develop qualitative studies to look further at these reasons and ways to overcome them to ensure positive student progression throughout medical school.

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Theme: Equality, Diversity and Inclusivity

Accepted as: e-poster

Paper no. 139
A Platform for BAME Student Voices: Discussion to Action

Author(s): Eva Larkai, Khadija Meghrawi, Dr Joseph Hartland
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Background It is well recognised that the Black and Asian Minority Ethnic (BAME) student attainment gap exists in higher education, not only in UK Medical Schools but across the world. The causes for this appear to be multifactorial, with many studies reporting that students feel isolated and that curriculums are not inclusive[1]. The Higher Education Academy and the NUS have both released guidance on how universities can consider tackling this topic [2,3]. The University of Bristol Medical (UoB) School is looking at many of these and has been engaging with student initiatives to address this issue. Namely, the creation of the BAME Inclusion in the Undergraduate Curriculum (BIUC) Working Group by BAME medical students seeking to bridge the gap between students and the medical school.

This group seeks to promote a clear way for student voices to be heard within the curriculum and allow them the opportunity to influence the school in a way that seeks to create a truly inclusive curriculum.

This talk will be run by BAME Medical students attending UoB Medical School. These students have been pivotal in setting up the BIUC Working Group. They will describe how they have worked in partnership with the school to do this and what they hope to achieve in the future with this role.

Presentation Aims:

- BAME medical students will explain the reason for creating a BIUC Working Group
- The purpose of this working group in the wider context of addressing BAME experience at university and the attainment/awards gap
- The future goals the BIUC group have for influencing the UoB curriculum
- Tips for other students and academics seeking to establish a similar student group

Methodology This oral presentation is a culmination of 10 months' work establishing a BIUC Working Group. During this time discussions have been had about the group's purpose, and why having an official affiliated group is important for increasing diversity within the medical curriculum by integrating it throughout the year within the clinical content that is learnt. Examples include clinical presentation and prevalence of disease differs between ethnicities, in addition to an appreciation of cultural sensitivity and bias. The authors will seek to help those attending understand why BAME students felt a working group influencing the curriculum was needed, and how this gives them agency that was missing before.

The students have reflected on the lessons learnt from working in partnership with the school and will describe the ways in which barriers can be overcome so other institutions can establish their own groups.

Results The presenting authors will discuss what the wider BIUC Working Group have identified as being integral to its founding and continued existence at UoB. This includes the importance of having senior leadership back projects such as this, and how leaders can improve the way that they listen to BAME student voices. They will also discuss how a student organisation can sit within the wider university structure, and the need for co-partnership working with academics to create new curriculum content that is more inclusive. Emphasis will be placed on how the focus shifted from discussing the issues to creating practical solutions

Discussion After discussing the primary ways in which an institution can support its BAME students to create a BAME student Working Group, the authors will focus on their future goals. This includes working with BAME students to identify key areas of the curriculum which require updating, to be more inclusive and diverse.

The authors will share with those attending the talk their priorities for the next 12 months and how they hope to achieve their goal of creating a curriculum that allows all medical students to be more inclusive practitioners and better serve the diverse patient population. It is the hope of the authors that this will inspire other organisations to consider the changes they can make in partnership with their own BAME students.

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Theme: Equality, Diversity and Inclusivity

Accepted as: e-poster

Paper no. 140
"Aren't we all just on the spectrum?": A qualitative study examining medical student misconceptions regarding autism spectrum disorder

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Background Autism is a lifelong developmental disability that affects how a person communicates with other people, and how they experience the world around them. Several inquiries have found that NHS trusts are failing to adequately respect the rights of people with autism with devastating consequences. In 2019 the NHS published the Long Term Plan, which set out targets for the next 10 years, including improving the level of awareness and understanding of patients with autism across the NHS. Furthermore the British Government carried out a public consultation in 2019 concerning making autism training mandatory for all healthcare staff.

Mezirow describes his transformative learning theory as "learning that transforms problematic frames of reference to make them more inclusive and discriminating". Whilst critics of this theory may challenge its idealistic view of education, in medical education we need to reflect and adapt to the changes in society. Transformative learning often goes hand in hand with self-reflection, challenging the assumptions people rely on to understand the world. Mandela famously stated "education is the most powerful weapon which you can use to change the world". By understanding the misconceptions our students have regarding autism, we can challenge these views and through a process of transformative learning, ensure inclusivity for our patients and colleagues.

Aim: to assess local medical student's knowledge of autism spectrum disorder

Methodology Convenience sampling was used to obtain a group of 33 medical students using a local District General Hospital during their training who participated in a semi-structured survey. Content analysis was used to review the results.

Results Full analysis will be shared at the conference if accepted to present. Early data demonstrated 62% had received no training on autism during their medical training to date. 43% agreed with the false statement "everyone is somewhere on the autistic spectrum". 27% incorrectly classified autism as a mental illness. 23% mistakenly believed "all autistic people have learning difficulties". The percentage of those with autism spectrum disorder in full time employment was grossly overestimated by the students. All felt healthcare professionals should have mandatory training on neurodiversity.

Discussion The study demonstrated that many misconceptions persist regarding autism in medical students. Transformative learning theory provides a framework to challenge the health inequalities faced by not just those with autism spectrum disorder. By critical reflection, assisted here by a survey, on the assumptions held, we can plan a course of action to enable our students to acquire knowledge and skills enabling reintegration of the new perspective into their professional lives. In order to tackle the health inequalities autistic patients face we, as educators, need to confront the knowledge deficit in tomorrow's doctors.

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Theme: Equality, Diversity and Inclusivity

Accepted as: e-poster

Paper no. 141
The UK's largest widening participation programme - National Health Careers Conference

Author(s): Kristen Davies, Rajiv Sethi, Biyyam Meghna Rao, Ammar Hamid, Cameron Jenkins, Gursharun Hayer, Declan Murphy, Elliot Clissold, Ibrahim Ali, Amy Lyons, Sharmaine Rizvi, Reena Suresh, Filippos Papadopoulos, Maarja-Liis Ferry, Bhavik Ruparelia, Sunil Sethi
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Background Being accepted into medical school remains a fiercely competitive process. Students are required to have gained insight into the profession through relevant work experience in addition to potential entrance examinations. Accessibility to medical schools is skewed as demonstrated by the fact that 80% of medical students come from 20% of schools (1). This disparity compelled us to establish Becoming a Doctor (BAD), a team of clinicians, medical students and advisors with a belief that anyone with the ability and aspiration to study medicine should have the opportunity to do so.

We initially held the National Health Careers Conference in Manchester in October 2017 with key organisations including the General Medical Council, Medical Schools Council, Royal Colleges, BMA, JASME and several Universities. The conference was a great success, with over 1,000 delegates participating on the day. Since the success of our conference, we aimed to continue delivering free opportunities for students interested in pursuing a career in healthcare. Our work with @BecomingaDr was acknowledged in the ASME New Leaders Award 2019.

Methodology Following the success of our 2017 event, we aimed to deliver a further national conference to allow further prospective students the opportunity to gain insight and experience into a career in healthcare. Additionally, we wished to provide unique opportunities for these students to engage with, reflect upon, and ultimately use in their application to higher education. We approached a number of organisations to deliver workshops and talks for our delegates whilst keeping it free for attendees. Additionally, we aimed to further develop our network with the widening participation organisations at individual medical schools as to increase our reach for prospective students and to help support organisations at each medical school.

Results The 2nd National Health Careers Conference was held in September 2019 in Manchester. It incorporated a much greater interprofessional component than our previous conference. There was an extensive keynote programme which included patient keynotes. Over 30 workshops were delivered on various medical careers and careers allied to medicine, as well as having an interactive exhibition for students, including activities such as the opportunity to learn CPR skills and extract your own DNA. Sessions for graduates, mature learners, parents and teachers on support through the application process were also provided. Following the conference, 96% of delegates reported being satisfied or very satisfied with the event (n=260).

Discussion In total, we have been able to support over 2,000 prospective students through our outreach work and the National Health Careers Conferences. We have developed stronger links with local widening participation organisations and have been able to provide them with resources to use to help support local students to apply for a career in healthcare. We hope to continue this work in the future. Further collaborative efforts are encouraged as we continue to remove the disparity and difficulty for students applying for a career in healthcare.

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Theme: Faculty Development

Accepted as: Oral Presentation in Parallel Session

Paper no. 142
A novel card game for enhancing collaborative teaching approaches

Author(s): Katie Webb, Julie Browne
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Background Lesson planning and delivery is still frequently seen as a solitary occupation, but healthcare educators are increasingly working in teams to produce learning opportunities for their students and trainees (1). There are many practical and educational advantages to interactive co-teaching including: knowledge and content integration, role modelling of professional behaviours, and a more active and engaging format for learners.

At the same time, the concept of 'playful learning' is emerging as educators increasingly recognise the value of offering learners 'safe' spaces in which to experiment, work collaboratively and creatively and, crucially, to learn from failure and to manage risk-taking (2).

The authors have designed an educational card game, "CARDIPH", in line with gamification and playful learning principles.

The purpose of the game is to encourage participants to collaborate in teams to plan and design an innovative and interactive teaching and learning intervention. Thanks to its element of chance, resource constraints and risk, "CARDIPH" accurately reproduces the challenges of 'real world' educational design and delivery.

Methodology "CARDIPH" will be piloted at two educational development events in early 2020.

The pilot sessions comprise a one hour workshop followed by post activity feedback.

1) During the workshop participants will be introduced to the game and its learning and teaching principles. They will also be invited to play "CARDIPH" during the workshop and then to reflect and feedback on the potential of playful learning and collaborative educational practice within their own healthcare education settings.

2) Participants will be asked to provide brief written feedback on their learning and experience of "CARDIPH" in relation to flexibility in teaching and learning approaches, decision-making, engagement and activity.

Results This project is currently underway.

We will present pilot evaluation results at the academic meeting.

Discussion This project is currently underway.

We will present data at the academic meeting regarding development and change activity toward the application and flexibility of teaching and learning approaches in different scenarios.

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Theme: Faculty Development

Accepted as: Oral Presentation in Parallel Session

Paper no. 143
Course design and delivery: breaking the mould

Author(s): Kerry Calvo, Miranda Kronfli
Corresponding Author institution: UCL

https://youtu.be/tA8US8A274E

Background We present our "disruptive" approach to a course for GP Clinical Supervisors. We designed a pragmatic, role-focused course, underpinned with "hidden veg" educational theory. Content and activities were informed by research, curriculum requirements and a comprehensive ongoing process of learning needs assessment and feedback; allowing our learners co-construct the course - moulding it to their experience and requirements. To date, we have delivered two courses, to 80 delegates. By July, we will have delivered six courses, preparing a total of 240 GPs to become Clinical Supervisors.

Theme: Faculty Development

Accepted as: Oral Presentation in Parallel Session

Paper no. 144
Ignore Faculty Development at your peril: Teacher Experiences of delivering Mindfulness in Medical Education

Author(s): Lara L Crowther, Noelle Robertson, Elizabeth S Anderson
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Background Mindfulness is in vogue, increasingly branded as a health panacea and is supported by research evidence.[1,2] In parallel, the General Medical Council (GMC) have called for strategies to reduce student stress and improve wellbeing.[3] Armed with an urgency to respond, many medical schools in the UK and globally, see the implementation of Mindfulness-Based Interventions (MBIs) as one solution.[4,5] However, often too little thought has been given to the specific details for curriculum alignment, especially 'Who' should be delivering this intervention. Faculty development for these new teaching innovations is often lacking.[6,7] This is the first study to explore the impact of teacher expertise on the understanding of teaching and learning in mindfulness. This research explores a teacher perspective, as part of a mindfulness and lifestyle programme delivered to first year medical students as a six week core curriculum in a UK medical school, since 2016.

Methodology This is a qualitative study using interviews. Data are collected from a purposeful sample of faculty members, local clinicians and mindfulness practitioners who have delivered mindfulness teaching. For the purpose of the study, teachers were grouped based upon their expertise in both mindfulness and medical education. Interviews were conducted using a semi-structured topic guide focused on; understanding of mindfulness, course preparation and delivery, teacher training, challenges to teaching, factors impacting success and professional and personal impact of mindfulness on the teacher. Interviews were audio-recorded, transcribed verbatim and thematically analysed using NVivo 12.

Results 20 in-depth face-to-face interviews (on-going) have been analysed. Overarching themes include; layers of mindfulness, scepticism, barriers and aides to teaching, leadership and relationships. Teachers acknowledged the relevance and usefulness of introducing mindfulness, both for themselves and for their students. Irrespective of teacher expertise, faculty training, continued professional development and strong leadership were recognised as being fundamental to the programme's success and sustainability. However, findings highlight huge variability between teacher's level of training and depth of personal mindfulness practice. Those with both formal training and a deep personal practice described mindfulness as a 'way of life' rather than a tool. There was a shift from cognitive factors such as increased attention to attitudinal effects of self-awareness, acceptance and compassion for self and others. Initial scepticism of mindfulness changed to scepticism of the intervention delivered and of the medical system as a whole. Experts recognised the challenges for teaching but saw them as opportunities and part of the mindful experience, with the less experienced struggling to adapt to the challenges.

Discussion Curriculum developers need to be aware of the complexity surrounding the learning and teaching of mindfulness and the need for careful planning. This study delves deep into teacher experiences and explores the impact of teacher expertise on the teaching of mindfulness. Variability in expertise and related outcomes highlight the importance of faculty development here, for both student and teacher benefits. Further work is needed to clarify optimal approaches for its successful integration into medical education and who is best placed to deliver it. We are mapping tutor mindfulness expertise to student experience and feedback in the next phase of this research.

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Theme: Faculty Development

Accepted as: Oral Presentation in Parallel Session

Paper no. 145
Staff Narratives: The experiences of physiology faculty teaching on medical programmes

Author(s): Rachel Ashworth
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Background Physiology (the study of function in the human body) and its application in medicine is a key part of the professional knowledge that doctors acquire during their medical training. Whilst there is general agreement that biomedical understanding is critical to medical education, there is still dispute around the most effective approaches to support this type of learning. Current research favours integrative educational strategies, where science is taught in the clinical context of medical practice. Integrative teaching methods (e.g. problem-based learning, PBL) have been adopted into many of the new medical curricula, replacing more traditional models, such as preclinical versus clinical teaching. These new, innovative integrated educational methods have been embraced by both students and faculty; however, there are concerns that the disadvantages have been overlooked. It is argued that biomedical knowledge is becoming devalued and that gaps in student understanding are appearing. Faculty are key drivers in these curricula changes; however, little is known about the views, attitudes and beliefs of faculty that teach biomedical science within medicine.
Methodology Using a qualitative research approaches, namely interpretative phenomenological analysis (IPA), the experiences of academic staff teaching physiology on medical programmes were explored. IPA takes a philosophical viewpoint that aims to capture a sense of how individuals view their world and, as shown by its use in healthcare settings, gathers information that can elucidate deep and often complex social issues. Using purposive sampling, experienced academics that deliver physiology teaching to medical students were selected. In-depth semi-structured interviews were conducted on a total of five participants, either face to face or via Skype. Dialogue was captured by audio recording and transcribed into text manually using a computer. Analysis of the text was a dynamic and iterative process to gain an understanding of each participants account. Identification of patterns and connections across interviews was also conducted to provide a more generalised understanding of the phenomenon.
Results Three major themes were identified from the analysis, focusing on (i) the participant's route into higher education teaching and their pedagogical development, (ii) the participant's experience of student learning in physiology and (iii) participant's reflections on the role of physiology, integration and the impact of organisational structures within the medical education.
Discussion The narrative of participants provided important insights into the experiences that have shaped their professional lives as educators teaching physiology within medical programmes. The work highlighted key factors influencing their practice including the tension between teaching and research and the significance of experiential, work-based learning. Participants were enthusiastic about importance of physiology in the training of doctors and recognised the value of integration as a learning strategy. Participants discussed their experiences of collaboration with clinical staff and its capacity to deliver effective student learning. However, participants also expressed concerns around the current status of physiology within medicine, they felt the area was undervalued and as a result under resourced. Divisions between different departments were also cited as major barriers to the effective delivery of physiology teaching.
Taken together, this study has revealed some of the internal and external issues affecting academics teaching physiology within medical programmes and insights from the project will be of interest to the wider teaching community. The work will enhance the debate around strategies aimed at improving integration of medical science and clinical practice and ultimately improve student learning during medical training.

Theme: Faculty Development

Accepted as: Oral Presentation in Parallel Session

Paper no. 146
The Stories Our General Practice Teachers Tell. A Narrative Analysis - Stories about teaching medical students on a longitudinal placement in General Practice

Author(s): Dr Rini Paul, Dr Ros Herbert
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Background The Longitudinal Placement in General Practice at the GKT School of Medical Education, King's College London, was introduced in 2017/18. A group of 8-12 second year medical students are attached to one General Practice (GP) and teacher and spend a day a week during term time immersed learning clinical medicine. The programme represents a substantial time commitment for our GP teachers, and it is therefore important to understand their experience in more depth. Medical teachers have multiple roles (1) but little is known about their identity development as educators. It has been suggested that looking at the lived experience of being a medical educator and using this as a framework for faculty development, with a particular focus on experiential and work-based learning, role modelling, mentorship and belonging to a community of educators would be a useful approach (2). Narratives are powerful, vivid and memorable stories. They are a subjective version of events that help the narrator make sense of what happens [3]. They typically have a beginning, middle and end, are past orientated and usually linear and sequential [4]. Hearing stories from medical educators (specifically our GP teachers' experiences of teaching) may enable us to better understand their identity development (5) and reflection on teaching practice (6). There is spare literature on educators' narratives of their own teaching. Formation of identity as a teacher often begins with a specific incident involving a learner (8), thus this is an area which we wanted to explore further.
Methodology Narrative learning theories fall under constructivist theory, which understands learning as construction of meaning and learning from experience. (7) Thirty-eight Year 2 GP teachers were identified as having taught in 2017/8 and 2018/19. Sixteen potential teachers were identified who were thought to be good story tellers from our knowledge of them and feedback from student evaluations. They were purposively invited to share their stories about teaching Year 2 students, either in written form or as an audio recording/interview. Six GP teachers were recruited with consent. Audio stories or recorded interviews were then collected and transcribed, and a narrative analysis approach utilised looking at the narrative function, plot and linguistic aspects. Narrative analysis reveals in-depth information from a small number of participants so larger numbers are not necessary. One teacher sent in a recording of their story and the other five were recorded telling their stories .
Results All the teachers had powerful narratives which centred on their experiences with their very first group of Year 2 students on the longitudinal placement or where something had gone wrong in a group e.g. the dynamics or an at risk/struggling student. The stories our teachers told were focused on juggling multiple roles, the tensions between teaching and clinical work, role modelling with awareness of how powerful that role was, engaging seemingly disengaged students, facilitating learning, and the practical aspects of teaching particularly group dynamics. The stories all hold a sense of joy and sometimes surprise at the benefits of teaching; the wider impact on a group of patients supporting each other after meeting at a teaching session, their satisfaction derived from supporting individual students in particular because they provided support and continuity over a whole year. "I was absolutely delighted to find that these teaching methods and ideas would make a difference…it was massive."
Discussion Our community teachers have many stories to tell about their teaching. Narrative analysis is useful for these complex interactions between teachers, a group of students, patients and teaching practices. Next steps would be to hear more stories from students, patients and teachers but also to tailor our faculty development programme more to the specific challenges that they have described in these longitudinal mentoring roles.
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Theme: Faculty Development

Accepted as: Short Communication

Paper no. 147
Confronting Barriers: Enabling Junior Doctors as Medical Educators

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Background Teaching is a key aspect of a doctor's professional role, according to Good Medical Practice (1). Involving junior doctors (JDs) in undergraduate teaching benefits both themselves and students (2). However a number of barriers to their involvement exist: time constraints when teaching is expected alongside clinical commitments; feeling undervalued by senior colleagues, or education departments; lack of formal education in teaching; and lack of awareness of available teaching opportunities (2-6). While suggestions to address these barriers have been made, there is little evidence on approaches used to counter these in practice.
The aim of this project was to address barriers to teaching and encourage JD involvement in undergraduate education, through the undergraduate academy in our teaching hospital.
Methodology A 'MedEd and You' event was designed and advertised to all doctors in Southmead Hospital. The event included short presentations of available teaching opportunities, local accredited medical education courses and quality improvement in education. This was followed by time to network with experienced educators, sign-up to teaching opportunities and encouragement to create their 'Own Ideas', to be followed up with educational faculty in subsequent weeks.
Thereafter participants and other interested colleagues who could not attend the event, have been emailed regularly with teaching opportunities, and those with their 'Own Ideas' have met with faculty to develop these into tangible undergraduate medical education programmes.
Those who attended 'MedEd and You' gave immediate feedback on its utility, with all interested JDs completing questionnaires three months post-event on the academy team's impact on them.
Results 20 doctors (95%) attending 'MedEd and You' felt the event encouraged them to become more involved in undergraduate education. In total, 36 doctors now receive regular communication, with five currently progressing ideas towards formal teaching programmes in collaboration with the academy team.
18 responses (10 who attended the event, 8 who had not) were received from 3-month follow-up questionnaires. 100% of doctors felt that the academy team had encouraged them to become more involved in undergraduate medical education, though only 55% had delivered any pre-planned sessions to students. 16/18 (83%) doctors have engaged in informal ward-based medical student teaching, with 100% feeling they are more likely to engage in teaching medical students as a result of academy engagement.
8/18 (44%) have completed one of the formal medical education courses advertised during the initial phase of the project, with 50% of those remaining planning to do so once time constraints allow.
Overall doctors rated the impact of the academy team on their medical education career as 7.8, using a Likert-type scale of 1-10. There was no significant difference between those who had attended 'MedEd and You' and those who had not. 77% suggested they would value a further event of similar structure to the original.
Discussion As a result of the 'MedEd and You' event and its advertising, 36 doctors are now regularly engaged with the academy, and the vast majority of responders are involved in undergraduate education. This includes delivering various forms of teaching, pre-planned and more informally, as well as attending courses to progress their formal educational accreditation.
Our programme has enabled their involvement and contributed towards advancing JDs' journeys as medical educators. By demonstrating regularly, through different methods, the academy's desire for their involvement, offering regular teaching opportunities and promoting relevant educational courses we have sought to address barriers previously described in the literature.
The interesting finding that 77% of doctors would value another event, including the chance to network with experienced educators suggests that schemes encouraging educational mentorship may be of value and warrants further research.
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Theme: Faculty Development

Accepted as: Short Communication

Paper no. 148
Northern lights: charting challenges experienced by early career foundation doctor educators in the North West of England

Author(s): Miriam Leach, Lauren Bell, Umair Gondal
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Background Peer Teachers in Practice (PiPs) is a rapidly expanding trainee led initiative championed by the North West (NW) of England School of Foundation Training & Physician Associates. It was developed in 2017 to support early career foundation doctor educators by: Facilitating the sharing of ideas, providing training and developing a community of practice for ongoing support of peer-assisted learning and other teaching activities. Despite this ongoing work, the opportunities available for foundation doctors to gain experience in medical education is varied across the NW. The aim of this study was to explore what foundation doctors in this region perceive to be the challenges they have faced when engaging in educational activities.
Methodology The annual PiPs conference aims to provide basic medical education training and the opportunity for foundation doctors interested in education to network. At the 2019 event we included a semi-structured focus group to discuss the topic in question. The participants of the workshop were separated into 8 groups and asked, 'What challenges have you experienced in your medical education activities?'. The discussion in each group was facilitated by a peer or near-peer member of the voluntary PiPs team (all previous PiPs attendees). The discussions were scribed by a member of each group. The transcribed codes were subsequently analysed by the three researchers (all leads for PiPs), to determine emergent themes.
Results 47 junior doctors participated in the workshop. Of the junior doctors, 19 were in their first year of foundation training, 25 were in their second year and the remainder did not specify. 22 stated they had experience of being involved in a peer teaching project. The most commonly occurring themes that emerged from analysis were: Understanding teaching and learning, practicalities of teaching and project development, building a network/finding support and tension with clinical work. Additional, less frequently recurring themes identified included: Seeing a career path, burnout and financing.
Discussion Teaching is a key competency for doctors and interest from foundation trainees in developing this skill is evidenced by the burgeoning of local peer and near-peer teaching activities. Formal education training is often costly and finding a network of people to support and encourage educators at the start of the career can be difficult (Bartle, 2014). There is limited literature published on

the experience of early career foundation doctor educators therefore findings from this study are significant in highlighting the kinds of challenges they may face.

This study was limited by its methodology; firstly, it was not always clear from the discussion scribed by the groups what the challenge was. Secondly, we were not able to ascertain any significant detail on the challenges that they had discussed beyond what had been written down. In the future, we hope to address these limitations with more detailed research.

By directing our activities towards addressing the challenges identified in this study we hope to continue to strengthen the support we are able to offer foundation doctors in the NW through PiPs. Additionally, by sharing this learning with others in contact with early career educators, we hope to inspire a drive to develop other opportunities and support for aspiring foundation doctor educators in their area.

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Theme: Faculty Development

Accepted as: Short Communication

Paper no. 149

Not just the SAMEE old ethics: a mixed methods pilot study of the Swindon Academy Medical Education Ethics (SAMEE) committee

Author(s): Alexandra Phillips, Rachel Nigriello, Thomas Lyons, Robert Moynihan, George Thomas, Chris Jacobs, Kevin Jones

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Background Research in the field of medical education is essential to develop innovative ways to engage, inform and inspire the next generation of clinicians, who will face novel and unique challenges during their careers. The extensive measures in place to protect participants in clinical research trials have been extrapolated to include participants in social sciences and education research in recent decades (1). While of paramount importance in clinical research where the risks of participating can be substantial, some authors have argued that they are excessively rigorous when applied to educational research (2). There have been several calls in the literature for the establishment of clear and accessible review processes for low-risk educational research (3,4) to avoid discouraging the pursuit of smaller, time-sensitive or student-led projects.

To elucidate and simplify the ethical approval process for medical education research projects at our institution, we established the Swindon Academy Medical Education Ethics Committee (SAMEE) for the review of local Academy-based projects. In this study we obtained feedback from committee members and Academy faculty to ascertain attitudes and opinions regarding this initiative.

Methodology Two online questionnaires were administered to committee members and Academy faculty respectively by circular email. Data was anonymous at the point of collection and informed consent was embedded within the surveys.

Results Of n=19 faculty members surveyed, there were n=8 respondents (42%). Of these, 3 respondents had submitted a total of 6 projects to the SAMEE for review. On a Likert scale from 1 (strongly disagree) to 5 (strongly agree) 7 respondents agreed that having a local ethics committee made them more likely to submit their projects for ethical review (mean = 4.12), while 4 respondents agreed that submitting a project for ethics made them consider ethical issues in more depth when designing their project (mean 3.5). 3 respondents agreed that they were more likely to submit a project for publication in a peer-review journal due to having a local ethics committee (mean = 3).

4 committee members were surveyed with a response rate of 100%. All 4 members strongly agreed that their committee position had improved their understanding of ethical issues in research, and agreed that it had improved their understanding of research design (mean = 4.75). Themes within the qualitative feedback included a 'greater awareness of the processes of applying for…ethical approval for research projects', development of 'skills regarding appraisal and application of key ethical principles' and having 'a significant barrier to pursuing publication of research…removed'.

Discussion The results from this study indicate that the establishment of a local ethics committee for medical education research confers substantial benefits to committee members, as well as some benefit to faculty members and to potential participants of research. The latter is manifest primarily in the likelihood of faculty submitting their project for ethics approval; an overwhelming majority were more likely to do this with a local committee available. Having a larger number of projects reviewed is likely to improve the design of these studies through ensuring that all ethical issues have been given due consideration. As mentioned in the qualitative member feedback, expediting the process of ethical approval is also likely to benefit faculty as junior doctors on rotation often do not have sufficient time to identify and design a project, acquire ethics approval and collect data before leaving a department.

Advantages to ethics committee members included greater awareness of the process for ethical approval and development of appraisal skills, and was widely reported as an enjoyable experience.

Our results illustrate some of the potential advantages of local ethics committees to faculty, committee members and to the students or trainees likely to benefit from any subsequent research.

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Theme: Faculty Development

Accepted as: e-poster

Paper no. 150

Can Virtual Reality serve an alternative or an adjunct mode of Meditation for Medical Students? A pilot project

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Background Student well-being and mental health are high on the Agenda. Student life can be exhilarating and exciting but also exhausting and challenging. Improved mental health encompasses a variety of efforts such as healthy nutrition, exercise, sleep, sharing experiences and meditation.

Virtual Reality (VR) is the latest cutting edge technology allows users to be fully immersed in a first-person experience of life-like environments. VR meditation may be an alternative or an adjunct for reducing anxiety, unwinding, reaffirming and re-aligning your thoughts. We conducted a VR pilot project to assess VR as an alternative or an adjunct mode for meditation.

Methodology 32 volunteer medical students (n=32) were recruited. Each student allocated a 30 minute time slot under supervision. Students were shown three VR applications (apps); An Introduction to VR, Alcove and Calm Place. Students provided feedback data on their experience using an on-line feedback form. The VR headset used was `Oculus Go` with pre-load software and audio. A ceiling cooling fan and an office chair was used to facilitation a 360 degree immersive VR experience. Pre and post oxygen saturation and pulse rate readings were taken in 17 students using a Nonin 9500 Onyx Finger Pulse Oximeter to assess increase or decrease of readings pre and post VR session.

Results 32 students provided feedback. Qualitative and quantitative data was collected. Four key areas were explored. Apprehension using VR, VR Meditation, overall VR experience and the need for a VR hub for our students.

- Apprehension: Pre and Post VR data was collected. Pre VR, 4 students (12.5%) were apprehensive about using VR, 28 (87.5%) were Not apprehensive. Post VR, No students were more apprehensive post VR, 7students (21.9%) reported they were less apprehensive and 25 students (78.1%) were not apprehensive.
- VR Meditation: 29 students (90.6%) reported yes definitely would continue to use VR for meditation, 3 students (9.4%) may use VR for mediation.
- Over all VR experience: 29 (90.6%) reported above average expectations, 3 (9.4%) reported average expectations, none reported a below average experience with VR.
- VR hub: 28 students (87.5%) reported, yes we should create a dedicated VR hub, 4 students (12.5%) reported may be.

- Oxygen saturation Pre and Post VR: 2 students (11.7%) levels Increased, 4 (23.5%) oxygen levels Decreased, 11 (64.7%) remained Unchanged.
- Pulse rate Pre and Post VR: 6 students (35.2%) pulse rate Increased, 10 (58.8%) rate Decreased, 1 (5.88%) Unchanged.
- 100 comments showed a positive response to VR.

Discussion Meditation involves composing body postures, silent contemplation and paying attention to your thoughts to relax. This requires concentration on the part of the participant and requires generation and navigation of their own thoughts and imagery. VR offers a fully immersive meditation environment with little effort on the part of the participant and reducing meditation drift. Customisation can be applied to apps, tailoring the session to individual needs. A desired effect of meditation would be a reduced pulse rate whilst relaxing. We noted a reduced pulse rate in 10 out of 17 students (58.8%), possibly resulting in reduced anxiety and thoughtful meditation. We noted an increased rate in 6 students (35.2%). This may be as a result of excitement surrounding VR. The results also showed 29 out of 32 students (90.6%) had an above expectation experience using VR, 28 out of 32 students (87.5%) were in favour of a dedicated VR room. Student comments were positive reflecting their VR experience and a desire to embrace VR technology.

From the data and student comments collected, we conclude that VR can be considered as an alternative or an adjunct mode of meditation in a safe environment and a VR hub should be considered as a dedicated facility for our students to relax and unwind. We accept a further study is necessary to fully evaluate the gains of VR technology. Thank you.

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Theme: Faculty Development

Accepted as: e-poster

Paper no. 151
Designing logbook for medical educators, Undergraduate Medical education department, Nottingham University Hospitals NHS trust

Author(s): Swe Khin-Htun, Dr Helen Wan, Thiri Nyan Coe
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Background A logbook is defined as a written record of activity in which details and events are recorded. Logbooks play a crucial role for trainees as it helps them improve not only their relevant skills but also for self-reflection and personal development. They also give trainers a quick overview of the requirements of the training and the trainees' learning progress.(Schüttpelz-Brauns et al., 2016) Doctors in training can keep clinical activity logbooks to record clinics, patients, procedures and their professional education. Although many Royal Colleges in the field of medicine have developed their own logbooks, none of them are catered towards educators for their own professional development in teaching. In order to fill the gap, we, Undergraduate Medical education department (UMED) developed a logbook based on official point systems of recruitment for junior doctors, academic career pathway framework from different universities, UK professional standard framework (UKPSF) for higher education qualification and professional standard framework of Academy of Medical educators (AoME). This helps the trainee build a portfolio from an early stage of their career, and help entry into most competitive specialties.

Methodology The format of our logbook is broadly broken down into five Domains according to professional standard framework of AoME: Designing and planning learning, Teaching and facilitating learning, Assessment of learning, Educational research and scholarship and Educational management and leadership. In each domain, there are four levels of achievement: understand, apply, disseminate and manage.

Steinert stated that faculty members could develop expertise through experience, observation, and reflection; they can also improve their skills as teachers and educators through peer coaching, learner feedback, online learning, and workplace learning, often by being a member of a community of practice. (Steinert 2010)

Therefore, the levels of expertise in this logbook are designed to encourage experiential learning, promote workplace learning, peer coaching, collaborating with other teachers, networking and reflection. The evidence in this logbook accounts all the learning by doing, learning by observing and learning by reflection in practice.

UMED team has also started developing the details assessment criteria for each and every level. Kern et al said that the dissemination of a new innovative teaching or improved teaching was important for stimulating change, providing feedback, increasing interchange, preventing redundant work, collaborating, helping curriculum developers achieve recognition and academic advancement. (Kern et al., 1998). These criteria for the achievement will involve not only teaching training and teaching experiences but also presentation and publication. Additionally, in completing the logbook, UMED team are able to issue certificates based on the trainee's involvement and able to assess the capability as a teacher.

Results This logbook fulfils the needs of individual clinicians looking to progress in teaching and education providers who need to show evidence of supporting their future educators.

Discussion Medical education is an area with many vested interests. The GMC has released several documents pertaining to medical education, emphasising that clinicians are responsible for 'developing the skills and practices of a competent teacher' (GMC, 2009) This message resonates throughout a clinicians career, with speciality training viewing evidence of teaching in their 'person specification' as essential or desirable.

There is an onus on the education providers to provide a high- quality-learning environment and in 'recognising and rewarding trainers.' (GMC, 2012) We therefore see that to be a high- quality teacher is an extremely desirable skill to attain and a way to promote this is: record all aspects of teaching professional development activities and enhance their status of teaching for individuals.

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Theme: Faculty Development

Accepted as: e-poster

Paper no. 152
Near-Peer Induction to Emergency Medicine for FY1 Doctors

Author(s): Kristen Davies, Sarah Taylor, Matthew Ingram
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Background Unusually, almost all Foundation Year One (FY1) doctors at Northumbria Healthcare NHS Foundation Trust (NHCT) have an Emergency Medicine (EM) rotation, spending time in the Emergency Department (ED), night ward cover and daytime shifts on the acute medical unit (AMU). This is a high stress role, with FY1 doctors expected to work in a variety of frequently unfamiliar and busy settings with unique IT systems. Following our own experiences in ED in this role, we aimed to provide our induction to this role for incoming FY1 doctors.

Methodology Existing FY1 doctors were consulted using an online questionnaire to determine areas of stress for those in the role. These results helped construct a presentation detailing the role of the FY1 at night, the structure and computer systems on AMU and the use of "NerveCentre" (ED computer system). The session was delivered by doctors who had completed the same job within the last 12 months during the FY1 induction week. The presentation involved talks on: familiarisation, and practice using NerveCentre software on trust iPhone devices; understanding the ward computer systems and the role of the back-of-house FY1. Feedback was sought from the new FY1s to refine the presentation and improve its relevance.

The primary barrier to implementation for our near-peer induction was gaining the support of the EM staff to deliver the session during the formal FY1 induction. We delivered our survey data to the EM staff who agreed for the need for our talk in induction. A foundation tutor and EM consultant attended the session to ensure accuracy of our content.

Results Our questionnaire to existing FY1 doctors found that there were a number of areas where improvements could be made. These areas included how to use NerveCentre software in the ED, familiarisation of the ED and trust structure, how to handover patients to other hospital wards, the role of the FY1 doctor in ED and the role of the back-of-house FY1.

Our presentation formed part of the FY1 induction in July 2019 for new FY1 doctors starting in the ED in August. To make the session as interactive as possible we acquired the use of Trust iPhones and delivered a practical demonstration of how to use the software with the new FY1 doctors.

Pre-course questionnaires revealed that the majority of new FY1 doctors did not know how to use NerveCentre (75% voted disagree/strongly disagree), a large percentage did not know how much support they would have on nightshift (59% voted neutral/disagree/strongly disagree) and the majority did not know how to hand patients over to other hospital wards (81% voted disagree/strongly disagree). Following our induction, a larger proportion of students knew how to use NerveCentre (86% voted agree/strongly agree), knew what support they had on nightshift (93% voted agree/strongly agree) and knew how to handover a patient to other hospital wards (59% agree/strongly agree). Each session was voted as very useful by the FY1 doctor (92%-97% voted agree/strongly agree).

Discussion Our near-peer induction has successfully increased self-reported confidence levels in new FY1 doctors in our trust. This suggests that near peer induction can complement, and enhance, consultant-led induction programmes. Feedback from our induction session was overwhelmingly positive. Following our session, FY1s reported increased confidence in their role, how to use a variety of trust software, and are more familiar with the trust model. We have been invited back to present future induction sessions for new FY1 doctors starting in ED.

Theme: International Medical Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 153
Medical Education in Honduras, the First National Training Survey

Author(s): Jhiamluka Zservando Solano Velasquez
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Background The Honduran medical training curriculum has not been reviewed or modified since 1971 and lacks a proper feedback system to address current challenges. The national health system provides resources for trainees to gain clinical exposure from their early years of medical school to final years of speciality training. Of three universities training undergraduates, only the public university runs post-graduate training programs alongside the National Health Ministry and the Honduran Institute of Social Security which provide funding and training placements. Currently, the national health system is in a state of collapse and the impact of this on the medical workforce, particularly trainees, has never been assessed. Objective: To identify strengths and barriers to the provision of undergraduate and postgraduate medical training in Honduras from the perspective of 7th (FY1) and 8th (FY2) year trainees, speciality trainees and medical trainers.

Methodology In collaboration with the Honduran Medical College and key stakeholders, we developed a cross-sectional survey of junior doctors, speciality trainees and medical professors using a five-point Likert scale. The survey followed the example of the GMC training survey but was adapted to the Honduran cultural context. The instrument comprised nine domains to include demographics, patient safety, training satisfaction, clinical supervision and experience, bullying, punishment, sexual harassment, emotional support and burnout. The survey was distributed nationally in 2019 throughout Honduras to all junior doctors, speciality trainees and medical trainers (n = 2934) through closed social media groups on a Qualtrics web platform and freely available to the invited groups for a week.

Results There were 324 responses in total giving a response rate of 11% (range 8-21%). Structured handover of patients between shifts took place only half of the time (54%). Overall, half of the doctors reported having to perform procedures without supervision or that were unknown to them. Trainees felt senior supervision was adequate on only half of occasions with 18% of trainers unaware that teaching was part of their contract. The quality of education and training for junior doctors and speciality trainees was rated by 45% of respondents as poor or very poor. Correspondingly, 59% of trainers felt teaching time allocated in their contracts was insufficient. Bullying was commonplace amongst doctors, with respondents reporting that they had been subjected to verbal (64%), physical (10%) or psychological (70%) abuse by a colleague or a senior. Sexual harassment was experienced by over a third of trainees (34%) with abuse coming from fellow trainees, consultant, non-medical personnel and even patients. Almost two-thirds of doctors felt affected significantly (66%) by the death or case of a patient but only 3% (9) received any psychological support to help cope with these situations. Over a third of trainees reported that they had been penalised for mistakes by illegal sanctions such as having to work several consecutive 24-hour shifts. 129 cases of severe burnout were reported amongst our respondents and were more common the more junior the trainee. These cases were mainly attributed to work overload and unreasonable sanctions on trainees.

Discussion The results of this first training survey are truly shocking and show that bullying, sexual harassment and staffing issues are rife in the medical system in Honduras. In addition, trainees report significant problems with lack of supervision, trainee wellbeing and high patient numbers impacting their ability to provide safe care for patients. Further basic changes are needed to provide a healthy learning environment for doctors and to improve patient care. This study will become mandatory for all Honduran medical trainees from 2020 but more importantly has revealed deep-rooted institutional issues that urgently need addressing.

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Theme: International Medical Education

Accepted as: e-poster

Paper no. 154
Developing a Global Health Student Selected Component in Uganda: 8 years on

Author(s): Bethany Ferris, Rebecca Butler, Holly Shaw, George Thomas
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Background The General Medical Council (GMC) sets the standards and requirements for all stages of medical education and training. This guidance can be found in two key up-to-date documents: 'Promoting Excellence: standards for medical education and training (2016)' and 'Outcomes for graduates (2018)'. These state that medical students must be given "the opportunity to choose areas they are interested in studying", whilst graduates must be able to "evaluate the determinants of health and disease and variations in healthcare delivery and medical practice from a global perspective".

The University of Bristol curriculum requires third year medical students to choose a six-week student selected component (SSC). At Swindon Academy over the past eight years, we have been offering students the opportunity to undertake a global health SSC with an overseas placement at a rural hospital in Uganda. The focus of this SSC is the planning and implementation of a small audit or research project in Uganda and students are assessed through submission of a project write-up including a reflection. In 2020, we are developing the SSC as we will be expanding our team to include junior doctors and consultants from the UK in addition to students and clinical teaching fellows. The purpose of the submission is to describe the process of setting up a global health SSC project and to evaluate our experiences of running this SSC through analysing student feedback.

Methodology Previous clinical teaching fellows have produced an eleven part step-by-step guide to establishing a global health SSC. This was created through first-hand experience of organising a project abroad, as well as feedback from students. Through a series of regular meetings with our team, which have been on-going since August 2019, we are expanding upon this guide due to new challenges that we have faced this year. We will be collecting student feedback in the form of focus groups and written surveys before and after the SSC in order to evaluate and improve our guide.

Results We look forward to collating the results in June 2020.

Discussion This year we have faced some new challenges in the organisation of the SSC for June 2020. We have added elements to this venture to better reflect the current best practice surrounding ethics and sustainability in global medicine. We are introducing qualified doctors to our team, in order to enhance expertise and the challenges we have faced include how to select these doctors and assist them in creating valid and worthwhile projects. We are also joined by consultants specialising in sexual health and human immunodeficiency virus (HIV) medicine. It will be interesting to reflect upon how our consultants have been able to evaluate the current highly-rated HIV services in Uganda, as well as aid quality improvement in this setting. Our students will be supported in Uganda by these doctors and we will collect feedback from the team as to whether this inter-professional approach helped the learning of both students and doctors. We are also keen to collect feedback from the staff in Uganda in order to build on our partnership in the future.

The student feedback from previous years found that all students' self-assessed knowledge of global health issues increased following the SSC. We will be expanding upon the pre-placement teaching which was offered last year to include public health and epidemiology; clinical skills and basic life support; clinical governance and professionalism and learning how to teach. Many of the students joining us in 2020 are hoping to undertake intercalated undergraduate degrees in global health starting in September 2020. They are hoping to use this SSC as a chance to start a project which they can continue during an intercalated degree. We feel it would be very valuable for future clinical teaching fellows to conduct future focus groups with these students to analyse whether acquiring first-hand experience of global health assisted them in their intercalated degree.

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Theme: Inter-Professional Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 155
Can a bespoke theatre based course change student attitudes and remove perceived barriers to learning in the theatre environment? A prospective randomised control study

Author(s): Thomas Lyons, Robert Moynihan, Nicholas Stafford, Anushka Chaudhry, Christopher Jacobs
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Background There are a variety of learning opportunities available to students in theatre. Medical students can find it difficult to make the most out of these learning opportunities because of the unfamiliar environment [1]. Thematic analysis of third year medical student focus groups identified that there are several perceived barriers to learning in the theatre environment. One of the biggest themes was a lack of knowledge surrounding the roles of the multidisciplinary team (MDT) in theatre which in turn led to anxiety about the behavioural etiquette in the theatre environment and uncertainty about their own role within the team. We designed and validated a course which aims to directly address these barriers to learning and improve student motivation to attend and engage with the learning opportunities available to them in theatres. This study successfully gained ethical approval.

Methodology A cohort of third year medical students on surgical and anaesthetic rotations were randomised into either an intervention or control group. The control group are to participate in the conventional placement whilst the second group will have the addition of a bespoke, validated course aimed at changing student attitudes and removing perceived barriers to learning in the theatre environment.

We conducted a pilot study in November 2019 to validate our course design. We found that undertaking a theatre-based simulation was potentially a useful teaching method for improving medical student confidence and encourages learning in theatres. Following feedback from the pilot study we added a workshop which students will run through prior to undertaking the simulation. The workshop introduces students to members of the MDT and their top-tips on how

to behave in theatres followed by skills stations including surgical scrub and airway management. Immediately prior to the simulation students view a tailored educational video featuring a patients journey through theatres.

All students will complete an Intrinsic Motivation Inventory (IMI) questionnaire at the beginning and end of their placement. The IMI is a validated questionnaire used to assess participants subjective experience related to a task or activity (2), the activity in this study being, going to theatre. We will be using the IMI subscales of; interest/enjoyment, felt pressure/tension, perceived choice and value/usefulness to assess the effectiveness of our study. We will also ask the students to complete reflections about their time in theatre at the end of their placement.

Results IMI questionnaire answers will be analysed for statistical significance between groups to assess for differences in attitudes towards learning in the theatre environment. Student reflections will also be analysed by a thematic analysis. The course will take place in early February and results will be available at the end of March 2020.

Discussion We aim to investigate the success of our course design in improving student motivation and removing some of the perceived barriers to learning in the theatre environment. Our hope is that students are more likely to attend theatre during their clinical rotations and feel comfortable enough to take full advantage of the learning opportunities available.

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Theme: Inter-Professional Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 156
Healthcare Education Values and Activities Study (HEVAS): improving communication and collaboration

Author(s): Julie Browne, Alison Bullock, Elaine Russ, Derek Gallen, John Jenkins
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https://youtu.be/XoAjFRoX66M

Background HEVAS (Healthcare Educators Values and Activities Study) aims to improve communication and collaboration between healthcare educators by establishing a consensus around values and activities that all share, regardless of clinical or professional background. A five-phase national consultation was held that included literature comparison, online survey, workshops and engagement events, nominal group exercise and two-step Delphi study. This resulted in agreement on a framework of 9 key values and 25 activities, grouped in an easily explained sequence which used iteratively, facilitates a cycle of

Theme: Inter-Professional Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 157
Putting the patient into patient safety education: Experiences from an interprofessional ward-based study

Author(s): Sarah Howarth, Shelley Fielden, Jane O'Hara
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Background Ward-based interprofessional interventions are crucial in promoting safe patient care practices (1). Yet whilst interprofessional education (IPE) is compulsory in most healthcare professional curricula (2,3), patient safety continues to be taught predominantly in the classroom, uniprofessionally and without patient involvement, which does not reflect the reality of the modern healthcare environment (4). To address this, an existing patient safety intervention (Patient Reporting and Action for a Safe Environment; PRASE), which involves hospital volunteers systematically collecting patient feedback about the safety of care and ward staff acting on it (4,5,6), was implemented differently. In this pilot study, students from different professions used the PRASE questionnaire to request feedback from patients and then worked collaboratively in multidisciplinary pairs to generate ideas for ward-based quality improvement which were then shared with staff. The aim of this study was to explore the feasibility, sustainability and impact of involving students from different healthcare programmes in an established, ward-based, patient safety intervention. This presentation will focus on the impact of this pilot on student learning and the implications for how we teach patient safety.

Methodology Between November 2017 and October 2018 medical, pharmacy and nursing students (n=17) voluntarily participated at one of seven wards across three local NHS Trusts. Semi-structured interviews were conducted with students (n=14), ward staff involved in facilitating the study (n=4) and programme leads (n=2). This data, as well as the student generated reports and researcher field notes, were then analysed using a process of thematic analysis. Appropriate ethical approvals were obtained from the participating NHS sites and the University of Leeds.

Results It was clear across all professional groups that students valued and benefited from the patient safety intervention being ward-based. Students developed knowledge and skills through: 1) discussing patient safety with real patients; 2) working with a student from another profession in a clinical environment; and, 3) the opportunity to discuss and generate solutions to real safety problems. More specifically, students reported that in speaking to patients, they were able to have a different type of conversation to those ordinarily undertaken on placement, one focused on the patient experience of safe or unsafe care rather than their presenting medical complaint. This focus enabled students to better understand what safe care meant to patients and to see the value in involving patients in discussions around safety. Working interprofessionally facilitated informal knowledge sharing around roles and responsibilities, but also communication skills as students observed the different approaches taken with patients and ward staff. This was not without challenge as it meant students had to confront and overcome perceived and actual professional hierarchies in their communication with staff members. Finally, students reported that collecting data in a ward environment meant they were actively involved in affecting real change, which they found rewarding and motivating. They felt they had the opportunity to address real safety problems and learn about the challenges of undertaking quality improvement.

Discussion When students learn about patient safety in a ward setting, through interacting with patients, ward staff and students from other professions, this not only better reflects working in a healthcare environment, there can also be greater knowledge and skill gain. We recommend that curriculum developers consider the benefits of moving towards more authentic learning experiences and engaging with a range of stakeholders to ensure student understanding of patient safety is meaningful.

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Theme: Inter-Professional Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 158
Reading between the lines: exploring Student Book Groups as a means of promoting wellbeing and building inter-professional relationships

Author(s): Miss Kate Vavasour, Dr Fiona Osborne, Ms Eleanor Rolls, Dr Laura Heggie, Ms Jenny Richardson, Dr Belinda Bateman
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Background The inclusion of humanities, particularly literature, within traditionally science-focused medical curricula has long been considered advantageous (1-3). Studies exploring the impact of interventions encouraging healthcare students to read non-medical texts describe promising outcomes (4-7). Practice related benefits include increasing empathy (5,6), improving communication skills (7) and facilitating patient-provider relations (6). There is also growing evidence of the benefits of reading in promoting wellbeing and reducing burn-out (7,8). This is of particular importance given present-day concerns of the burden of mental illness amongst medical staff and students (9). However, a major obstacle to reading has been cited as lack of time during medical courses, as well as the expense of books (10). Book Groups, with a dedicated time set out in the students' days and books provided, have been suggested as a way to combat these difficulties and improve interprofessional learning (11).

Methodology In our district general hospital trust, a Student Book Group was established as a joint initiative between medical teaching staff and library services. The collaboration was part of a departmental wellbeing initiative and branched from a highly successful trust-wide NHS Staff Book Club which increased literature book issues in the hospital libraries by 416%. Meetings are held fortnightly during lunch times across three hospital sites. Discussions are facilitated by teaching fellows and library staff. Novels are selected according to suggestions from participants and are chosen with the aim of addressing themes relevant to medical practice. Books are loaned free of charge by the hospital libraries. Evaluation of the initiative begun after four months using a suggestion box with a simple anonymous questionnaire requesting free-text feedback from attendees.

Results Over a four-month period the Student Book Group was attended by eleven medical students, nine teaching fellows and five library staff. Five books were covered over eight Book Group sessions and addressed several themes including trauma, substance use, fertility, racism, sexual abuse, conflict and developmental disorders. Nine attendees, exclusive of the authors, responded to the feedback questionnaire representing 47% of the group. The feedback repeatedly highlighted the motivation the book club gave staff and students to 'take some time out', acting as a 'great release from university work'. It also drew attention to the group's ability to 'break down barriers' between the staff and students, allowing them to meet on a 'more equal footing'.

Discussion Our early evaluation findings echo the results from similar initiatives which found that reading literature can promote wellbeing and reduce stress (7,8). This is particularly significant in the UK context given the high prevalence of stress reported by medical students (12). Interestingly a recent survey found that guilt around relaxation is a significant stressor for medical students (13), perhaps indicating a potential benefit of Book Groups in normalising 'rest periods' within medical curricula. With regards to inter-professional learning, our findings were also consistent with previous initiatives which found that Book Groups helps promote discussion in a relaxed environment (4) and establish relationships between individuals from different professional backgrounds (11,14). Furthermore, another clear advantage reported in our evaluation was the increased ease of relationship between staff and students. This may also aid stress levels by reducing anxiety surrounding interactions with staff, which has been highlighted amongst students as a source of stress which is often underestimated amongst doctors (15). In conclusion, our experience of establishing a Student Book Group was that it had the dual benefit of promoting wellbeing and reducing stress whilst also breaking down staff-student barriers.

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Theme: Inter-Professional Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 159
Re-designing the Teddy Bear Hospital: an Interprofessional Education Intervention

Author(s): Rebecca Archer, Rebecca Quinn, Kate Bowers, Jimmie Leppink, Martin Veysey, Gabrielle M Finn
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Background Teddy Bear Hospital (TBH) is an initiative founded by the European Medical Students' Association (EMSA) intended to help 3-12-year-olds to lose their fear towards doctors and hospital environments. Hull York Medical School (HYMS) is among many national institutions that participate in this initiative. The HYMS' intervention targets children aged 4-7 with medical-themed games and informative stations with teddy bear 'patients', to change perceptions and feelings surrounding healthcare.

Recognising the importance of interprofessionalism in healthcare, HYMS has redesigned their intervention to include interprofessional education (IPE) as a secondary mission of their TBH. It has been demonstrated that even minimal hours of IPE lead to improved attitudes to interprofessional teams, including self-reported confidence and knowledge.

These findings indicate that a brief intervention such as TBH can have immediate positive effects and contribute to the development of health professionals, who are ready to collaborate with others to improve patient outcomes.

Methodology This cross-university collaboration at Hull and York, brought students together from Medicine, Nursing and Physician Associate cohorts in a triphasic intervention.

Phase 1: Ethnographic methodology was used to observe IPE students collaborated to design a teddy bear journey through a selection of clinical cases, applicable to both primary and secondary care.
Phase 2: Primary schools were recruited from Hull and York using an existing outreach network at HYMS. IPE students delivered the clinical cases to children and were observed using ethnography.
Phase 3: Focus groups evaluating IPE were recorded, transcribed verbatim and analysed using thematic analysis.
Student participation was voluntary, and responses were treated in confidence and were anonymous. The study was given ethical approval by HYMS Ethics Committee.
Results Preliminary results suggest that while IPE is the focus of the work, students expressed hesitancy, and initially preferred working most directly with students in their cohort. Assigning different IPE students the design scribe role in sessions led to observable respect of leader, regardless of professional cohort. There was a trend for student in post-graduate training programmes to be more vocal in design, despite some undergraduate students having experience in designing previous. TBH was regarded as a positive initiative for promoting IPE and appreciation of clinical roles.
Discussion Early results are encouraging towards the use of interprofessional education interventions; however, we have seen that many complex issues interplay and impact upon the success of IPE, which may not be currently represented in the literature.

Theme: Inter-Professional Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 160
Road2Resus- Pre hospital and emergency care interprofessional learning simulation for undergraduate students

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Background Prehospital medicine is an important and dynamic specialty, yet one which medical students are rarely exposed to during undergraduate training. 'Road2Resus' was created in conjunction with paramedics, to bridge the knowledge gap between prehospital and hospital care. Our objective was for students to follow patients' journeys from injury to A&E and develop leadership, prioritisation, communication and interprofessional learning (IPL) skills during simulated scenarios.
Methodology Participants included 50 final year medical students from Newcastle University and 8 final year paramedic students from Teesside University. Three scenarios were delivered, incorporating students as either role players or medics. Scenario 1: Multi trauma wedding scene, scenario 2: Ambulance transfer, Scenario 3: Resus scene. Students participating in scenarios were recorded via SMOTS and the live video was streamed into a debriefing room where other students and faculty could observe. There was an extended debrief after each scenario and formative feedback from students was gained at the end of the session.
Results 80% rated the course excellent with the other 20% rating the course very good. All students agreed or strongly agreed that this course would change their future practice. Common themes in free text feedback included enjoyment of IPL, recognition of human factors and the importance of gaining useful feedback during debriefing.
Discussion Medical students appreciated the opportunity to gain experience in prehospital medicine, which is often neglected in the undergraduate curriculum. Feedback highlighted significant learning between paramedic and medical students whilst allowing an opportunity for both groups of students to demonstrate leadership in a safe, simulated environment. The realistic scenarios were praised and emphasised the importance of human factors in emergency situations. Due to the size of the cohort some students acted as role players. Although this was accepted positively as they could understand the patient perspective, it would be preferable for all students to experience both roles. We therefore propose to adapt this course for future use, recognising that smaller group sizes may be more appropriate.

Theme: Inter-Professional Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 161
The Ophthalmic Common Clinical Competency Framework (OCCCF): A national programme of inter-professional education for the multi-disciplinary team

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Background Ophthalmology is a diverse specialty concerned with management of disease affecting the eye and associated structures. It is the busiest outpatient specialty, accounting for 8% of the 94 million hospital outpatient attendances in the UK (1). With increasing demand on hospital eye services the structure of the eye care team is changing, with health care professionals (HCPs - ophthalmic nurses, orthoptists and optometrists) undertaking extended clinical roles to deliver services that were previously the domain of medically-qualified ophthalmologists. The General Medical Council's guidance on Good Medical Practice states that when doctors do not provide the care themselves, as when delegating to colleagues, they 'must be satisfied that the person providing care has the appropriate qualifications, skills and experience to provide safe care for the patient' (2). Safe delegation of tasks is difficult if training and qualifications are not standardised. It is therefore necessary that those to whom care is delegated have recognised levels of competence, supported by education and training. The Ophthalmic Common Clinical Competency Framework (OCCCF) has been developed by the Royal College of Ophthalmologists (RCO), in discussion with other professional bodies and with the support of Health Education England, as a standardised curriculum through which to educate the multidisciplinary team, delivered through a programme of inter-professional education.
Methodology The OCCCF curriculum was developed from the established Ophthalmic Specialist Training (OST) curriculum. Consultation between the RCO, Royal College of Nursing, College of Optometrists and British and Irish Orthoptic Society began in 2016. Separate curricula were created in four subspecialist disciplines of maximum clinical need, comprising Acute and Emergency Eye Care, Cataract, Glaucoma and Medical Retina. Each curriculum advances through three levels in a 'spiral learning' structure of increasing complexity, with level three (highest complexity) aligning to the clinical pillar of the Advanced Clinical Practice Masters Programme. HCPs can choose to complete one curriculum area to any level, or they may wish to complete multiple curricula. Certification is awarded when all learning outcomes are achieved for an entire level in the relevant curriculum area.
Results The OCCCF launched in June 2019 (3). The curriculum is delivered through a combination of online resources (learning materials, assessment tools), and clinical teaching and supervision delivered by members of the multidisciplinary team in training units. Learners evidence their achievements through a standardised portfolio. Clinical and Educational Supervisors must attend a Train the Trainers (TTT) course specific to the OCCCF programme. The initial TTT course was held at the RCO in London in June 2019 for HCPs who had been involved in OCCCF curriculum development, delivered by a team of ophthalmologists familiar with medical TTT courses. Two further TTT courses have been delivered to date, each delivered by a faculty of ophthalmologists and HCPs who attended previous courses. Regional OCCCF TTT teams are being developed to provide training in ophthalmology units. The first cohort of OCCCF learners enrolled in the programme in January 2020.
Discussion The OCCCF offers a formal process through which HCPs can develop extended clinical roles, with national recognition of the skills acquired. It demonstrates a novel approach to inter-professional education, involving members of the multi-disciplinary team in curriculum development, design of teaching resources and delivery of the educational programme both centrally and through regional training units. The OCCCF will enable HCPs in ophthalmology to achieve their maximum operational potential and promote delivery of the highest standards of patient care, improving patient throughput and outcomes. It is hoped that it may become an exemplar for development of clinical teams in other medical specialties.
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Theme: Inter-Professional Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 162
What's the added value of medical students training to be Health care assistants? Student and faculty perspectives

Author(s): Kishan Patel, Elizabeth Anderson, Richard Holland
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Background Many lament that medical students enter the clinical environment much later than other healthcare students and feel unprepared.[1,2] They fail to settle into the team, struggle with working processes and are not 'ward smart'.[3] Despite bridging programmes and more immersion into clinical context through patient contact in the early years, addressing this gap remains a challenge. Enabling medical students to train as health care assistants (HCA) from the outset is seen as one solution.[4] In fact, Fearnley, who trained as an HCA, reported having an improved understanding of patients and being a more thoughtful prescriber.[5] We report on a pilot study which aims to evaluate the effect of HCA training on medical student attributes. The medical students completed a 1 week training course, in week two of medical school. Within 6 months they completed e-learning, further classroom learning, the NHS Trust induction and work placements. The study has ethical permission.

Methodology We used a mixed methods approach combining student pre- and post-course scored questionnaires on course aspirations and potential learning with free text comments and focus groups. Faculty, including nurse trainers, completed one-to-one interviews. The quantitative data was analysed using SPSS (version 26), the qualitative data was analysed using thematic analysis

Results We succeeded in recruiting thirty medical student volunteers; only 3 withdrew with one student not completing the Trust induction. The students valued the learning and advanced their understandings of the work of HCAs (P=0.01). From the outset, they perceived a value for themselves to propel their medical studies. The qualitative data highlighted why they chose the course; "experience healthcare setting", gain confidence, skills development, work in teams and more patient contact. Being paid was not a driver. The training was valued because it highlighted "the importance of tailoring care towards individual patients", helped them understand how to navigate a ward and gave them early exposure to clinical symptoms. In particular, it raised their value for the nursing faculty whilst the nurse trainers/faculty benefitted from raising their perceptions of the commitment of medical students stating "…that level of commitment really showed through". Furthermore, the nursing staff benefited from a different perception of medical students "they were probably a bit younger than what I expected and probably a bit more down to earth. They were just normal young people". The nurses were delighted at their organisation and ability to complete their set work; "When XX asked them to turn up …[with their books] they all turned up. They really did commit to it, the fact that we've only had 3 not complete is really good". Members of the Medical faculty highlighted some of the challenges to insert this training for all medical students, but welcomed the addition.

Discussion It is not easy to design a bespoke training package for medical students to become HCAs within a national variance and abiding to local policy. The faculty leads have reflected on possible ways to re-shape the training which, with a 90% success rate, can be completed within six months of starting medical school. Another important finding is that the nurses associated with the programme benefitted from a positively changed perception of medical students. The added commitment of the medical students was amazing and made the pilot worthwhile. We await student feedback following paid employment and are seeking to expand to take 90 students in 2020.

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Theme: Inter-Professional Education

Accepted as: Short Communication

Paper no. 163
Assessing Adverse Childhood Experience Education for an Interprofessional Audience

Author(s): Jacob Arnold, Alayna Craig-Lucas, Mark White, Dennis Dawgert
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Background An Adverse Childhood Experience (ACE) is defined by the CDC as a term used to "describe all types of abuse, neglect, and other potentially traumatic experiences that occur to people under the age of 18" (1). Despite a growing acceptance and understanding that ACEs represent an enormous public health burden, there is a gap in training and education for healthcare providers and community members at large. A recent survey of US family medicine residents found that while eighty percent believed it was their job to screen for ACEs, less than half reported any formal training, and only two percent screened patients for ACEs in first encounters (2). It is therefore incumbent upon the medical community to design and implement educational programming to increase confidence and competence in caring for people who have experienced ACEs. Few studies have examined design of such trainings, and none found in our literature review targeted heterogenous or multidisciplinary audiences (3,4,5).

In November of 2018, Geisinger Commonwealth School of Medicine hosted a symposium on ACEs, with the aim of building awareness of and competence with ACEs and resiliency, and trauma-informed care, targeting an interprofessional audience.

Methodology Participants were asked to complete pre and post surveys providing demographic information and rating their knowledge of and familiarity with ACE and resiliency scores using a seven-choice Likert scale. Answers to the Likert-scaled questions were assigned a numeric value from 1 (strongly disagree) to 7 (strongly agree). Means were ascertained for all questions that used a Likert scale. Eight of the questions on the pre and post surveys were identical. Results of the paired sets were subjected to two-tailed T-tests assuming unequal variance, a hypothesized mean difference of zero, and an alpha of 0.05. The data were then binned by profession and the tests were repeated.

Results Participants overwhelmingly agreed on the post survey that ACEs, resiliency, and trauma-informed care is important (mean: 6.8), will allow them to change their work (mean: 6.3), and largely agreed that they planned to use trauma-informed care in their work (mean: 5.8). All eight questions showed statistically significant increases following the symposium and variation among responses markedly decreased for all questions except those asking whether the participant regularly uses ACE or resiliency scores respectively. The greatest increases were seen in the questions asking whether participants had heard of and were familiar with ACE and resiliency scores. When viewed categorically by profession, these data become less clear, likely due to the small sample sizes. However, for most questions, there were significant increases among participants who indicated medicine was their primary field and those who chose more than one primary field.

Discussion The importance of educating medical providers and community members about adverse childhood experiences cannot be understated. Such adverse experiences have repeatedly been linked to poor health outcomes, including mental health and substance abuse disorders, obesity, heart disease, asthma, and stroke (6,7). It is incumbent upon all members of the community to understand ACEs, and perhaps more importantly, to strive to reduce their occurrence. Although previous works have found a high degree of enthusiasm among providers and students for learning more about ACEs (3,4), training has not yet been widely adopted by the medical community (8). We have shown that educational programs can effectively address a heterogenous audience and reaffirmed that medical professionals at all levels and members of the community have a strong desire to learn more about ACEs, resiliency, and trauma-informed care. Educational programs such as our symposium are an important first step upon which we hope future interventions may be built.

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Theme: Inter-Professional Education

Accepted as: Short Communication

Paper no. 164
Does MDT Simulation Soothe Delivery Room Drama?

Author(s): Ryan Youde, Chloe Rich, Holly Shaw, Anjola Mosuro, Kevin Jones
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Background Good multidisciplinary team (MDT) work is essential in delivering a high standard of perinatal care for both mother and baby. Training in emergency obstetric care has been related to improved adherence to protocols for evidence-based practice (1) and has been shown to reduce incidence of both low neonatal 5 minute Apgar score and hypoxic ischaemic encephalopathy (2). Perinatal MDT skills are not taught within the current medical student, midwifery student or student operating department practitioner (ODP) curricula in Swindon. We aim to improve undergraduate confidence participating in perinatal emergencies and increase appreciation of the associated perinatal MDT roles via use of simulation.
Methodology We conducted a sequence of multidisciplinary simulations for medical, midwifery and ODP students. Four back-to-back scenarios were conducted, aiming to sequence a perinatal emergency in real time as follows:
1. History, examination and diagnosis of placental abruption within a pregnant mother at term gestation, with recognition of the need for category 1 caesarean section,
2. Anaesthetisation of the mother with difficult airway management,
3. Delivery of neonate and management of post-partum haemorrhage,
4. Newborn life support for a significantly compromised neonate.

This sequence of scenarios was repeated throughout the day. A total of twenty students participated.
Students were asked to act within their own roles during the scenarios, with support from seniors available in the form of confederates, if needed. Confederates consisted of qualified doctors with paediatric/obstetric experience, ODPs and midwives. Feedback was collected through questionnaires issued to participants pre and post simulation.
Results Median student confidence in participating in perinatal emergencies increased from 4 to 7 out of 10, whilst median confidence in participating in MDT simulation in general increased from 5 to 7 out of 10. Marked improvements were noted in the individual subgroups' (medical, midwifery and ODP) understanding of the roles of the other disciplines within perinatal care. Qualitative feedback highlighted the benefits of MDT simulation as a student to increase confidence in participating in perinatal emergencies in future. An appreciation of the high fidelity of the scenarios was noted.
Discussion Perinatal MDT focused simulation is favoured by students and is able to increase student confidence in participating in perinatal emergencies, whilst increasing awareness and appreciation of the roles of the wider perinatal multidisciplinary team. We therefore believe there would be benefit to incorporate a similar programme into the undergraduate curricula for medical students, student midwifes and student ODPs and aim to take this forward for implementation.
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Theme: Inter-Professional Education

Accepted as: Short Communication

Paper no. 165
FOAM Rolls learning across shifts: Two years' experience of a multidisciplinary online learning forum for Emergency Medicine Education

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Background Sustaining scheduled, multidisciplinary teaching is not always conducive to the time pressured and chaotic environment of the Emergency Department (ED). Free and Open Access Medical Education (FOAM) forums in Emergency Medicine provides an online platform through which learning can continue despite the barriers of regular shift work and can engage all healthcare professionals in ED.[1]
Social media plays an important role in the knowledge and information sharing in today's world with many having access through their phones. [2] However, concerns around the credibility of material posted by users and lack of moderation on such social media-based FOAM Forums has been raised.
We present faculty and user reflections on two years of maintaining Great Western Hospital Emergency Department FOAM forum on a social media platform.
Methodology Many Emergency departments have created websites for information dissemination. However, to avoid labour intensive website creation and maintenance, we opted to create a closed Facebook group. This allows members to receive notifications on updates and opportunity for interaction with the materials posted. To ensure a standard of quality, we appointed a senior multidisciplinary faculty to moderate the content and comments of this group. Users are free to post relevant information but this is approved by the moderator. Common posts on the forum include; info-graphics, RCEM clinical learning updates and safety briefs, outcomes of trials, papers, podcasts, instructional videos, ECGs, X-ray of the month and interactive cases led by faculty members. To cater for members not on Facebook, bimonthly email updates of summarised content and discussion topics are created into newsletter format and circulated.
Results The results in 2019 showed a satisfaction score of 7.7/10 from 22% of surveyed users. [3] There are 179 members of the forum. We are currently surveying this year's performance. All users will be invited to complete a structured survey focusing on the impact the availability of this resource has had on their learning and clinical practice. Furthermore, we will be collating all the topics discussed on the forum during the year to ensure a breadth of topics are being covered to provide a balanced resource for Emergency Medicine.
Discussion The asynchronous nature of this education forum creates a sustainable resource and allows members to learn without the restrictions of shift patterns. Through the launch of the FOAM forum we have shifted the culture of education our department to an open discussion that continues both on and offline.
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Theme: Inter-Professional Education

Accepted as: Short Communication

Paper no. 166
How to Improve Drug Safety on an Inpatient Cardiology Ward in Twenty Minutes

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Background There are an estimated 237 million 'medication errors' per year in NHS England (1). The World Health Organisation (WHO) Global Patient Safety Challenge 'Medication Without Harm' aims to reduce global burden of severe and avoidable medication-related harm; with education and training a key element for health professionals (2).
In the Bristol Heart Institute on two inpatient cardiology wards there were 64 drug related errors reported between May 2019 and October 2019. With countless more errors identified by members of the multidisciplinary team but not formally reported.
Interprofessional education is recognised as an effective method to enable effective collaboration and improve health outcomes (3). Interprofessional learning is also recognised by The Department of Health as part of an effective learning organisation (4).
Implementing interprofessional interactive teaching in twenty minutes within a ward environment can be used to increase nursing awareness and understanding of cardiac drugs. In turn this should lead to reduced drug errors and increased formal reporting of drug errors.
Methodology To address drug safety five sessions relating to five different cardiac drug classes were devised. The teaching was designed and delivered by a cardiology pharmacist and a cardiology teaching fellow. Each session comprised of multiple very short interactive activities. Important safety information was highlighted in each session followed by a practical assessment using a drug chart to identify errors. Errors included both common errors and formally reported drug errors from the incidents reported on the wards. The sessions were delivered on the ward environment and strictly timed to twenty minutes to increase nursing attendance and decrease time away from clinical duties. The first drug safety week was delivered in October and will be repeated throughout the year. At the end of each session all attendees completed a questionnaire including self-reported confidence levels surrounding drug safety on a Likert scale as well as whitespace for qualitative feedback.
Results The first drug safety week had 34 attendees with 79% registered nurses and 20% student nurses. Prior to the session attendee's confidence levels regarding important safety information surrounding the 'drug class of the day' was low with only 35.5% feeling very confident in the subject. Following the session however this almost doubled to 67.6%.
88.2% (n=30) of attendees felt the content would affect their clinical practice and 100% would attend further teaching sessions. The main theme from the feedback was that attendees really enjoyed the interactive nature of the teaching sessions "Interactive and fun as well as informative" and reflected the focus of the session to improve practice "Real-life examples (drug charts etc) are useful for seeing how it affects our practices"
Reported drug errors from October onwards following the implementation of teaching sessions are currently being monitored.
Discussion Interprofessional teaching helped in both the design and delivery of the teaching. Taking teaching to the ward environment and delivering this over a short time period of only twenty minutes actively encouraged nurses to attend. The location of the teaching session is vital to increase accessibility; 47.1% of nurses worked on the cardiology ward where the teaching session was located. The very interactive approach ensured participation by all attendees and highlighted important safety information which was demonstrated in attendees comments. All attendees would attend future drug safety teaching which is important in the continued strive to improve drug safety.
The reporting of drug errors is felt be underreported. Therefore formal reported drug errors may not reflect drug errors in practice. Improved knowledge of drug error may lead to increased reporting due to increased awareness. Continued interprofessional teaching and learning is required to improve drug safety.

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Theme: Inter-Professional Education

Accepted as: Short Communication

Paper no. 167
Inter-professional teaching - doctors teaching paediatrics to the new generation of physician associate students

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Background Physician associate's training curriculum consists of a minimum of 1,400 hours in a clinical setting under the supervision of doctors, including 90 hours of paediatric placement (1). Within University Hospitals Bristol NHS Foundation Trust this is overseen by a team of clinical education fellows and the current PA programme within paediatrics is now in its second year. Whilst a curriculum exists for PA training those delivering the clinical part of the course may be uncertain regarding the levels to be attained during their 90 hour placement within paediatrics (2).
This study aims to investigate and further understand how best to facilitate doctors involved in training physician associate students during their paediatric attachment.
Methodology As a pilot study, semi-structured interviews were held with 4 paediatric clinical education fellows (doctors) within University Hospitals Bristol NHS Foundation trust. They train 5 pairs of PA students during a 3 week paediatric placement across the academic year 2019-2020. Key questions surrounding their initial approach to the topic choice, choice of teaching style, breadth and depth of knowledge they expected PA students to acquire and any unexpected challenges or positives of teaching a different professional group to their own were explored. Following this successful pilot, the study will continue and extend to the other doctors in our Trust involved in PA student paediatric clinical teaching which will be presented. The interviews will be transcribed and analysed using an inductive approach to establish key themes and findings.
Results Emergent themes of the pilot included uncertainty amongst doctors regarding the expected level of clinical knowledge and clinical skills of PA students. There was a tendency to compare PA students to medical students and use this as a basis of expected standards for the depth and scope of knowledge. Positive comments regarding teaching included an overall enthusiastic, mature and proactive attitude toward learning that participants felt was related to the postgraduate design of the course.
Discussion Additional information on the level of paediatric training required for PAs would benefit their training in hospitals and increase confidence of doctors training them. This work between PAs and doctors involved in PA training will be presented.

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Theme: Inter-Professional Education

Accepted as: e-poster

Paper no. 168
A New Approach: In-situ Palliative Care Simulation in a Hospice setting

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Background Simulation as a method of providing realistic and practical medical education is an ever-growing area.(1) Since 2016, Health Education England and the JRCPTB have specifically recommended its use in supporting medical curricula(2). However, its particular use in the field of Palliative Care (PC) remains limited compared to elsewhere (3). What there is tends to focus on a single discipline – whether speciality doctors or nursing staff – rather than a multidisciplinary (MDT) approach(4). Where it has been used, such as for specialty trainees, it has been shown be effective(3). Most studies have looked at hospital-based care in a fully simulated environment. This does not reflect the diverse environments where PC teams work with potentially unstable patients, notably hospices.

There has been little work on developing 'point-of-care' in-situ simulation based in hospices. A 2018 literature review found no evidence of work outside of a 'simulation laboratory' setting amongst 78 studies looking at simulation in PC. There were also specific shortfalls within this – for instance only 13% considered symptom control, 6% addressed team communication and 16% included members at different training stages(5). The combination of these factors suggested that there was room for an innovative approach to PC education.

Methodology We designed and ran a series of scenarios addressing advanced communication skills, emergency care and symptom management. These were delivered to a MDT of doctors and nurses of varying grades. Participants had all worked within a hospice setting. For maximum fidelity, the sessions were provided in a vacant patient room, and included only equipment that normally available in a hospice setting. All scenarios were run by staff with experience of PC, supported by actors and an advanced simulation mannequin to aid fidelity, provided by Swindon Academy. Each scenario was followed by a comprehensive, reflective debrief overseen by experienced staff – and the overall session was structured to reflect Kolb's 4 stages of experiential learning(6). Feedback was collected before and after the session, with space for written comments to accompany quantitative measures of confidence relating to clinical and communication skills.

Results Feedback was collected from 7 participants for the session. Pre-session results reflect a mixture of participants in terms of role, grade, and simulation experience. There was also significant variation in baseline confidence levels regarding PC scenarios. All participants reported a degree of anxiety regarding the session.

Comparing those results to post-session responses, there were significant increases in confidence levels both in management and communication. The mean confidence level for management (out of 10) increased from 3.1 to 6, and for communication from 3.9 to 6.7. All participants had felt that the session was useful for learning and relevant to their own work. There was universal agreement that it had been helpful for developing clinical and communication skills. Verbal feedback and free text feedback was also very positive – citing it as a useful opportunity to practice scenarios and skills, and a good learning experience.

Further sessions will be run during the year, potentially including additional staff groups as appropriate.

Discussion These results clearly show a potential role for innovative hospice-based MDT simulation in PC education. All members of the MDT represented were able to gain significant value and specific learning points from the session, which is encouraging.

Going forwards, further work could include further staff groups within the hospice, as appropriate – such as HCAs, volunteers and physiotherapists. It should also be recognised that the numbers here are currently quite small, so further research in similar settings would be indicated in order to confirm benefit – perhaps in comparison to similar sessions based in traditional simulation suites, which we have not looked at here.

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Theme: Inter-Professional Education

Accepted as: e-poster

Paper no. 169
"Big SIM": Learning from In-Situ Multidisciplinary Simulation within the Emergency Department

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Background The clinical environment provides opportunity for invaluable learning experiences and inter-professional interaction. Medical professionals are obliged to provide optimal treatment with patient safety as priority (1). As this can provide difficulties within medical education, simulation-based learning has provided a way of navigating this risk (2,3). Simulation allows the acquisition of clinical skills, behaviours and attitudes within a safe environment (4). The aim of this study is to evaluate a novel inter-professional simulation programme within an emergency setting and the distribution of key learning points.

Methodology The "Big SIM" project began in July 2019 and continues to run in the Royal United Hospitals Bath Emergency Department (ED). Supervised by an emergency medicine consultant and facilitated by clinical teaching fellows, monthly one hour multidisciplinary simulation sessions are conducted within the ED. Cases for the simulations are chosen based on the clinical needs of the team; addressing identified knowledge gaps; introduction of new equipment; preparation for incidents; and embedding new guidelines. They have allowed staff to practice using new documentation and locating and using equipment in real time. New guidelines and a new system for accessing them emerged during this period, therefore the simulations have been used to increase engagement with the guidelines and the new "eResus" guidelines system.

All members of the ED are encouraged to participate in "Big SIM", including: nurses, doctors, phlebotomists, nursing assistants, medical and nursing students and porters. Attendance is facilitated by allocation of supplementary senior staff to support the ED during the simulation. On average 15 ED team members attend each session. A team debrief is completed after each simulation, during which learning objectives are discussed and written feedback collected. Learning points identified within the debrief are distributed to all members of the ED via email and via posters within the department. Data collection from the feedback on the simulations and the preferred method of learning point distribution is ongoing.

Results Results will include analysis of feedback response on simulation scenarios, debrief and preferred method of learning point distribution. Results will be available for poster presentation at the ASME Conference 2020

Discussion Our project aims to facilitate simulation-based learning for an inter-professional cohort within a busy ED and to cascade this learning to the whole department, ultimately ensuring optimal patient care is provided.

Establishing the "Big SIM" training programme has enabled a complete cross-section of the ED to benefit from this evidence-based learning style, tailored to their specific needs. Running in-situ emergency medicine simulations increases fidelity as staff are required to interact with their own working environment, systems and equipment.

We maintain that the team-based simulations also improve multidisciplinary team working throughout the ED. Several simulations have also progressed to include members of other speciality teams including paediatrics and intensive care, which strengthens our working relationships and understanding of these specialities.

Distribution of key learning points is essential due to the nature of shift work in the ED which allows only a small proportion of our staff to be present at each

simulation. We are working to find the most effective way to ensure that our organisation learns and progresses as a whole.

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Theme: Inter-Professional Education

Accepted as: e-poster

Paper no. 170
Boards to Wards (B2W) - A multidisciplinary Sepsis teaching intervention

Author(s): Kate Fenton, Ben Messer
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Background There are over 200,000 cases of Sepsis annually in the UK, and the death rate remains high, with 44,000 deaths a year due to Sepsis[1]. A multidisciplinary approach is essential in preventing morbidity and mortality due to Sepsis[2]. Education of the workforce is critical to ensure improvements in the recognition and treatment of Sepsis. However a Health Education England report found that only 56% of responding hospitals provide sepsis training to all staff[3]. Teaching sessions are often lecture based, requiring time away from clinical duties which can be difficult to arrange. Furthermore, there are competing priorities for staff education such as mandatory training. It was therefore decided to bring a teaching session to the wards to enable maximum participation from healthcare staff. This Boards to the Wards (B2W) teaching mode had been trialled and well-received in anti-microbial stewardship education within our Trust.

Methodology The setting was a large tertiary teaching Hospital Trust in the North East of England.

A teaching session which could be delivered in less than 5 minutes was designed, focusing on the recognition and treatment of Sepsis. A whiteboard on wheels was used to attach visual aids to and act as a focus for the sessions. Sisters and Charge nurses on each ward were consulted as to suitable times to hold the sessions. On each ward the session was held twice back to back to allow all ward staff to attend. Sessions were led by a Clinical Teaching Fellow in Microbiology and a Consultant in Intensive Care who is the Clinical Lead for Sepsis for the Trust. Participants were asked to complete a feedback form involving Likert scales rating their pre- and post-session knowledge of recognising and treating sepsis . Data were also collected on role/grade of participants and free text comments on the session.

Data were analysed for normality and compared using a paired t-test (SPSS).

Results Sessions were delivered to all adult medical, surgical and obstetric wards in the Trust. 144 feedback forms were received. Attendees included staff nurses, health care assistants, ward clerks, physiotherapists, junior doctors, midwives, maternity support workers, dieticians, pharmacists and assistant practitioners. The improvement from pre to post intervention knowledge score on both recognition and management of sepsis was highly significant. Free text feedback was overwhelmingly positive, with particular emphasis on the short session and the fact participants did not have to leave their wards to attend.

Discussion B2W was successful in improving participants' self-reported knowledge of recognition and management of Sepsis. The B2W format appeared to work well and could be applied to other topics in future.

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Theme: Inter-Professional Education

Accepted as: e-poster

Paper no. 171
Implementation of a medical education programme for Addictions MDT staff members to improve knowledge and confidence in managing substance users with complex co-morbidities

Author(s): M. A Edison, J. Fehler
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Background Public Health England (PHE) has highlighted a rising number of deaths due to substance use disorders, and notable changes in substance misuser profiles. Increasing misuse in older people means management is now entwined with medical co-morbidities and polypharmacy. Early detection and/or onward referral to specialist medical teams is vital to minimise harm. Furthermore, mental health frequently needs treating in tandem, but cross-referral services can fail to recognise or meet these needs. A cohesive and confident multidisciplinary team (MDT) is vital to provide holistic care and accelerate recovery in a cost-effective manner. Greater knowledge may help facilitate MDTs to take on new and challenging leadership roles, as well as effectively broker lines of communication between the many interlacing inputs of a substance misuser's care.

Methodology 21 MDT members of a single substance misuse centre participated in an education programme set up and run over a three-and-a-half-month period. 8 PHE recommended topics were covered in the 6-session programme. These related to physical and mental health consequences of substance misuse, as well as the treatment needs of specific population groups who may access the service.

Results There was a statistically significant improvement across all domains including: MDT knowledge and confidence in recognising early signs of physical or mental health deterioration, when to escalate to a senior, and providing basic health advice. Regarding specific PHE topics, the biggest areas of mean improvement were managing substance misuse with physical co-morbidities and/or polypharmacy and in pregnancy, at 38.2% and 35.9% respectively (both p 0.0001). Regarding other topics; biological mechanisms increased 26.0%, physical health consequences 24.2%, hepatic disorder population 31.7%, older people 31.3%, the homeless population 31.8%, and co-existing mental health care 24.6%. (all $p \leqq 0.002$). Confidence in communicating concerns to both internal clinicians and external clinicians also significantly increased post-intervention at 14% and 21% respectively ($p \leqq 0.001$).

Discussion A teaching programme improved MDT knowledge and confidence in the early detection, escalation, and communication of physical and mental co-morbidities associated with drug and alcohol misuse. This intervention therefore should support harm reduction strategies both on an individual and wider community levels. Introducing an education programme which may be repeated periodically ensures a sustainable approach to workforce development and helps to facilitate holistic care in a cost-effective manner. Clear communication between the many 'cross-referral' services often involved in managing the complex needs of this population group is essential to reduce risk and provide comprehensive and integrated care.

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Theme: Inter-Professional Education

Accepted as: e-poster

Paper no. 172
Starting as we mean to go on: Ward round-based interprofessional simulation with medical students and pre-registration pharmacists

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Background The daily ward round is the backbone of inpatient care. Whilst clinical focus is essential, an effective ward round relies on a variety of equally important non-technical skills (NTS) such as communication, interprofessional teamworking and situational awareness (1). Simulation as a modality of teaching, has long been regarded as the most effective way to train clinicians in non-technical skills, however studies largely focus on surgical, anaesthetic or emergency training, rather than the acute medical specialties (2). Interprofessional simulation specifically, is becoming an increasing priority in postgraduate medical education, however it is often ignored in undergraduate training. Medical students have little interaction with allied health trainees during their undergraduate studies. Their collaborative working with these professionals will be key to providing safe, effective and high-quality patient care (3). We aim to pilot a simulation-based medical ward round experience for final year medical students and pre-registration pharmacists and assess its effectiveness at developing these key non-technical skills.
Methodology We designed a 1-day ward round simulation experience consisting of a 30-minute lecture on ward round principles, followed by a simulation and small group tutorial carousel. Attendance was mandatory as part of their undergraduate simulation programme. Half of the students were randomised to the lecture-only group and half to lecture plus simulation carousel. We used pre and post-intervention questionnaires, based on a non-technical skills framework to evaluate the effectiveness of the interprofessional simulation experience.
Results Full results awaited (project completion March 2020) but non-technical skill domains evaluated will include situational awareness, teamwork, task management, decision making and leadership. Statistical difference between two groups (lecture only vs lecture plus simulation carousel) in domains such as ward round confidence and preparedness for work as a doctor will be determined.
Discussion Full discussion awaited based on results but will comment on the following; whether interprofessional simulation at an undergraduate level, specifically with pharmacists, is a beneficial experience for both medical students and pre-registration pharmacists; the use of non-technical skills training in acute medical specialties rather than surgical or emergency specialties; the use of non-technical skills training at the undergraduate stage of medical training and the need for a validated non-technical skills assessment tool for medical students; whether interprofessional simulation is valued by medical students as a tool for preparing them for medical ward rounds.
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Theme: Inter-Professional Education

Accepted as: e-poster

Paper no. 173
There's no "I" in Elderly Care: Use of an ageing workshop to develop MDT working

Author(s): Rebecca Butler, Bethany Ferris, George Thomas, Anil Ipe
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Background Many specialities in the modern-day National Health Service take a multi-disciplinary team (MDT) approach to patient care. This is especially true in Elderly care, where patients have multiple and complex needs[1]. The Comprehensive Geriatric Assessment (CGA) is a vital part of the management of elderly patients when they are acutely admitted to hospital and involves expert review by many members of the MDT[1,2]. Effective team work depends on cohesive MDT working and a good understanding of all health professional roles. Medical students especially have been found to be lacking in this knowledge and the importance of working with others early on in careers has been highlighted [3]. Therefore, we decided to introduce the opportunity of MDT learning into our Elderly Care teaching. The aim was to highlight the importance of each role within the MDT and apply that to caring for elderly patients and developing empathy together in a safe and fun environment.
Methodology Over the past three years Swindon Academy of the University of Bristol has used ageing suits to teach students about functional limitations of ageing. We invited students from the wider MDT to participate in the workshop to join the medical students. Participants included nursing and physiotherapy students from Oxford Brookes University and the University of the West of England. This year we developed the workshop further, aiming to maximise the opportunity to develop empathy, as well as help all the students learn more about the physiology of ageing from different perspectives.
After group activities on the MDT and physiology of ageing, the students participated in a race to complete seven relevant tasks whilst wearing the ageing suits. It also provided an opportunity to teach each other about their roles and daily tasks on the ward. These tasks included mobilising, sorting and taking medication (sweets), putting on a shirt, making a cup of tea and completing a cognitive assessment. All participants completed a pre- and post-workshop survey to explore their attitudes towards ageing, expectations of the difficulties of each task and knowledge on the role of the MDT.
Results This workshop has now been delivered four times this year and data collection is ongoing.
In terms of baseline data, 73% of students felt that they already had a good understanding of the MDT. However, this increased to 95% agreeing or strongly agreeing at the end of the workshop. The most commonly reported observation was that the MDT included more people than they realised and that communication and understanding the skillset of others was important.
After the workshop 95% of students agreed or strongly agreed that they had a good understanding of the physiology of ageing, compared with only 26% before. The most commonly reported learning point was increased empathy for elderly patients in their care. The overall feedback for the session was positive and students enjoyed it.
Discussion Medical students in the past have been reported as to having little appreciation or perhaps understanding for the roles of their team members on the ward[3]. During this workshop, the students were keen to engage and learn from one another and this should enhance future team work 4,5. Innovative and safe ways of learning are important to encourage MDT working [4]. As there were no real patients involved in this workshop it provided a lower pressure environment. The fun element of the ageing suit and competitively completing tasks encouraged the students to work together and overall increase their knowledge on the physiology of ageing in the context of MDT working.
We would recommend including MDT learning within all elderly care placements and would also like to develop the opportunities for medical, physiotherapy and nursing students to have opportunities to be more involved in teaching each other.
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Theme: Medical Student Mental Health and Wellbeing

Accepted as: Short Communication

Paper no. 174
The Effects of Therapy Dogs on the Mental Health and Wellbeing of Medical Students

Author(s): Harriet Shuker, Shirley Rigby
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Background The high prevalence of mental health problems in medical students is a concern due to the potential consequences of this including compromised patient care, poor academic achievement and most worryingly suicide. Medical schools need to find ways to maintain their students' wellbeing - one such intervention is therapy dog sessions. These have been implemented in universities across the world and there is increasing evidence demonstrating their benefits. However, there have been no published studies on the effects of these sessions in UK medical students. The aim of this research was to assess the effects of therapy dog sessions on improvement of medical students' stress, anxiety and mood. This was carried out using tools to assess these aspects of mental health and wellbeing before and after a therapy dog session.
Methodology Medical students at Warwick Medical School self-selected to take part in the study, which involved a brief (15-20 minute) interaction with a qualified Therapy Dog. Three validated tools were used to analyse the effects of these sessions – the Current Anxiety Level Measurement, Positive and Negative Affect Schedule and a Stress Visual Analogue scale. These were filled in by participants before and after the interaction with the Therapy Dog.
Results Overall 84 students participated in the study. A significant improvement in participants' mood, anxiety and stress immediately after a therapy dog session was demonstrated. Qualitative thematic analysis revealed common themes, for example participants found the sessions relaxing and enjoyable.
Discussion This study demonstrated that therapy dog sessions are of benefit to medical students' mental health and wellbeing and adds to the growing evidence in this field of research.

Theme: Patient Voice

Accepted as: Short Communication

Paper no. 175
Elder Abuse: A New Approach to an Old Problem

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Background With an expanding ageing population, the problem of elder abuse in the UK and across the world is growing. It is estimated that up to 15% of the global elderly population have been victims of some form of abuse[1]. However, healthcare professionals remain largely unaware of these issues and ill-equipped to deal with them[2]. This simulation teaching session was designed for medical students and junior doctors to raise awareness of this issue and equip them to manage it in clinical practice.
Methodology We wrote three simulation scenarios to reflect the wide range of types of abuse in different healthcare settings: financial abuse in the community; neglect and physical abuse in the emergency department and disclosure of emotional and physical abuse in an inpatient setting. Actors replaced mannequins to enhance the realism of the scenarios.
We have run the session for 10 participants including medical students and doctors. In pairs, participants take part in a scenario and watch the other scenarios via a live video link. We partnered with the charity Action on Elder Abuse and a representative was present for each session. All participants, including actors, contributed to the debrief. The main focus was on communication skills.
Students were informed beforehand that the scenarios would contain safeguarding issues. We collected feedback afterwards on awareness and confidence on the topic. Participants selected how relevant it was for their learning and whether they felt it helped their communication skills on a 4 point Likert scale. There was also a free text space to detail their main learning points.
Results Data collection is ongoing. This has shown that 87% strongly agreed this was useful for their learning. 75% strongly agreed that this teaching had increased their confidence in identifying elder abuse. 87% reported an increased confidence in dealing with elder abuse. Participants also reported that they felt this method of teaching helped with their communication skills and interacting with actors, rather than the mannequin, aided this. The main learning points were techniques for allowing patients a safe space for disclosure of the abuse and also the importance of escalating to a senior.
Discussion The World Health Organisation (WHO) reported that globally 1 in 6 elderly people experienced abuse in the past year. Despite this high prevalence, elder abuse has received very little attention in the global discussions around prevention and protection of vulnerable people against violence[1]. This is a major public health issue as it contributes to morbidity and mortality as well as significant healthcare costs[3]. Physicians do not feel well equipped to identify elder abuse and often see it as the responsibility of other professionals [2]. Similarly during simulation teaching, medical students had a low suspicion of elder abuse and felt they needed concrete evidence to report it [4]. Specific lecture teaching did not improve identification of elder abuse when medical students were presented with vignettes [5]. Our participants were able to identify the red flags for abuse and attempted to escalate these to a senior. This may have been due to the design of our teaching session as actors added realism and consecutive debriefs facilitated application of learning to the next scenario. Our data shows that this teaching session has improved confidence and awareness in identifying elder abuse.
Due to an ageing population, elder abuse is becoming a more significant public health problem. It is the responsibility of all healthcare professionals to identify these problems at presentation and escalate appropriately. Doctors are traditionally not very good at this and therefore more teaching early on in medical school is essential. This simulation teaching session with real actors provided a safe space for learning whilst creating realistic scenarios. Students will be able to apply their learning from this in the future and improve patient care.
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Theme: Patient Voice

Accepted as: Short Communication

Paper no. 176
Maximising learning though bedside teaching: are patient and medical student perspectives aligned?

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Background Despite the popularity of bedside teaching among students and patients [1] [2] [3] [4], fear of burdening [5] or disrespecting [6] patients can

negatively impact student experience. Few studies have addressed this issue, leaving potentially untapped promise in the teaching method for student learning and patient engagement. Signs Circuit is a foundation doctor-led bedside teaching (BST) programme for final year medical students at Whipps Cross Hospital (London, UK). Each patient is verbally consented in advance and examined by up to four pairs of students who rotate over two hours. Following focussed examination, the tutor provides feedback and leads discussion. The purpose of this cross-sectional study was to maximise learning for students and patients involved in BST by assessing the positive and negative impact on patients involved in Signs Circuit and whether these responses coincided with medical students' perceptions.

Methodology Eighteen students were given handwritten questionnaires before participating in Signs Circuit over one term. Fifteen patients (average age 65 years) were asked to fill in a questionnaire after the sessions. All participants verbally consented for their answers to be used in research. Questionnaires contained some 1-5 Likert scales (1: strongly disagree to 5: strongly agree) and open text responses.

Results All patients enjoyed being involved in the teaching; 93% would volunteer again; and 93% felt more satisfied with their hospital stay. Most (93%) felt well informed about their condition but only 80% knew what the students were examining for. Patients wanted to: relieve boredom (40%), help (40%), aid learning (40%), and learn about their condition (7%; however, 22% felt they achieved this). Four patients saw room for improvement (2 wanted more explanation, 1 got tired and 1 patient had visitors). When asked whether they think patients enjoy BST, the 18 students averaged 3.4/5 (range 3-5). In terms of positive impact for patients, 56% of students felt that learning about their condition was the main advantage from being involved. 28% felt that BST relieved boredom, 28% felt that giving back to the NHS was the main positive impact and 22% felt that patients benefit from more attention from the MDT. Student concerns included patients finding BST: tiring (33% of responses), stressful (17%), embarrassing (17%) and painful (11%). They also had concerns the teaching interrupted time with relatives or meals (11%) and that students may give patients incorrect information (11%). 44% of students felt the patient experience would be improved by encouraging patients to engage, such as through providing feedback.

Discussion Well-consented patients derived significant and varied benefits from being involved in BST. The vast majority acknowledged that medical students learn greatly from real patients and enjoyed using their time in hospital to further their learning. Patients felt it improved their hospital stay. Students' perceptions were well aligned as they also described patients as willing resources of knowledge with time to spare. However, the students underestimated the benefits of BST for patients and overestimated the harm caused. This could be alleviated by allowing students to gain consent themselves and allowing time afterwards to answer questions and explain findings. Patients felt informed about their condition, but there was a disconnect between self-reported knowledge and uncertainty around the clinical methods of examination and conclusions drawn during BST. Medical students are well placed to fill this gap; they could learn about the human dimension of disease while easing their own anxieties about poor patient engagement during teaching. Having a junior doctor tutor present could allay fears about providing incorrect information. Avenues for future research include health outcomes after participation in teaching, patient selection and whether students can further enhance patient empowerment and satisfaction.

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Theme: Patient Voice

Accepted as: Short Communication

Paper no. 177
Patient and Patient Voice Led Medical Student Special Study Module Projects

Author(s): Nina Muirhead
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Background There is an increasing awareness of the importance of the patient voice at the heart of good care and a demand for greater patient involvement in medical education. There are many patients who feel misunderstood by doctors, particularly those with chronic, complex, difficult to diagnose conditions. Areas of the curriculum experiencing a mismatch between patient experience and current understanding should prompt a revision of traditional education methods. This study was designed to show how patients with myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) could improve education on this topic via student projects.

Methodology Four medical students at Cardiff University chose to study different aspects of ME/CFS patient care and medical education during their six-week special study modules. Each student had a university supervisor and a patient supervisor. Ethics approval was obtained as required. The projects were (i) Medical education: survey of what is currently taught at medical schools across the UK on the topic of ME/CFS and thematic analysis of patient ideas about what should be taught (ii) What ME/CFS patients would like from primary care including online survey and patient interviews (iii) The use of validated questionnaires for assessing the impact of ME/CFS on the quality of life (QoL) of both patients and their family members (iv) an audit questionnaire comparing local care against NICE guidelines and semi-structured interviews about patients' perspective of the patient pathway.

Results The students performed particularly well in aspects of developing empathy and understanding of ME/CFS. Patients volunteered their time willingly and there was a feeling of mutual respect. All students developed a range of practical research skills and experience with national/international oral and poster presentations. Results have been shared with the local government health department and presented to the NICE ME/CFS guideline committee.

(i) 22/34 medical schools (65%) responded to the online questionnaire sent via the Medical Schools' Council, 3 medical schools confirmed that students are likely to meet a patient with ME/CFS during training. 64% were interested in receiving further teaching materials. Thematic analysis of 38 patient responses highlighted patient priorities that danger of graded exercise therapy be conveyed (19), neuroimmune exhaustion is much more than 'fatigue' (16) the importance of believing the patient (8) and not adopting a psychological explanation or approach (6).

(ii) 690 participants responded to the online question on a ME charity website; patients wanted GPs to have more knowledge of the range of symptoms and diagnostic criteria to make an early and accurate diagnosis. Feedback from patients raised the recurring theme that many GPs do not believe patients or recognise ME/CFS as a physical condition and importance of the wider role of primary care support in chronic disability.

(iii) There is a significant negative impact on the QoL of patients particularly in respect to WHOQOL physical health score, this is correlated with the negative impact on family members' QoL which was significantly greater (mean FROM-16 score=19.9 SD=7.2 n=42) compared to previous FROM-16 scores of family members of patients with 25 other diseases (mean=12.3, SD=7.5, n=120 p0.001).

(iv) Audit data was collected from an online survey with 97 responses, 74% reported their experience as 'poor' or 'very poor' average time from symptom onset to diagnosis was 9 years. Semi-structured interviews were carried out over the phone with 13 ME/CFS volunteers, lack of healthcare practitioner knowledge and understanding was identified as a recurring theme.

Discussion Medical student projects based on the patient voice resulted in greater knowledge, understanding and empathy for ME/CFS patients. Patient co-supervisors help students develop skills in research, communication and presentation and ultimately improve patient care, education, policy and practice.

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Theme: Patient Voice

Accepted as: Short Communication

Paper no. 178
Patient Voice in Case Based Learning: A tension between authenticity and learning outcomes

Author(s): Kate Owen, Catherine Bennett, Krystyna Matyka
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https://youtu.be/3TyZB3__BIM

Background We have developed a portfolio of CBL cases introducing patient voice based on the levels of Towle's ladder of involvement. Our pre-existing CBL cases were developed based on set learning outcomes, however as the level of authenticity in terms of patient involvement increased in our revised cases we found an increasing tension with the learning outcomes assigned to the case. We will discuss how this can be managed within a curriculum, whether new outcomes are gained through the use of patient stories and whether striking a balance mid ladder is a pragmatic solution or reduces impact.

Theme: Postgraduate Education

Accepted as: Prestigious Oral Presentation

Paper no. 179
Multisource Feedback for Residents: A Qualitative Study on Influencing Factors and Impact

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Background Multisource Feedback (MSF) is an important form of assessment for postgraduate training. Still, surprisingly little is known about the factors which influence the impact of MSF (1). Gaps in literature have been described in detail: Overeem et al. pointed out, that factors which depend on the learning climate, such as the relation between reflective learning and work setting, are still not well understood (2) and later, that more investigation is needed on the mentoring relationship and the frequency of feedback conversations (3). Similarly, Yama et al. call it the "roles and responsibilities" which should be investigated further (4). Also, more data on the role of the facilitator and impact over time is still missing (5). We therefore conducted a study to investigate the influencing factors on MSF and its impact.

Methodology To explore the social processes, we conducted a constructivist qualitative study. Data were collected in seven focus group interviews with participants of MSF, who were residents, raters or supervisors (n = 35). We analysed these data using a reflexive thematic analysis approach as described by Braun and Clarke (6).

Results Analysis of the focus group discussions can be summarized in twelve themes which reflect the perceived influencing factors on MSF (eight themes) and the perceived impact of MSF (three themes). The influencing factors are, in keywords: Clear goal, training of raters, continuity of observation, timing, narrative comments, self-assessment, role of supervisor, and structure of the feedback conversation. We found impact of MSF in three areas: professional development of residents, enhanced teamwork, and raised commitment of raters.

Discussion Some of our results on influencing factors confirm earlier studies. The factors which have not been reported before or deepen earlier studies are: continuity of observation (a longitudinal approach enables raters to observe more in-depth), timing during rotation (when residents rotate often, a flexible approach on when to conduct an MSF helps), role of supervisor (colleague or external person depending on participants and goal), and structure of feedback conversation (a documentation sheet helps). Furthermore, we found a relation between our results and identity formation theory (7).

The experiences as expressed in focus groups, support the hypothesis, that MSF facilitates residency training. We found influencing factors and impacts, which have not been reported before and also found a strong relation between our results and identity formation theory. Our findings might guide further research and facilitate the usage of MSF in residency training.

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Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 180
"Becoming the Medical Registrar": A Novel Pilot Programme

Author(s): Anita Cheah, Ambika Nedungadi, Caroline Ming, Emma Bailey, Jo Szram, Geeta Menon
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Background The role of a Medical Registrar has traditionally been perceived as challenging. In recent years, trainee satisfaction has declined, and specialty recruitment has been disappointing with trainees seeking alternative career paths. Key themes of concern were identified as:

- Taking referrals and giving advice
- Leadership
- Prioritisation and decision making
- Confidence managing arrests and acutely unwell patients
- Burnout and stress

Our aim was to deliver a one-day programme across South London to improve the confidence and address Internal Medicine Trainees' (IMT) concerns about transitioning into the role of a Medical Registrar. The programme outline includes taking A&E referrals; how to manage yourself, your team and other specialities; Medical Registrar 'nightmares'; Hospital @Night Handover; and careers planning.

Methodology The trainees completed a pre-programme questionnaire about their perceptions of training, confidence and career prospects, as well as a post-programme questionnaire about their reflections on how the course has made them feel about being a Medical Registrar and the reasons behind it. Both questionnaires included quantitative scores and qualitative free-text feedback.

Results 33 trainees attended the training session in 4 hospitals across South London. 31/33 (94%) completed both the pre- and post-programme questionnaire. The average confidence on being a Medical Registrar on-call improved from 4.58 to 7.27 out of 10. Trainees rated the usefulness of this course in preparing them to become a Medical Registrar as 8.61 out of 10. 94% of participants surveyed agreed that this programme should be a mandatory component of Internal Medicine Training. Qualitative free-text feedback showed frequently used words include 'honest', 'practical', 'approachable', 'reassuring', 'non-clinical', 'advice' and 'great'.

Discussion This programme has been shown to improve confidence and addresses trainees' concerns about the transition in becoming a Medical Registrar. This has led to plans to embed it into the IMT curriculum from the year 2020.

Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 181
Empathy, resilience and self-compassion in the Foundation Programme

Author(s): Daniel Turton, James Kelly
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Background The General Medical Council's National Trainee Survey 2019 shows doctors in their first two years of post-graduate training, or Foundation Doctors (FDs), have the highest levels of burnout amongst all doctors-in-training. This is cited as one possible reason for the year-on-year reduction in the percentage of FDs choosing to proceed directly into speciality training. In 2018, only 37% of FDs transitioned directly into speciality training down from 85% ten years earlier. This contributes to the issue of burnout being of such pressing concern in post-graduate medical education. Furthermore, it would appear that the Foundation Programme is no longer fit for the purpose of ensuring smooth progression into speciality training.

There is debate as to how doctors can protect themselves from burnout and increase their resilience. Should doctors be encouraged, as they have in the past, to adopt a position of 'detached concern' towards their patients or, conversely, can we enhance doctors' resilience by encouraging empathic behaviours? This study investigates whether the attributes of empathy and resilience amongst FDs are positively or negatively correlated; and whether self-compassion, which is considered a 'trainable quality' (Kemper et al, 2015), is correlated with either. It is only through a better understanding of the interplay of these attributes that future educational interventions can be designed to better support doctors-in-training as they progress through the Foundation Programme.

Methodology Longitudinal matched cohort study of Foundation Year 1 doctors (F1s) at five hospitals in the North East Central London Foundation School (NECL) and one in NE England. Three validated self-reporting tools were administered together with a brief demographic survey. Empathy was assessed using the Jefferson Scale of Empathy (JSE); resilience with the Connor-Davidson Resilience Scale (CD-RISC); and, self-compassion with the Neff Self-Compassion Scale (SCS). Repeat surveys will be carried out at six months and one year to assess changes in the attributes and how any observed changes correlate with each other and with demographic data. Results were analysed in Excel with the Xrealstats add-in; correlations using Spearman Rank; differences of the means using T-test.

Results In August 2019, 189 F1s completed the surveys (response rate 96.4%), 143 from NECL and 46 from NE England. A positive correlation was demonstrated between resilience and self-compassion (r=0.507, p0.001) providing good evidence of the linked nature of these attributes; and a statistically significant, albeit weak, positive correlation was found between empathy and resilience (r=0.197, p 0.01) suggesting that adopting a stance of 'clinical detachment' is unlikely to be protective against burnout.

The demographic data shows women tended to score higher on empathy than men (109.91 vs 105.45 respectively, p 0.05, Cohen's d=0.33); and that having previously held a full-time job was associated with higher empathy scores (110.72 vs 106.60, p=0.052, Cohen's d=0.30) as was having a partner (110.21 vs 105.26, p 0.05, Cohen's d=0.34). No significant correlation was found between the respondents' age and their empathy, resilience or self-compassion.

Discussion This is the first study we are aware of demonstrating a positive correlation between empathy and resilience in UK doctors. Interventions that promote empathic behaviours may, therefore, not only be beneficial vis-à-vis patient safety but might also buttress the doctors' own resilience. The correlation between resilience and self-compassion provides evidence for establishing interventions that enhance doctors' self-compassion as a means to further increasing doctors' resilience. If such interventions are successful, they will go some way to establishing a causal link between self-compassion and resilience. If the cohort can be followed-up, it will be possible to determine how these attributes correlate, if at all, with the decision to take time out of training.

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Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 182
EPAs, LEAN and QI; using quality improvement principles to develop entrustable professional activities for GP Training in Ireland

Author(s): Aileen Barrett, Karena Hanley, Patricia Patton
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Background GP Training in Ireland is underpinned by a detailed and extensive curriculum comprising over 800 learning outcomes and case vignettes (1). Following feedback from GP trainers, trainees and programme directors during a process to introduce formative assessment tools, it became apparent that the day-to-day integration of this curriculum was a significant challenge in busy clinical practice. We therefore embarked on a 'Curriculum-in-Action' project with the aim of developing a framework of Entrustable Professional Activities. This project was conducted with resource limitations; we chose a novel approach to an efficient development process, integrating IHI-Quality Improvement (2) and LEAN process principles

Methodology Using principles of IHI-QI and borrowing from LEAN strategies in healthcare, we developed a user-design approach to EPA development. In the year prior to the EPA project, and in developing user-designed workplace-based assessments, we attempted to articulate the 'customer need' i.e. the feedback challenges and barriers encountered by the GP training community, to ensure our EPA design was tailored to those specific needs. We defined our 'aim' (to integrate the training curriculum and improve feedback to trainees and develop a culture of low-stakes assessment), considered measures of success (improved, regular, learner-centred feedback) and implemented a Plan-Do-Study-Act approach to the resource-limited project. We developed and executed a design plan and we are currently in the study phase (pilot) that will inform a national implementation plan ('act') for EPAs in GP training. Consistent with EPA design internationally, we established an expert working group to develop an initial set of EPAs that was subsequently disseminated to the entire GP training community via a three-round Delphi study approved by the College's Research Ethics Committee.

Results The expert group of trainers, trainees, programme directors, medical education specialists and including a college librarian met for a one-day workshop in November 2019 and a set of 23 EPAs emerged. The three-round Delphi study, conducted at one-week intervals in December, resulted in a set of 16 EPAs agreed (80% consensus) by a national cohort to be 'the important and essential tasks of a practising GP'. At the second expert group workshop in January 2020, the set of EPAs was further refined by discussion and agreement to a final set of 18 EPAs. Descriptions of each EPA and their associated competencies were completed by the expert group using a modified template developed by the working group for EPAs for Internship in Ireland (3). The EPAs were mapped to the Irish Medical Council's Eight Domains of Good Professional Practice and Pillars of Professionalism (4).

Discussion Undertaking the development of an EPA framework is a significant challenge and large-scale task. Limited by funding and time constraints, we developed a novel approach to this design phase. While the project was designed efficiently, we also placed an emphasis on rigour within these constraints and ensured that the process - in particular the Delphi study - conformed to the highest medical education standards. Engagement with our training community at all stages of the project was a high priority in delivering this user need. Healthcare quality improvement methods offer practical, efficient processes that can be modified and adapted to health professions education.

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Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 183
Expectations and experiences: The contribution of supervision to the professional development of postgraduate GP trainees

Author(s): Dawn Jackson, Ian Davison, Josephine Brady
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Background With rising clinical workloads, increasing medical complexity and changes to Junior Doctors contracts, the profession has questioned if the duration of General Practice (GP) training is sufficient, and if newly qualified GP's are prepared for autonomous practice upon qualification (1,2). For GP trainees developing professionally within this context, the supervisory relationship is considered a key source of support (3), and the General Medical Council and Royal College of General Practitioners have outlined standards and guidance for supervision (4,5,6). However, anecdotally, the lived experiences of trainees and their supervisors do not always appear to align to these institutional expectations. Working within the paradigm of pragmatism, this research aims to understand the contribution of supervision to the professional development of GP trainees, and the factors that influence the supervisory experience, within the changing landscape of contemporary postgraduate GP training. This presentation will outline the results from a PhD research project, bringing together the findings of each stage of the research to draw conclusions and raise further areas for exploration.

Methodology Using the West Midlands region as a case study, a mixed methods approach was taken. Explicit and tacit voices from the wider profession were explored, through semi-structured interviews with experienced supervisors, and thematic analysis of the postgraduate GP training documentation. The lived experiences of supervision of 13 GP trainees were explored through a series of narrative interviews (at the beginning and end of their final year of training), incorporating Figured Worlds theory to consider the contribution of supervision to the professional development of trainees, within the socio-cultural context. Experienced GP supervisor participants (with 60 years cumulative experience) were sampled based on gender and geographical location, from a group with a particular interest in supporting trainees in difficulty. Final year GP trainees were sampled from across the region, based on a range of performance outcomes at Annual Review of Competency Progression, gender and location.

Results This presentation will aim to illuminate the expectations from the wider profession, explicit and implicit, regarding the professional identity development of trainees. The 'good' trainee is expected to be a legitimate participant, reflective learner and an adult learner. Tacit expectations also suggested that the 'good' trainee collates evidence and doesn't complain. Trainee agency to work out their professional identity in the context of these expectations appeared most evident for those improvised, and who mastered particular artefacts of training (such as the electronic appointment, electronic portfolio and geographical access to support), rather than those who challenged situations directly. Supervision, within this context, appeared to undulate between an agent of the wider profession (through power and positioning), and an environment where trainee agency could be supported.

Discussion Areas of dissonance emerged between the institutional expectations of the profession and the lived experiences of trainees; who must navigate multiple identities, tensions and responsibilities alongside their professional training. Supervisory relationships appear to remain an important contribution to trainee professional development, but are influenced themselves by institutional expectation, inherent tensions and the socio-cultural context. The presentation will conclude by offering a model of the supervisory alliance in GP training, to serve as a springboard for negotiation these complexities. Alongside Bordin's concepts of bond and agreement (in goals and tasks) (7), the presentation will also emphasise the benefits of clarity and safety in supervision, negotiation of power and positioning, and the influence of the wider socio-cultural context.

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Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 184
Exploring shifts in professional identity through education mentoring

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Background Mentoring in medicine is widely held to be beneficial, with reported benefits in personal transitions, retention and career progression (Fletcher, 2007; Kashiwagi et al, 2013; Cornelius et al, 2016), academic engagement and participation (Ehrich et al, 2004; Christie, 2014), reflective practice (Mann et al, 2009); professional identity formation (Cruess et al, 2015), and wellbeing and social resiliency (Wald, 2015). In healthcare, emerging research into the mentoring relationship has tended to focus on peer mentoring of clinicians or medical students. Such research rarely crosses disciplinary boundaries, however, and few studies focus on how mentoring contributes to doctors' and other health professionals' development as educators.

Since 2015, alongside Peninsula Medical School's Postgraduate Certificate in Clinical Education, we have offered a Mentor Scheme to support participants in their education role as they progress through the programme. In this project we set out to explore mentors' and mentees' perceptions as they encounter concepts and practices that potentially disrupt and challenge their professional identity. How do both mentors and mentees experience synergies and disconnects in their roles as clinician and educator? And how do they start to realise alternative 'possible selves' (Fletcher, 2007)?

Methodology Following an initial literature review and the collection of questionnaire data from both mentors and mentees, participants were invited to take part in a series of recorded conversations to be arranged by the pairings towards the end of their mentoring relationship. The inspiration for this stage of the data collection was the BBC Radio 4 Listening Project which aims to "record, share and preserve stories generated by connected individuals".

Audio files of the conversations were produced by the mentor and mentee pairings, which were then transcribed and a thematic analysis performed by the project team. A diverse but coherent set of key findings have been elicited from the data that highlight the 'meaning making' that occurs as participants move between the complex and often codified behaviours, attitudes and values associated with their clinical and educator roles.

Results Early findings from our project suggest that mentoring is a transformative process for both mentors and mentees. For mentors, the mentoring role not only provides an opportunity to 'give back to feed forward' (Steinert & MacDonald, 2015) but acts as a positive reinforcement of their own journey. For mentees, mentoring plays a pivotal role in beating stress and isolation, building self-awareness and confidence, and providing the social and dialogic tools through which professional identity is navigated and framed.

The sharing of experiences appears to contribute to wider (and often unexpected) 'meaning making', empowering individuals to challenge and disrupt dominant discourses and hierarchies that exist in both education and healthcare organisations (Sklar, 2016).

Discussion Despite contested evidence on mentoring best practice (Kemmis, 2014), our findings highlight its value when navigating shifts in professional identity. The conversations between mentors and mentees alike revealed the extent to which those new to teaching perceived a transformative effect on their practice.

Exploring assumptions, beating isolation, recognising diversity, developing alternative ways of working - all emerge as key themes. Can we use our findings to justify a higher place for an education model mentoring in clinical education? What might that model look like? And how can we take what is often quiet, behind-the-scenes (often gendered) activity and raise awareness among those who would not otherwise engage with it?

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Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 185
Going against the tide: Reducing the flexibility of online learning

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Background A dominant discourse in Higher Education and health professional education is the importance of designing curricula to support flexible learning. Flexible learning can be understood as dimensions of flexibility (in a programme) which support learner-led educational processes and choices (Casey and Wilson, 2005). Dimensions of 'flexibility' include: time (e.g. starting and assessment submission dates, pace of studying); content (e.g. topics, learning materials, exit points); instructional approaches (e.g. social organisation of learning, monitoring); and delivery (e.g. tutor:student contact time, modalities).

It has been assumed that maximising learner choice is positive for learners, for example, open versus set submission dates for assignments. Although open seems to fit with adult learning literature, it relies on student capacity to prioritise soft study deadlines over firm work ones. The perceived wisdom then suggests for post-graduate education a flexible approach allowing students to manage their own learning and deadlines.

The professionalization of medical education has seen an increasing desire for participation in postgraduate medical education programmes globally. Significant numbers of health professionals seek part-time online programmes to enable study alongside professional and personal commitments. Multiple drivers influence the design of these curricula e.g. employer and professional body needs, institutional priorities, and learner needs and expectations.

During 2015/16 the Centre for Medical Education (CME), University of Dundee undertook a major review of their long-established distance learning Master of Medical Education (MMEd) programme. Following analysis of key learner outcomes and experience data, a series of curriculum design changes were enacted. As such, the revised MMEd programme afforded new learner experiences in relation to flexibility of time, content, instructional approach, delivery and logistics. This afforded a unique opportunity to evaluate learner experiences and outcomes for three demographics: learners on the previous programme, those on the revised programme, and those who transitioned during their studies to the revised programme. This study aims to evaluate experiences and academic outcomes for online distance health professional learners afforded different levels of flexibility in their learning.

Methodology A mixed methods design was used. Extant quantitative data were analysed on a range of academic outcomes. Semi-structured interviews of a purposive sample of students (non-cohort study only, non-cohort study online, and transferring from non-cohort to cohort) were thematically analysed to generate findings related to the learner experience.

Results Reducing the flexibility dimension of 'time' (e.g. introducing assessment submission deadlines) had a significant positive impact upon progression and completion. Qualitative data helped to illuminate the positive (e.g. an enhanced sense of being part of an online community of learners), and the unintended impact of the curriculum changes.

Discussion Given the backdrop of busy healthcare and education workplaces as well as other pressures, it might be expected that maximising flexible learning for part-time students studying an MMEd would be positive. However, gaining insight from a large programme that instituted selective changes in dimensions of flexibility, we have shown this to be over simplistic. We also proffer explanations of dimensions which are particularly valuable for learning and those which may present as more challenging for learners and those supporting programme delivery. These findings are expected to be of interest and value to anyone involved with the planning, designing and delivery of online medical education programmes.

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Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 186
"If we knew what it was we were doing, it would not be called research": The challenges of establishing a junior doctor medical education research collaborative

Author(s): Kirsty Mozolowski
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Background Trainee research collaboratives started life in 2007 when a group of surgical trainees came together to discuss the common frustration of creating potent research within the constraints of training rotations. A model was suggested whereby they undertook each other's projects in an identical manner in multiple units simultaneously, thus creating multicentre studies. The West Midlands Research Collaborative (WMRC) was formed leading to the formation of many other trainee research groups.

Medical education research is no stranger to collaboration with several groups driving forward innovation in this area. They comprise a diverse range of researchers but mostly those with proven track records and long term or permanent academic positions. There is currently no dedicated trainee research collaborative in existence.

We sought to establish a medical education research collaborative comprising non-consultant grade doctors from all specialities with the aim to produce good quality trainee-led studies. Here we discuss the stages and some of the challenges in establishing such a collaborative.

Methodology Members of the WMRC had published an outline of what was involved in establishing their group and this was used as a template for this collaborative.

3 trainees from surgery and paediatrics initially proposed the idea described and as such an email was composed and disseminated using a snowball technique. Local medical education bodies and directors of medical education were also asked to pass on details. Focus was concentrated in Scotland initially but interest from elsewhere was welcomed. Interested individuals were then invited to meet and establish the collaborative. Mentorship and financial support were obtained and proposals sought for an initial project.

Results 28 people initially indicated interest. Despite request to disseminate the details widely, most came from a small number of specialities. Most were trainees of a variety of grades and the majority were from Scotland. Organising an initial meeting was challenging. The intensity of junior doctor rotas and the need to find a geographically convenient location enabling maximal participation were the main hurdles. 7 members attended the initial meeting at which decisions were made regarding authorship, project selection and avenues of support. We also chose a suitable person to approach to provide mentorship. It was felt that future meetings could be held using video conferencing to remove the geographical barriers.

Project proposals were invited that were not speciality specific and considered issues which affected junior doctors, although studies from anywhere on the continuum of medical education were welcomed. They also needed to be suitable for multi-centre, collaborative investigation. 8 proposals were submitted covering a wide range of areas. Proposals were then anonymised and members were invited to vote.

Finding a video-conferencing platform on which all members could easily access meetings was challenging and in the meantime communication was via email. We eventually settled on Zoom as fairly simple, free of charge and accessible on most devices.

At this stage it was noted that we had seen a significant wain in engagement from members. Very few votes were cast for projects and there was little enthusiasm for another physical meeting. No further members had been recruited. Use of social media to publicise and communicate was suggested to improve matters. We were also accepted to use a workshop at a regional medical education conference to host a meeting with the intention of increasing awareness and boost recruitment.

Discussion Whilst there is interest in establishing a junior doctor medical education research collaborative to create meaningful multicentre research, challenges remain. Demands on junior doctor's time, adequate publicity and effective communication need to be considered. Utilising pre-existing networks and resources combined with novel methods may improve matters.

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Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 187
Physician Associate students and primary care paradigmatic trajectories: perceptions, positioning and the process of pursuit

Author(s): Megan EL Brown, William Laughey, Gabrielle M Finn
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Background As the role of the Physician Associate (PA) establishes within the UK, there is increasing interest in the recruitment of PAs to primary care. By 2020, Health Education England (HEE) forecast 1000 PAs recruited to primary care roles to assist in the delivery of the primary care five-year plan. Yet currently 72% of all UK PAs work in secondary care.(1) Recruitment to primary care is wanting, for reasons that remain unclear. This work sought to investigate student PA experiences in, and attitudes towards, primary care as a career choice in a relatively PA naïve area. The theoretical lens of paradigmatic trajectories was utilised to explore emerging career identities. Paradigmatic trajectories, 'visible career paths provided by a community that shape how individuals…find meaning in their own experiences',(2) form part of student learning within a community of practice.(3) We speculate paradigmatic trajectories may provide a useful lens through which to scrutinise PA recruitment and retention within primary care. Given this, we set out to investigate student PA experiences of primary care paradigmatic trajectories.

Methodology We conducted a multi-site, qualitative study from an interpretivist orientation. One to one, detailed, semi-structured interviews were undertaken, with audio recordings of the interviews transcribed verbatim for analysis. 19 students were interviewed in sum and constructivist grounded theory analysis undertaken. Open, focused and theoretical coding was undertaken by all members of the research team, with memo-writing and reflexivity discussions utilised throughout. In line with our constructivist grounded theory approach, background literature was read throughout in order to generate a theoretical framework.

Results 2 major themes were identified from analysing student PA perceptions of, and engagement with, primary care paradigmatic trajectories: access and process.

Within access, factors were identified enabling student PA engagement with primary care trajectories: practices accepting of diverse multidisciplinary teams; adequate time spent within primary care; and engaging students with a degree of responsibility in service provision. Barriers to engagement included ignorance regarding the PA role, and reverence of medical students as a 'gold standard'.

Students detailed their process of engagement with paradigmatic trajectories within primary care and described how this process impacted their emerging identity. A conceptual model of this process is proposed, involving early encounters within primary care; legitimate peripheral participation; learning by 'seeing, hearing, doing and imagining'; reflection; reconciliation of multiple trajectories; and agency to self-select to, self-deselect from, or forge a new, primary care paradigmatic trajectory.

Discussion Some of the above findings resonate with medical student literature regarding career identity aspirations. For example, stronger professional identity is evident when one is integrated into a team and can access positive role models.(4) Yet, some findings are unique to student PAs, such as a stronger sense of identity when interest is taken in understanding their role and exposure provided to allied health professionals, not just doctors. Student PAs must be provided with the opportunity to imagine where they may fit within a primary care team, in order to strengthen their identification with this career trajectory. The conceptual model outlined by this work may be used to identify points of intervention to improve student PA primary care experience and engagement with primary care paradigmatic trajectories. Improved experience resulting in student PAs positively identifying with primary care trajectories may later influence student career choice. Further longitudinal work is needed in this area to explore the long-term impact of variable paradigmatic trajectory exposure on practicing PA recruitment and retention to primary care.

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Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 188
Retention of doctors in emergency medicine: an ethnographic study

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https://youtu.be/gKRkttTCPF4

Background My study addresses the problem of sustainable careers in healthcare, specifically medical staffing of emergency departments. I focus on how people manage the work, the environment and themselves to facilitate sustainable careers. I do this through observation and interview, using ethnography as my methodology. I perform three months of observation in two different departments, interviewing people from both departments and from key stakeholders. The empirical findings are analysed alongside the academic and policy literature to produce a deep and nuanced understanding and policy recommendations.

Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 189
SIMplifying the Mental Health Act

Author(s): Neera Gajree, Jonathan Price, Monica Love, Catherine Paton
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Background Section 36 of the Mental Health (Care and Treatment) (Scotland) Act 2003, better known as an Emergency Detention Certificate (EDC), is used to provide compulsory treatment for patients suffering from mental illness in Scotland. Any doctor with full General Medical Council Registration, which is required prior to starting foundation year 2 (FY2), has the authority to detain patients under an EDC (1). Detaining patients involves assessment to determine if they meet the criteria necessary for an EDC and then completion of the legislative paperwork. Anecdotally many FY2 doctors report lacking confidence in both aspects of this process.

Simulation, which can be defined as educational activities that replicate clinical scenarios, enables participants to learn from their experience and from feedback during a debriefing session (2,3).

The aim of this study was to determine whether a simulation-based teaching session could be used to improve the confidence of FY2 doctors in detaining patients under the Mental Health (Care and Treatment) (Scotland) Act 2003.

Methodology FY2 doctors working in NHS Lanarkshire undertake a half-day simulation based teaching programme. A simulation scenario that involved detaining a patient under an EDC was piloted between March 2019 and December 2019 as part of the teaching programme.

In the scenario a FY2 doctor was asked to assess a simulated patient (portrayed by an actor) who presented to an Emergency Department with a relapse of schizophrenia. During the course of the scenario the patient attempted to leave, and the doctor was required to make a decision about whether to detain the patient under an EDC and to do so if necessary. The doctor had telephone access to a Psychiatrist to discuss the case. The 15 minute scenario was video recorded and watched live by the other FY2 doctors at the teaching programme. Following the scenario there was a 30 minute debriefing session, during which a Psychiatrist guided the FY2 doctors towards discussing and reflecting on the process of detaining patients under the Mental Health (Care and Treatment) (Scotland) Act 2003.

The FY2 doctors were asked to complete questionnaires before and after the teaching programme, which involved responding to a number of questions and rating their confidence in implementing an appropriate legal framework in the context of a challenging mental health presentation on a Likert scale.

Results Twenty-six FY2 doctors participated in the simulation scenario, all of whom completed feedback forms. Sixty-one percent reported that they had had formal training on detaining patients prior to the simulation scenario, and forty-six percent advised that they had been involved with detaining patients in clinical practice. With the exception of one doctor who noted no change, every FY2 doctor reported that their confidence in implementing an appropriate legal framework in the context of a challenging mental health presentation increased following the simulation scenario. The average Likert score for confidence prior to the scenario was 2.4 (2 being "not so confident" and 3 being "neutral") and the average score after the scenario was 4.7 (4 being "confident" and 5 being "very confident"). Thirty five percent of doctors highlighted the simulation scenario as a specific part of the teaching programme that will impact their future practice.

Discussion Prior to the simulation scenario most FY2 doctors rated their confidence in detaining patients as low, despite over sixty-percent having had formal training in it. The vast majority of FY2 doctors found that that learning about the Mental Health (Care and Treatment) (Scotland) Act 2003 through a simulation scenario increased their confidence in using this legislation.

This study suggests that simulation may be a more effective means of teaching junior doctors about mental health legislation than more traditional methods.

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Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 190
TIPSQI - Trainees Improving Patient Safety through Quality Improvement; a peer lead training initiative

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Background Junior Doctors have been repeatedly referred to as 'agents of change' as the nature of their role means they are well placed to provide insight into patient safety and areas for service improvement. Consequently, Quality Improvement (QI) is now a part of many postgraduate training curricula to help enable positive changes. However, junior doctors often feel unprepared and ill-equipped to undertake workplace-based improvement work(1,2,3) due to key barriers including a lack of knowledge of QI methodology, cultural apathy and a lack of support from supervisors. A survey of 1500 junior doctors demonstrated that 91.2% had ideas for work-based improvements but only 10.7% had implemented any change (4).

To further explore the problem locally, an initial survey was conducted to assess foundation doctors' knowledge of QI. Results showed that 60% were unaware of any QI concepts, 54% were unaware it featured on the curriculum and 100% felt they would benefit from QI training. At the time of its inception there was no training in QI offered to Foundation doctors within the North West.

Methodology TIPSQI is comprised of interactive workshops where trainees are taught core QI concepts, based on the Model for Improvement(4). Currently, NHS Trusts are offered bespoke sessions encompassing an introductory session for Foundation Year 1 doctors, plus a recap and coaching session for Foundation Year 2 doctors. The project began in 2013 at a single NHS Trust and is now delivered to 22 Trust across the North West of England. Feedback from participants has been continually used to amend and improve the sessions. The training has been delivered to over 3000 trainees, plus equipped approximately 200 Educational Supervisors with the tools to assist their trainees.

To ensure sustainability, we annually recruit a cohort of leads. These are FY2 doctors mentored by a member of the core faculty and trained further in QI methodology and coaching to deliver the sessions to their peers.

Results The initial aim of the project was to improve Junior Doctors' understanding of QI methods and empower them to improve patient safety in their clinical environments. We used The Kirkpatrick Model for evaluating training(5) alongside a realist approach to evaluate impact.

When asked to rate session quality and relevance on a Likert scale (0-Poor, 10-Excellent) participants gave an average of 8.53/10 for Quality and 8.13/10 for Relevance. This has remained consistently high over the years demonstrating no compromise in quality despite project spread. Qualitative feedback underwent a thematic analysis and supports these findings.

When asked to self-assess their knowledge at the end of the sessions the data demonstrate a global increase across all subject areas for both trainees and supervisors. In addition, after the session there is reduced variability between trainee knowledge across all subject areas compared with before the session.

Finally we looked at the number and quality of QI projects submitted each year. The number of projects submitted has increased from 17 to 3683 per year over the 7 year period. We also held a successful 'showcase' evening offering trainees a chance to present and share their learning.

Discussion The feedback for the project has been overwhelmingly positive. The demand for sessions has increased dramatically over the years showing a clear want and need. We have worked hard to engage local QI and Audit teams to attend and support sessions, to create a local link. Supervisor's identified difficulties in supporting trainee-led projects due to a lack of knowledge of QI methodology. We have addressed this problem by providing optional supervisor sessions and working closely with Health Education England North West to clarify curriculum requirements.

Over the last 7 years the project has become embedded into the Foundation training programme. The project is currently being expanded to other speciality groups and other regions of the UK.

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Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 191
Transforming learning culture in Obstetrics and Gynaecology using a disruptive methodology

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Background This study reports on the impact of a system level intervention to transform learning culture within a large midwifery unit. Nationally, trainee rankings of learning environments in O& G are lower than in any other medical speciality [1], often captured in concerns about undermining and bullying. Workplace incivility affects the individuals concerned, any onlookers and the wider team with psychological distress, reduced performance and reduced willingness to help [2] Historically, undermining has been characterised as the (poor) workplace behaviours of individuals with interventions at this level having minimal purchase. Our work adopts a different standpoint, framing undermining as a systemic issue, focussed more on actions, processes or workplace practices that have the potential to lessen the ability or effectiveness of teams or individuals.
The presented work was commissioned by Health Education England (working across London). The intervention team comprised an experienced educational researcher (CM), a Darzi Fellow (AP) and an O & G Education Fellow (SS) working with medical, midwifery and gynae staff over a 9 month period. The intervention adopted was based on Engeström's Change Laboratory[3]. Change Laboratory is a system level intervention focussed on in-depth analysis of existing practices followed by collective re-imagining and testing out of new forms of work activity. Work activity is seen as involving individual and collective actions, mediated by 'artefacts' (such as rotes, or training curriculum) directed at shared 'objects' of activity e.g. delivering patient care and training. Work is understood as being shaped by history ('how we do things around here') and influenced by multiple voices and viewpoints on practice. Over time structural tensions accumulate e.g. the dual purposes of a rota are to ensure coverage of the service for the organisation and coverage of the curriculum for trainees. Tensions are created when service needs dominate decision making about who does what, where and with whom. Tensions are seen as creative forces for change of activity, exposing the potential for expansive learning, the basis of the Change Lab.
Methodology Over 9 months the team worked through an expansive learning cycle. CHARTING involved observing daily work and talking about practice with individuals. ANALYSING happened in a series of six professional group meetings, involving trainees, consultants, midwives and gynae nurses. Eight Change Laboratory sessions allowed further analysis and MODELLING OF NEW SOLUTIONS focussed on respectful relationships and recognition of education. In between sessions staff TESTED OUT NEW MODELS which included multi professional huddles on the wards, briefing and debriefing of clinics and multi-professional in situ simulations. These practices are now being IMPLEMENTED. In-depth interviews were held with a cross section of staff before and after the intervention.
Results We will discuss the ways in which it was possible to adopt and adapt Change Laboratory methodology to facilitate shifts in working culture and practices in a busy maternity unit. We will discuss the challenges faced and lessons learned during this pilot project, which is to be rolled out to two other sites. Preliminary analysis of interview data will be shared, focussed on practitioners accounts of what it is like to work in O and G and changes they have observed over the past year.
Discussion Change Laboratory is argued 'to bring work redesign closer to the daily shop floor practice while still keeping it analytical – a new dialect of close embeddedness and reflective distancing' Virkunnen et al 2013: 24.[4] The approach moves us away from the positivist, linear research traditions of medical education, with researchers becoming interventionists, working within the messy realities of clinical practice - a disruptive approach in medical education research perhaps?

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Theme: Postgraduate Education

Accepted as: Oral Presentation in Parallel Session

Paper no. 192
Written feedback in Foundation doctor teaching does not give a true representation of how teaching was received by learners

Author(s): Eleanor Boddy, Alexandra Rowland
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Background Foundation doctors have specific learning needs, yet NHS Trusts often receive poor quality feedback on the value of the Foundation Programme's weekly generic teaching, causing a barrier to design and innovation. We sought to understand opinions of Foundation doctors within the East of England Foundation Schools as to what makes a 'good' teaching session. Our findings were aimed to provide regional guidance to support educators in generating tailored teaching programmes for Foundation doctors.
Methodology We retrospectively assessed feedback, both qualitative (comments) and quantitative (Leichardt scale), received by Trusts in the East of England for their generic teaching programmes in 2017/18. Data from the seven responding Trusts was thematically analysed[1] by two reviewers with support of Nvivo software. This also involved comparison of qualitative feedback made between two subgroups of data – those rated 'poor' or 'excellent' on Leichardt scales. Focus groups were conducted at three Trusts selected by purposive sampling, for further exploration of ideas generated from qualitative data. This second data set was also thematically analysed, and results amalgamated to generate three overarching themes.
Results The three themes arising from the data were "context", in a semantic dimension[2] relating to the workplace, "teaching technique" and "learner empowerment". The latter rose from trying to understand deeper ideas relating to belonging, power and ownership of teaching and learning that resonated through the data. Feedback was key to this, relating to learners' ability to make changes.
Interestingly, we found that doctors provided similar written feedback for the worst and best sessions. Exploration of this in focus groups suggested a desire to act professionally and unease at providing poor feedback, often resulting in trainees feeling inhibited from giving honest and constructive feedback. This led to a sense of powerlessness in guiding their own learning. Doctors also acknowledged that giving feedback can be a "tick-box exercise", reporting that they may give positive Leichardt scores even for poor sessions. They feel that feedback is pointless, as organisers of teaching are not seen to be receptive to change. Where feedback is not anonymous, such as when a named feedback form acts as a register, they worry that constructive comments will be seen as individuals causing a problem.
These observations feed into an underlying feeling of Foundation teaching not being seen as important. They feel that their teams and the wider MDT are not respective or aware of the protected nature of teaching. There is concern that educators do not take pride when teaching Foundation doctors, for example when compared to the pride that teams appear to take in presenting at Grand Round. However, these sentiments are rarely captured in feedback.
Discussion We thus recognise that Foundation doctors need to feel like stakeholders in their own learning, but do not feel empowered to make changes to their teaching programmes. Feedback mechanisms are not seen to be working, not least because doctors are not always honest in feedback. This may be related at some Trusts to forms also being an attendance register, with lack of anonymity

and fear of repercussion. There is a perception that feedback is not acted on and therefore not a useful exercise.

Are feedback forms telling educators what they need to know? One suggestion would be to consider a "What Went Well? Even Better If…" approach, or focussed questions on specific aspects of the session. Trusts should ensure that forms are anonymous. Importantly, they should act on feedback, with a mechanism to share changes that have been made, such as a trainee forum. Foundation doctors' ideas should be listened to, with space in the programme for a newly suggested session to be tried. If doctors do not feel that they are stakeholders in their own teaching they will have little onus to take responsibility for their own professional learning.

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 193
Curriculum changes and the introduction of CIPs: Registrar and Consultant Perspectives

Author(s): Chris Lewis, Amy Lindh, Raveen Jayasuriya, Simon Woods, Paul Renwick, James Tomlinson
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Background The imminent surgical curricula changes will see the introduction of Capabilities in Practice (CIPs) and more focus on Non-Technical Skills (NOTSS) and professional behaviours (PB). Our aim was to establish Yorkshire orthopaedic registrar and consultant perspectives on this and identify barriers to successful implementation.

Methodology A questionnaire was distributed to all delegates at our Annual Yorkshire Orthopaedic Faculty Day to identify current perceptions, with a response rate of 69% (63/91). A second questionnaire, identifying barriers to change was distributed to all Yorkshire orthopaedic registrars, with a response rate of 60% (48/80).

Results 14% of consultants lacked confidence in assessing registrars on CIPs, with 65% wanting training on how to perform these new assessments. 49% felt there was a lack of both opportunities and time for CIPs. However, 89% agreed CIPs and NOTSS were important additions to the curriculum with 83% agreeing that CIPs and NOTSS represent skills required as a Day 1 consultant.

Registrars identified the following four barriers to change; a lack of NOTSS and PB training, concerns consultants will not be able or willing to assess them, lack of time to perform them and also forgetting to incorporate these new skills into their clinical practice.

Discussion Importantly, both consultants and registrars value the importance of these curricula changes and support the introduction of CIPs and a greater focus on NOTSS and PB. However, there are significant concerns with regards to a lack of time and training, which need to be addressed urgently to ensure these curricula changes are successfully implemented.

Theme: Postgraduate Education

Accepted as: Short Communication
Paper no. 194

Development of an innovative digital platform and collaborative learning resource for Internal Medicine Trainees

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https://youtu.be/i1QBWfgtEE0

Background Padlet using technology enhanced learning tools to improve the post graduate training experience. It is an online electronic notice board that is collaborative, allows multiple users and embeds multimedia. Our IM trainees Padlet is free to develop, requires no knowledge of coding, is easy replicated and scalable and has been enthusiastically received by trainees. Post graduate education in hospital must develop in line with the way trainees consume information.

Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 195
Ethically Challenged: The Development of a Junior Doctors' Medical Ethics Forum

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Background Junior doctors face unique, ethical and complex decisions during their clinical work however there is little support to help junior doctors learn from their experiences.[1] The "Junior Doctors' Medical Ethics Forum" is a Quality Improvement project created by Clinical Fellows at the Great Western Hospital, Swindon. It is a structured teaching program run monthly for Foundation doctors with the primary aim of improving confidence in complex decision making regarding clinical ethical dilemmas, whilst also providing education in medical ethics and law. This forum aims to be an ethics resource and support for junior doctors in the hospital to discuss cases they have been involved in. It also acts as a forum for raising systemic ethical issues which are then relayed to the Director of Medical Education and Foundation Programme Director, and answerable to the hospital clinical ethics committee.

A baseline survey was conducted among junior doctors in the hospital to ascertain whether an ethics forum would be of value to junior doctors. 35% of respondents did not feel supported tackling ethical dilemmas. Over 70% of respondents stated they would benefit from a regular ethics-based teaching session as they encounter ethical dilemmas almost weekly.

Methodology Teaching sessions are based around a theme such as "death and dying". Junior doctors are encouraged to submit cases that they have been involved in. Two cases are selected for discussion each session. A short teaching session is delivered on the ethical and legal principles that are broadly involved before allowing time for debate and discussion amongst junior doctors. Senior consultants facilitate these discussions. Web based apps are used to promote discussion by generating word clouds and voting.

Pre and post teaching surveys were completed by participants to assess if confidence across different domains has increased.

Results Confidence at making complex and/or ethical decision increased from 9% to 27%. Confidence at having discussions with patients/families about resuscitation status increased from 36% to 45%. Confidence in knowing where to look for help increased from 27% to 81%. Other areas that improved in confidence were at engaging in discussions with team members about ethically challenging issues and filling in paperwork to do with resuscitation. Topics that participants requested further sessions on included mental health issues, do not resuscitate paperwork, consent in children and issues surrounding self-discharge.

Discussion There is a small increase in confidence in making decisions and having discussions. Whilst this may initially seem unpromising, it is likely to reflect the fact that having conversations about ethically challenging issues is, by its very nature, a difficult thing to do as a junior doctor. We would expect that junior doctors recognise this and retain a degree of uncertainty which reflects their inexperience and acknowledgment of the challenging nature of these issues. The most encouraging result is the increased confidence junior doctors felt in knowing where to find help in making complex decisions. This reflects that this forum has provided good support to juniors and acted as a useful signposting system. As this program is still in its infancy and has only been run twice as a pilot, we need to collect more data on how it is impacting junior doctors' working lives and practice. Ideally, we hope to show a larger increase in confidence however it may well be that questionnaires show the opposite as participants are exposed to more "unknown unknowns". We have several more sessions scheduled and hope to collect more data about how these sessions help junior doctors and help them feel supported. Overall it appears these sessions benefit junior doctors by

increasing their confidence at complex decision making and knowing where to find help in complex decision making.

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 196
Evaluation of Effectiveness of Neonatal Resuscitation Program (NRP) Course Among Pediatric Residents in Libya

Author(s): Muhammed Elhadi, Aimen Bashir Ashini, Ahmed Tarek, Hazem Ahmed, Taha Khaled

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Background The Neonatal Resuscitation Program (NRP) is the official educational program of the American Academy of Pediatrics and the American Heart Association for educating and training health care providers to improve their knowledge and skills of neonatal resuscitation. The NRP course improved healthcare providers' knowledge and skills in developed countries; however, the NRP was introduced recently in 2019 in Libyan hospitals by Libyan neonatology association, and there has been no evaluation of its educational impact for Libyan doctors. We aim to determine whether the introduction of the NRP course in Libya improved the knowledge and skills of a neonatologists.

Methodology Qualified NRP instructor administered the NRP course to 38 paediatricians from different hospitals in Libya. Pre-test evaluation was obtained and post-test evaluation obtained after the completion of the course. Wilcoxon signed-rank test was used to determine if there is a statistically significant difference between pre and post evaluation.

Results Of the 38 participants recruited to the study, the NRP course elicited an improvement in their knowledge and skills compared to their knowledge before the course. Thus, there was a significant difference between pre and post-test evaluation (Z = –5.195, p 0.001). Indeed, the median course evaluation score was 10 and 14 for pre- and post-test respectively.

Discussion NRP training has the potential to improve the knowledge and skills of neonatologists in Libya substantially.

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 197
Improving the Quality of Educational Supervisor Meetings

Author(s): Louis Hainsworth, Ryan Jennison, James Heal

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Background Educational supervisor meetings are an essential tool in supporting and developing junior doctors. However there is no clear understanding of what consists of a high quality educational supervisor meeting. This project aims to assess trainees' current opinions on educational supervisor meetings, in order to identify areas to improve them in the future.

Methodology A questionnaire was then sent to all junior doctors in training at a single district general hospital. The questionnaire sought to identify their opinions of their educational supervisor meetings in the last year

Results 48 responses were obtained from a possible 202 junior doctors across a range of grade and subspecialties. 91.6% of trainees felt that their educational supervisor meetings were at least moderately useful. As the seniority of the trainee increased, they spent more time preparing for meetings.

Qualitative analysis revealed common themes that were an issue including; the location of the meeting, preparing for the meeting, lack of holistic approach to the trainee and a lack of career support and guidance.

Discussion This study identified that significant changes could be made to educational supervisor meetings to improve their value: private meeting room, preparation by both parties and holistic relationship with the trainee.

Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 198
Inter-speciality education: Can doctors from other specialities assess the portfolio station for Internal Medicine Training mock interviews?

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Background Increased preparedness (1) and improved outcomes (2) are two benefits of mock interviews before entry into medical specialty training programmes. Although costs of these have been offset with the multiple-mini interview format (3); it remains difficult to find doctors to train others due to time constraints (4). Universal aspects of medical training include: professionalism, team-working, service improvement and leadership (5) – skills often assessed in the "portfolio station" of interviews. Theoretically, doctors from other specialities could sit on the interview panel to assess them. We sought to determine if having a doctor from a different speciality on the Internal Medicine Training (IMT) portfolio station panel affects the experiences of the interviewees and panel members themselves.

Methodology After reviewing the stations for post-foundation specialty interviews, we found that several specialities include portfolio stations. Areas assessed include additional degrees, publications, quality improvement, teaching experience and commitment to speciality.

We contacted doctors in those specialities to act as panellists and received respondents from paediatric and surgical trainees (n=3). They were briefed on the IMT interview, given sample questions, a portfolio Evidence Summary Form (6) and were accompanied by a second panellist - a retired consultant physician experienced in interviewing.

Candidates who had applied for IMT were recruited and consented (n=6). They completed anonymous pre and post-interview questionnaires comprising both free-text and Likert scale questions to allow cross-validation (7) of items.

The non-specialist panellists were interviewed using a set of focussed questions evaluating their experience. The retired consultant physician was interviewed to evaluate if having non-specialists on the portfolio panel impacted the quality of the mock interview.

Results The Interviewees:

Prior to the mock interview, 50% specified that they had concerns regarding their portfolio. After the mock-interview 100% felt that their concerns had been addressed.

100% strongly agreed that:

- The mock interview was relevant to their application preparation at this stage.
- The feedback on their portfolio from the non-specialist on the panel was valuable.
- Their learning was enhanced by the experiences shared by the non-specialist interviewer.

33% of interviewees agreed that "having a non-specialist on the panel made the interview less relevant". However this was contradicted by their free-text answers, which were overwhelmingly positive.

They indicated that it was 'helpful to have a different perspective' and that it made no difference in the portfolio station having an interviewer from a different speciality.

The Examiners:

100% reported no difficulties in assessing the portfolio of a doctor from another speciality, and 66% thought this was because portfolios are generic at this training stage. Several noted that they would be comfortable theoretically running the portfolio station alone, but that training and guidance was useful.

The Physician Examiner:

There was no difference in quality having a non-specialist on the panel.

After training, it was felt non-medical specialists would be suitable to run the station alone.

Discussion This pilot found that having a non-specialist on the interview panel for the IMT portfolio station does not negatively affect the relevance, learning or quality of mock interviews. It was well received by the interviewees, non-specialist and specialist examiners.

The premise of using non-specialists to review portfolios could be used for other speciality mock-interviews. Benefits include a larger pool of potential faculty and a multi-speciality perspective. The study is limited by a small sample and a possible flaw in the design of the Likert scale questions that gave us contradictory answers. Further work to see if it is reproducible, or if trained non-specialists can run the portfolio station alone, is required.

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 199

Keep Calm and Bleep the Med Reg: Preparing New Medical Registrars to Make the Leap

Author(s): Victoria Gaunt, Chloe Broughton, Tessa Glynn, Ross Hamblin, Frances Parry, Sarah-Jane Bailey, Amy Crees, Emily Bowen

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Background Medical registrars are senior doctors training to become consultant physicians in medicine. Doctors taking up medical registrar posts have completed at least 4 years of training after leaving medical school, yet evidence suggests that many doctors do not feel prepared for the role and have concerns about their ability to provide safe, high-quality patient care (1). Working as a medical registrar is a big transition in medical training. Not only does it require the knowledge and skills to provide senior medical cover across a wide range of complex medical conditions, it also requires leadership skills to manage the medical take and run cardiac arrest calls.

Methodology A one day course "New to Medical Registrar" was introduced in the Severn Deanery in 2016 and continues to be delivered on an annual basis. The course design includes interactive lectures, small group workshops and clinical skill sessions during which common clinical and ethical scenarios are covered. The course is organised and facilitated by a committee of medical registrars working in the Severn Deanery. Each year, trainees were asked to complete a questionnaire immediately following the course. In 2019, additional questions were included to evaluate the course effectiveness.

Results Over 4 years, 74 trainees have completed the course and 73 questionnaires were completed. The majority of trainees found this course useful (Likert score 4.75 out of 5) and 100% of trainees would recommend this course to future trainees. Trainees found the course "a very informative and supportive day", "a useful opportunity to meet up with other trainees making the leap" and importantly felt "more prepared to start working as a medical registrar".

In 2019, 100% of trainees agreed or strongly agreed that the course had improved their confidence to work as a medical registrar. 89% agreed or strongly agreed that the course had improved their skills in managing unwell medical patients. In particular, delegates reported that their knowledge about the use of pacing and defibrillation, setting up non-invasive ventilation and how to manage their team effectively, had all improved.

Discussion The "New to Medical Registrar" course supports trainees to feel more prepared to work as the medical registrar. It is crucial to teach and support doctors about becoming the medical registrar so that it is not a deterrent for trainees applying to medical specialties where this role is mandatory. The course also highlights a potential gap in training and a need for focused teaching. The introduction of the new Internal Medicine Training programme (2) aims to better prepare doctors to work as medical registrars, but we anticipate there will still be anxieties at the time of this transition and therefore demand for courses such as these will continue.

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 200

Out of our Comfort Zone: Do Foundation Year 1 Doctors lack confidence in managing Mental Health Problems

Author(s): Dr Owen Davis, Dr Amarit Gill, Dr Clare van Hamel

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Background Each year approximately one in four adults experiences some form of mental health problem[1], with estimates of prevalence in medical inpatients as high as 38.7%[2]. Anecdotally, it is a group of patients that many Junior Doctors feel they lack the knowledge, confidence and skills to assess and treat. This study aims to explore self-perceived preparedness of Foundation Year 1 (FY1) Doctors to care for this group of patients on commencing their new role and the degree of confidence gained in the first four months of clinical practice, in order to identify whether this is an area where more training is required.

Methodology In September 2019 an optional survey was sent to all new FY1 Doctors. Two questions were included to gauge preparedness to assess and treat mental health patients; 'I feel confident in looking after patients who have acute mental health problems (e.g. psychosis)' and 'I feel confident in looking after patients who have chronic mental health problems (e.g. dementia)' with respondents asked to grade agreement on a 5 point scale from strongly agree to strongly disagree. Four months later a second survey was sent to the same group posing the questions 'I am competent in acute mental health care provision' and 'I am competent in chronic mental health care provision', with participants again asked to grade themselves on the same five-point self-assessment scale. Questions gauging preparedness to complete practical procedures and recognise critically ill patients were also assessed within the same questionnaire, the results of which are included for comparison.

Results There were 1299 respondents to the initial survey. 16.55%(n=215) strongly agreed (2.31%, n=30) or agreed (14.25%, n=185) that they felt 'confident in looking after patients who have acute mental health problems (e.g. psychosis)' 43.26% (n=562) strongly agreed (3.77%, n=49) or agreed (39.49%, n=513) that they felt 'confident in looking after patients who have chronic mental health problems (e.g. dementia)'. 70.82% (n=920) of respondents strongly agreed (14.37%, n=187) or agreed (56.34%, n=733) that they felt 'adequately prepared in practical procedures'. 78.36% (n=1008) of respondents strongly agreed (15.68%, n=204) or agreed (62.57%, n=814) that they felt 'adequately prepared in recognising the acutely ill patient'.

There were 652 respondents to the follow-up survey. 26.07%(n=170) strongly agreed (4.60%, n=30) or agreed (21.47%, n=140) that they felt 'competent in looking after patients who have acute mental health problems (e.g. psychosis)'. 36.04% (n=235) strongly agreed (4.45%, n=29) or agreed (31.60%, n=206) that they felt 'competent in looking after patients who have chronic mental health problems (e.g. dementia)'. 77.76% (n=507) of respondents strongly agreed (13.82%, n=90) or agreed (64.06%, n=417) that they felt 'competent at performing practical procedures'. 82.05% (n=535) of respondents strongly agreed (14.88%, n=97) or agreed (67.18%, n=438) that they felt 'competent in recognising the acutely ill patient'.

Discussion There is a marked difference between the confidence levels of Junior Doctors in dealing with mental health patients and their confidence levels with other core skills such as assessment of the acutely unwell patient and carrying out practical procedures. More worryingly, there is no significant improvement in confidence after 4 months in-post, with Foundation Doctors actually feeling less confident managing chronic mental health conditions. This implies that there is likely a need for more focus on the practical management of mental health patients amongst medical students, as well as continuation training amongst Foundation Doctors to ensure that this knowledge gap is addressed. Furthermore, this data closely reflects that gained from identical surveys of the 2017 and 2018 FY1 cohorts, implying that interventions over this period to improve both medical student preparedness and junior doctors training in this area have yet to show any benefit.

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 201
Pausing to develop professionally and personally – experiences of Clinical Teaching Fellows

Author(s): Dr Stephanie Bull, Dr Dan Couchman and Dr Jo Tarr
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Background The UK Foundation Programme Career Destinations Report (2017) showed that the number of F2 doctors progressing directly into specialty training has decreased substantially[1]. In 2018, 52% doctors were taking up a service post rather than specialist training within the UK and 11% were taking positions as anatomy demonstrators. 1. The University Exeter Medical School (UEMS) employ junior doctors after their F2 year as clinical teaching fellows (CTF) with a 50% commitment to teaching anatomical and biomedical science to undergraduates and the equivalent working in a hospital service post.

This project aims to understand the motivations and experiences of junior doctors on the CTF positions at UEMS. The perceptions of education faculty would also be explored.

Methodology Semi-structured one-to-one interviews were conducted with CTFs and education faculty exploring motivations, contribution, and the dual role. Interviews were audio recorded, transcribed and analysed thematically using an inductive approach. 2. Clinical Fellows from different Deaneries have sense checked the thematic map.

Results Five CTFs and Five Faculty members were interviewed (117:17 and 144:06 minutes respectively). Four themes were identified. Theme 1. CTFs were developing their career (subthemes: 1.1 exploring options, 1.2 building a CV, 1.3 building a niche). Theme 2. CTFs were developing their competence and capability as a clinical teacher (subthemes: 2.1 subject knowledge, 2.2 teaching ability and 2.3 working autonomously). Theme 3. CTFs were developing a sustainable work-life balance (subthemes: 3.1 taking a strategic break, 3.2 managing competing responsibilities). Theme 4. Views on the contract of employment.

Discussion Junior doctors partaking in this study were deliberately opting to delay entry to specialty training, using the time to develop professionally and personally. All were mindful that they had a long career ahead and valued finding a specialty that suited them and could be sustained. The faculty held similar views to the CTFs on their contribution to the educational programme and how the role was used to support their development. With this in mind, could specialty training, which provided clinical training and teaching opportunities, be developed as a new track for members of the workforce who are interested in a portfolio career?

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 202
Pre Hospital Newborn Resuscitation & Stabilisation: A Novel Multidisciplinary Course

Author(s): Holly Shaw, Andrew Armson, Ryan Youde, Anjola Mosuro, Teresa Kelly, Adrian Sawyer, Kevin Jones, Sarah Bates
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Background The Resuscitation Council UK (RCUK) Newborn Life Support (NLS) course has been successful in standardising skills and knowledge in newborn resuscitation nationally. However, it is focused on hospital births and planned home births. Unplanned out-of-hospital births are attended by healthcare professionals with limited resources and support and are associated with increased rates of newborn morbidity and mortality (1). There is a need for specific training aimed at pre-hospital practitioners. A recent study demonstrated that targeted simulation-based education was effective in improving knowledge of NLS and mask-ventilation technique in this group (2). We evaluate a novel course: Pre-Hospital Newborn Resuscitation & Stabilisation.

Methodology The course was developed as a joint initiative between the South Western Ambulance Service and the resuscitation and neonatology departments of the Great Western Hospital. Candidates represented a diverse range of professionals involved in care of the newborn. Faculty members were from a comparable breadth of professions and most had NLS instructor status.

Content was mapped to the RCUK 2015 NLS standards. Initial group lectures detailed the theory to underpin the clinical skills which were taught in the small group sessions which followed.

Groups were organised with a mix of candidate professions to foster multidisciplinary team (MDT) work and sharing of perspectives. Mentors were assigned from the experienced faculty. Skills were taught using the 4 stage technique.

Knowledge and skills gained through throughout the course were consolidated using real-time simulation, focussing on the logistics of transfer, effective handover and implementing the NLS algorithm and airway skills in a variety of situations, whilst encouraging MDT working throughout.

A two stage debrief was carried out: small group debriefs facilitated by their mentors, who then fed back key points in a whole-group debrief. Feedback was sought from candidates using pre and post course questionnaires.

Results Only 56% of candidates had received any training on NLS specific to the prehospital setting. Candidates rated the importance of NLS training in the prehospital setting as 9.8 /10 where 10 is extremely important (mean; range 8-10).

Comparison of pre and post course questionnaires showed that candidates had improved in self-ranked confidence across a range of domains relating to care of the newborn (1.5 – 3.5 median increase). All candidates were very satisfied with the course, rating their satisfaction as 10/10 (10= very satisfied, median value).

From qualitative feedback, candidates cited that: the simulated scenarios allowed high fidelity application to the real-world environment, introductory lectures added important underpinning theory and rationale, and that MTD working fostered the sharing of ideas. Debriefing helped to solidify learning outcomes.

Discussion Unplanned pre-hospital births are associated with adverse clinical outcomes in terms of newborn mortality and morbidity (1). Our results suggest a shortfall in provision of pre-hospital training; something which we hope this course could address.

Early and good quality thermal care and airway management has been shown to improve outcomes in newborns (3) and applying these skills in the prehospital setting was a central learning outcome of the course. Overall analysis of feedback indicates that the course was effective and well received.

This proof-of-concept course is shown to be feasible, highly valued and effective at delivering set learning objectives. In line with national priorities around optimisation of newborn outcomes (4), which is a stated element of the NHS Long Term Plan, it is hoped that this course meets the training needs of those professionals who may be called upon to deliver pre-hospital NLS.

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 203
Reflection in Surgical Training: A Reflection on Current Practice

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Background In the course of surgical training, the process of reflection can often be neglected (Peshkepija, 2017). It has even been proposed that there may be a 'surgical persona' - often portrayed as being action-oriented – that can find the process of reflection a complete anathema. (Page, 2011).
With changes in the training structure in recent decades, surgical training programs have had to consider how to encourage trainees to reflect on clinical experiences and integrate new knowledge acquired into their future practice. We aim to review what strategies are currently being used to promote reflection in the surgical training context. We also describe a system we have used in our unit.
Methodology A literature review was performed using the Pubmed database. The terms training, surgery and reflection were combined for the search. There were 436 results. The titles were reviewed and irrelevant articles excluded. The abstracts of the remaining articles were reviewed and the final relevant papers selected for review.
Results There were a variety of activities described to promote reflection in the surgical training context. The following themes recurred in the literature search:
E-PORTFOLIO/ WORKPLACE BASED ASSESSMENTS (WBAs)
WBAs are mandatory for every surgical trainee in the UK. Case Based Discussion in particular have been recognised by trainees as being of value in stimulating reflection. (Phillips, 2015)
COACHING
Although the definition is loose, a number of papers (Lin, 2019; Zahid A, 2018) describe coaching as a process that can encourage self-reflection using facilitated feedback. It's described as being individualised to each surgeon's needs and goals and can benefit surgeons at all levels.
DIARY/ PROSE/ESSAY
In the West Midlands Deanery, they have piloted 'The THREAD exercise' where surgical trainees keep a reflective diary and engage in regular discussions with their AES. This has been found to yield many learning points for both trainer and trainee.
Another paper describes the value of essay contests to trigger the reflection process (Koo, 2018).
SCHEDULED MEETINGS WITH SUPERVISORS
A program used in Melbourne, Australia centred on a weekly meeting with the head of department where trainees would reflect on their cases of the week. Trainees would also present a structured written reflective case discussion to the department once a week.
RAINBOW REFLECTION
This is a reflective process we have used in our unit. It requires the trainee to reflect on a clinical episode/ operation and write using free text about the case. The aim is to not think to analytically in the first instance. The trainee will then read through what they have written and code according to the following categories: case, context, professionalism, forms of knowledge, clinical thinking processes, professional judgement, seeing the wider picture, therapeutic relationship. This facilitates a structured approach to reflecting on the case.
Discussion Many of the strategies to promote feedback described in the literature rely on regular meetings with supervisors. While this may be the gold standard, it is not always practical in the busy clinical setting and can be resource intensive. The use of WBAs can trigger the reflective process but tend to have a technical emphasis. This may risk Non-Operative Technical Skills, integral to safe operative practice, not being reflected on as readily.
The model of reflection we have made use of in our unit works well as it can be used by the trainee individually or as a springboard for discussion with a supervisor or group. It also provides a structured approach to the reflection process. We commend its use to other units.
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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 204
Review of carousel-based stations at a regional clinical oncology training day

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Background Clinical Oncology is a practical, multimodal specialty with a five-year training programme. Training encompasses systemic treatments, clinical trials, and radiotherapy, along with the added challenges of dealing with patients and families with cancer. Treatment, verification and radiotherapy planning are mostly taught at postgraduate level during training rotations, which is consolidated with tri-annual classroom teaching.
Previous training days have typically used lecture-based, didactic teaching. This benefits auditory learners, has limited interaction, and can be a barrier for learners to ask questions or assess participant understanding.[1] Previous feedback has highlighted the difficulty tailoring sessions for different levels of expertise, as all levels of trainee from ST3 to ST7 will be taught in the same sitting.
Methodology A new teaching regimen was implemented, using circuit teaching. This included five 25-minute stations, which were delivered by a multi-professional faculty including consultant oncologists, radiographers and consultant radiologists. 31 trainees were grouped by training level, and moved around stations until the cycle was completed. A survey including quantitative and qualitative questions was completed at the end of the day.
Results The sessions were scored on average 4.9/5. 40% of learners reported it was stimulating and 'very interactive'. Small-group learning allowed 'more practical learning' in a safe educational environment where learner were able to ask questions amongst peers, and teachers were more approachable in smaller groups.[1,2] feedback showed students appreciated being grouped with peers of equal experience; facilitating teaching 'suited to [their] level of ability'. 50% described that they enjoyed expert speakers teaching a variety of topics.

Discussion Throughout the carousel, multi-professional speakers using a variety of media, taught for 25-minute sessions. This allowed learners to maintain high levels of interest and engagement. The focus of the method was to tailor teaching to the learner's level of expertise. Small-group sessions allowed for focused teaching, and feedback highlighted students' ability to ask questions when grouped with peers of similar knowledge.[2,3]

We appreciate that this might not translate to other specialty training days, and that this training day required more time from speakers. Teacher feedback showed that teaching sessions developed throughout the day, and was not overtly repetitive, as the sessions were kept short.

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 205

The interaction between Core Surgical Trainees and Physician extenders (Advanced Nurse Practitioners, Physician Associates and Advanced Clinical Practitioners) within the surgical team and its impact on surgical training

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Background In a report entitled Improving Surgical Training (1) published by The Royal College of Surgeons of England, the report suggested full utilisation of the extended surgical team to help core surgical trainees (CSTs) meet their surgical training requirements while keeping up to pace with ever-increasing service needs. We aimed to explore the interaction between CSTs and physician extenders (PEs) and its impact on surgical training.

Methodology 37 CSTs working across 11 NHS trusts within Yorkshire and Humber deanery were asked to complete a 14-question questionnaire. This data was then tabulated.

Results The results showed that the majority of CSTs frequently worked closely with PEs (51% most days of the week, 19% once a week, 14% every day, 8% never, 8% other). Most interaction occurred on the wards (68% wards, 32% admissions, 22% theatre, 16% clinics) and rarely out of hours (OOH) (65% no interaction OOH, 21% regularly interaction OOH, 11% very frequently OOH, 3% others).

32% of CST responded that the impact of working with PEs was positive, 16% responded it was negative, 35% were unsure of the effect it had, and 16% replied 'others'. Furthermore, 49% responded that the interaction did not result in missed training opportunities, while 41% responded opportunities were missed as a result of the interaction, and 10% responded as 'other'. 41% responded working with PEs allowed them to gain more training/educational opportunities, 51% responded they did not gain more training from this interaction, and 8% reported 'other'. When training opportunities were missed, out of the 31 responses, 52% did not escalate this. 20% of those who escalated said that no actions were taken despite escalation. CST repeatedly suggested that the role of PEs in the surgical team needed to be better defined. A total of 6 CSTs suggested in free-text that PEs role in the surgical team could improve if they could prescribe, were given more ward-based responsibilities and shared on-call responsibilities to allow CSTs to pursue off-ward training opportunities.

Discussion The results suggest that CSTs and PEs frequently interacted within the surgical team. One way to improve this interaction and enhance training for CSTs could be to define the role of PEs within the surgical team better. It would also be beneficial to explore why surgical trainees reported a lack of action when missed training opportunities were escalated and what could be done to encourage a higher percentage of trainees to escalate these occurrences.

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 206

Thinking with Stories: the value of non-medical literature in GP Specialty Training

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Background GP and trainer Dr John Salinsky writes 'When I became a family doctor, I found myself in a world where people are constantly telling me stories and sharing their feelings with me. Often they reminded me of people in my favourite books..' The experience of reading the classics and non-medical literature inspired Salinsky to include literature in the GP training programme for his scheme. When Lewisham GP training Scheme decided to include a session on reading and discussing non-medical books in 2015, it was to look beyond the structured medical curriculum and enter the world of the humanities for a brief moment, with a view to nurturing curiosity and examining human experiences.

The challenge in teaching general practice is to develop the holistic focus of the generalist within a scientific reductive framework whilst being human. Reading non-medical literature offers the trainee an escape from the rigidity of medical protocols and engages their imagination. They have access to other 'patient' voices and stories that offer new and different perspectives some which may not sit easily with their own world view. The book group has been a useful teaching tool to allow the trainees to imagine alternate narratives, nurture a curiosity, and to learn more about themselves and how they relate to others.

Methodology The selection of the books has been varied. One year we took a vote from the larger group and in other years it has been a consensus between the three training programme directors (TPD). The over-riding rule of thumb is to offer a selection of formats that include non-fiction, fiction and other formats such graphic novels. Interestingly the addition of a play was not well received. The play in question -'Tiger Country ' by Nina Raine- was set in a hospital and so may have been too close to the trainee's experience.

The trainees choose one book to read critically with a view to discussing in small groups facilitated by TPDs. In the small group work, the trainees reflect on what is being communicated by each author and how that information gets translated by the reader. This is a skill that we are using all the time in our consulting rooms in trying to understand our patients.

Results We asked the trainees to feedback on the following questions:

1. What do you think you gained from reading the book? Both personally and as a doctor?
2. Was it useful VTS session for development as GP?
3. What did you gain from the group discussion?

The three broad themes that emerged from the feedback were

1. Around connecting with the human side of medicine

'The book made me think more deeply about how my own (and other doctors) identity is wrapped up in our jobs. It made me consider how much satisfaction and happiness I derive from my job compared to my personal relationships and what would matter to me if I was put into a position of having a life-limiting illness. '

2. Having the opportunity to read literature was regarded as a gift and some trainees found it an escape from the real world.

'Good escapism into a well read narrative. Useful to remember that I enjoy reading & the narrative was both interesting, emotive and enjoyable.'

3. The narrative of human experience resonated with patient narratives and has helped the trainees to see their patients differently.

'Examining the value system of myself & my patients – what's important to me/ them '

Discussion The learning from reading non-medical literature and introducing the humanities to future GPs is encapsulated by Professor of Clinical Ethics Rita Charon as 'narrative competence' which she defines as a means of making sense of the patient's 'figural language and grasp the significance of stories told'. In summary the 'Book Group' has offered our trainees the opportunity to think with stories and not just about stories, an important skill for future General Practitioners. The inclusion of selected non-medical literature in the GP

curriculum offers a step towards developing critical skills regarding patient narrative, compassionate understanding and a dialogue around being human.

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 207

What does it take to get good feedback? An analysis of the conditions needed for high quality feedback in workplace-based assessment

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Background Formative assessment is accepted across a range of educational contexts as being crucial to promoting learning and, since 2010, the General Medical Council has mandated its use for doctors in postgraduate training programmes. Despite promising early indications that workplace-based assessments (WBA) could fulfil a formative function[1-3], there were signs that they did not always operate as intended[3-6], with concerns being shared internationally[7-10].

Against this backdrop, the Academy of Medical Royal Colleges[11] advised that feedback should be, inter alia: timely; specific; focused on behaviours; related to learning goals; and able to inform action plans. It was not clear at the time whether feedback generated by WBA typically reached this high standard. Consequently, we analysed a large number of WBA outcomes recorded in the UK radiology training e-portfolio, with a particular emphasis on the quality of written feedback provided by assessors and the conditions required for high quality feedback to be provided[12].

Methodology We analysed 32,613 radiology direct observation of procedural skills (Rad-DOPS) assessments recorded by UK trainees from 2010-11 to 2012-13, and 2016-17, from which a random sample of 2,500 assessments was selected for in-depth analysis of feedback quality. A theoretical model of high quality feedback was established after a review of the formative assessment literature and was used as an analytical framework.

The e-portfolio record yielded several features of trainee profiles for analysis, including stage of training, average rating for the assessments, overall judgement of competence and time during placements that assessments were undertaken. It was thus possible to examine associations with high quality feedback.

Associations were explored using Qualitative Comparative Analysis (QCA) 13, which allowed identification of conditions that were sufficient, or quasi-sufficient, and necessary, or quasi-necessary, for high quality feedback.

Results Descriptive analysis showed that trainees tended to record numbers of assessments that aligned closely with the minimum numbers mandated for progression through training. Peaks of assessment activity were apparent around 50% and 90% of the way through placements – time points that align with recommended educational appraisal meetings. There was evidence of a large number of assessments being recorded at the very end of placements (9–12% across the sample) and a substantial number being completed retrospectively (7–13%).

High quality feedback was only identified in very small numbers of assessments (average 5% across the sample).

Conditions that were necessary, or quasi-necessary (i.e. necessary in ≥70% of cases) for high quality feedback were: trainees being in the earliest ('core') stage of training; trainees having a low average score in an assessment; trainees needing close supervision. However, none of these conditions was sufficient to guarantee high quality feedback.

Discussion Our findings align with previous research[6] that found high levels of retrospective assessment and variable quality feedback, and extend this work by offering an evaluation of the quality of feedback provided to a large sample of trainees drawn from across the UK over several years. Furthermore, we were able to establish necessary conditions required for high quality feedback. The finding that none of these, each of which clearly implies an ongoing learning need, was sufficient to trigger high quality feedback must be of concern to those involved in postgraduate medical education. Adopting such formative processes as co-construction of learning activities, dialogic feedback in communities of practice and peer and self-assessment could move WBA to a position in which the 'quality of engagement [with learning] that it helps to secure and to shape is personally, institutionally and/or socially valuable' (p. 5)[14].

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Theme: Postgraduate Education

Accepted as: Short Communication

Paper no. 208

Using a structured teaching course to improve junior doctor confidence in basic urological knowledge and practical skills

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Background Urological complaints account for 5-10% of GP visits and 20% of acute surgical attendances to hospital (1). However, Urology is historically poorly represented in the medical school curriculum. Whilst attempts to address this have been made by the British Association of Urological Surgeons (BAUS) through publication of an undergraduate urology curriculum (1), recent studies show that this continuity of learning does not continue into the Foundation Programme. A cross-sectional study has suggested that most Foundation doctors have limited clinically immersive experience of urology before entering the workplace (2).

Furthermore, self-reported confidence in performing core urological procedures is uniformly low across both FY1 and FY2 doctors (3).

In smaller district general hospitals, Urology is often "cross-covered" out of hours by junior doctors and therefore postgraduate training is imperative. We devised a teaching programme aiming to improve junior doctor confidence in the management of common acute urological presentations and clinical skills.

Methodology A urology themed course was devised, the programme of which was mapped to the BAUS and Foundation Programme curricula. The course was advertised through work emails as well as social media (Facebook, Whatsapp) to all junior clinicians (pre-consultant grades) in the West Suffolk Hospital, Bury St Edmunds.

The course comprised of four sessions, which were delivered over a one month period in 2019 by two clinician facilitators (surgical trainees). The teaching sessions were themed to cover the most common urological presentations and comprised a mixture of case-based interactive lectures as well as practical simulation of clinical skills using manikins in the skills lab.

Pre- and post- course questionnaires were distributed to the participants of the course. Participants were asked to self-report their confidence using a 10-point Likert scale. Statistical analysis (paired T test) was performed using Stata MP v16 software (4).

Results The mean average number of participants at each session was 12 (range 7 – 13); variation was due to junior doctor on-call commitments and annual leave. The grade of junior doctors in attendance included FY1, FY2 and GPVTS trainees.

The course was highly successful and junior doctor confidence increased across all domains. Particularly notable increases occurred for management of post-obstructive diuresis (3.9 p 0.001) and changing a suprapubic catheter (4.9 p0.001) which are both key practical skills during a urological on-call. The participants valued the sessions, giving an average usefulness score of 8.8/10.

Discussion Due to the general nature of undergraduate and foundation curricula there is low confidence amongst junior doctors with regards to the management of common urological problems and the performing of basic urological practical skills. This can be easily be addressed with a simple, locally delivered, teaching course.

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Theme: Postgraduate Education

Accepted as: e-poster

Paper no. 209
Continuous education for foundation trainees in surgery: using online teaching tools to improve the peri-operative management of diabetic patients

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Background Diabetes affects 6- 7% of the UK population and is expected to increase exponentially. Management of diabetes is often complex, particularly in surgical patients whereby inadequate management directly results in poor outcomes and lengthened inpatient stay. The Joint British Diabetes Societies (JBDS) identified factors leading to adverse outcomes as per their 2011 report: lack of institutional guidelines for management of diabetes; poor knowledge of diabetes amongst staff delivering care; complex polypharmacy and insulin prescribing errors. Education of staff is therefore paramount and should be maintained to a high standard.

Aims

1. To audit practice at a busy district general on peri-operative management of surgical diabetic patients against JBDS guidelines.
2. To assess foundation trainee awareness and understanding of JBDS and local guidelines of diabetic surgical patients.

Methodology Anonymous online survey for foundation trainees, reviewing awareness, understanding and ease of use of local and national guidelines. Statements were rated across a Likert scale.

Additionally, prospective data collection over two weeks for all surgical patients with diabetes mellitus undergoing general anaesthesia on elective or emergency lists, with review of peri-operative management as per JBDS guidelines.

Results Survey response included 84.2% in foundation year 1 and 15.8% in foundation year 2 trainees [n= 19]. Year of graduation ranged from pre-2015 to 2018, with the cohort representing both national and international medical school graduates. 100% had a surgical rotation as part of training. Only 10.5% agreed with a statement they felt confident in their knowledge regarding local management guidelines. When asked about the most beneficial educational intervention, an app was selected by 37%, a website by guidelines by 33%, and a short teaching session by 30%.

Patient management was reviewed and compared against JBDS guidelines for 15 patients with an average age of 63.9 ± 16.7 years, with all experiencing micro and macrovascular diabetic complications. 60% went on to have surgical interventions. Of note, and in accordance with JBDS guidelines, 75% had had HbA1c checked within the last 3 months, and only 11% had inpatient emergency treatment prescribed for hypo/ hyperglycaemia; both metformin and liraglutide were incorrectly omitted for patients; insulin prescriptions with appropriate fasting doses were all correct.

Discussion Practice review showed room for improvement with national targets not reached. Review of foundation trainee knowledge and confidence could also be improved with most indicating they would prefer an app or website modality. This would provide ease of access for up-to-date guidelines and ensure continuing professional development. As such, an android app, 'The Surgical Patient', has been created using free online tools, as well as a companion website. This has required multi-disciplinary team input, and will also allow accessibility for other health professionals.

The app and website will be made live and advertised locally, with subsequent review of local practice and assessment of impact on foundation trainees and their training experience.

Theme: Postgraduate Education

Accepted as: e-poster

Paper no. 210
Differential Satisfaction of General Practice Trainees in Secondary Care in South London

Author(s): Alex Drewett, Sarah Divall, Geeta Menon

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Background In England general practice (GP) training lasts 3 years, 18 months of which is carried out in secondary care. It is imperative that these secondary care posts are relevant to the learning needs of these trainees and their future careers.

Methodology All trainee doctors in England complete the National Training Survey (NTS) annually so that the quality of their training can be monitored across 17 domains[1]. We used the 2019 NTS to analyse results from all GP training posts in secondary care in the south London deanery (35 posts) and compared these to their colleagues in speciality and foundation training.

Results Overall satisfaction of GP trainees ranged from 41.0 to 90.7 (all scores out of 100). Overall satisfaction of GP trainees by speciality were; Emergency Medicine 76.1 (posts=6, range 71.3-80.7), Medicine 74.2 (posts=9, range 61.9-88.6), Paediatrics 77.1 (posts=6, range 62.4-90.7), Obstetrics & Gynaecology 69.1 (posts=6, range 48.7-87.3), Psychiatry 76.6 (posts=6, range 63.4-87.0), General Surgery 53.0 (posts=2, range 41.0-65.0). The differential in overall satisfaction between GP trainees and their Speciality colleagues in the same job post ranged from; Emergency Medicine +7.9 to -14.2, Medicine +26.4 to -10.1, Paediatrics +9.3 to -19.1, Obstetrics & Gynaecology +10.7 to -41.7, Psychiatry +1.3 to -24.8, General Surgery -18.0 to -39.8.

Discussion GP trainees were on average less satisfied than other trainees in the same post. We found a wide disparity in the overall satisfaction of GP trainees within the same specialities, and between GP trainees and their speciality/foundation colleagues working in the same department. We are carrying out a thematic analysis involving trainees and programme leads in order to explore these disparities and discover best practice so it can be shared amongst trusts.

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Theme: Postgraduate Education

Accepted as: e-poster

Paper no. 211

Ethics case-based discussion sessions in the style of a clinical ethics committee - a pilot for foundation doctor teaching

Author(s): Dr Richard Shoulder

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Background The GMC's 'Ethical Guidance for doctors' (1) and the Foundation Programme Curriculum (2) sets out a syllabus and requirements needed to pass foundation training. A significant portion of these expectations and standards relate to ethical issues and professional practice.

At the start of this academic year there was a change in the national teaching requirements for foundation doctors (FD's) from the previous percentage attendance targets. Each FD must now attend a minimum of 60 hours (during 12 months) of teaching during their FY1 and their FY2 rotation. At least 30 hours must be core foundation teaching (the face-to-face teaching programme provided by the Trust). (3) Currently at Oxford University Health (OUH) Trust core teaching for FD's totals 2 hours a fortnight meaning there is a need for more. Due to on-call commitments, annual leave and busy working days it is not uncommon for FD's to struggle to meet their required teaching hours.

FD's at OUH were surveyed with the following findings:

-14% of surveyed FD's felt there was an appropriate amount of medical ethics teaching during foundation training (not including medical school).
-14% of surveyed FD's felt there were enough opportunities to discuss ethical issues encountered at work.
-40% of surveyed FD's disagreed or disagreed strongly that 'speciality teams informally discuss ethical issues regularly'
-36% of surveyed FD's agreed that as a junior doctor you feel supported in ethically challenging situations both during and after.
-45% of surveyed FD's felt they often or very often identified ethical issues at work that related to patient safety.

This highlights a need for additional face-to-face teaching hours provided by the Trust as well a gap in the current provision of medical ethics teaching to fulfil the curriculum.

Methodology The Foundation Educational Leads (FEL) committee at OUH started a new project. A fortnightly 1-hour session was held, facilitated by Professor Dominic Wilkinson, with a focus on foundation doctor participation and engagement. Attendance was not mandatory but the session was approved to be counted as core teaching hours toward ARCP requirements. FD's were invited to present a case for discussion, which could then be signed off as a CBD on Horus ePortfolio. The format of the sessions resembled that of a clinical ethics committee.

The sessions were advertised via the same methods as core teaching sessions. Attendees were asked to fill in online pre-session questionnaire. Following the session attendees were asked to fill in a post-session feedback form. Initial findings are discussed below. It should be noted that the sessions are ongoing and the survey is being developed to look into other measurable outcome.

Results The results were overall very encouraging. FD's rated (/5) the session as highly useful (4.5), interesting (4.7) and well facilitated (4.8). 100% said they would like to attend similar sessions. 94% of respondents felt sessions would improve their recognition of ethical issues in clinical practice. 82% of respondents felt the sessions will make them more likely to discuss ethical issues with their team.

Discussion These initial results support the provision of ethics case-based discussion sessions in the style of clinical ethics committee as part of the FD teaching programme. Further evaluation of these sessions is ongoing. These sessions would help FD's meet mandatory teaching hours. The individual feedback comments suggested the sessions were beneficial to FD mental wellbeing as they offered an opportunity to discuss the subjective issues encountered at work. Clinical teams may benefit if FD are more likely to prompt discussions of ethical issues and where these involve issues of patient safety there is an additional benefit to service users. All UK Trusts that train FD's could offer these sessions and the ongoing effect of engaging junior doctors with medical ethics could provide long-lasting benefit to the NHS.

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Theme: Postgraduate Education

Accepted as: e-poster

Paper no. 212

How do Trainees' emotions during the simulation debrief influence learning from feedback received during the debrief?

Author(s): Rebecca Young

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Background Simulation training is now a common and compulsory aspect of the Foundation Doctor Training Programme (1). Providing feedback during a simulation debrief was found to be the most important aspect to facilitate learning (2). As feedback during a simulation debrief is so vital to learning, it is important that variables such as emotions which affect the way in which feedback is received by learners, are addressed.

Intense emotion has been shown to result in enduring learning (3). The literature however, reveals that the role that positive and negative emotions have on learning is less clear. Due to the ubiquitous nature of emotions, further understanding into their role during simulation and their impact on how trainees learn from feedback is therefore important. Potential methods for managing emotion and thus improving learning during the debrief will also be explored.

Methodology Foundation Year one Doctors (FY1s) at a District General Hospital have been chosen as the focus for this research. Three FY1 Doctors and one simulation facilitator participating in a single simulation session were recruited for this study.

A mixed methods approach has been adopted for data collection to improve reliability and reduce bias (4). Methods included; observation of filmed simulation debriefs for each of the three trainees and individual semi-structured interviews with the trainees and facilitator following the simulation session.

Discourse analysis (DA) has been chosen as the single method for data analysis for the video-tape footage and interview audio data. General themes were identified (5) and recorded in NVivo then immersion in the data allowed exploration behind the meaning of language used (6).

Results Four over-arching themes were derived deductively based upon the interview schedules:

-Emotions experienced during the debrief
-Influences on emotions during debrief
-Influences of emotions on learning during the debrief
-Improving learning

A variety of emotions were experienced by the trainees and identified by the simulation facilitator during the simulation debrief. Negative emotions feature most predominantly including nervousness, uneasiness (self-doubt) and fear, particularly of being judged. Positive emotions feature less commonly but included relief, relaxation and determination.

The main factors influencing emotions during the debrief were the facilitator (including facilitator technique, delivery of feedback and role), the trainees colleagues, and the simulation session design.

Influences on learning during the debrief included nervousness, successful scenario outcome, facilitator technique in delivery of feedback and opportunity to reflect over time.

Potential methods to help manage emotion during simulation such as a pre-simulation questionnaire, adapting the scenario to the ability of the candidate

and performing the simulation in a group were identified to help improve learning during the debrief.

Discussion This research has demonstrated that a wide spectrum of emotions occur in learners during the simulation debrief process. The influences on these emotions and their subsequent impact on learning from feedback during the debrief varies considerably between trainees. This is not an unexpected finding given the complex relationship described between emotions and learning in the literature. This research has highlighted that trainees participating in simulation appear to value an individualised, learner-centred educational experience which takes into account their emotions and learning preferences. This recommendation is generalisable across all of forms of simulation-based medical education. This can be achieved through adapting facilitation and debriefing technique and simulation session design. Several methods for creating a more individualised simulation experience have emerged from this research including a pre-simulation questionnaire which warrants further research.

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Theme: Postgraduate Education

Accepted as: e-poster

Paper no. 213
Mind the Gap; A survey exploring the transition from Doctor in Training to Independent Practitioner

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Background Transition periods have been shown to relate to high levels of professional stress in healthcare workers. There has previously been lots of research on the junior transition periods but very little on the senior transition from trainee to independent practitioner. What little literature there is in this area has shown that consultants tend to feel underprepared for the non-clinical areas of work (Yardley, 2018).

The aim of this project is to try and better prepare trainees for the transition to independent practice. We have set a series of objectives to help us achieve this;

- Obtain up to date quantitative data on areas of practice that new consultants and GPs feel underprepared for
- Use qualitative data to validate the quantitative data
- Co-design and deliver resources, with trainees, aimed at improving preparedness
- Re-evaluate

This abstract relates to the initial phase regarding collection of quantitative data.

Methodology The first phase of this project will comprise of a survey. This is based on previous work, but has been expanded, to ensure all areas of the Generic Capabilities in Practice are covered. The survey is being run through the onlinesurveys.ac.uk website. All consultants and GPs within 5 years of CCT in the HEE North East and North Cumbria region will be invited to complete the survey. The survey is due to be open from 6/1/20 till 31/3/20. We have obtained ethical approval for the survey from Northumbria University. We hope to achieve a 20% response rate leading to approximately 280 responses.

The plan is to process the data using thematic analysis. It is hoped that this will identify broad areas of practice where extra learning resources may be of help to trainees and junior consultants.

Results In the first 8 days of the survey being open we have received 62 responses. Initial, crude, analysis supports the idea that new consultants are under prepared for non-clinical aspects of work. Approximately 10% of consultant respondents admit to seriously considering leaving clinical work after becoming a consultant. These are very early results but we expect to have a completed analysis by July.

Discussion The early results indicate that non-clinical work seems to be the main problem. The stresses associated with this seem to be associated with a feeling of burn out. Consequently, we feel this project is important to allow us to better identify areas for future work to improve the working lives of doctors and improve staff retention.

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Theme: Postgraduate Education

Accepted as: e-poster

Paper no. 214
Preparing todays doctors for tomorrow; a focussed foundation teaching program supporting transition from foundation year 1 to 2

Author(s): Rachel Ventre, Sarah True
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Background The Dr Foster (2009) report confirmed what was already suspected amongst NHS professionals, that death rates increase in August. This coincided with the first day for many newly qualified doctors and the began headlines of "Black Wednesday". This lead to the Keogh (2012) report for the DoH introducing compulsory shadowing for new FY1 doctors, supported by evidence that a period of shadowing reduces errors (Aspinal and Blencowe, 2009). This became known as "Grey Wednesday". A shadowing program was trailed at a local Hospital and then introduced across the deanery. This addresses the learning needs of newly qualified FY1 doctors but does not consider other junior doctors who progress to more senior positions on the same day.

As doctors move from FY1 to FY2 they gain full registration with the GMC. This allows them more responsibilities, from out of hospital prescribing and sectioning powers under the mental health act. These enhances responsibilities are reflected in the positions offered to FY2s, such as general practice, community placements and emergency medicine. Their practice in previously familiar hospital jobs will also change, with the job description including more out of hours work and decision making. Overall they will need to practice more autonomously.

Methodology We analysed FY1 junior doctor overall confidence in progression to FY2, this was measured by percentage confidence on an electronic sliding scale. We analysed the foundation year two curriculum to identify responsibilities that needed to be developed during this transition. These included career planning, managing the acutely deteriorating patient and applying the mental health act. A quantitative survey was carried out to assess confidence in these topic themes. Qualitative survey was carried out to identify other themes for development.

This supported the planning of this course and allowed curriculum alignment. A 10 week teaching program was developed.

Quantitative and qualitative was collected after this teaching intervention. The data was analysed to assess confidence in preparing for FY2.

Results There was demonstrated to be a statistically significant increase in overall confidence about progression from FY1 to FY2 from 41.55% to 69.43% (p=0.0102). An increase in confidence was also demonstrated for each topic independently.

Discussion The highest area of reported confidence, both pre and post intervention, was in supervising and supporting medical students. This may be explained by the existing FY1 teaching programme which aims to develop teaching skills throughout the year. The smallest increase in confidence was demonstrated in roles and responsibilities at cardiac arrest. This may be explained by ALS training and participation in the cardiac arrest team as part of the medicine rota. Confidence could be improved by other methods of learning such as increasing simulation sessions.

Due to clinical commitments not all FY1 doctors were able to attend all sessions of the teaching programme. Respondents were invited to report confidence regardless of if they had attended the corresponding session.
This pilot study has demonstrated increased confidence in FY1s in relevant areas as they begin their transition to FY2 SHOs. Sufficient supporting evidence has been generated to justify the introduction of an annual teaching programme.

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Theme: Postgraduate Education

Accepted as: e-poster

Paper no. 215
'Primary Care Teaching Workshop'; Reshaping the GP trainee curriculum in Lanarkshire

Author(s): Dr Meadhbh Halpenny, Dr Helen Taylor
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Background Teaching is one of the 14 core competencies in the Royal College of General Practitioners postgraduate training curriculum (1). Unfortunately, opportunities to teach medical students in a primary care setting are lacking. If teaching was incorporated into the postgraduate GP curriculum in a structured manner, trainees could be equipped with teaching skills to boost their confidence to teach.
Recent literature has suggested that 'Near Peer Teaching' can have a positive impact on GP recruitment in terms of meaningful promotion of GP as a career (2). This is a crucial consideration, given that the Scottish Government has plans to increase undergraduate medical school places by 22% by 2021 over 2016 levels (3).
Research aims:
Do GP trainees in Lanarkshire, Scotland feel prepared by their current training programme to teach medical students? Can a half day teaching workshop influence their confidence to teach?
Methodology A half day teaching workshop was designed and delivered to GP trainees in Lanarkshire on two occasions between June and November 2019. We recruited a mix of first and final year trainees and participation was voluntary. The participants were asked to fill in anonymous questionnaires pre and post workshop.
Results -Total of 11 participants. Likert scale 1-5 used.
-Participants indicated that they feel poorly prepared by the current GP training programme to teach medical students (Likert mean 2.3)
-Participants confidence to teach medical students increased from a mean of 3 pre-workshop to 4.3 post-workshop.
Discussion Our findings suggest that the current GP training programme leaves trainees feeling poorly prepared to teach. It indicates a need to reshape the current curriculum, linking with the theme of 'disrupting medical education'. Our results show that a half day teaching programme can boost trainees confidence to teach. Incorporating teaching formally into the GP trainee curriculum would be of benefit.

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Theme: Postgraduate Education

Accepted as: e-poster

Paper no. 216
"Professionals Together" – A Peer Support Scheme for FY1 Wellbeing

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Background Medicine offers a respectable, stimulating and fulfilling career. However, in recent years poor morale and high levels of burnout have been widely reported amongst doctors, such that the wellbeing of the medical workforce has become a significant concern (1,2). Junior doctors are a group especially vulnerable, demonstrated in the 2017 NHS staff survey where 36% of doctors in training felt unwell due to work related stress (3). Literature has suggested that doctors should have opportunities to process stresses common to the profession, highlighting peer support initiatives as an example of this (4). We piloted a peer support scheme for FY1 doctors in the West Midlands deanery named "Professionals Together". Our aim is to support junior doctors in delivering healthcare from a place of wellbeing by creating a compassionate and supportive environment in which experiences of being a doctor can be openly discussed.
Methodology The scheme consisted of nine 2 hour evening sessions across the academic year, each consisting of a meal, short presentation and group work. There were 3 phases:
1. Being Human - focusing on the physical, emotional and psychological impact of working in healthcare
2. Being Carers - importance of cultivating compassion in healthcare towards self, patients and colleagues
3. Being Together - developing supportive working relationships with colleagues, team dynamics and organisational cultures

Questionnaires from attendees were completed at the end of each phase.
The scheme was funded by Health Education England West Midland Foundation Programme and the BMA, with leaders and facilitators volunteering their time.
Results During 2018/19, 28 FY1 doctors expressed interest. Of these, 22 attended an evening session.
100% of the participants would recommend the scheme to others and that it had been a positive influence on their initial experience as a doctor. 90% strongly agreed that the scheme content had been relevant to their professional development, whilst 80% agreed strongly that the scheme had enabled them to be honest about their wellbeing. Selected feedback comments include:
-"Continuity of care! It's the only opportunity I've had to meet up with the same people, in a professional setting, as well as mentors."
-"The benefit of having a safe space, separate from work to discuss the difficulties of being a doctor in a constructive way cannot be overstated."
Discussion The Professionals Together Scheme has shown significant promise in its pilot year. We set out to create an environment for FY1 Doctors to process the experiences of their first year in clinical work, receiving support from other clinicians. Those undertaking the scheme have universally reported that it had a positive impact on their experience as a first year doctor, such that all would recommend the scheme. For some of the participants, the scheme has provided a continuity of peer support and mentoring that they have not experienced during their clinical placements. We seek to grow a sustainable scheme that will continue to enhance the experience of moving from student to practitioner for FY1 doctors in the West Midlands.

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Theme: Postgraduate Education

Accepted as: e-poster

Paper no. 217
Stressing the system: Preparing for Perimortem Caesarean Section through MDT Simulation

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Background Maternal collapse is a rare emergency requiring timely response from numerous clinical teams. If a woman arrests beyond 20 weeks of gestation a perimortem caesarean section (PMCS) should be performed within 4 minutes of collapse in order to optimise maternal outcomes(1). Removal of the fetus and placenta via PMCS is chiefly a resuscitative tool, resulting in improved venous return and cardiac output in the mother, and facilitating easier CPR and ventilation (1). It has been described as 'the most crucial resuscitation tool in pregnant women' by the latest confidential enquiry into perinatal death (2), and is a procedure which the report suggests requires improved familiarity amongst clinicians working outside of obstetrics(2).
The Royal College of Obstetricians and Gynaecologists (RCOG) recommend the immediate attendance of a midwife, senior obstetrician, and obstetric anaesthetist alongside the cardiac arrest team in all cases of maternal collapse. The neonatal team should also be called early if PMCS (and thus delivery) is anticipated (1). A recommendation for the use of emergency simulation training of maternal collapse scenarios is highlighted in their 2019 guidelines, with a focus on its use to test human factors and potential system errors (1). We created a simulated maternal emergency to explore our own hospital systems and efficiency of team working in a medium sized district general hospital.
Methodology A maternal collapse scenario was written by a team of obstetric, neonatal, anaesthetic, and emergency department (ED) consultants. The scenario depicted a maternal collapse secondary to pulmonary embolism and was designed for 'point of care' use within the emergency department.
On the day of simulation each hospital team who might be contacted, as well as hospital switchboard, were alerted to the presence of a simulated emergency taking place that day. Additional doctors were available to cover clinical need whilst those involved in the simulation were removed from their respective clinical areas.
A paramedic acting as confederate called the emergency department with a pre-alert to initiate the simulation. A Laerdal 'SimMom' model was used to simulate the patient, and the scenario unfolded within the resus area of the emergency department. The ED team called immediately for obstetric and neonatal support following their pre-alert; in total 17 clinicians participated in the simulation.
A whole group debrief took part immediately following scenario end. Feedback was gathered from each individual involved, with questions focused on the relevance of the scenario to clinical practice and the benefit of using simulation to improve multidisciplinary team working, and test systems and processes.
Results Both qualitative and quantitative data was collected. Likert scales from 1 (completely disagree) to 10 (completely agree) were used alongside free text boxes. An average score of 9.8/10 was given to the relevance of the scenario to everyday work, with numerous written comments remarking further on the relevance and realism of the scenario. An average score of 9.8/10 was attributed to the usefulness of using simulation to test systems and processes, whilst a score of 9.4/10 was given for the benefit of using simulation to aid MDT working. Suggestions for improvement were mainly limited to using a smaller faculty in order to reduce crowding.
Discussion Using simulation to test systems and prepare for obstetric emergencies has been recommended by the RCOG to improve outcomes in maternity care. Maternal collapse remains a rare event, however simulation training may be used to increase preparedness of both clinicians and hospital systems for such an emergency. Utilising this method of training within our hospital was recommended by all who took part as a relevant and useful training tool, in particular with regards to testing systems and processes.
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Theme: Practice Based Teaching And Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 218
Does a longitudinal community pharmacy placement promote integration, engagement and learning?

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Background Longitudinal clinical placements are defined as involving "a regular, recurrent placement in the same setting with the same supervisor over a period of time". The underlying mechanism promoting learning is "continuity" in its varying forms of patient, supervisor and location longitudinal exposure. Longitudinal placements have been reported to promote learning by establishing more opportunities for connection with patients ("continuity of care"), integrating knowledge, skills and attitudes across science and practice ("continuity of curriculum") and enhancing supervision, role modelling and mentoring ("continuity of supervision")(1). This study sought to answer the question: Does an early longitudinal community practice placement (LCPP) for pharmacy students promote learning by establishing more opportunities for connection with patients, curriculum integration and professional engagement?
Methodology This was a sequential explanatory mixed methods study. The LCPP involved students attending the same community pharmacy for a half day each week over twelve weeks. Data for the quantitative before and after study was collected using a validated tool called the Student Pharmacist Inventory of Professional Engagement (2) (S-PIPE) and the questionnaire also contained questions related to connection with patients and curriculum integration. Qualitative semi-structured interviews, focussed on continuity of care, curriculum and supervision, with students, supervisors and practice-educators were conducted following the 12-week longitudinal placement. The interviews focused on continuity of care, curriculum and supervision and were thematically analysed through a constructivist lens.
Results 78% (n=47/60) students completed the questionnaire. Significant increases in the sum scores for professional engagement (S-PIPE) (Pre: 68.61, Post: 80.23, p 0.001) were recorded. Belonging, connectedness and meaningful experiences sub-scores from the S-PIPE all increased significantly following placement. Some increases were recorded relating to connection with patients. The majority of students agreed with questions relating to integration. The majority of students agreed that the placement helped them to contextualise and apply knowledge learned from modules.
The qualitative component showed trends of continuity of curriculum integration, through learning activities promoting links between module content and practice and contextualising learning. Continuity of supervision generally was experienced through role modelling and professional working relationships. Continuity of care was not as apparent due to not seeing interactions to completion, inconsistencies with level of interaction with patients and lack of repeated encounters with the same patient.
Discussion The LCPP promotes professional engagement, curriculum integration and patient-centred beliefs. The LCPP creates more opportunities for curriculum integration and professional engagement but there is room for creating more opportunities for connection with patients.
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Theme: Practice Based Teaching And Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 219
Educational debriefing in Pre-hospital Medicine: how do faculty on a leading pre-hospital care course facilitate debriefs and what are the effects of debriefing?

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Background Educational debriefing is central to learning and development in a number of fields, ranging from aviation to pre-hospital and emergency medicine. Although educational debriefing has been explored following hospital simulation scenarios, there is little research in this area for pre-hospital medicine, due to it being a relatively new although increasingly important medical speciality. One model of educational debriefing in pre-hospital medicine is the Pre-Hospital Care Course (PHCC). Held three times a year by the Institute of Pre-Hospital Care, an international centre of excellence and education in the field, and London's Air Ambulance, a charity committed to delivering excellent and innovative pre-hospital care [1], it attracts pre-hospital clinicians from around the world. Given the global reach of education on the PHCC, this research aimed to explore educational debriefing in pre-hospital medicine with reference to the course, focusing on how debriefs are facilitated and the impact of educational debriefing on pre-hospital clinical practice; findings that are likely to be relevant to educational debriefing for other specialities.
Methodology Ethnographic observations of simulation scenarios and debriefs were conducted over two consecutive days of the PHCC course. Detailed contemporaneous field notes were made and analysed thematically. Key informant interviews with debrief facilitators and PHCC participants were conducted to explore their experiences of and reflections on educational debriefing in pre-hospital medicine and its effects, including its relation to clinical practice. Interview data were transcribed by the researchers and analysed thematically.
Results The initial findings indicate that facilitators and participants acknowledge the importance of effective debriefs for learning, and importantly, the relevance of these debriefs to clinical practice. However, the data indicated conflict between the learning agenda of the facilitators and that of the participants, and the challenge of striking an appropriate balance. Both observational and interview data highlighted the multifaceted role of the facilitator in educational debriefs – leading, questioning, clarifying, answering questions and revealing learning points. Additionally it was felt peers and observers made important contributions by offering insight from their own experiences. Interestingly, there was evidence that facilitators learn from debriefs as well as participants. Interviewees agreed that an effective debrief needed to address not only the clinical aspects of the scenarios but, given the acuity of pre-hospital medicine, also the human factors and awareness of the potential psychological impact of scenarios on participants. There was also agreement around the importance of making debriefs a normal part of learning in all areas of medicine, both in a clinical and educational capacity. Perceived barriers to effective educational debriefing included time constraints and participant contribution to debriefs.
Pedagogically, there was evidence of a range of different explicit and implicit educational approaches to debriefing being employed. There is currently no formal training for the running of educational debriefs on the PHCC. Data collection and analysis are ongoing and will be used to confirm existing findings and look for additional themes.
Discussion The preliminary data indicates that debriefing is an important component of learning in pre-hospital medicine, and that a positive learning experience is created despite the use of different methods. It also indicates the relevance of educational debriefing to learning for improved pre-hospital clinical practice. However, there are challenges that need to be addressed to improve the effectiveness of these debriefs, in turn improving clinician learning and the quality of patient care. The results of this research are likely to be applicable to educational debriefing in other medical specialities and in non-medical fields.
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Theme: Practice Based Teaching And Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 220
The Value of Mindfulness in the Clinical Phase of Medical Education: A Qualitative Study

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Background It is well recognised that participating in a Medical degree is stressful while the clinical pressures of medical practice can result in health problems in qualified doctors.[1,2] There is a constant call for medical schools to do more to support and prepare students for the emotional and physical challenges experienced both as students and for work as a doctor. In 2016 a UK Medical School introduced the Health Enhancement Program (HEP) working with Monash University Australia.[3] The compulsory first semester teaches mindfulness practice and lifestyle improvements. Mindfulness teaching has been recognised to reduce stress levels in medical students.[4,5,6] We sought to analyse how to build on this early teaching when the students reach the later clinical years. This study has ethical approval and was funded by the Leicester Learning Institute and Association of Learning Development in Higher Education.
Methodology We used a qualitative approach to gain insights into how medical students used their prior HEP training when in practice. For example, how do they apply mindfulness when in a clinical setting for their personal well-being? In addition, we asked if they or clinicians used mindfulness practice with patients and asked more about their reflections on the relevance of the early HEP module. Data was collected using taped focus groups with fourth year medical students. The tapes were transcribed verbatim and analysed using thematic analysis, in NVivo (Version 12).
Results To date 10 focus groups (on-going) have been completed with 45 students from the 2016 cohort. The on-going iterative analysis shows the majority of medical students talk about feeling stressed. Many students are using the mindfulness strategies for personal meditation at times of stress, such as examinations or following stressful clinical experiences. "When something really stressful has happened, it [mindfulness] just helps me process it not necessarily deal with it but let is wash over me." The students are pleased to have been taught these techniques so early at medical school. Importantly, many students wanted the content to be more focused on practical advice on how to use mindfulness for themselves when in clinical practice and how to share the techniques with patients. However, they report that the modules evoked stress and pressure because it was assessed (reflective journals and examination questions). "I remember the irony of feeling quiet stressed about filling out an essay, for something that was supposed to be quite relaxing". Several felt the sessions should be optional as some students would "not take it seriously" and "people are just there laughing". "I don't think it [mindfulness] can be taught when it's forced on you"; "anything like that that's compulsory is going to be met with resistance". Further group mindfulness sessions were not popular although they asked for optional drop in mindfulness practice sessions.
Discussion The new HEP module was welcomed but was perceived as disruptive by students as it added to their stress because it was assessed. The greatest value in later training years was not the health associated teaching on lifestyle but the purity of being able to use mindfulness meditation when stressed. Many students were using their own personal forms of mindfulness meditation to manage stressful moments. These findings help to shape how mindfulness is introduced and themed throughout a curriculum, valued by students and is therefore more likely to be of value when qualified.
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Theme: Practice Based Teaching And Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 221
You show me yours and I'll show you mine: how peer review of assignment drafts helps post-graduate students' engagement with assessment

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Background In undertaking a master's level programme in Education highly qualified medical staff may find themselves to be "strangers in a strange land"[1] when it comes to interpreting social science learning outcomes and assessment criteria, a key skill in producing lengthy, critically reflective assignments. To attempt to address this issue, a novel peer review of the 2-page assignment drafts in one unit on the Diploma in Teaching and Learning for Health Professionals was instigated. Each student reviewed two others' drafts and wrote formative feedback. All therefore received two sets of peer feedback before making adjustments and sending the revised draft to the tutor. The goals were:
-to focus students' attention on the unit outcomes and assessment criteria 2,3
-to give them practice in judging an outline assignment and in writing constructive feedback
-to maximise feedback at the draft stage of the assignment.
Methodology Learners received clear instructions about the process including suggested prompts for feedback. This directed their attention to salient points, e.g. 'Does the draft address all of the assignment learning outcomes?' and included suggestions about the tone to adopt, e.g. 'you could ask a question, like… ' The first drafts, with their two sets of feedback, were collected, as well as the results of a questionnaire, undertaken when the final assignment was submitted. The questionnaire comprised five, mainly open questions, e.g. 'Please comment on how you found the process of reviewing colleagues' drafts' and also 'Any other comments'. Content analysis was carried out on both sets of data.
Results Preliminary content analysis of the questionnaires reveals some interesting perceived advantages, like encouraging learners to focus on their own assignment and the outcomes: (it)"helped me reflect on my own essay as well as be clearer on the learning objectives I needed to cover". Developmental suggestions were also made about the project, e.g. for "feedback on the feedback" which may well be worth exploring in future. Preliminary analysis of the students' feedback to their peers includes comments on structure, focus (e.g. is the title too broad?), content and learning outcomes. Detailed analysis will be presented at the conference.
Discussion Having to make judgements about how far others' drafts appear to be addressing the outcomes and assessment criteria ensured that students scrutinised these in timely fashion. It led participants to think in more depth about their own work and to begin to develop their academic literacy4. In receiving two sets of feedback, each student was ensured a variety of perspectives, and in reading two others' drafts they were able to experience other writing styles and approaches to the topic. In addition, learners engaged in resource sharing (suggested journal articles), demonstrating the beginnings of an academic community of practice in the context of the unit topic.
In addition to developing their academic literacy, the requirement to write constructive feedback based on educational criteria is potentially useful for these learners' future in medical education as some will go on to assume posts of responsibility in universities.
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Theme: Practice Based Teaching And Learning

Accepted as: Short Communication

Paper no. 222
Learning from serious incidents; changing the 'blame' culture

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Background Medical errors can lead to significant patient harm or death (1). These errors are common, and healthcare professionals are not immune to making mistakes. Medical errors that are reported can be further analysed in serious incident (SI) reports. The aim of these reports is to understand the root causes of these errors and improve patient safety by learning from these cases and preventing similar occurrences(2). SI reports are usually distributed via email or presentations and learning from these cases can therefore be limited. We believe simulation-based learning can provide a powerful learning experience that ensures a culture of patient safety and preventing medical errors. Very few papers have commented on simulation teaching based on SI reports. This approach will provide a more practical and interactive learning opportunity(3, 4) for healthcare professionals over reading lengthy SI reports.
Furthermore, SIs are often regarded with negative connotations, as they highlight mistakes in the healthcare profession potentially leading to serious patient harm(2). Therefore, few talk openly or share their experiences, missing valuable learning opportunities, and support and guidance from the team members. By bringing these cases into simulation, we hope to improve transparency of SIs and encourage an open culture of learning from these cases.
Our aim is to introduce scenarios based on SIs into simulation sessions and focus on medical knowledge and system errors, whilst also role modelling and facilitating discussions for an open, blameless culture.
We have developed a simulation scenario based on a SI of a surgical patient. We have selected the learning points of the SI report to formulate the learning outcomes of these scenarios. This will be delivered within our high-fidelity surgical simulation course for Foundation and Trust grade doctors. The scenario focuses on a critically unwell patient with bowel ischaemia in the context of previous bariatric surgery. This scenario will be undertaken by one participant. In a comprehensive debrief, we focus on medical knowledge, human factors and systematic failures.
In addition, the facilitators will role model and share their own experiences with medical errors and encourage the participants to do so in a safe, supportive learning environment. We hope this approach may form the initial steps of creating an open culture.
We have scheduled two sessions in March 2020 and further sessions in May and June.
Methodology We have designed pre and post-simulation questionnaires with both quantitative and qualitative components. In addition to evaluating their learning gains on medical knowledge, human factors skills, and navigating through systematic challenges, we will explore their perceptions on sharing medical errors and open discussions towards creating a blameless culture.
Results We will present the data of these questionnaires together with our own experiences and challenges of implementing and facilitating this course in our presentation.
Discussion Challenges within our existing systems may be identified during the simulation and debrief discussions, generating new methods to address these shortcomings. Simulation from SIs can also be a method for the hospital governance team to ensure and demonstrate active learning from these events and improve patient safety.
This SI simulation can be further developed with multiple scenarios in other specialities, incorporating in multi-disciplinary teams to broaden the scope of learning and benefiting the wider healthcare environment. Running this

simulation course in situ where possible, will present more realistic experiences for participants and identify hidden system challenges in clinical practice.
We believe this SI based simulation will not only provide a powerful learning opportunity for the participants but encourage an open culture into SIs and improve the overall clinical governance.

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Theme: Practice Based Teaching And Learning

Accepted as: Short Communication

Paper no. 223
The simulated ward round: is it reaching its goals?

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Background The simulated ward round is used in the University of Nottingham as a safe environment to teach medical students the skills needed in future medical practice that include both technical and non-technical skills such as communication, prioritization, prescribing and documentation. This study aimed to evaluate what areas of learning the simulated ward round enhanced for the students, and then to inform any changes in future design of the ward round.

Methodology All final year medical students allocated to Queen's Medical centre (Nottingham) for their medicine placement participated in a simulated ward round at the beginning of their attachment. The ward round runs for 1 hour consisting of 5 patients with a variety of medical cases; feedback was provided after the encounter. The students were asked to fill out a survey to evaluate their experiences of the simulated ward round.

Results 20 students participated in the survey. 75% (15/20) of the students reported feeling more confident in being on a ward round after the simulated encounter. 95% (19/20) felt that they understood the how the ward round ran, and the role of other team members after the clinical encounter. Only 40% (4/10) felt that this experience improved their documentation skills, with 60% (6/10) not noting any improvement. Free text did reveal that students found it "useful" and asked for more of these sessions.

Discussion The simulated ward round was well received by the students and appeared to improve their perceived understanding of how the ward round works and the role of other team members. This also improved their confidence. However, there was limited perceived improvement in documentation skills. This could suggest that the simulated ward round helped to develop the non-technical skills, but not the technical skills. Other studies have noted a success in improving both technical and non-technical skills (Behrens et al., 2018; Morgan, Green and Blair, 2018), in particular when the simulated encounter has been a course over a prolonged period of time. This could suggest that more than one simulated encounter may be needed to address technical skills. One encounter may not be enough to achieve the aims. Also, cognitive load has been found to impair learning in the simulated environment (Behrens et al., 2018), especially with regards to clinical skills. A solution to this has been well designed simulation scenarios that avoid distraction. This could suggest that the simulated ward round needs careful planning of each scenario with regards to cognitive load, especially in the context of learning or developing new skills.

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Theme: Practice Based Teaching And Learning

Accepted as: Short Communication

Paper no. 224
Validation of novel 3-D hydrogel models for vascular anastomosis simulation

Author(s): Rachel Falconer, Ms Catriona Semple, Professor Jen Cleland, Professor Will Shu and Professor Angus Watson
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Background There is mounting evidence that simulation can improve performance in theatre, reduce risk of patient harm during "training operations" and ultimately, improve patient outcomes[1–3]. This has prompted many to re-evaluate the suitability of the traditional "learning by doing" apprenticeship model[4]. In addition, new technologies are revolutionising our ability to create realistic models for open surgical simulation without the attendant financial, ethical and ecological restrictions of those currently used[5]. The purpose of this study was to undertake an assessment of the face and content validity of novel 3-D biofabricated hydrogel models for vascular anastomosis simulation.

Methodology The models are were created using a pioneering biofabrication technique from a novel hydrogel material (OrganLike Ltd)5. Vascular trainees and consultants were voluntarily recruited from vascular units across the UK and asked to perform an end-to-side anastomosis using the models. Participants were then asked to complete an anonymous written questionnaire. Biomechanical properties were scored on a 10-point Likert scale with 1=not elastic/rigid/thick enough/not enough resistance and 10=too elastic/rigid/thick/too much resistance. Behavioural properties were scored using a 10-point Likert scale with 1=not realistic and 10=very realistic.

Results 33 participants (19 vascular surgery consultants and 14 vascular surgery trainees) took part.

Face validation

For the double layer artery model, the mean score (±standard deviation) was 6.5 (±1.75) for elasticity, 4.2 (±1.66) for rigidity, 5.0 (±0.90), for thickness, 4.4 (±1.45) for resistance to needle insertion and 5.2 (±1.56) for pulling a suture through. The vein model was scored as 5.7 (±1.27) for elasticity, 5.1 (±1.33) for rigidity, 5.7 (±1.15) for thickness, 5.0 (±1.08) for resistance to needle insertion and 5.1 (±1.02) for resistance to pulling a suture through. The mean score (±standard deviation) of the behavioural properties of the double layer artery were 5.8 (± 1.62) for tactile feel, 5.76 (±1.79) for handling with instruments, 4.85 (±2.24) for response to making an arteriotomy, 5.5 (±2.06) for ability to hold a suture and 6.3 (±1.88) for ability to hold tension of a knot. The scores for the vein model were 5.7 (±1.73) for tactile feel, 5.8(± 1.73) for handling with instruments, 6.1 (±1.81) for ability to hold a suture and 6.3(±1.67) for ability to hold tension on a knot.

Content validation

All participants rated the arterial model "as good as" or "better than" models currently used for vascular anastomosis simulation training. Overall, 19 (100%) consultants and 12 (86%) trainees felt the models were suitable for vascular anastomosis training.

Discussion The first generation of 3D hydrogel models have appropriate face and content validity for vascular anastomosis simulation training. The double layer artery also provides a foundation for the development of complex models (for example, with intrinsic removable plaque) as currently, no vascular models provide standardised pathology or unusual anatomy at a cost which would facilitate deliberate, repeated practice.

A recurring criticism of validation studies is that many are undertaken at surgical conferences and involve a small number of self-selecting participants[6,7]. This study aimed to provide a more representative cohort by inviting vascular trainees and consultants in multiple vascular units across the UK to participate although as participation was voluntary, there may still be inherent selection bias.

This study represents the first step in validating a range of affordable, realistic and clinically relevant models, which could help to provide equitable access to regular open vascular simulation throughout training. Further work is needed to provide a standard for validation of vascular simulation models, as well as to define the optimal model characteristics for effective skill acquisition in different learner groups.

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Theme: Practice Based Teaching And Learning

Accepted as: Short Communication

Paper no. 225
Widening participation and the Foundation Year for Medicine: embedding a community based placement

Author(s): Peter Leadbetter, Gemma Lewis, Lynn Howard
Corresponding Author institution: Edge Hill University

Background A joint initiative from HEFCE/HEE, published in October 2017, invited HEFCE-fundable Higher Education Institutions to bid for the expansion of undergraduate medical education places. A bid from Edge Hill University was submitted for the development of a new medical school with a successful outcome.

The Government's priorities included widening participation and improving access to medicine, so that the medical workforce is more representative of the population it serves. Hence, the Faculty of Health Social Care & Medicine incorporated a Foundation Year for Medicine (MBChB with Foundation Year) specifically aimed at widening access to students who live in the North West of England and typically attend state schools where attainment levels are below the national average.

The aim of the programme is to equip and support widening access students throughout their medical degree and to raise aspirations in the community by ensuring that doctors trained at EHU are representative of the local population they serve. Successful completion of the Foundation Year guarantees entry for students onto the MBChB programme.

The Foundation Year for Medicine programme is innovative as it directly aligns to the curriculum and philosophy of the MBChB programme, and hence the General Medical Council's Outcomes for Graduates[1]. With an emphasis on widening access and social accountability, the programme also includes core community-based placements in the local community. The aim of these unique community-based placement is to foster understanding of health and healthcare in the community where students reside and to develop an understanding of multi-disciplinary health teams. This pre-medical community-based placement and associated reflective portfolio element of the Foundation Year programme is unique.

Methodology The aim of this presentation is to explore perceptions of the students' first community-based placement in the Foundation Year for Medicine. Thematic analysis from evaluations and forums will be presented.

Results Analysis and results focus on the challenges and opportunities associated with embedding this unique community-based placement experience into the programme.

Discussion The presentation will conclude by providing an overview of how this experience informs forthcoming community learning experiences in Year 1 of the MBChB programme (September 2020).

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Theme: Practice Based Teaching And Learning

Accepted as: e-poster

Paper no. 226
A pilot study: Does theatre-based simulation improve medical student confidence in the theatre environment?

Author(s): Thomas Lyons, Nicholas Stafford, Robert Moynihan, Anushka Chaudhry, Christopher Jacobs
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Background Theatres offer a wide variety of learning opportunities to medical students in anaesthetic and surgical specialties. Unfortunately, due to the unfamiliar environment of being in theatre, medical students often find it difficult to make the most out of these opportunities [1].

We have used mixed methods research to analyse medical students' preconceptions of learning in theatre and developed a structured theatre-based simulation. Our aim is to improve student confidence in theatre and enable the students to make the most out of the available learning opportunities there are.

Methodology We asked 22 third year medical students in Swindon academy; 'Use 3 words to describe their feelings about going to theatre'. We found that most students were excited to go to theatre, however, the next most common responses were; nervous, daunting, apprehensive and scary.

To alleviate the negative feelings about going to theatre, we designed a structured theatre-based simulation to teach the medical students the normal workings of a theatre. We highlighted the roles of the anaesthetists and surgeons and introduced the wider members of the theatre multi-disciplinary team (MDT) e.g. Operating Department Practitioners (ODPs), Scrub nurses, Theatre support workers etc.

Using anaesthetists, surgeons and ODPs, learning opportunities were highlighted throughout the simulation to inform the students where they can offer to help the theatre MDT (e.g. WHO checklist, moving and handling). During the simulation we taught the students relevant theatre skills e.g. surgical scrubbing, basic airway management etc.

We collected written feedback from the course and asked the students to reflect on their experiences in theatre before and after participating in the course. The authors individually reviewed the qualitative data, thematic analyses highlighted the key themes with quotes to support the findings. We used subscales from the validated intrinsic motivation inventory (IMI) questionnaire [2] to assess whether the students found the course enjoyable and useful.

Results 6 students participated in our pilot study. All students strongly agreed (4/4) that the course was relevant to their learning and well structured. The students' overall impression of the course was 5/5. The average score from the enjoyment IMI subscale was 6.89 (out of 7). The average score for the usefulness IMI subscale was 6.94 (out of 7).

Thematic analyses from the feedback and reflections showed that before the course the students did not find going to theatres a worthwhile learning opportunity. They did not understand how a theatre operates or who the staff were. They felt ill-equipped to take part in theatre as they did not know the relevant skills. After the course students felt less intimidated by the theatre environment. The students felt the course explained the practicalities of being in theatre and gave them confidence to seek out learning opportunities in the future. The students found being in theatre more enjoyable and provided better learning opportunities.

Discussion Our pilot study suggests that theatre-based simulation is a fun and useful teaching method for improving medical student confidence and encourages learning in theatre.

From the feedback of this pilot study, we have developed a larger prospective randomised control trial due to take place in January – March 2020.

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Theme: Practice Based Teaching And Learning

Accepted as: e-poster

Paper no. 227
Exploring the use and acceptability of decision-making aids for chest pain in clinical practise

Author(s): Zarina Karim, Dr Swe Khin-Htun
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Background Numerous clinical conditions present to the admitting acute medical and nursing team with a variety of ambiguous or potentially conflicting symptoms and signs which may result in delays for conducting further investigations or instituting definitive treatment. In turn, this may result in less effective or erroneous clinical management.

A plethora of decision-making aids (DMAs), from guidelines to artificial intelligence, have been developed and are being developed to support and guide clinicians in diagnosing, treating and discharging patients safely and accurately. However, it is less clear about how these are perceived by clinical practitioners.

This project examined the use, acceptability and relevance of existing paper-based or electronic DMAs within the context of the Emergency Department / acute medical admissions pathway at Queens Medical Centre (QMC), Nottingham. This project focused on one specific presenting symptom: 'Chest pain' as it is one of the most common symptoms and it can arise in a variety of conditions that can offer diagnostic and therapeutic challenges for the clinicians.

The results of this study can also inform medical educators about the elements practitioners perceive as promoting or repressive in their personal use and the key features that identify a good or bad DMAs for future designs, as well as about the need of training to increase the awareness on their existence and usage.

Methodology The study used the qualitative approach of phenomenology and the six phrases approach by Braun & Clarke (2006) for thematic analysis was applied. Twelve semi-structured face-to-face interviews were conducted and recorded with 11 junior doctors (from foundation year one doctor to speciality training level one), and one advanced clinical practitioner (ACP) who all volunteered and gave informed consent. A priorly developed interview guide with eight questions was used, the recordings were transcribed, transcriptions were read several times, preliminary codes and subthemes were developed and ultimately merged to five meaningful themes, outlined in the write-up.

Results Five themes with 29 subthemes emerged and were identified as key aspects influencing the use and acceptability of decision-making aids amongst clinical staff:

1. Education and awareness for decision-making aids,
2. Features and design of decision-making aids,
3. Perception and attitude towards decision-making aids,
4. Organisational and clinical factors,
5. Non-clinical factors

Awareness for DMAs positively correlates with the use of decision-making aids. Participants explicitly voiced the need for further education on decision-making aids and lamented the lack of it during clinical practise. Apart from the ACP, who mentioned how ACPs receive regular updated training on these tools.

Even though available, apps are used less due to small, repetitive and lengthy texts dominating guidelines on small phone screens, consequently overviews, hyperlinks, visual aids and lighter intuitive content are valued higher. Guidelines were described as "convoluted", "busy" or "time consuming" and the "multitude of pages" were questioned.

Although aids are generally perceived as trustworthy, participants explained, they are often used as reassurance rather than primary guidance. Barriers to access DMAs include time pressure and connections delays. Responsibility towards patients as well as senior colleagues promotes the use, whereas the reluctancy to use these tools in front of patients represses the use.

Discussion Generally, clinical staff starts using the decision-making aids once they are introduced to them. But due to lack of formal training on how to use them, many interviewees had insufficient understanding and knowledge about them. Many interviewees did not know what the term 'decision-making tools' meant, that is indicative for the need to increase the level of awareness. This study also identifies areas of improvements such as IT availability, visual designs and content overviews.

Theme: Practice Based Teaching And Learning

Accepted as: e-poster

Paper no. 228
What are the benefits of being an educational supervisor?

Author(s): Eleri Farr, Dr Jonathan Fuller
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Background The benefits of mentoring within undergraduate and postgraduate medical education have been widely discussed in academic literature. Mentors are able to impart their own experiences to help the student develop themselves as students and professionals, as well as serving as role models for their mentees. Clinicians who have reported having mentors also report feeling more confident in their abilities than their peers and produce more academic papers. (Palepu et al., 1998) Mentoring has also been shown to improve the aspects within the hidden curriculum of medical school; improving ethical values and professional skills. It enables the mentees to learn about the environment they are looking to enter into, including its priorities, its customs, institutions and structures. (Ramani et al., 2006) Having a mentor will therefore allow the mentee to be better prepared for their journey into the medical profession in this regard. More measurably, having a clinician as a mentor has been shown to increase the mentee's academic attainment and the attainment of procedural skills.

The benefits for the mentee are clear, as the purpose of mentorship is to benefit these parties, however the potential benefits for the mentors themselves are unclear. Most of the current literature looks into the impact of the mentor-mentee relationship in terms of the benefit or perceptions of the students, and as a result the benefits for the mentor within this relationship are mostly self-reported. A few studies have reported some benefits for the mentor; mentoring is commonly reported as being a rewarding endeavour, however beyond this not much more has been identified. It has been proposed (Sackin et al., 1997) that mentoring results in a reduction in stress on the part of the mentor, however little research has been done to back this up. A study by (Stenfors-Hayes et al., 2010) identified that mentors felt that mentorship allowed them to develop in becoming a good teacher.

Methodology This study aims to identify and explore the benefits of being a mentor in an undergraduate mentorship programme, which will be done by semi-structured interviews with current mentors at Barts and the London School of Medicine and Dentistry. The interviews would be centred around the mentoring experience; what mentoring involves for the mentors and what they feel they have gained.

Results From the results, the commonly discussed benefits will be identified. This will give a better understanding of the mentoring experience and what mentoring can do to improve mentors.

Discussion By identifying the benefits of being a mentor, universities and mentorship programmes may better be able to recruit mentors, giving more trainees the opportunity to improve themselves within these.

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Theme: Professionalism

Accepted as: Oral Presentation in Parallel Session

Paper no. 229
Disrupting the status quo with Phronesis (Practical Wisdom)

Author(s): Dr Sabena Jameel
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Background Knowledge, Skills and Attitudes are common terminologies perfused in most medical education curriculums at postgraduate and undergraduate and

undergraduate level. What if those attributes became a cohesive whole? An aspiration to develop wise, not just clever doctors?

Professionalism is often best tested when values conflict. Phronesis (Practical Wisdom) adjudicates when values conflict. This would suggest we have an underexplored tool to address the enigma that is professionalism.

The presentation will outline how understanding Phronesis (originally described by Aristotle) can help us redirect the future of medical education. Not only does Phronesis (Practical Wisdom) provide a framework for understanding Professionalism better, it's goal is to strive for flourishing of self and others (Eudaimonia); a critical goal in the current climate of healthcare.

The talk will briefly explain the ethical frameworks that have influences healthcare and health education. It will then introduce the concept of virtue ethics and the place of Phronesis (an intellectual virtue). Empirical Research on Phronesis will then be presented.

Methodology The presentation will go on to convey PhD findings of the Enacted Phronesis in General Practitioners study (EPGPS). This was mixed method research that has tried to capture what a wise GP looks like.

An establish wisdom questionnaire (that looked at cognitive, reflective and affective abilities) was administered to 211 GPs in the West Midlands (from training grade to established practitioners). The highest scoring 10% proceeded to the second stage which was biographic narrative interviews (BNIM). These interviews were then analysed by a panel and themes relating to lived life and told story emerged.

Results These important narratives provide food-for-thought with themes such as locus of control and sense of agency, learning and growth from challenge, high levels of self-awareness, competing with self rather than with others, high levels of connection with others and embracing the golden rule. These can be contrasted with some low scoring GP narratives which reveal quite different features.

The results also demonstrated that the wise doctors (purposive sample) were also happier doctors, aligning with Aristotle's concept of Eudaimonia (Flourishing).

Discussion Character statements from high and low scorers were synthesised. These statements have been used in teaching sessions to both GP educators and GP trainees. This has resulted in some suggesting that the research findings have radically changed their approach to their thinking in both their professional and personal life.

The presentation will conclude by asking the audience if there is merit in exploring and operationalising this concept further when considering innovative disruption to the future of Medical Education.

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Theme: Professionalism

Accepted as: Oral Presentation in Parallel Session

Paper no. 230

'How have I changed?', 'Am I ready?': the value of looking back at past reflections in the final year of Medical School

Author(s): Hilary Neve, Rachel Leyland, Elizabeth Drake, Tracey Collett

Corresponding Author institution: University of Plymouth Peninsula Medical School

Background Supporting students to develop as critical and reflective practitioners is an important role of medical schools yet learners often do not find reflection easy (1). Written reflection can help unlock previously inaccessible "reservoirs of thoughts"(2) yet programmes have been criticised for producing "reflective zombies" (3) who follow the required steps but fail to engage in authentic, meaningful reflection. Whilst it is also clear that medical students find reflection valuable (4), to date few studies have explored in depth students' experiences of reflection and their perception of its benefits. As part of their professionalism module, our Medical School requires students to undertake written reflection throughout the 5 year undergraduate programme. In their final year, just 2 months before qualification, students are asked to reflect in writing on how they have changed over their time at medical school and the most important and difficult concepts they have encountered.

The initial aims of this study were:

1). To gain insights into students' perceptions of personal and conceptual change over their 5 year course. We were particularly interested to compare our findings to those of a similar study, with Year 3 students in the US (5).

2). To explore students' perceptions of how reflective practice had impacted on their learning and behaviour. A key difference between our study and the US study (5) was that we asked students to review and reflect on their written reflections from previous years

Methodology In 2018, following ethical approval, all year 5 students were invited to take part in this study. Over a third of students (n =36) consented to their anonymised reflections being analysed. A team of 4 researchers explored 10 reflections each for key themes and an initial analytical framework was negotiated and agreed. Students' reflections were coded to the framework using NVivo and the themes further refined. The initial analysis identified reflective practice as a particular theme and a secondary analysis was undertaken to explore this further. The results from this analysis are reported here.

Results All 36 student reflections were analysed. There was a strong sense of students seeking meaning, in comparison to the more formulaic reflections often seen in earlier years. Where students (n=30) referred explicitly to at least one past written reflection, this appeared to facilitate an appreciation of how they had grown over time with respect to a number of themes. Several of these themes were similar to those identified in previous studies including "We cannot fix everyone", "There is no single right answer" and "the holistic approach"(5,6). Additional themes related to emotional regulation, increasing confidence and a sense of preparedness for future responsibilities. Students frequently described a shift from earlier struggle with the study themes to acceptance. There was also strong evidence of students viewing reflective practice more positively; for example they identified how their reflective writing had improved over time or stated a clear intention to continue reflection as a doctor.

Discussion Becoming an effective reflective practitioner takes time. Using illustrative quotes, we will demonstrate how our approach appeared to facilitate final year students to reflect authentically on how they have changed over time, grown in confidence and preparedness, and how their views and skills in relation to reflective practice itself had developed. We will discuss the implications for curricula and the potential relevance to other health professions and settings.

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Theme: Professionalism

Accepted as: Oral Presentation in Parallel Session

Paper no. 231

Incidental Teaching Lecture Series- Incorporating education surrounding clinical incidents and complaints into foundation year 1 doctors' induction

Author(s): Laura Horne, Koushan Kouranloo, Jyothis Manalayil

Corresponding Author institution: Blackpool Teaching Hospitals

Background 'To Err Is Human' is a report by the United States (U.S) Institute of Medicine encouraging an open culture to learn from adverse events without blame. This attitude was also taken up by the United Kingdom's (UK) National Health Service (NHS) safety watchdog. However, there still appears to be a

culture where incident reports are often used as threats with the potential of causing significant anxiety to employees, especially junior doctors.

According to NHS Improvement (2017) patient safety incidents are any unintended or unexpected incident which potentially could, or did, lead to harm to patients. Incident reports are crucial to improve patients' care and to identify further actions needed to prevent harm. Reflection upon reported incidents also offers useful learning opportunities for the members of the Multi-Disciplinary Team (MDT).

Methodology Based on our observation, a common view among the FY1 doctors in our local NHS Trust involved a fearful opinion surrounding being involved in clinical incidents. Significant anxiety in those situations prompted the need for a focus on the topic of "clinical incidents" during their induction to the Trust in two consecutive years of 2018 and 2019.

A near-peer lecture series was delivered to new FY1 doctors by existing junior doctors. Presenters were selected on a voluntary basis to share their experience of being named in an incident report, varying from near misses to death.

Qualitative pre- and post-lecture series feedbacks were gathered from FY1s and analyzed.

Results Results from lecture series from two consecutive years showed all FY1 doctors agreed or strongly agreed that they had a good understanding of incidents following the lecture. Compared with their pre-course feedback, there was an increase of 6-fold (2018) and 8-fold (2019) in those that strongly agreed.

Post-course, more than 90% of doctors reported that they would feel comfortable sharing with colleagues their involvement in an incident.

Furthermore, 96% (2018) and 33% (2019) of doctors agreed that receiving a clinical incident can be a positive experience; an increase of 34% and 4% compared with pre course surveys. It is unclear why the increase in 2019 was less dramatic.

Regarding perceived benefit of the attendance at the lecture series, 86% (2018) and 68% (2019) of doctors found the lecture series beneficial.

Discussion An open culture to incident reporting is a fundamental part of medical education and quality improvement. Encouraging this attitude amongst medical professionals and creating a supporting environment surrounding sharing of experiences will help to form a generation of doctors that see incident reporting in a positive light.

Our next goal is to deliver the lecture series to a multidisciplinary audience to encourage a team approach in preventing harm. Lastly, our model of lecture series could be utilised in other UK Foundation Programmes with the aim of enriching the FY1's induction period and encouraging honesty among newly qualified doctors.

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Theme: Professionalism

Accepted as: Oral Presentation in Parallel Session

Paper no. 232
Medical student societies- a credit or a curse?

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Background Student societies can help to maximise student life through friendship, self-development, and encouraging physical activity and mental wellbeing. They can enhance the student experience, benefit the wider community and charities and promote the reputation of the university. However they are not without their risks, as students may be new to organising events, unaware of potential pitfalls and risk-promoting behaviours that faculty, the General Medical Council (GMC) and society would not approve of. GMC figures show the biggest increase in concerns, regarding medical student professionalism, is beyond the classroom and clinical environment namely sports tours, annual balls and pantomimes.

Our medical school supports 40-50 societies every year, offering financial and logistical support. This has allowed us to gain a deeper insight in to the benefits and potential professionalism risks. We present the lessons learned over the past five years of supporting medical student societies.

Methodology We considered trends in medical student societies and themed them into categories, including philanthropic, sporting, medical speciality and arts. We looked at the data on societies who had been granted funding and explored the benefits and challenges of this.

Finally we reviewed the literature on student societies and professionalism concerns and compared this with our own experience.

Results There are currently 50 medical student societies registered with the Student Union; 20 medical speciality, 12 philanthropic, 14 sports and 4 arts.

In the academic year 18/19, 38 funding applications were considered by the medical school and £22,467.57 was allocated to support their events. Over the past five years we have developed and refined our guidance to students running societies in an attempt to reduce the potential risks, however lack of handover between student committee members and failure to pay attention to the guidance means we have not eliminated problems.

Our search found very little in the academic literature relating to professionalism beyond the classroom and curriculum, however a Google search raises articles in both local and national press highlighting problems relating to student professionalism outside the learning environment.

Discussion The GMC states that 'Medical students need to behave professionally outside of work and medical school. This means you should avoid doing things that will undermine the trust patients have in doctors and the public has in the medical profession. As a student aiming to join a trusted profession, you have to meet a higher standard of behaviour than other students, who are on courses that don't directly lead to joining a profession' (GMC 2016). In sharing our experiences we encourage all those supporting student extra-curricular activities to ask, is history and tradition within student society culture beneficial or a risk to your students? Do you know what your students are doing in their societies? Or are you only going to find out if the worse happens?

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Theme: Professionalism

Accepted as: Oral Presentation in Parallel Session

Paper no. 233
Pathways to the Professional : Origins and Antecedents of Professional Identity

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Background Becoming a doctor involves more than the acquisition of the necessary knowledge and skills. Successful undergraduates must also adopt a set of values, beliefs and behaviours to form a professional identity (Wald, 2015). This complex, gradual process involves internalization and acceptance of professional norms and is informed by both formal and hidden curricula (Wong & Trollope-Kumar, 2014). Successful professional identity formation may be a potent influence on both confidence and educational attainment, and individuals may experience identity dissonance as they are confronted by elements of the professional persona that are incongruous with elements of their own personal identity (Costello, 2005). Moreover, the values internalized in professional identity formation can alter behaviour, including help-seeking behaviour (Putnik, de Jong & Verdonk, 2011), potentially affecting struggling students.

Despite increasing work in the field, little is known about the antecedents of ideas of professional identity, or the interplay between culture, social background, and the makeup of professional identity.

We present a qualitative study addressing ideas of professional identity in matriculating medical students at the University of Birmingham, and the experiences informing these ideas.

Methodology We have performed semi-structured interviews on ten volunteer first-year medical students, comprising students from a range of social and ethnic backgrounds. Interviews lasted on average 57 minutes. Interviews were transcribed and coded for thematic analysis by two researchers in parallel using emergent theory.

Results At this time (Jan 2020) final coding and analysis is as yet incomplete. However, current preliminary data analyses suggest that students arrive at medical school already aware of large components of the hidden curriculum, and that this information is derived both from personal experience of interactions with healthcare professionals, most commonly on work experience, and from information found in popular culture, particularly television dramas. Students were able to identify a broad range of features of what several referred to as 'the doctor mask' and relate these to not only the expectations of other healthcare professionals, but also to the expectations of patients, which in turn are linked to broader culture. Prominent thematic areas include doctors and class, doctors and power, doctors and emotion, collaboration and competition, the 'gatekeeping' role of the admissions process, and doctors' help-seeking behaviour.

Discussion Our preliminary analysis suggests that medical students arrive at medical school with ideas about what it means to be a doctor already established, that they actively glean such ideas from their experiences prior to medical school, and that they view aspects of their own background, particularly social class, as a potential barrier. More detailed analyses will be available for presentation in July 2020.

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Theme: Professionalism

Accepted as: Short Communication

Paper no. 234
Developing pharmacy students as reflective thinkers for the evolving field of pharmacy: an educational strategy and insight into student reflective approach

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Background Reflection has been identified as crucial at various points in a learning experience: at the start in anticipation, during the experience towards managing the array of information and provoked thoughts and feelings, and following the experience during a phase of debriefing and consolidation. These are referred to as conscious reflective activities, which are purposeful and pervasive towards the reconstruction of a learning experience.[1] It has been described that the purpose of reflection serves two aims: first to develop learning that is focused on conceptual knowledge and understanding and second, consequently, to improve professional practice.[2]

Iterative reflective practice has also been recognised to support learners' formation of humanism and resilience, thereby facilitating healthy development of professional identity. In short, cultivation of meaningful combination of expertise and values can be achieved through effective reflective practice exercises.[3] This work describes the educational strategy adopted at one School of Pharmacy to facilitate undergraduate pharmacy student development of the skills and attitudes for reflective practice. Student abstracts submitted for a student-led Reflection Conference in the final year of the programme are investigated to explore the student approach to reflection.

Methodology The guidelines for reporting evidence-based educational interventions and teaching checklist [4] was employed to describe the teaching, learning and assessment within the Masters of Pharmacy programme to develop student reflective skills and practice.

Students experience a series of seminars across the four years of the programme to develop their understanding and skills in the practice of reflection and its articulation. In Stage (year) 4, students engage in a Reflection Conference where they must present a reflective account of a 'Significant Learning Event' or upon their journey 'From Student to Professional'. The student abstracts submitted for this conference in the academic years 2017-18 and 2018-19 were retrieved with consent. Content analysis was employed to systematically and objectively explore the student-reported experience of learning and development from their submitted reflective abstracts. [5] The inductive approach was adopted where abstracts were openly coded, categories created and abstractions formed, so specific findings could be combined into a larger whole that describes the student experience.

Results 107 abstracts were submitted across the two student cohorts. Students choose to reflect mainly upon experiences across a range of extra- and co-curricular activities. These accounts related to some of the six kinds of significant learning as framed by Fink's taxonomy: foundational knowledge; application; integration; human dimension; caring, and learning how to learn.[5] Notably, very few students related stories about learning foundational knowledge, with all other forms of significant learning, especially human dimension, caring and learning to learn, very highly referenced throughout the abstracts.

Discussion Students shared stories about their skills, attributes and emotions experienced across a range of environments and contexts. The commonality in these situations was often the involvement of patients or the public, and the students' self-derived appreciation (rather than the directed signposting) of those gained, experienced or observed skills, attributes and emotions. Students at the culmination of the reflection educational strand within this Pharmacy programme are demonstrating purposeful, deliberate introspection and metacognition in their abstracts for the Reflection Conference. These skills are fundamental to support Transformative Learning, whereby students have the ability to self-regulate and critique their frames of reference with autonomy and flexibility that will enable them to most effectively engage and benefit from lifelong learning within the profession.

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Theme: Professionalism

Accepted as: Short Communication

Paper no. 235
Does portfolio presentation correlate to clinical performance in medical students?

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Background Whilst professionalism is widely acknowledged to be a crucial component of medical school education, it is commonly learned as part of a hidden curriculum rather than through explicit teaching and is often not routinely assessed[1]. Previous studies have suggested that deficiencies in professionalism can also predict poor clinical performance in medical students[2,3]. This is the first known study to investigate whether aesthetic presentation of a portfolio, as a marker of professional behaviours, also correlates with medical student competence and thus could be used by tutors as a simple practical predictor of clinical performance.

Methodology Voluntary participation was offered to Year 4 medical students at the South Bristol Academy, with full ethics approval from the University of Bristol. Aesthetic presentation of a clinical portfolio was used as a marker of professional behaviour and was scored independently by two Clinical Education Fellows on a 1 to 5 Likert scale. This was correlated to students' performance in

a formative OSCE, which was scored by a mark out of 50. All data was anonymised by student number.

Results Data has been collected with written consent from 26 participants thus far and analysis is underway. Data is being collected from January to May 2020, over the course of 3 student rotations with a maximum of approximately 90 possible participants.

Discussion We predict that a higher score for professionalism will correlate with improved clinical performance, anticipating that students may demonstrate a similar diligence in their clinical application as in maintaining professional standards. If this is the case, portfolio presentation has the potential to be used as a predictor of students who may need additional support or teaching in order to meet expected academic standards, and may aid tutors in identifying such students.

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Theme: Professionalism

Accepted as: Short Communication

Paper no. 236
I'M SAFE: Implementing a well-being self-checklist

Author(s): Ed Horowicz, Dr Jayne Garner
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Background Understanding the importance of personal health and well-being is an imperative component of professionalism, both in relation to the individual student and patient safety. Yet the health and well-being of medical students on clinical placement can be influenced by multiple factors, therefore it is vital that the development of self-awareness is supported through undergraduate medical education. Of concern though is how to support medical students in their decision-making, specifically when their health and well-being is impaired sufficiently enough that they should not attend clinical placement? Edge Hill University Medical School set out to develop a physical aid to support and signpost students considering the question of whether they should attend clinical placement or not.

Methodology We developed a credit card sized plastic information aid with the acronym I'M SAFE: Illness, Medication, Stress, Alcohol, Fatigue and Eating. On the reverse of the card are key contact details including the Student Well-being Team, the Absence Reporting system, the Practice Education Team and the Raising Concerns Portal. These cards were distributed to all students prior to their first placement.

Results Feedback on the design and aim of the cards has been extremely positive and we plan to formally evaluate the usefulness of the cards at the end of the academic year.

Discussion Although we are in the early stages of evaluating the cards, we anticipate that the cards will serve as a useful physical aid for medical students and Physician Associate students.

Theme: Professionalism

Accepted as: Short Communication

Paper no. 237
Influences on professional identity formation; Medical graduates' perspectives

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Background Professional Identity Formation (PIF) is an essential process for medical students whereby their identity is conceptualised, constructed and reconstructed, merging pre-existing personal identities with a new professional identity. This multi-faceted process can be impacted by factors such as their prior educational experiences, individual backgrounds, their training environment and role-modelling. This study seeks to examine the perceived influences on PIF by a cohort of Graduate Entry Medical School (GEMS) graduates in examining their own PIF journey.

Methodology A non-probability, volunteer sampling strategy was utilised with graduates of the BMBS programme at the Graduate Entry Medical School, University of Limerick. Ten qualitative semi-structured interviews were completed in total. In parallel to interviews, participants engaged in 'participatory diagramming' (Umoquit et al. 2008), completing a timeline diagram highlighting milestones on their medical school journey. Interviews were completed by Skype, by telephone and in-person and transcribed. Thematic analysis was completed by two researchers independently, with any discrepancies resolved by the full research team.

Results Graduates described in detail the conflict between their personal and professional identities, during the transformation from early-stage medical students to junior doctors. Identity construction and reconstruction was identified as central to PIF by graduates, supported by role models at key time points; in particular, an Early Patient Contact Programme in years 1 & 2 and a longitudinal clerkship in general practice were highlighted as influential in PIF by participants. This extended clerkship supported graduates' PIF and embedded core values and skills, introducing them to a new community of practice. Challenges in this identity construction and subsequent reconstruction included navigating team dynamics via socialisation, interaction with their peers, faculty and patients. Role models identified by participants included graduate's own peers, who acted as an early community of practice. Timelines completed by participants explored key milestones in their careers to date and allowed a true reflection of participants' experiences to be highlighted.

Discussion The conceptualisation and construction of identity plays an integral role in medical students' education. Graduates identified role models and mentors as having a key role in supporting their professional competencies and the integration of their previous personal identities with emerging professional identities as doctors. The impact of time as part of a longitudinal clerkship was highlighted in relation to PIF; one to one time with a practice tutor and significant time spent on clerkship. These findings suggest that curriculum design that includes early patient contact and a longitudinal clerkship provides a valuable opportunity for students' participation in a community of practice that supports their professional identity formation.

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Theme: Professionalism

Accepted as: Short Communication

Paper no. 238
Introducing formal handover to increase preparedness for foundation doctor changeover

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Background Foundation year 1 (F1) doctor changeover is a time of unavoidable discontinuity in patient care, which could potentially lead to patient harm and stress for doctors. Effective handover aims to minimise miscommunication – acknowledged as the leading cause of life-threatening adverse events for patients. Despite emphasis on the August induction and shadowing, there is a paucity of evidence on doctors switching jobs, the quality of these handovers, and how juniors perceive these upheavals.

The purpose was to assess the enthusiasm for, and perceived benefits of, introducing a changeover session for F1s in terms of confidence and satisfaction in their new role.

Methodology Before the face-to-face handover, 22 F1s filled in a questionnaire with some open text responses and statements with 1-10 scales (1: strongly disagree to 10: strongly agree). Responses will be collated and compared with data after the second changeover session in April 2020 to assess the benefits of a formal handover.

Results 73% strongly agreed that a handover session would be useful (10/10; average 9.2/10) owing to: improved preparedness (46%); eased anxieties (21%); to assist colleagues with challenging aspects of the role (14%); patient safety and mistake avoidance (11%); and because no other handover exists (7%). The average anxiety level for changing jobs was 6.7/10 (range 4-10). These anxieties could be eased by: talking to doctors who have just done the job, having written advice to refer back to, having a formal induction or shadowing and having the rota in advance. Concerns regarded day-to-day duties in the new role (16%), completing speciality-specific tasks (such as ordering tests and referrals; 15%), on-call shifts (11%), the personalities or preferences of seniors in the team (11%) and the level of senior support on the ward (11%). Other concerns included taking leave (9%), how to do administrative tasks (5%), where to go on day one (5%), what is expected in the role (5%), workload (4%), specialty-specific knowledge that should be gained prior to starting (4%) and the firm's weekly timetable (2%). Preparedness was rated 5.5/10 on average (range 3-8). The necessity for a face-to-face F1 handover was rated 8/10 and was deemed more effective than a written one (7.5/10). Participants broadly agreed that they would not have otherwise organised a formal handover (6/10).

Discussion Handover is essential for patient safety and foundation doctor well-being. F1s acquire much specialty-specific administrative and academic knowledge in 4-month rotations and there is currently no formal consolidation. There is a lack of formal handovers for inter-year F1 changeovers, which are times of anxiety for the majority. Face-to-face handovers in protected teaching time would be encouraged by juniors to increase preparedness, which is currently perceived as poor. These preliminary data will be combined with post-session data in the coming months to assess whether the face-to-face sessions and written handovers have achieved the aims of increasing confidence and preparedness and decreasing anxiety at changeover time.

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Theme: Professionalism

Accepted as: Short Communication

Paper no. 239
Medical Students' Views on the Influence of a Student-led Clinic on Professional Development

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Background Close associations have been demonstrated between professionalism and improvements in both patient and doctor satisfaction, and healthcare outcomes(1). As such, the importance of establishing professional behaviours in medical students is well recognised(2). Professionalism is challenging to teach, with no set definition, curriculum or specific guidance on how professional traits can be demonstrated to and encouraged in our students(3). In teaching paediatrics, complex patient interactions and an unfamiliar environment for students make the need for professionalism even greater(4). Current literature suggests the need to take a multifaceted approach, including some explicit teaching about the necessary traits, and some experiential learning methods to demonstrate these traits in clinical practice(3).

Considering the needs for more measures that explicitly drive professionalism teaching, in our centre we have developed student led clinics (SLCs), run in a hospital paediatric outpatient setting, alongside service delivery clinics. This pilot study uses qualitative methods to explore the influence of student-led clinics on professional development.

Methodology Students on their paediatric block are assigned to a newly established student-led clinic (SLC) which takes place alongside routine general paediatrics outpatient clinics, with students seeing patients already booked into these clinics. There are two students per SLC, supervised by a medical education fellow. The students are allocated one hour per patient, which includes preparation, administration tasks and reviewing investigation results, as well as seeing the patient for a history and examination, and devising a management plan. The students then present their findings, observe the consultant consultation and receive feedback.

Semi-structured interviews were designed based on six areas of professionalism, with the aim of investigating whether the SLC experience was a beneficial professional learning experience. The interviews will be carried out in February - April 2020, and will be transcribed and thematically analysed(5) using the NVIVO® qualitative analysis software.

Results The new SLCs have been successfully piloted, and will be expanded for the next cohort of medical students in early 2020. Results from the semi-structured interviews will be available for presentation at the ASME conference in July 2020.

Discussion A reciprocal relationship has been demonstrated between the formation of a professional identity, i.e feeling like a "good doctor", and the strengthening of professionalism(6) We hypothesise that giving students responsibility for the patient interaction will help them develop a profession attitude (as defined by six areas of professionalism(3), broadly described as "good doctor" attributes)(7). The themes we generate from our analysis will allow us to gain an understanding of the issues that students have faced in learning about professionalism in their current curriculum, and whether SLCs are considered a valuable educational experience for professional development. Furthermore, the depth of the thematic analysis methods(5) will provide a richer understanding of the cognitive processes underlying teaching about professionalism.

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Theme: Professionalism

Accepted as: Short Communication

Paper no. 240
The Duty Radiologist: Reflections of Radiology Trainees on how they learn professionalism when on-call

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Background Professionalism and professional learning have received considerable attention in medical education over recent years. The literature identifies professionalism as a set of attributes; as a process and as a set of non-technical skills. Moreover, the literature explores professional learning through social interaction; through reflection and through the hidden curriculum. This study aims to explore what radiology trainees understand by professionalism and how they feel they are learning to be professional. The focus is in relation to a particular aspect of a radiologist's job; being the Duty Radiologist. This role denotes a time of significant high pressure and workload, which may act as stressors on even the most robust of professional personalities.

Methodology A qualitative study was undertaken as part of an anti-positivist epistemological approach and conforming to a phenomenological interpretive paradigm. Purposive homogeneous and criterion-based sampling of trainees in the second half of their training was selected to ensure that they had had sufficient exposure to the experience of being on-call. Semi-structured interviews and

thematic analysis were used to collect, organise and interpret the data in line with constructivist grounded theory.

Results Six interviews were conducted over six months with trainees from the same deanery (two third-year, one fourth-year and three fifth/sixth-year trainees). The trainees rotate through eight different hospitals during training. The interviews were manually transcribed and approximately 13700 words were analysed. The thematic analysis showed a recurrence of many initial and more focused codes. In particular, reflection on learning and previous clinical experiences as a junior doctor are very important for radiology trainees when considering how they learn professionalism when on-call. Overall, there were five emergent themes; 'learning through reflection', 'learning through role models', 'desirable qualities', 'value of the Duty Radiologist' and 'communication with clinicians'. These themes corresponded well with the ideas found in the literature.

Discussion 'Learning through reflection' is important for radiology trainees. They respond favourably to senior role models explaining their own 'know-how' and actively reflect upon this in their training experience[1]. In particular, they appreciate when senior role models sign-post the complex cognitive processes essential for reaching a diagnostic or management decision. Moreover, they refer to learning from each other as less and more-experienced learners (or junior and senior registrars) and how this 'scaffolding' approach is useful to developing professionalism[2]. They are also aware of the significance of 'tacit' non-technical or non-interpretative skills when on-call and how harnessing these skills forms a key part of professional learning. Of note, an important element of fairness was discussed; as radiology trainees draw on their previous clinical experiences to help give insight into a clinician's needs and stresses, they advocate for clinicians to also spend time with radiologists to understand their needs and stresses. This is an important consideration to take forward in postgraduate medical education in general, as Foundation year posts in Clinical Radiology are very limited. Finally, some of the trainees suggested that their involvement in the study itself has allowed them to reflect further on what they do and how they learn. This highlights the importance of incorporating discussions regarding professional learning into postgraduate medical education and development. Areas of future work could include non-technical skills workshops centred around on-call scenarios. Furthermore, modifications of the Anaesthetics Non-Technical Skills Rating System may be applicable in Clinical Radiology for observed and formatively assessed 'Duty sessions'. These should allow the trainees an opportunity for senior support, feedback and personal reflection to aid learning.

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Theme: Professionalism

Accepted as: Short Communication

Paper no. 241
Where are we with medical education faculty development? Exploring the value of postgraduate courses using the Place Model

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Background For many clinicians, the journey from clinical practice to medical education is one that is characterised by a need for appropriate professional development [1] accompanied, often, by a perceived loss of status, with clinical practice and research being comparatively higher status activities [2]. Faculty development programmes may support the formation of professional identity as an educator [3] but are not guaranteed to increase professional status[2]. In fact, Hoyle[4] has argued that certain faculty development activities can serve to limit professional status, being focused at the 'restricted' end of a restricted-extended continuum of professional development[5]. Restricted professionality [4,5] is characterised by: a narrow focus on 'skills'; a local (e.g. classroom) emphasis; a concern for personal autonomy; and development activities that lack theory and research. By contrast, extended professionality is characterised by a global outlook, embracing collegiality, engagement with research. According to authors such as Clarke [6] and Sahlberg [7], extended professionality is more likely to be developed through 'master's-level professional learning' [6, p. 71] than skills-focused CPD courses.

Given this claim, we were interested in answering the research question: What are the perceptions of medical educators regarding the extent to which postgraduate programmes enhance their professional status and/or support the development of extended professionality?

Methodology In answering the research question we will use Clarke's[6] Place Model, which brings together the related but distinct comparative lenses of status and professionality, providing an a-priori analytical framework. Using the model, it is possible to consider educators as: professionals, proto-professionals, de-professionalised and precarious professionals. However, in our research, the model will be used as a heuristic tool for qualitative analysis rather than being deployed positivistically as a reductionist classification device. Key informant interviews will be conducted with medical educators currently or recently enrolled on a number of postgraduate medical education courses across the UK. Interview data will be analysed deductively, using the Place Model as an analytical framework, and inductively, with meaning flowing from the data.

Results The literature suggests that one of the most significant obstacles to pursuing a career in medical education is overcoming its perceived low status compared to research and patient care. Therefore, we anticipate that participants will comment on why they think this is the case and discuss the extent to which undertaking a postgraduate degree in medical education facilitates, or doesn't facilitate, the enhancement of their status as educators. We hope to gain insights into the extent to which participants believe that their courses exhibited a skills focus, at the restricted end of the professionality continuum, or introduced them to broader educational perspectives, including theory and research, at the extended end.

Discussion The discussion will explore where participants are situated in terms of status and professionality. Rather than simply categorising participants, we expect that the concepts that underpin the Place Model will support a consideration of the current utility of postgraduate courses in facilitating the development of medical educators as high-status and highly learned professionals

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Theme: Professionalism

Accepted as: e-poster

Paper no. 242
'Ask the Doc' - Fostering conversations between medical students and doctors

Author(s): Dr Jacqueline Morgan

Background Doctor stress and burnout is a prevailing concern. The current generation of medical students have gone through their early medical education years surrounded by this environment, not only via media bombardment, but also within the hospital environment, which can often lead to student distress (Wallace and Lemaire 2017; Benbassat 2019). It is, therefore, of no surprise that stress and burnout is prevalent within medical students, and increasing as they enter the latter years of their medical school education (von Harscher et al., 2018). This, in turn, can increase the risk of such students engaging in unprofessional behaviour (Dyrbye et al., 2010).

The purpose of the 'Ask the Doc' event was to foster conversations between medical students and doctors, whilst allowing medical students to take full control of the topics of conversation by asking the questions they want answering, thus addressing student specific concerns.

Methodology An evening event was organised for final year medical students within a singular hospital trust towards the end of their rotation. This involved

a panel of five doctors of various specialties and at different levels of their career (consultants, FY2, SHO, trust grade). The panel was briefed prior to the event and advised to give as honest and open answers to the questions asked as possible.
Prior to the panel questioning, a questionnaire was handed out to the students asking them to detail their expectations for the event.
The doctors then introduced themselves to the students giving a short background of their career journey so far, and then the floor was opened to the students to ask any question they wanted. The briefing to students regarding the questions they could ask was kept deliberately vague to allow students complete freedom with topics covered.
A post-event survey was then emailed to those who attended, detailing how beneficial they found the event, what they found particularly good about the event, and what they would change about the event.
Results Eighteen final year medical students attended the event and pre-event questionnaire answers highlighted that students' main expectations for the event were insight into work as doctor and worries, challenges, and difficulties of the job.
Post-event feedback obtained showed that 75% of those who responded strongly agreed, and 25% agreed that they found the event to be beneficial. Respondents provided the following feedback on things that were particularly good about the event: 'unique', 'wide range of perspectives', 'approachable', 'could ask them anything', 'seeing the differences between them [panel doctors]', 'informal session in which we could ask questions'.
Discussion By providing an informal and open environment where medical students can ask seniors their questions, students were able to receive answers to concerns they may have. It was observed that as the session progressed and more questions had been answered, the questions asked became more personal, and both the panel and students felt more comfortable with asking and answering the more challenging questions, such as on topics like workplace bullying and stress.
We plan to run this event for future cohorts of final year students, and based on improvement feedback, having an even more diverse panel of doctors from different specialties. Further, although, an honest and non-judgmental setting was ensured, the nature of the event may have meant that some students would not have been comfortable asking the questions they wanted within a group setting. A consideration for future events would be to allow an avenue for anonymised questions, for example, through electronic means.
The event can also be introduced earlier on in the medical school curriculum in order to start fostering these types of conversations sooner and work towards alleviating student concerns and stress prior to working as doctors, subsequently aiming at preventing burnout and its associated consequences (Walsh et al., 2019).
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Theme: Professionalism

Accepted as: e-poster

Paper no. 243
Looking into Lake Victoria: Can Reflective Practice be honed on a Global Health student selected component?

Author(s): Bethany Ferris, Rebecca Butler, George Thomas, Holly Shaw
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Background The University of Bristol curriculum requires third year medical students to choose a six-week student selected component (SSC). At Swindon Academy over the past eight years, we have been offering students the opportunity to undertake a global health SSC with an overseas placement at a rural hospital in Uganda. The focus of this SSC is the planning and implementation of a small audit or research project in Uganda. The students are assessed through submission of a project write-up, including a reflection.
The process of reflection has developed from experiential learning theory and is recognised by the General Medical Council (GMC) as an essential part of good medical practice and continuing professional development[1]. The GMC state that all medical graduates must have developed a range of coping strategies during their undergraduate training and this includes reflection. Medical students do not instinctively know how to reflect and often struggle to decide what they should reflect upon[2,3]. It is advisable that they learn and hone these skills early in their medical training especially as this can help them to learn from clinical experiences[4] and develop resilience[5]. Teachers can help students to reflect by providing a challenging but safe learning environment[6]. During the global health SSC the students will be placed in a vastly different clinical learning environment and this presents the perfect opportunity to teach and practice the essential skills of reflection. The main aim of this project will be to explore how and what reflective skills are developed and how students think these will be helpful in their continued professional development. The second aim will be to assess students' learning outcomes from the overall project using their reflections.
Methodology As part of the upcoming global health SSC students will be taught about the process of writing a reflection using guidance written by the GMC: 'The Reflective Practitioner'. We will attempt to foster regular informal discussions about day-to-day experiences and encourage the students to reflect using the Gibb's reflective cycle as a model[7]. Following the placement, students will be asked to complete a written questionnaire and attend a focus group to explore whether the SSC helped them to achieve the aims. We are also interested to find out if students were able to use reflective practice to cope with any difficult situations during the placement in Uganda and whether they feel it will be useful as a future coping strategy in clinical practice. All written reflections will undergo thematic analysis so that we can assess the students' learning outcomes from undertaking this SSC.
Results We look forward to collating the results in June 2020.
Discussion This is the first time that we will have incorporated teaching on reflective practice into the global health SSC. Reflection is an assumed part of the practice of doctors within the NHS and is assessed within the foundation doctor curriculum for new graduates. Medical students frequently struggle to reflect effectively[2,3,8] and the topics and structure of written reflections are often vague[9]. Although it has not been proven that reflection enhances clinical competence, it is presumed that this would be the case[9]. Due to low engagement in reflection amongst medical students[8] we believe that a dramatically different clinical environment may help to highlight the benefits of the process of reflection.
Based on the results of previous years, thematic analysis from students' reflections has shown that the main learning outcomes were grouped into the following themes: patient obstacles to accessing healthcare; differences in clinical practice between Uganda and the UK; adapting the projects aims to suit the healthcare setting and dealing with emotional reactions to situations and encounters witnessed in the hospital. We will analyse students' reflections to see if our learning outcomes are similar following teaching on reflective practice.
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Theme: Professionalism

Accepted as: e-poster

Paper no. 244
What are the barriers to participating in clinical incident reporting for junior doctors?

Author(s): Dr Ifti Haq, Dr Aidan Hanrath
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Background An open learning environment which encourages blame-free reporting and discussion of clinical incidents and near-misses is central to a healthy patient safety culture within healthcare settings (Leonard et al., 2004; Singer et al., 2009). Junior doctors are recognised as important contributors to a healthy patient safety culture, and were highlighted in the Francis report as being vital "eyes and ears of the NHS" as they work across wards and rotate between specialties and directorates (Francis, 2013).
Unfortunately, a number of studies have found a lack of engagement by junior doctors in the clinical incident reporting process (Bagenal, Sahnan, & Shantikumar, 2016; Evans et al., 2006). Key themes in qualitative studies exploring this issue include "a lack of role modelling and senior leadership, a culture within medicine that was not conducive to reporting concerns and a lack of feedback providing evidence that formal reporting was worthwhile" (Hooper, Kocman, Carr, & Tarrant, 2015).
Methodology We sent an anonymous online survey to all doctors below consultant level at Newcastle upon Tyne Hospitals, focussing on their views and attitudes towards the local incident reporting process, which uses the proprietary Datix system produced by RLDatix.
Results 68 responses were received within 14 days, with the majority having been involved in clinical incidents in the past year, and 55% completing clinical incident reports.
When asked to identify barriers to completing incident reports, 78% of respondents felt reports were too time consuming, and over half highlighted a lack of feedback about results, and a fear it would be seen as accusatory. 27% indicated a fear of repercussion, and 24% an overall negative impact, as barriers.
Only 44% of respondents felt clinical incident reporting was used in a helpful way to improve patient care. Some of the free text comments pointed to an attitude of blame and punitive use of clinical incident reports, and a perceived lack of senior leadership relating to incident reporting within the Trust, as having a negative impact on reporting rates.
Discussion This survey of junior doctors highlights significant barriers to clinical incident reporting. Our findings demonstrate that previously reported barriers to junior doctor engagement with clinical incident reporting systems hold true at Newcastle upon Tyne Hospitals, with some junior doctors highlighting a negative attitude around clinical incident reporting.
Human and system errors are predictable features of healthcare, but their harmful effects can be mitigated by a blame-free and constructive clinical incident reporting culture which promotes participation and shared learning, and efforts should be made to reduce barriers to junior doctor engagement in this process.
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Theme: Resilience

Accepted as: e-poster

Paper no. 245
Building Resilience: Helping medical students use adversity to prepare for being a Junior Doctor

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Background It is well established that medical school can be a stressful period +. Medical students report higher levels of stress than their non-medical counterparts [2]. As challenging as medical school can be, junior doctors then go on to an arguably more demanding and rigorous work life. There is increasing discussion about managing burnout and developing resilience as poor mental health remains a problem amongst the medical profession[3-5].
Medical students especially describe the transition from pre-clinical medicine to clinical placement as a particularly difficult time[1]. The "academy system" is the clinical placement scheme at University of Bristol Medical School. It is typified by a cohort of satellite hospitals where medical students carry out their learning. For many students this means being out of their university town and living in unfamiliar and occasionally remote areas.
The aim of this study is to explore medical students understanding of academy placements and their perceived benefits and drawbacks. This was then compared to the reported challenges of starting work faced by junior doctors, in order to look for any common themes.
Methodology We designed and carried out a small observational cohort study. Medical students on academy placement were given a ten question survey which asked students of their understanding of the academy system as well as their perceived benefits and challenges.
Junior doctors in their first to third year post-qualification were given a four question survey which asked doctors of their perceived challenges of beginning work as a doctor and also of the ways in which they feel they could have been prepared better by their medical school. The resulting data was collated and thematic analysis conducted to compare responses.
Results Many of the challenges faced by medical students related to working in an unfamiliar and busy ward environment which changed frequently as they changed placement. Although many students recognised the benefits of learning in smaller groups in District General Hospitals, many students were worried about discrepancies in experience between placements. 40% of the medical students made specific reference to being away on placement having an impact on their social life and friendships.
Junior doctors reported more specific stressors at work including being responsible for sick patients and dealing with long working hours. A third of these doctors reported struggling with work-life balance and the impact that being a doctor had on their social life. They felt that more time with foundation doctors when they were at medical school would have been helpful, as well as more simulation teaching. 25% felt that nothing could have prepared them better.
Discussion There are unique challenges to medical school, which involve workload, stressful exams and learning in a busy clinical environment[1]. However, our results show that many of the challenges faced by medical students are similar to or enhanced by becoming a junior doctor, particularly regarding work-life balance and difficulties maintaining social life. Resilience is a much discussed topic now amongst medical professionals. It is described as an ability to manage stress, and despite being important is difficult to teach [6-7]. From our thematic analysis it appears that academy placements can be a major stressor for medical students. Nevertheless, junior doctors highlight the importance of being on the wards to help prepare for work. Part of responsible medical education should be helping students to build resilience. There is still not much evidence surrounding how this can best be carried out[6-7]. Rather than accepting or ignoring the difficulties of placement we suggest that we should support students in small groups and

help them to reflect and develop healthy coping mechanisms now, in order to prepare for the future.

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Theme: Selection

Accepted as: Prestigious Oral Presentation

Paper no. 246
Medicine applicants as bricoleurs: an examination of the hidden curriculum in medical school admissions

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Background Despite a growing drive to improve the demographic diversity of medical schools, those from state schools and lower socio-demographic backgrounds remain underrepresented. This study aims to explore Hafferty's concept of the formal, informal and hidden curriculum, considering if this may extend to the preparatory activities of medicine applicants, before commencing undergraduate study. It has been argued that medical educators most frequently focus their efforts on the formal curriculum to remediate unequal treatment (1). However, a recognition and articulation of the hidden curriculum in medical schools admissions may serve as an important area for change to improve demographic diversity (2).

A commitment to change within the 'hidden' element of Hafferty's curriculum triad also requires an understanding of the personal, social and cultural processes at play that enable some applicants to succeed, and others to fail (2). We draw on Levi-Strauss' concept of the individual as a 'bricoleur' to disrupt traditional views of the medical school applicant, and describe the hallmarks of bricolage within the hidden curriculum of medical school admissions (3).

Methodology Narrative interviews were undertaken with applicants to a UK (United Kingdom) medical school to explore their experiences of preparation for selection (n=23). 3 focus groups (FG) with Year 1 medical students were also undertaken to explore the experience of successful applicants (n=17). The interview and FG participants were identified by a (purposive) sampling process to ensure representation across school background, gender and ethnicity. Transcribed narrative interview data were analysed using Labov and Waletsky's analytic framework to identity narrative episodes and consider the structural elements of abstract, orientation, complicating action, evaluation, resolution and coda (4-6). FG data were analysed using thematic analysis (7).

Results A 'hidden' curriculum was suggested, with applicants perceiving a sense of inflating competition which was extended to school support or work experience opportunities. Additional pressures included the stress involved in navigating the perceived complexities of selection, juggling academic demands and trying to do 'everything'. Myths and misunderstandings about preparation for selection were evident.

Hallmarks of bricolage included the strategic approach employed by applicants to navigate the application 'game', leverage contacts and do whatever was needed to 'tick the boxes'. For some (particularly those from lower socio-demographic groups and those starting their preparation 'late', after GCSE results), bricolage occurred amidst financial and geographical constraints, unanticipated situations arising, and a lack of school and family support. Such applicants appeared most vulnerable to myths and misunderstandings.

Discussion Bricolage refers to process of 'making do' with the resources available, often in creative, innovative and personalised ways, to get the job done (3). Constraints to opportunities and unexpected situations appeared to motivate the process of bricolage for a number of the applicants, who leveraged resources and used innovative strategies to navigate the application process.

However, bricolage is not simply a response to resource constraints, but also a cultural effort, where the bricoleur 'makes do' with the current social repertoire of myths, signs and precepts, 'whatever the task at hand' (8). Considering our applicants as 'bricoleurs', they are driven by a hidden curriculum characterised by competition, myths and 'ticking boxes' to 'get the job done', with those from lower socio-demographic groups potentially more vulnerable to myths and misunderstandings as a result. Recognising this in the field of medical school application may go some way to explain the sense of inflating activity, irrelevant tasks and stress amongst applicants, despite concerted efforts by educators to 'level' the playing field.

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Theme: Selection

Accepted as: Oral Presentation in Parallel Session

Paper no. 247
A natural history of the UK Medical Applicant Cohort

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Background As medical schools work towards widening access and participation, there is an increasing need to understand how applicants perceive medical education and applying to medical school [10]. Medical schools may know what they want in an applicant [12] but little is known about how the applicants select medical schools [11].

The UK Medical Applicant Cohort Study (UKMACS) is a National Institute for Health Research (NIHR) funded programme investigating how applicant choice of medical schools varies by social background. UKMACS included a questionnaire administered to UK residents aged 16 or over, seriously considering applying to study medicine at a UK medical school for entry in 2020. It describes the impact of individual applicant background and context [3] on their choices and application strategies.

Methodology Questionnaire development was informed by interviews with current medical students and medical school applicants to determine which medical schools applicants are aware of and which information sources and strategies they could use. The study showed that applying is a dynamic process that involves changes of priorities and strategies. To enhance generalisability of the data, questionnaire items were selected to be comparable with other studies, particularly longitudinal cohort studies, such as the Millennium Cohort Study [4, 5, 8], Next Steps [17] and previous studies of medical students [1, 11].

The study primarily focuses on the 16-18 age group, a group notoriously difficult to engage [2, 16]. To generate a high response rate and ensure a representative

cohort, in addition to an open survey UCAT registrants who consented to participate were invited via a personalised link followed with two reminder emails and two SMS reminders and a final close of study reminder. A prize draw and presenting the study as active involvement in research on medical school applications and an opportunity to further consider their own applications were incentives. While it was unavoidable that some questionnaire items raised awareness of particular information sources, medical schools and course options or prompted consideration of other criteria, rather than trying to minimise this, it was openly stated that there may be some benefit to participating in the study. Participants also consented to the data being linked with administrative data in UKMED.

Results The questionnaire itself provides a complex set of data on a cohort of 6,465 respondents engaged in the process of applying to medical school to various degrees. Generating the initial descriptive statistics and further analysis generates a taxonomy of applicants on the traditional vs non-traditional axis which will be presented for discussion.

The data collected on individuals, their awareness, strategies, choices and demographics is an informative mix of individual and large-scale data that can be used to model applicant choices. It has also collected data from those that we have had little information on – those who eventually decide not to apply to medical school [6].

Discussion Presented here is a natural history of the UK medical applicant cohort of 2019, categorising applicants in terms of context, information-seeking behaviour and ambitions [7]. The questionnaire data provides valuable insights into applicant strategies and choices, allowing us to model their perspective and the impact of background and context on their choices, applications and outcomes. It develops our understanding of why certain groups are under-represented in medicine and helps explain why some groups have low application rates for medicine.

The dataset goes beyond the assumptions made about medical school applicants [13,14] by actually allowing them to describe themselves. This will assist future applicants, improve available Information, Advice and Guidance [15], and also inform individual medical school recruitment and selection to improve equality of access to medical school [6] and the diversity of the medical workforce [9].

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Theme: Selection

Accepted as: Oral Presentation in Parallel Session

Paper no. 248

Can assessment format influence the acceptability and feasibility of selection tools without compromising widening participation

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Background There are a series of medical education initiatives across the UK to address the shortfall in the medical workforce. There continues to be concern about the selection of medical students with the right values and commitment to serve the NHS in the future. Traditional student selection relies heavily on academic achievement as the key to course success, fostering an environment of grade inflation in GCSE, A-level, and GPA. Thus, it is increasingly difficult for students with ambition and non-academic skills to be competitive if their academic qualifications are the primary construct under examination in the pre-interview stage, which is often the case for underrepresented groups.

Although the MMI[1] has successfully improved the interview process, it is only applied to the small subset invited to interview. This highlights the value of introducing a pre-interview screen for non-academic skills, which demonstrates minimal correlation to cognitive measures, with smaller subgroup differences for under-represented groups. The caveat is if students do not see this new measure as feasible and acceptable, it will only partially address widening participation if they do not apply. This study sought to compare the feasibility and acceptability of a new format SJT, with demonstrated validity evidence, for applicants to UK medical training.

Methodology A video-based constructed response SJT, known as CASPer, is used in North America and Australia to change the way students are selected for medical school[2] with validity evidence. Unlike other SJTs, CASPer is an online scenario-based assessment of non-academic skills where applicants do not identify what they believe they should do, but employs the theory of planned behaviour asking applicants to articulate why they believe that response is appropriate. Preliminary published evidence demonstrates smaller subgroup differences, no correlation to GAMSAT sciences and predictive validity evidence[3,4]. A subset of applicants applying to two medical schools in the UK was asked to volunteer for CASPer, as well as an online post-SJT survey on their impressions. Test feasibility was measured by examining technical support problems and interaction with applicant support, including those from isolated and remote communities. Aspects of applicant motivation were also examined (time per scenario) to support the validity of the findings.

Results Thirty-three applicants completed the voluntary assessment and exit survey, with over 50% in communities of less than 50,000 people. Of those 33 applicants, only 2 (6%) had technical issues, one of whom did not complete the technical requirements test and the other which resolved without support. 87.9% of applicants indicated that they were somewhat to extremely satisfied with the test experience. Applicants also perceived CASPer as fair (84.8%). When applicants were asked if they believed the test to be an effective evaluation of non-academic abilities, 78.3% believed it to be moderately or extremely effective. Importantly, 78.8% of applicants indicated that having CASPer as part of their application process would have no effect or increase their likelihood of applying to that program, which did not differ among demographic groups. These results are higher than published results for fixed response SJTs[6,7]. The majority of applicants spent the full 5 minutes responding per scenario for each of the 12 scenarios, rather than progressing through after cursory responses. This indicates they were sufficiently motivated to do well on the assessment, and supports the validity of the findings.

Discussion This acceptability and feasibility study indicates support amongst applicants as well as technical feasibility, even in isolated and rural communities. These findings support the hypothesis that CASPer can be used to widen access to medical education in the UK.

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Theme: Selection

Accepted as: Short Communication

Paper no. 249
Contextual admissions in UK medical schools

Author(s): Eliot Rees, Kirsty Alexander, Karen Mattick, Katherine Woolf
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Background Students from lower socio-economic backgrounds and those who attended state funded education are underrepresented in UK medical schools. There is evidence that grade requirements are the most significant barrier to those from the lowest socio-economic groups (1). Considering the evidence that students from non-selective state schools outperform those with equivalent grades from private schools, many UK universities have adopted 'contextual admissions' in which applicants that meet specified criteria are offered a reduced threshold for interview or reduced grade offers (2).

This study seeks to describe how different medical schools define 'non-traditional' applicants and the criteria they use for eligibility for contextual admissions.

Methodology This cross-sectional study collected data from the websites of all UK medical schools.

Forty medical schools were identified (35 established, and 5 undergoing GMC approval), and their websites were reviewed in May 2019. All text relating to widening access, widening participation, or contextual admissions was extracted.

The extracted text for each course was reviewed and individual eligibility criteria for contextual admissions were identified and copied in to a separate spreadsheet with each criterion linked to the course and institution code.

A coding framework was generated based on the classification of criteria described in the Sutton Trust report 'Admissions in Context. The use of contextual information by leading universities' (3). This categorised criteria in two four levels: individual level, school level, area level, and attendance at widening participation programmes.

Two researchers independently coded all criteria to the framework and met to discuss any discrepancies.

Results We identified 40 medical schools in the UK, offering 74 courses. Of these 74, 39 were standard entry five-year (or 6 year including intercalated degree) courses, 16 were four year graduate entry courses, and 19 were six year courses with a preliminary or gateway year.

Twenty-nine out of 39 standard entry courses explicitly referred to contextual admissions and the criteria used to inform these decisions on their websites. Of these, most (27/29) used a combination of at least two levels of criteria.

When the specific criteria used within each level at different institutions was explored, it was evident that there was significant variability in the criteria used. Furthermore, when we explored how different schools defined eligibility for an individual criterion, there was more variability. For example, those medical schools that used 'low household income' as a criterion defined this as between under £25,000 to under £42,875.

Discussion These results demonstrate that most medical schools use a combination of criteria drawn from different levels for contextual admissions to their standard entry programmes, as is recommended by the Medical Schools Council (4). However, there are significant variations in the criteria, and the cut offs for these, that different medical schools use when making contextual offers. Furthermore, many schools do not describe the criteria they use, or how to determine eligibility. Given that applicants from lower socioeconomic backgrounds (i.e. those potentially eligible for contextual offers) are more likely to apply to medical schools that are geographically proximal to their parental residence, this variation in contextual criteria could mean that one has to be more deprived in certain parts of the country to be successful in applications, than in others.

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Theme: Selection

Accepted as: Short Communication

Paper no. 250
Gaming the Medical School Application System: Revealing the Coaching Effect Size of a Constructed Response Situational Judgment Test

Author(s): Kelly Dore, Heather Davidson, Harold Reiter
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Background Assessments used in selection are at risk for fostering target material in the evergrowing test-prep market, with, in some cases, limited understanding as to the impact of coaching on final outcomes. Given the high costs associated with test-prep, if coaching were to greatly impact scores there is the potential to undermine widening access efforts. Understanding is confounded by potential multiple factors impacting test-retest score changes - coaching, practice, construct-relevant skill enhancement (i.e. impactful events, maturation), and range restriction (high test-scorers being admitted and low test-scorers self-excluding due to non-competitiveness). There's less concern regarding both practice effect, when equally available and used[1], due to diminishing returns[2]; and range restriction, when controlled during score analysis. The greatest retest score change concern is coaching, as it threatens score enhancement driven by construct irrelevant factors like response distortion and test-wiseness (where coaching companies focus on test-taking approaches over knowledge for greater short-term effect[3]). For cognitive testing coaching effect, separated from practice effect, demonstrates minimal impact (0.06 standard deviations)2; more limited, disparate results (+0.50 to -0.22 SD)3,4 are found with selected-response SJTs. For constructed-response SJTs, coaching effect remains unknown. This study sought to examine the role of coaching effects in SJT performance in medical school admissions.

Methodology A survey was sent to all medical school applicants completing a constructed response SJT (CASPer) in the 2018-19 application cycle, asking respondents to indicate whether or not they used any of the following preparation strategies: read the website tips for applicants, completed the free practice test on the website, participated in a commercial test preparation course, studying potential questions based on the assessment competencies, rehearsed responses with technology, and rehearsed responses without technology. Applicants were aware individual results would not be sent to programs. Variables were coded dichotomously (1 = used strategy, 0 = did not use strategy). We then conducted a multiple regression analysis to compare the effect of each preparation method on SJT scores, holding all other preparation methods constant. To control for range restriction, we compared 2017-18 score distributions of those who chose to retest in 2018-19 to those who did not.

Results Approximately 7% of SJT test takers completed the survey (n = 2800). Of the six preparation strategies, only completing the free practice test on the test website (b = 0.16, p .001), studying potential questions based on the assessment competencies (b = 0.13, p = 0.02), and rehearsing responses with technology (b = 0.18, p .001) provided significant additive benefit to test scores over and above other methods. Test preparation method accounted for only 2% of the overall variance in test scores (R2 = 0.02, F(6,2887) = 14.44, p .001). Regarding range restriction, we found a negligible difference between 2017-18 test takers who chose to retest in 2018-19 (n = 3042) and those who did not (n = 20665; d = .12 [.08 - .15]).

Discussion Data showed that test preparation strategies had a small effect on SJT scores, and that commercial test preparation strategies provided extremely small benefit over and above freely available strategies. Results interpretation was not confounded by range restriction, perhaps because many programs placed variable emphasis on SJT scores for selection and because test-takers were unaware of their SJT scores. These results highlight the importance of ensuring equitable access to practice tests, and relieves concerns over potential socially regressive impact of commercial test preparation. Future research should explore the ways in which freely accessible practice can be most equitably provided.

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Theme: Selection

Accepted as: Short Communication

Paper no. 251

The Student Voice in Medical School Selection

Author(s): Joanne Selway, Jacqueline O'Dowd, Joanne Harris, Jasmine Hearn
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Background Multiple Mini Interviews (MMIs) are routinely used in medical school selection due to their validity, reproducibility, reliability, feasibility, and acceptability [1]. Co-creation is the process in which all partners are actively engaged and empowered in (and stand to gain from) the process of learning, including curriculum design and delivery and decision making processes [2,3]. The importance of co-creation and widening student participation as agents in curriculum development is increasingly being recognised [4] and participatory design projects are a common methodology adopted to recognise and integrate the student voice [5]. Benefits of student participation, include increased collaborative interaction among students, increased group productivity, and a sense of ownership and responsibility [6].

As a new medical school with active cooperation and quality improvement processes involving our students, we wanted to extend their participation in the key decision-making process of students entering medicine. Having personal experience of the curriculum and teaching pedagogies adopted, current students are likely to be able to contextualise many of the attributes required to succeed in medical school. Furthermore selection contexts devised by current students will likely reflect their unique experiential perspective, thereby driving the selection process to reflect their experiences, and enhancing the validity of the process for their own school.

Methodology The authors developed a week-long student selected course entitled 'Selecting Tomorrow's Doctors, Today' within the third year of the MB ChB curriculum in order to teach interested students on the theory of MMIs and selection of new medical students. This study will outline the course, and the outcomes in terms of student engagement in co-creation, and evaluation feedback.

A total of n=54 students have participated in the course which used classroom based small-group teaching and learning methodologies to enable small groups of 2-3 students to develop new MMI stations and then pilot and evaluate them within their cohort.

Results N=19 stations have been developed in the course, n=9 have been incorporated into the MMI station bank for future selection processes and further quality assurance, and n=3 adapted and used within actual student selecting MMIs.

Stations contained a variety of different scenarios and competencies but some themes were evident. Communication appears in every station illustrating its importance to all students on entry to medical school. Originality was another attribute that featured highly n=8 (42%) of the stations measuring this attribute within the scenario. Other frequently appearing attributes include confidence (n=7, 37%), reflection (n=6, 32%), critical thinking (n=6, 32%) and judgement (n=6, 32%).

Discussion This study has demonstrated the utility of engaging current students in the process of medical school selection. Students are willing, and able, to participate in the selection of students to medical schools and place value on communication skills as a key attribute to assess during selection. This study marks the start of building the evidence base for inviting students to be partners in the selection process for medical school. However, more work is required to evidence the quality of the stations developed by students, as well as their predictive validity and reliability.

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Theme: Selection

Accepted as: Short Communication

Paper no. 252

What do medical school applicants really think about extra-curricular activities?

Author(s): Laura MacKenzie, Melissa Bowen, Lucy Tague, Philip Chan
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Background Participation in extra-curricular activities has been a longstanding consideration of medical admission panels as an indication of non-academic qualities that may demonstrate suitability for medicine. Moreover, these activities may also predict student's subsequent performance on the medical course. (1) However, what do medical school applicants themselves think about participation in extra-curricular activities?

Methodology As a group activity station in the admission MMI for a single medical school, all applicants were split into discussion groups of 6 people, with an external chair/facilitator. They were required to discuss how participation in extra-curricular activities should be considered in application to a medical school. Applicants were specifically asked to rank extra-curricular activities in regard to their value and create guidance notes for an admission panel. No further structure was imposed, and 35 minutes allowed. Facilitators' notes were consolidated and thematically analysed.

Results Data was available from 3 facilitators' notes, involving 126 applicants. Most groups, without prompting, developed lists of values and skills that could be gained through partaking in an extra-curricular activity that they felt were relevant to the role of medical student and doctor. The most described value of partaking in an activity was noted as gaining experience of team-work. It was also common understanding that through participation in extra- curricular skills

an applicant would also be able to develop skills in communication, time management and problem solving and be able to demonstrate empathy and leadership due to their experiences. Many groups felt volunteering in the community was an important activity to demonstrate. Nearly all groups described the need to reflect upon partaking in an activity on application and particularly what skills an applicant had gained. Priority lists and scoring systems were developed by most groups.

Discussion As this was an assessed MMI station, applicants were eager to show themselves, and also the group as a whole, to their best advantage. Nevertheless, the facilitators felt that the opinions expressed were genuine and reflected applicants' own experiences, rather than some artifice designed to impress assessors.

Applicants were quick to appreciate that ranking extra-curricular activities was a near-impossible task as no single activity was felt to be of more value than others. The need to reflect on what an applicant has learned and gained from participation in an activity and the importance of articulating this in personal statement and interview was present in all group discussions. It could be assumed that this may be a result of application "training" either through support at school, application courses or literature. There was some disagreement amongst applicants regarding the necessity to demonstrate leadership. Some applicants argued that a potential medical student must demonstrate their ability to be a leader on application, whereas some felt this was a skill that should be developed throughout medical school in preparation for work. This was echoed in the merits of demonstrating empathy and if this is a value that is not necessary to be evident on application but can be developed during their training; they did not appear aware of evidence to the contrary.

Although groups were diverse, and respected the activities suggested by other group members, there was a notable lack of consideration into the potential discriminatory issues regarding the influence of disability, ethnicity, economic status and gender on access to participation in activities. We believe that few candidates have overcome adversity in these areas and therefore did not or could not comment on the relevance of these issues.

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Theme: Student wellbeing

Accepted as: e-poster

Paper no. 253
Pets as Therapy (PAT) for student well-being

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Background The University of Bristol has recently had a lot of media attention regarding the mental health and well-being of their students (1). Although, in a 2018 University of Bristol survey, the levels of poor mental health were no different to National surveys, the University has a provided a significant mental health well-being strategy (2). Bristol Medical School has developed a traffic light warning system in order to try to identify students that need further support. The traffic light system allows the students themselves to classify whether they are "well", "stressed" "becoming unwell" or "unwell". To build on this, we have organised a series of events which include mindfulness and well-being training at North Bristol Academy with the aim of decreasing stress amongst medical students.

Pets as Therapy (PAT) dogs have been shown to significantly improve patient and staff well-being in primary and secondary healthcare, as well as other settings such as education (3). However, there is very little evidence on this area in the UK. The first wellbeing session aimed to use PAT dogs in order to see if this improved students' health and well-being using the traffic light system.

Methodology Undergraduate students were invited to attend voluntary sessions with Pets as Therapy dogs. They were asked to anonymously rate their current mental health state using the traffic light system. They were also asked if they would like repeat sessions or other sessions focusing on well-being. All students were reminded how to seek medical help and access the formal student well-being support services should they find this helpful.

Results The PAT dog trial involved 34 medical students from years three and five. Prior to the PAT dog session 44% of students self-assessed as well, 36% were stressed, 18% were becoming unwell and 2% were unwell. Following the session: 84% self-assessed as well, 3% were stressed, 13% were becoming unwell and 0% were unwell. However, two students were lost to follow-up did not complete the traffic light system following the PAT session. Overall, there was a 40% increase in feeling well, 33% decrease in stress, 5% decrease in becoming unwell and 2% decrease in unwell students. Students feedback showed an appetite for further sessions, including mindfulness, yoga and resilience training.

Discussion This pilot study has shown that the use of PAT dogs led to an apparent short-term improvement in student well-being. Further work will aim to improve well-being in the long-term with a variety of sessions, including mindfulness techniques. The findings from this will be available by the ASME conference dates.

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Theme: Teaching About Specific Subjects

Accepted as: Prestigious Oral Presentation

Paper no. 254
The value of Healthcare Team Observations for Patient Safety (HTOPS); results of a three year study with final year medical students

Author(s): Anderson ES, Griffiths L, Forey T, Wobi F, Norman R, Martin G
Corresponding Author institution: University of Leicester

Background It remains a fundamental principle that medical students should be trained with knowledge, skills and attitudes to protect patients and place patient safety at the forefront of their practice.[1] There are few relevant learning opportunities to achieve this which are directly linked to practice. Patient safety leaders are seeking advances in education and new ways to identify risks and hazards in real time.[2] Many have stated that students see what is really going on in every day practice.[3] We share the development of a learning approach to change medical student attitudes and NHS culture towards patient safety: Healthcare Team Observations for Patient Safety (HTOPs). The approach mirrors methods used in aviation.[4] After training on patient safety, final year medical students spent 6 days observing and anonymously recording real-time practice to identify safety concerns. They worked in an acute hospital on wards, clinics and theatres. The project steering group consisted of NHS patient safety leads, patients, other clinicians and academics.

Methodology We collect cycles of data on patient safety observations in acute hospital settings with stakeholder perspectives. Interview data were completed with students (observers) and practitioners (observed). Student observations were checked for accuracy and analysed using thematic analysis. Early paper recordings were later designed as an app. The project was a partnership with final year medical students, NHS colleagues and academics. The study has ethical permission and was funded by the Wellcome Trust.

Results Thirty-seven medical students took part over three years. We report on the data from 2017-2019. Students identified 917 issues, which clustered under the themes of human factors, systems and environment. The early template for recording, using principles from aviation, was adapted for the complexity of healthcare. There were five qualitative interviews with medical students who all spoke of the need to become familiar with the recording process, finding the app much easier than paper. Students felt as if they were 'almost marking the staff' and felt obliged to be very friendly. In some situations, the observers felt more welcomed than in others. Students felt more aware of patient safety; "I think it makes you more vigilant in your own practice when you have to observe other people making those mistakes…I feel like I'm more aware of myself in those settings because I've had to observe someone else". Eleven interviews with a range of NHS staff were completed. Some practitioners stated 'feeling a little tense' and 'uncomfortable' being watched. Several had a change of mind-set when they

realised it was anonymous and was aimed to help improve standards. Practitioners felt students were the right people to observe for safety as they have enough knowledge and were fresher and perceived as 'non-biased'. Many welcomed the value of these observations; "…as a Ward Sister…I have responsibility for this ward so if the practice is not of an expected standard I would like to know … so I could disseminate it back to my team". Both the observed and the observers needed clarity and reassurance about the process and what happens to the data.
Discussion HTOPS presents a promising approach to learning about the totality of patient safety in practice. This learning is part of a special student module and requires wider student engagement and testing for Foundation doctors. The method feeds-back into front-line patient safety mechanisms and has the potential to raise standards and change culture, as achieved in aviation.4 HTOPS offers the opportunity for collective ownership of safety concerns without blaming individuals and has been positively received by NHS staff and medical students. The local NHS trust were pleased to receive the HTOPS data highlighting poor practice.

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Theme: Teaching About Specific Subjects

Accepted as: Oral Presentation in Parallel Session

Paper no. 255
Confidence levels of GP trainees in giving lifestyle advice to patients: Is medical education in Ireland preparing them for work in the age of lifestyle- related disease?

Author(s): Emer Cullen
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Background Non-communicable diseases are becoming the main global causes of both morbidity and mortality, and poor diets and physical inactivity play a significant role in the development of these chronic, lifestyle-related diseases. The prevalence of hypertension, diabetes and cardiovascular disease are increasing in Ireland and 60% of Irish adults are overweight or obese. The population struggles to adhere to the Healthy Eating and Physical Activity Guidelines. Doctors can play a significant role in promoting healthy behaviours in their patients, including diet and exercise. However, international studies have shown that diet and physical activity education is lacking in formal medical education, and that doctors feel unprepared to give lifestyle advice as a result. There is a paucity of literature looking at this in the Irish context.
Methodology This study aims to fill the identified gap in the literature by exploring the adequacy of nutrition and physical activity education in undergraduate medical education and intern-teaching in Ireland, and whether this prepares Irish General Practice trainees to confidently give lifestyle advice. The study used a mixed-methods approach, with an online questionnaire to gain an overview of attitudes and beliefs of participants, and focus groups to explore this in more detail. Participants were current General Practice trainees who had completed both their undergraduate medical education and their intern year in Ireland.
Results Questionnaire results indicated that the majority of Irish GP trainees do not feel undergraduate medical education prepared them for their role in giving lifestyle advice. Nutrition and physical activity education was not taught or assessed formally in undergraduate or intern teaching. Thematic analysis of focus groups identified three themes: "Training to Date", "Experience of Lifestyle Advice" and "Training Needs", and highlighted the lack of formal teaching, mixed confidence levels and the need for further education.
Discussion More formal education is essential to prepare Irish doctors to give clear and consistent diet and physical activity advice to their patients. It is recommended that this include input from Allied Health Professionals. Incorporation of this training from the beginning of medical education could help to change attitudes towards the importance of lifestyle approaches.

Theme: Teaching About Specific Subjects

Accepted as: Oral Presentation in Parallel Session

Paper no. 256
Teaching Lifestyle Medicine in the Undergraduate Curriculum

Author(s): Christopher-James Harvey, Amy Bannerman, Richard Pinder, Edward Maile
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Background Imperial College London has developed Lifestyle Medicine and Prevention partly in response to The General Medical Council 'Outcomes for Graduates' (2018), to address the required professional knowledge around applying psychological principles; applying social sciences principles; health promotion and illness prevention, and clinical research and scholarship. The module aims to give students insights into the wider determinants of health, as well an understanding of how to promote behaviour change in their patients. A corollary of this is creating space to allow students to think about their own behaviour, and so enabling them to thrive in their training and professional environments.
Methodology The module adopts a blended-learning flipped-classroom approach. Students are given ~1 hour of online materials for each 1 hour face-to-face workshop. They work through these independently prior to the face-to-face workshops. These workshops run in groups of 12, which repeat to accommodate 720 medical students across 2 years. Accompanying this, students participate in a lifestyle tracking study to monitor their own health behaviours- psychical activity, sleep, mood- over the academic year. This data is then used to teach students about research design and statistical analysis.
Results The module is currently in its first year. Acquired skills will be assessed summatively via the development of a podcast and commentary. The lifestyle tracking data may provide some insights into behaviour change over the year. There will also be College level evaluation around student responses to the new programme.
Discussion We would like to present discussion around the various points of innovation and novelty-particularly within medical teaching-that this module represents. The blended, flipped-classroom approach is novel at Imperial. The online materials allow students space to reflect on their own behaviours, and this reflection is intended to enrich academic and clinical discussions in the classroom.

Theme: Teaching About Specific Subjects

Accepted as: Oral Presentation in Parallel Session

Paper no. 257
The Use of Video Briefs to Enhance Fidelity of the Simulation on the Safeguarding of Children

Author(s): Anjola Mosuro, Ellen Haire, Holly Shaw, Ryan Youde, Kevin Jones
Corresponding Author institution: Great Western Hospital

Background The Safeguarding of children is everyone's responsibility (1). In the sphere of the healthcare system there are designated professionals responsible for the safeguarding of children. Due to the various professional bodies who come into contact with children sometimes there is a lack of clarity regarding ones specific role and responsibility in safeguarding (2). Therefore, educating professionals on their responsibility in this regard is of importance. Safeguarding children can be a sensitive matter, so supporting professionals to hone their communication skills in this arena will be valuable (3).
Studies have shown that improvements to fidelity in simulation have a positive effect on the learning experience of participants (4). Enhancing fidelity does not have to be high-tech to be effective (5). A limited amount of research has explored the use of audio-visual story-telling as a tool to augment the pre-brief and improve fidelity; however studies that have utilised audio-visual story-telling have found it to improve fidelity and transfer of skills from simulation to the clinical setting (6).
Furthermore, work has surfaced highlighting the importance of the pre-brief in emphasising the aims of the simulation and improving engagement (7).
The aim of this study is to augment the pre-brief with the use of audio-visual narration, in order to increase the fidelity of a simulation on child sexual exploitation. We believe this will improve the ability and confidence of medical

students and junior doctors to recognise and manage child sexual exploitation. We are optimistic that it will aid the retention and transference of skills to the clinical setting (6) while also improving learning outcomes over-all.

Methodology We aim to develop an audio-visual clip to accompany a child sexual exploitation scenario, showing a previous encounter with a healthcare professional in the lead up to this presentation. In this way we would deliver the salient information regarding preceding events and also set the scene for the student prior to the commencement of the simulation. Participants in a separate cohort will not be exposed to the intervention and will proceed with their simulation, using a conventional pre-brief and written vignette prior to the start of their simulation.

- Two interventions:
  - The standard – brief vignette prior to simulation which students read before commencing
  - The intervention – audio-visual recording of the "patient" prior and leading up to the point at which student intervenes in the simulation

A de-briefing session will be done after each scenario to explore learning outcomes and highlight the aims and objectives.

Results Following the simulation, both groups of students will be asked to complete a questionnaire which aims to understand students' experiences and also ask them to rate the level of fidelity and their perceived adoption of the aims of objectives initially set out, using a Likert scale.

- Self-rating scale to glean:
  - Fidelity
  - Understanding of aims
  - Benefit of simulation to learning

The intervention is scheduled to take place in February, after which we can collect results and publish our findings.

Discussion The conclusion to be tested is: Is there a benefit to the use of audio-storytelling in pre-brief simulation to enhance fidelity and improve learning outcomes of child safeguarding for medical students and junior doctors?

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Theme: Teaching About Specific Subjects

Accepted as: Oral Presentation in Parallel Session

Paper no. 258
Undergraduate medical education in long-term conditions: a scoping review

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Background A new undergraduate medical curriculum at King's College London has recently been implemented. One of its modules for senior medical students focuses on long-term conditions. The module is innovative in two ways; it prepares students to address the diverse health needs of an increasingly elderly population with a high chronic disease burden[1] and departs from traditional medical training programmes, historically built on single acute illness models. In preparation to undertake an educational evaluation of the module, a scoping review was conducted. The purpose of the review was to identify what is currently known about teaching long-term conditions at the medical undergraduate level, specifically identifying good practices and challenges. This information would inform the design of the evaluation and suggest theoretical frameworks for analysis.

Methodology A scoping review methodology is appropriate where there is doubt whether the research field is sufficiently strong to support a full systematic review,[2] as is the case with long-term conditions teaching for medical students. It enables a mapping of existing literature to snapshot the available evidence in the area. We have used this literature review methodology to collate research reporting the experiences of medical students, faculty and patients involved in the delivery of educational initiatives centred on long-term conditions across a breadth of educational and geographical settings internationally. 6 databases were searched with keywords relating to medical education and long-term conditions. Additional papers come from hand searching references. Studies were independently reviewed by 2 researchers and are included if they describe learning or teaching experiences or are empirical research on educational interventions related to long-term conditions for medical students. Papers older than 2011 are excluded to emphasise current practice. Data were charted and subsequent thematic analysis undertaken.

Results 2404 unique abstracts were screened, of which 105 full texts were read. Of these, 8 papers were eligible for inclusion. These studies were based in Europe (n=3), the United States (n=3), Singapore (n=1) and Australia (n=1). The papers predominantly focused on medical students in the clinical stages of training. Interventions included lectures, small group teaching, skills courses, exposure to media and formation of longitudinal patient relationships. 6 papers focused on single chronic diseases or specialisms, whilst 2 discussed long-term conditions in a broader sense. Key emerging themes include a tension between service provision and time to teach in the clinical environment, particularly in hospitals. Addressing this, some studies suggested teaching long-term conditions in non-traditional settings such as nursing homes or online simulated environments.

Discussion The results of this scoping review have implications both for the research field and for educational practice. One of the main findings from this scoping review is the lack of high-quality educational research on long-term conditions for medical students, typically situated at Level 1 of Kirkpatrick's evaluation.[3] This also proved the biggest challenge to us in conducting the review. Interesting innovations were reported but these were not based on research. Many excluded papers reported innovations in teaching practice without evaluation. Aligning with the intention of a scoping review to 'snapshot' the field of inquiry, we created a new category: emerging innovative teaching.

The evidence found is a stark reflection of the specialty-specific silos in which medical practice and teaching occurs in this field, all with little collaboration. A fundamental challenge for medical schools is identifying settings in which students get exposure to learning about managing patients with multiple conditions. This suggests a clinical systems challenge in organising care for those with multiple long-term conditions.

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Theme: Teaching About Specific Subjects

Accepted as: Short Communication

Paper no. 259
Bed Block - A game to help understand patient flow

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Background Patient flow is crucial for emergency departments(ED) to function and for patient safety. The longer patients remain in the ED, the greater their morbidity and mortality is. However, the concept of patient flow and its importance is not taught to health care professionals (HCP). With increasing demand in the ED, helping HCPs understand this concept is crucial. Therefore we wanted

to develop an educational resource to help teach the importance of patient flow and understanding the hospital system.

Methodology We developed a prototype board game, set around an imaginary hospital. The board game consists of 4 areas of the hospital; an ED, a medical ward, a surgical ward and an intensive care. The aim of the game is to collaboratively try and survive 24 hours of running a whole hospital, without generating patient safety incidents. If three are generated, the game ends. Your role is to discharge more patients from the hospital than there were at the start of the game. This game has been played by 90 different HCPs. We have recorded and collated their feedback.

Results Overall, the general feeling about the game has been positive. 95% of people found that they were more confident, and understood the importance of patient flow following the game. Very few of our participants had formal teaching on the importance of patient flow. Common themes learnt from the game include the importance of team work, understanding the bigger picture and understanding the pressures in other parts of the hospital. Improvements around the technical aspects of the game where noted, and will be added into the final version of the game.

Discussion This prototype board game has shown a benefit in helping HCPs understand the importance of Patient flow. Further work is needed to see if this can change clinical practice.

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Theme: Teaching About Specific Subjects

Accepted as: Short Communication

Paper no. 260
Cards against Paediatric Orthopaedics – A game to teach Paediatric Minor Injuries

Author(s): Sarah Edwards, Vicky Wells, Damian Roland
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Background Minor injuries can be a difficult topic to learn and grasp in emergency medicine. With well established nurse practitioner services and limited clinical experience, leaning minor injuries can be even harder. Games can be a fun educational tool. Therefore we have developed an educational game around learning about paediatric minor injuries (PMI)

Methodology A card game titled Cards Against Paediatric Orthopaedics, was developed. This game has 29 different types of PMI. The object of the game is to match the X-ray, diagnosis, presenting history, presenting examination and management of each injury. This game was played in 2 paediatric teaching days and the feedback evaluated. This is done in collaborative fashion to encourage team working and shared learning. This game has been played in 2 paediatric teaching sessions in 2019.

Results A mix from nurses through to senior registrars played this game. 25 people over two session played this. 85% found they learnt aspects around the topic of PMI. 100% felt their knowledge had overall improved, with 88% feeling it would impact their clinical practice. Negatives about the game included, that there were a lot of PMIs and it took significant time to work through them all.

Discussion Overall, this game has seen a benefit to people's knowledge around PMI. Whilst this is not an exhaustive list of injuries, it suggests this could be a good introduction to the topic. Our game is freely available to download.

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Theme: Teaching About Specific Subjects

Accepted as: Short Communication

Paper no. 261
Evaluation of the delivery of sustainability-focused quality improvement teaching to third-year medical students

Author(s): Philippa Clery, Luke Rutter, Stuart d'Arch Smith, Charlotte Hayden
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Background Integrating Quality Improvement (QI) and sustainable healthcare into medical school curriculums is an educational priority recognised by healthcare professionals, medical educators, health policy makers and students alike (1). The GMC mandates that newly qualified doctors must be competent in QI and be able to apply the principles of sustainable healthcare to medical practice (2,3). With the medical community acknowledging climate change as the 'biggest public health threat of the century' (4), it is relevant and necessary for medical students to appreciate and contribute to the topic. The 'Sustainability in QI' (SusQI) framework (5) provides an approach for improving patient care with a focus on sustainability, by integrating the measurement of environmental, social and economic impacts into mainstream quality improvement methods. With QI and sustainability high on the agenda for medical schools and health policy, we aimed to develop and evaluate a sustainability-focused QI lecture and workshop for University of Bristol third-year medical students to introduce these principles.

Methodology A one-hour interactive lecture was delivered to the entire cohort of third year medical students (n=342 approx., based on attendance) via video-conferencing software through a Microsoft® Surface HUB. This novel technology allows centralised lecture-based content to be delivered to students in peripheral trusts via video conferencing, with the ability to incorporate small group teaching break-out activities. Students completed a questionnaire before the session assessing self-reported domains of knowledge, confidence, attitudes and applied value. Post-session evaluation used the same questionnaire to re-assess these domains, with additional questions incorporated to assess reaction to the session.

Results Of the total cohort of third-year students (approx. n=342), 59.7% (n=198) completed the baseline questionnaire and 35.4% (n=121) completed post-session questionnaires.

Students reported an improvement in knowledge (% reporting 'good' or 'excellent') in sustainability in QI (6.2% to 57.6%, $p<0.001$), sustainable healthcare (14.8% to 63.6%, $p<0.001$) and the health impacts of climate change (23.4% to 74.8%, $p<0.001$). Levels of confidence increased (% reporting confidence as 'completely' or 'fairly' confident) in undertaking a QI project (3.1% to 27.1%, $p<0.001$), knowing what QI involves (6.7% to 65%, $p<0.001$), and identifying a need for QI (3.5% to 47.9%, $p<0.001$). After the session, a greater proportion of students recognised the importance of susQI in the future of healthcare (77.8% to 95%, $p=0.103$) and taking action to reduce carbon emissions in their future jobs (83.3% to 94.2%, $p=0.313$). 84.3% thought it was important for this teaching to be a core part of the curriculum and 62% reported they were 'likely' or 'very likely' to take part in a susQI project following the session.

Discussion We demonstrate that integrating sustainable healthcare into quality improvement teaching leads to a marked improvement across knowledge, confidence, attitudes and applied value domains in both topics.

Consistent with previous literature, students engage more in QI learning when they can participate in designing projects in relevant topics important to them (6). Our session harnesses video-conferencing technology to facilitate this by incorporating interactive group activities whilst delivering centralised teaching to a geographically sparse cohort.

We are following-up with the participants in focus groups to capture their motivations, transformational thoughts and behaviours, and identify their application of learning from the session.

Continuing teaching these crucial themes early on, we hope to motivate and prepare students to undertake sustainability-focused QI projects throughout their careers, supported by ongoing undergraduate and postgraduate susQI teaching nationally (7).

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Theme: Teaching About Specific Subjects

Accepted as: Short Communication

Paper no. 262
Frontiers in Digital Health: Piloting an Accredited Continuing Professional Development Programme in Health Informatics

Author(s): Matt Gray, John Davison, Tejal Shah, Tricia Campbell, Patrick Williams, Nick Booth, Aad van Moorsel, Namita Kumar
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Background Technology is having an increasing impact in the world as we know it, predominantly complementing the way we go about our daily lives. However, in the healthcare sector, the use of technology to assist the delivery of patient care is in its relative infancy.
'Clinical Informatics' (also known as 'Health Informatics' or more broadly 'Digital Health') is the term used to describe 'the use of information and information technology to achieve safe, effective and efficient health and social care' (1), and has been emphasised as an area for future focus in the recent national 'Topol' review into technology in healthcare (2).
In response to this need and a comparative lack of formal educational opportunities in Health Informatics (3,4), collaborative work between Health Education England North East & North Cumbria (HEENE) and the Institute of Coding at Newcastle University has resulted in a an introductory CPD programme on 'Health Informatics' (HI). This is the first such programme to be accredited by the UK Faculty of Clinical Informatics (FCI) (5).
Here, we outline an overview of the programme, early feedback and plans for the future.
Methodology The curriculum of this pilot CPD programme is introductory in nature encompassing a broad overview of key computing topics relevant to healthcare. The objective of the programme is to provide a foundation for beginners in HI from which they can build additional knowledge in this field.
The content was iteratively developed through regular stakeholder meetings at various stages of development: i) before development to understand requirements and expectations as well as to scope the course content, ii) during development to ensure the content stayed focussed and aligned with requirements and iii) after development to receive feedback and revise the course content to ensure expectations are being met.
Stakeholders included members from the regional NHS trusts, North East Education Support group (run by HEE NE), Clinical Informatics Flexible Portfolio Trainees in the North East, and academics from Newcastle University.
Results The CPD programme is currently in progress to be delivered over 10 sessions until March 2020.
Qualitative and quantitative feedback are sought after each session via electronic survey. The CPD participants are from diverse roles within the healthcare sector including doctors, nurses, clinical coding specialists, IT specialists, academics, and managers.
Early feedback has been overwhelmingly positive with participants agreeing that the course has been useful, well-structured, engaging and most importantly relevant to their day-to-day jobs in the healthcare service. On a scale of 1 (strongly disagree) to 5 (strongly agree), the mean satisfaction scores for course content and course design and delivery for the first two sessions entitled, "Introduction to HI" and "Introduction to Health Information System Interoperability" were respectively: i) 4.88 and 4.92 (response rate of 44.4%) and ii) 4.85 and 4.8 (response rate of 71.4%).
Discussion As the first programme of its kind in the North East of England, it is expected that this innovative programme will be a positive addition to the development of Digital Health in the NHS in the North East & North Cumbria. It is envisaged that this will go some way to attracting and equipping prospective Clinical Information Officers to the NHS into the future. Furthermore, the programme is expected to exemplify the demand for formal education in HI, encourage regional and national HI dialogue and provide an additional stimulus for the development of a standardised HI curriculum.
A long-term goal is to offer CPD topics as a stack of credit-bearing modules leading to a Postgraduate Certificate (PGCert) in HI. Furthermore, it is anticipated that continual development of the course will allow it to be offered on an online distance-learning basis to widen the potential benefit to healthcare practitioners nationally.
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Theme: Teaching About Specific Subjects

Accepted as: e-poster

Paper no. 263
A change of heart about teaching paediatric cardiology teaching: back to the drawing board

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https://youtu.be/8-lH8hsLohU
Background Teaching paediatric cardiology is challenging, due to the complex anatomy and physiology, and unfamiliar terminology of the diseases. To aid medical student understanding, novel methods including 3D printed hearts have been trialled to varying degrees of success. However due to issues with costs and accessibility, we propose an alternative method which has proved similarly successful. By going back to basics and drawing simple diagrams, we have improved our students' understanding of these complex conditions, and now plan to quantify this effect at bedside teaching sessions.

Theme: Teaching About Specific Subjects

Accepted as: e-poster

Paper no. 264
Bringing physiology to life through simulation in extreme environments

Author(s): Dr James Ross, Dr Sophie MacDougall, Dr Rob Willmore, Dr Sarah Wysling, Mr Kevin Jones
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Background Traditional teaching of physiology in a lecture based environment doesn't lend itself to application of physiological principles to real life scenarios.

The GMC guidelines on Good Medical Practice identify 'leadership', 'teamwork', 'situational awareness' and 'problem solving' as key skills required by a clinician throughout their career (1). We feel that experiential learning in our Extreme Physiology Choice programme will allow students, at the beginning of their clinical studies, to apply physiology learnt in the classroom to real life situations, while simultaneously promoting the development of leadership, communication, teamwork and practical skills which they can take forward into clinical practice.

Methodology Over the past two years a cohort of 2nd year medical Students (n=114) students spent a week in La Clusaz in the French Alps with the Faraway Medicine team, a group of medics with backgrounds in acute specialities, who provide medical cover on expeditions. The physiology of topics such as major haemorrhage, hypothermia, and anaphylaxis were taught in small group tutorials and the principles were then applied to high fidelity simulations in the alpine environment using high quality moulage. Students worked in small groups to assess and treat patients using the ABCDE approach; debrief was used to consolidate the learning outcomes from each scenario. Team work and leadership skills were promoted by students building trust by working in the same groups for the entire week as they encountered progressively more complex scenarios.

Feedback was gathered to assess the quality of the teaching provided using Likert Scales (1-5) and qualitative feedback statements are also collected.

Results The feedback was very positive. 100% of students strongly agreed the course was stimulating and engaging. 96% rated the scenarios and exercises as excellent with 98% of students strongly agreeing that applying physiology learnt in tutorials to afternoon scenarios consolidated their knowledge. 96% strongly agreed they were able to develop their teamwork and leadership skills.

Written feedback from the students confirmed that 'debriefing after scenarios were very informative and constructive' and that the 'scenarios were the perfect way of consolidating our knowledge by having a hands-on experience'. Students found the week 'truly inspirational', ' the course 'reinvigorated my interest in medicine' and 'opened my eyes to all the doors which a medical degree could open for me '.

Discussion This course has provided students with a different way to learn clinical physiology through stimulating, practical scenarios which aid them in consolidating their theoretical knowledge. In addition they are able to build team working skills and are given the opportunity to develop as leaders among their peers, which will aid them in their future NHS careers. Furthermore, the nature of the course and exposure to the Faraway Medicine team highlighted the wonderful opportunities that a career in medicine can offer and reinvigorated their passion for medicine.

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Theme: Teaching About Specific Subjects

Accepted as: e-poster

Paper no. 265
How are the General Medical Council Guidelines on Lifestyle Management implemented into the undergraduate curriculum?

Author(s): Piyal Modi
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Background The World Health Organisation predicts that by 2020, two-thirds of disease burden worldwide will be caused by poor lifestyle choices with Type 2 Diabetes being one of the most prevalent of these diseases. With every 1 in 6 patients in hospital with the condition, it's vital to ensure that clinicians irrespective of speciality or grade are equipped to manage the condition. Approximately 3 in every 5 cases of Type 2 Diabetes can be prevented or delayed by maintaining a healthy weight, eating well and being active. Given this, it's important to consider the teaching of lifestyle management in Diabetes teaching in the undergraduate medical curriculum.

Methodology The exploratory research project set out to investigate the teaching of Type 2 Diabetes management in the Leeds curriculum in relation to General Medical Council guidelines. The study adopted a qualitative research design, set within a constructivist paradigm. Staff who teach on Diabetes were invited to participate in semi-structured interviews. The data from the interviews explored the teaching of Diabetes and its management from the perspective of the staff. The interviews were recorded and transcribed verbatim before being thematically analysed.

Results Factors influencing Diabetes teaching include; Educators' choices which influence the curriculum, perceived difficulty in engaging students with health promotion and perspectives on whether the role of lifestyle management lies with the doctor or with other healthcare professionals.

Discussion The study revealed differences in the interpretation of GMC guidelines, educators' perceptions on the doctor's role and perceptions of student engagement with health promotion in influencing Diabetes teaching. The findings of this study will be shared with the staff who deliver the Diabetes curriculum so they can consider any implications for future teaching. This will be in the light of new Outcomes for Graduates (GMC, 2018) and other national policy drivers.

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Theme: Teaching About Specific Subjects

Accepted as: e-poster

Paper no. 266
Interpretation of Hepatitis B Serology, an Illustrative Aid

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Background Interpretation of Hepatitis B (HBV) serology is a key skill required for satisfactory practice as a foundation year doctor, however the interpretation of such results is complex. Terminology for serological markers used to define a patients' Hepatitis B status are similar in nature and can be confusing to students and clinicians alike. Hereby, a method to aid interpretation of results is described.
Methodology A diagram depicting a step-by-step approach to analyse HBV serology was designed and made into a presentable format. This diagram was either shown to junior doctors ranging from F1-SHO level or shown and explained to medical students from clinical years 1-3. Both forms of teaching explained the pathophysiology behind the natural HBV virus infection and its vaccination counterpart. A total of 18 subjects participated, who had to decipher the HBV status of 4 patients, and answered questions based on confidence and their understanding of interpreting HBV serology. Forms with these questions were given to participants before and after the diagram was shown.
Results Out of 18 subjects, 10 showed an improvement in the number of correct answers given, 6 showed no improvement or worsening in the number of correct answers (although 4 of these participants had already answered all questions correctly prior to having been shown the diagram) and 2 showed a worsening of results. Confidence and understanding the meaning behind interpreting HBV serology improved by 50% and 44.5% respectively, and 88.3% of participants agreed that the diagram aided learning and understanding of HBV interpretation. Only 33.3% of participants agreed that analysis of HBV serology was taught well at their medical schools.
Discussion HBV serology interpretation is an important, yet tricky, component of undergraduate learning, and is generally taught poorly at medical schools. The understanding of these results is an invaluable skill in fields such as emergency medicine, gastroenterology, genitourinary medicine, and occupational health. Herein we have proposed a structured, colour-coded diagram that explains the difference between the hepatitis B virus and vaccination, and aids analysis of serology results. Although this diagram was not 100% effective in improving serology interpretation, it showed a general improvement in understanding and confidence on the topic as a whole.

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Theme: Teaching About Specific Subjects

Accepted as: e-poster

Paper no. 267
North Bristol: A Green Academy

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https://youtu.be/Ub4SOxw91AY

Background Recognising the massive environmental impact an organisation linking a medical school to an NHS trust has, we looked to progress our academy's practical and educational approach to climate action. Engaging our students and staff in a 'Green Academy' campaign we used various initiatives to promote climate-positive workplace practice. Students' behaviour developed across several domains, with student sustainability champions playing a key leadership role. Promoting a culture aligned to positive climate action has improved our practice, as well as preparing students as future healthcare leaders.

Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Oral Presentation in Parallel Session

Paper no. 268
A survey of online content utilisation and content needs for a video learning platform in orthopaedic surgical training

Author(s): Akash Soogumbur, Mohannad Ammori, Luke Hughes, Ronnie Davies
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Background Online learning material is increasingly being used throughout postgraduate medical training. There are numerous commercial and independent resources available with differing formats and educational content. We conducted a survey of North West orthopaedic speciality trainees to understand current usage patterns of online media, preferred formats and the future needs for online content. This also assessed the requirements of regional trainees to inform the development of a unified virtual learning environment (VLE).
Methodology All speciality trainees in the North West Deanery were included in the study representing a regional cohort of 72. A 13-item online survey tool derived on previous literature (1,2) developed by the investigators was distributed to all trainees. The survey was subdivided into sections to assess current patterns of online material use, preferred content media, preferred format, and adjuncts perceived to increase knowledge retention.
Results Forty-two (67%) of trainees responded to the survey, representing all levels of training from ST3 to ST8. We demonstrated that 88% of trainees view online material relating to orthopaedic surgery. Of these, 42% spend 1 to 2 hours per week and a further 29% spend 2-4 hours per week viewing online learning material. Of those who did not regularly view online material, most cited a lack of time or poor quality of information to be the factors influencing this decision.

100% of those using online material use it to address immediate clinical needs, such as in clinic or the operating theatre. 60% use this for exam revision, and over half incorporate online learning in their regular study schedule. There was equal preference for video or written content, with only 4% preferring audio media, such as Podcasts. Most would prefer a duration of surgical videos or lectures to be less than 30 minutes.

Two-thirds of respondents value the ability to review material relevant to their current sub-speciality rotation and at their own pace and convenience. They prefer videos to focus on surgical procedures (98%) and clinical lectures (95%) over case presentations or journal article reviews. No clear preference could be identified for the teaching topics to be covered in the videos from the trauma and orthopaedic curriculum. More than 80% would view recorded lectures delivered as part of their regional teaching programme even if they were unable to attend the session.

To supplement online learning, the majority of trainees (65%) felt the greatest aids to retention of knowledge were to have the regional clinical lectures to run in parallel to their current sub-speciality rotation along with an online question bank.

Discussion This is the first study of this kind to be conducted to evaluate the learning patterns of orthopaedic trainees in the UK. Most orthopaedic trainees surveyed are already using online material on text-based and video-based platforms. North West Orthopaedic speciality trainees would like to see more video formats to cover a clinical lectures and surgical procedures. There is a clear demand for a structured e-learning platform for North West orthopaedic trainees. Results from this survey should be used to match content and learning needs. Program co-ordinators and educators should be aware of trainee preferences when developing and providing a video-based platform. An interactive VLE will further enhance and support training in the North West Deanery.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Oral Presentation in Parallel Session

Paper no. 269

Assessing Evidence Based Medicine skills in the workplace using a Supervised Learning Event (SLE) in medical students' e-portfolio

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Background There is considerable variation in Evidence Based Medicine (EBM) teaching in UK medical schools with little provision for teaching students the skill of applying EBM to real clinical practice (1). Recent policy and evidence indicate that effective teaching of EBM must incorporate a move from classrooms into clinical practice and that multi-faceted, clinically integrated approaches with assessments provide a more effective teaching and learning experience (2-4). In the University of Buckingham Medical School (UBMS), EBM has been integrated as a spiral longitudinal theme throughout the MB ChB course. Students are encouraged to apply EBM skills in real-life encounters during their clinical placements. We have further designed a novel educational intervention and assessment tool -the EBM supervised learning event (SLE) in students' e-portfolio. SLEs are routine assessments of student performance in the workplace'. This study evaluates the feasibility and impact of incorporating an e-portfolio based intervention aimed at integrating teaching and assessment of EBM in clinical practice in a cohort of UK medical students.

Methodology SLE templates were based on educational prescription model developed by the University of Wisconsin (5). The EBM SLEs guide students through the five steps of EBM- asking an answerable clinical question, acquiring evidence, appraising evidence and applying it to patient care. The tool also captures students' reflections about whether the evidence changed patient care and learner satisfaction. Clinical block leads were informed of the new tool in the students' e-portfolio and asked to encourage students to use EBM skills during clinical placements. Students in the fourth year (n=65) were asked to complete at least one EBM SLE during their clinical placements. The SLEs were signed off by clinical or educational supervisors in the students' clinical placements.

Results 62 SLEs have been submitted to date (one per student). Of the six clinical rotations, most of the SLEs were from acute medicine, cancer and child health Blocks. 56 SLEs (90%) addressed foreground questions, researching information to inform a clinical decision, such as drugs, treatments, prognosis, diagnostic tests, harms and benefits of treatments. Five SLEs (10%) addressed background questions, researching general information such as mechanism of action of drug, incidence and prevention. Students used evidence from pre-appraised databases, such as the Cochrane library, NICE guidelines, NICE evidence and UpToDate. The majority of students completed their reflection in the SLE in less than 2 hours. 42% of students felt the EBM assignment confirmed their clinical decision; 40% felt that it had no effect on the decision; 10% felt it would have changed the plan if they had the information earlier; while 8% felt it changed the decision. 89% agreed that the task was useful for the patient. 60% of the students were satisfied with this new educational intervention.

Discussion It has been feasible to integrate teaching and assessment of EBM in clinical practice in undergraduate medical curriculum. Students have reported an impact on patient care and most of them have found it useful. EBM SLEs in students' e-portfolio can help in assessing day to day application of EBM in clinical decision making; a skill highlighted in Outcomes for Graduates (2018). Students engaged well with the new assessment, were satisfied with the task and reported an impact on the clinical decision. Most of them have found it useful for the patient. They can also be used by medical schools as formative assessments to help students document their acquisition of EBM competency and encourage reflective practice. Further research is needed to test the reliability and validity of this new assessment.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Oral Presentation in Parallel Session

Paper no. 270

Improving Inpatient Education: Bringing Mini Chalk Talks to Handover

Author(s): Shefali Parikh, Finbar Slevin
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Background Feedback from junior doctors in the haematology/oncology department identified deficiencies in teaching during their 4-6 month rotation. A weekly higher specialty trainee-led and delivered teaching programme was introduced to address this feedback. The aim was to introduce 'bite sized' teaching using a chalk talk methodology based on the principles of near peer learning.

Methodology The design of the mini chalk talk programme (Pitt and Oralnder, 2017) was mindful of the time pressures of an inpatient service. The programme underwent an iterative process over 3 months and evolved into weekly mini chalk talks that lasted 15 minutes and were delivered directly after the morning departmental handover. Topics were identified that corresponded to haematology/oncology-related learning outcomes for foundation programme and internal medicine trainees. Emphasis was placed on clinical reasoning, step-wise management on inpatient problems and relevant pathophysiology. The chalk talk method involved teaching using diagrams drawn in real time rather than slides and was designed to be interactive. Supporting case materials were provided for trainees to use after each teaching session. The educational impact of the teaching was

determined using qualitative feedback, a comparison of trainees' self-rated knowledge about the topic before and after each session using a Likert scale and general programme evaluation performed 3 months following the introduction of the final version of the programme.

Results Self-rated knowledge regarding each topic was scored by trainees using a Likert scale from 1 to 5 (ranging from inadequate knowledge to full confidence in applying knowledge to clinical practice). 81 paired scores from 10 chalk talk sessions were analysed and there was a statistically significant improvement in the median self-rated knowledge from 3 pre-mini chalk talk to 4 post mini chalk talk (Wilcoxon signed rank test p value 0.00001) objectively demonstrating Level 2 Kirkpatrick's level of learning. In general programme evaluation, 100% of trainees agreed or highly agreed that the mini chalk talks were interesting, useful and that they found the learning style appealing. Furthermore, 100% of trainees agreed or highly agreed that the chalk talks had informed their behaviour and clinical practice (self-evaluated Kirkpatrick Level 3 behavioural change).

Discussion Introduction of 15 minute chalk talks for haematology/oncology junior doctors improved their educational experience, trainees' knowledge and informed their behaviour and clinical practice.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Oral Presentation in Parallel Session

Paper no. 271
Parallel surgeries in undergraduate medical education: perceptions of active learning

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Background Parallel surgeries are a teaching method employed throughout undergraduate and postgraduate primary care education. They involve the student consulting with patients and formulating their own clinical assessment independently before calling in the supervising GP to discuss their impressions and recommendations, usually with the patient present. A literature gap was identified surrounding the implementation of parallel surgeries in UK undergraduate education. Consequently, there is little consensus on optimal teaching in parallel surgeries. Our aim is to describe the perceptions of this educational tool from student, patient and doctors' perspectives.

Methodology We conducted semi-structured interviews with the students, GPs and patients directly following parallel surgeries at four UK practices within the Northern region. The interviews were transcribed verbatim and analysed collaboratively using thematic qualitative data analysis.

Results The overarching themes identified were 'active learning versus passive learning', 'progression- bridging the gap between student and doctor', 'roles', 'challenges' and 'benefits'. Discussion of roles featured extensively and the challenge of 'role management/conflict' between the GPs and students was evident. The GP could hold one of many roles (practitioner/facilitator/supervisor/teacher/service delivery) and the student strived to act as 'practitioner'. Challenges were separated into subthemes of 'individualistic nature', 'role management/conflict' and 'patient sensitivity'. Benefits were identified for all three parties. Experiences of feeling 'legitimate/validated' were emphasised by the students as a main benefit.

Discussion Parallel surgeries are generally perceived as positive experiences with a plethora of benefits for students, patients and GPs. Whilst challenging at times, solutions and ways of negotiating challenges were demonstrated suggesting these can be overcome. When conducted expertly, parallel surgeries are predominantly an active learning experience that allows the student to progress, taking the next step up the ladder to becoming a doctor, building confidence and skills successfully in a legitimate and valid role. Role awareness and consideration could be beneficial as there is a complex interaction and dynamic of roles within the consultation, particularly for the GP.

Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Short Communication

Paper no. 272
Barriers to Teaching on Surgical Ward Rounds

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Background No research in the UK has looked at the prevalence of teaching, or barriers to it, on surgical ward rounds (WRs). WR teaching has traditionally been a key opportunity for senior surgeons to enthuse and inspire juniors to attract them into surgical training. On medical WRs competing demands between providing patient care and education has been described as a significant obstacle to clinical education (1-3). The GMC identified skills imperative to being a doctor are best taught in clinical environments and continue through early postgraduate training therefore this should be part of daily clinical life (4). Therefore this paper undertook a review of WR teaching to see if it is taking place and if not to identify the barriers to it.

Methodology An adapted validated (1) anonymous paper questionnaire was distributed by hand to FY1 and SHO grade doctors in General Surgery. This was done in November 2019 in a UK tertiary referral centre and results were then collated and analysed.

Results A total of 18 respondents across 3 specialties (Vascular, Upper GI, Lower GI) responded to the questionnaire. Twelve were female, 6 male and average age was 26. Nine respondents were FY1, two were FY2, two trust grade SHOs and three Core Surgical Trainees. On average, respondents participate in 4 consultant WRs and 1 Registrar WR per week. 6% of time on the ward round was felt to be dedicated to teaching. 11.1% strongly agreed and 83% agreed that the learning experience of WRs could be improved.

Time was considered the main barrier to teaching on WRs with all respondents agreeing or strongly agreeing to this statement. The emphasis on 'getting the ward round done' was also frequently cited with 44% (n=8) strongly agreeing. The free text comments echoed this commenting "consultants generally don't wait for juniors to finish writing in notes let alone take time to explain" and "can be quite rushed". Most respondents felt frequent team changes are a significant obstacle to learning (72%, n=13). Ward environmental factors such as noise, mealtimes and lack of privacy were not considered to be barriers.

WRs were considered a good opportunity to learn diagnostic imaging, radiology and patient management as well as surgical complications. Other important components such as history taking and understanding basic sciences were not felt to be able to be developed in a ward round environment.

Most respondents felt it is important for learning to be able to discuss patients away from the bedside (78%, n=14). However, this is achieved in just 55% of WRs. Suggestions to improve the educational value of WRs from respondents include specific time during the ward round designated to teaching with individual trainees presenting specific patients or time following the ward round, with refreshments, to discuss identified points in further detail.

Discussion 94% of juniors felt educational value of ward rounds could be improved. However, whilst doctors felt that 6% of the ward round is dedicated to learning it is likely that further informal learning is taking place (5). It has been suggested that additional signposting of learning opportunities may help to make this more explicit (3).

In addition to impacting on learning, the ward round time pressures could have an impact on clinical care, based on the logic that if consultants are not clearly communicating reasoning for such scan, it can make the junior doctors ability to prioritise jobs harder.

There is a slow decline in applications and interest in surgery as a career (6). Ward round teaching could be a cheap intervention to increase numbers and decrease drop outs, by role modelling and inspiring junior doctors (7,8). We would like to widen this research to see if this is a local issue or national.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Short Communication

Paper no. 273
Becoming professionals: final year medical students' experiences of professional identity formation

Author(s): Henry Peake
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Background Professional identity formation appears to be at the heart of medical education (Holden et al., 2012, pp. 246). The transition from lay individual to medical practitioner requires students to exhibit and internalise the values, beliefs and behaviours that define the profession (Arnett, 2000; Schwartz et al., 2005). Students must develop professional identities if they are to become confident and competent doctors capable of shouldering the responsibilities and requirements of their working lives (Beagan, 2001; Lingard et al., 2003). This appears most influenced by student participation in clinical environments; however, the processes by which this happens are inadequately understood and require further research to improve undergraduate education.
I aimed to explore how final year medical students come to define themselves as professionals as they participate in clinical environments, in order to suggest ways professional identity formation can be supported.
Methodology Using a phenomenological approach, in-depth one-on-one interviews with four final year medical students were conducted. Data were analysed using Interpretive Phenomenological Analysis.
Results Four major themes were identified as key experiences for professional identity formation: Acceptance and Inclusion, Confidence and Self-Efficacy, Responsibility and Independence and Acting like a Doctor. Acceptance by staff appeared to produce positive emotional outcomes for students increasing their confidence in their abilities and enabling them to see themselves as legitimate members of the professional community. By participating in clinical environments students were able to learn and practice the professional roles they would be adopting and come to see themselves as professionals. Short rotations and pressures to meet assessed outcomes were identified as threats to participation and identity development.
Discussion Whilst caution must be applied to transferring and generalising this investigation's findings and further research is needed, this study offers insight into the experiences of professional identity formation and adds to the debate over whether it is the classifications of others or performative aspects which most influence professional identities, suggesting they cannot and should not be separated.
This study suggests supporting and facilitating student acceptance and participation in clinical settings will help aid students to define themselves as professionals. This study proposes this could be achieved through longer rotations and providing student apprenticeships after final exams, addressing the tendency of students to learn for assessed outcomes at the expense of the more tacit skills and behaviours required to be a doctor .
This study argues understanding and supporting professional identity formation in clinical environments is pivotal for producing confident and competent doctors and for delivering the excellence in medical education demanded by 'Tomorrow's Doctors'.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Short Communication

Paper no. 274
Buddies for budding doctors – the introduction of a 'Ward Buddy' scheme to improve ward engagement at Swindon Academy

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Background During a 6-week clinical placement, final year medical students from Oxford University were noted by teaching staff to be spending minimal time on the wards and practicing the associated skills. A survey distributed to the students corroborated this and they reported several obstacles to ward-based learning, including being 'ignored' and staff being 'disinterested'. A teaching and mentoring scheme in the form of 'Ward Buddies' was hypothesised to be an effective way of improving student engagement in ward-based learning better preparing the students for clinical practice, based on similar projects reported in the literature (1,2). A pilot scheme was introduced for final year medical students and is ongoing for 4th year students.
Methodology 'Ward Buddies' were recruited from Foundation Year 1 and 2 doctors by circular email. 2 groups of 10 final year students undertook a 6-week placement at the Great Western Hospital, Swindon. At the start of their placement the students were informed of the ward buddy scheme and their buddy's details. They were encouraged to arrange an initial meeting and subsequently to contact their Ward Buddy when they were not in teaching to undertake supervised ward-based learning. A survey was distributed to students at the end of the placement to establish their engagement with ward-based learning and whether they had met with their buddy.
Results Before the introduction of the Ward Buddy scheme, 80% of students were spending 5 hours or less on the ward each week. There was no change in the self-perceived readiness for Foundation training for any student over the course of the placement; on a scale of 1 (least prepared) to 5 (most prepared), the average was 2.6 at both time points. On the same scale, the average confidence of students in going onto the wards during their placement was 2.8 (median = 3).
After the Ward Buddy scheme was introduced, only 30% of students were spending 5 hours or less on the wards, with 50% of students spending over 10 hours. The mean confidence of students in going onto the wards (on a scale of 1-5) increased by 15% to 3.2 with the Ward Buddy scheme in place, while there was also an increase in the students' perceived preparation for Foundation training from 3 to 3.8 over the course of the placement.
Unfortunately only 10% of students successfully met with their Ward Buddy, with many citing their upcoming exams as a barrier to this. 100% of students who had met with their Ward Buddy strongly agreed that the scheme made them feel more comfortable going onto the wards and improved their clinical education during the placement.
Discussion Our results demonstrate a clear improvement in student confidence to go onto the wards following the introduction of the Ward Buddy scheme, as well as an increase in the number of hours that students were spending on the wards. Since the scheme was introduced, there has also been an improvement in the preparatory value of the placement for Foundation training.
There were a number of limitations to our study. These include a small sample size, recall bias as to the students' self-perceived readiness for Foundation training at the start of the placement, and selection bias, as students who voluntarily completed the survey may not be representative of the entire student cohort. The proportion of students who actually met with their Ward Buddies was also relatively low, likely due to the students' imminent final exams and their opportunity

to undertake a 'Preparation for Practice' placement after completing these. However, it is possible that the students felt more confident to learn on the wards in the knowledge that a Ward Buddy there if required, irrespective of whether they actually met with them.

We intend to make student contact with their Ward Buddy compulsory during the placement, and to shift the Ward Buddy scheme to benefit 4th year students. We hope to gain more qualitative data on the benefits of the programme, including perceptions of Buddies as well as students.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Short Communication

Paper no. 275

Clerking versus classroom: is clinical exposure or classroom teaching more effective in improving medical student competence in Paediatrics?

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Background Paediatrics poses problems in medical student education, with lack of familiarity communicating with children, senior-led care and brief hospital stays potentially preventing clinical learning. Classroom sessions can bridge this gap but cannot offer situated learning[1]. OSCEs (objective structured clinical examinations) are a valid and reliable tool used in medical schools to assess medical student performance. We question whether clinical exposure, measured through number of patient clerkings and clinic attendance, or classroom teaching yield greater improvements in medical student competence in Paediatrics, assessed objectively through OSCE performance. While qualitative studies have compared clinical and classroom teaching in nursing and dental education[2,3], this is the first known study to quantify the comparison and correlate to academic outcomes in Paediatrics.

Our aims in conducting this study were to assess correlation between:

1. Clinical exposure to paediatrics and OSCE performance
2. Classroom exposure to paediatrics and OSCE performance
3. Compare effects of clinical versus classroom exposure on OSCE performance

Methodology We performed a study of Year 4 medical students undertaking a paediatrics rotation, including clerking paediatric patients, attending clinics, and undertaking a practice OSCE involving 2 simulated paediatric consultations. Participation was voluntary, with written consent from participants and full ethics approval from the University of Bristol. We collected anonymised data on participants' clinical exposure through number of clerkings and number of clinics attended documented in their portfolio, and classroom teaching was recorded as attendance at taught seminars (%). Competence was assessed by performance in a formative paediatric OSCE (mark out of 50). Multivariate analysis will be performed with the completed dataset, to assess if variables independently predict OSCE performance. Data collection will conclude in May 2020, with approximately 100 possible participants.

Results Data has been collected from 26 participants to date and analysis is ongoing. Pilot data show that students have clerked a median of 8 patients, attended a median of 6 clinics and have a mean OSCE mark of 38 out of a possible 50. Statistical analysis is ongoing and will be completed following data collection.

Discussion We hypothesise that greater clinical exposure will be associated with superior medical student performance in a paediatric OSCE, due to the patient group in Paediatrics often being alien to medical students and familiarity dealing with young patients and families being impossible to achieve in a classroom setting. Despite obstacles in achieving clinical exposure in Paediatrics we predict that this will be the most significant predictor of performance in OSCE, which would suggest that paediatric rotations should strive to maximise clinical exposure for medical students.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Short Communication

Paper no. 276

Design and Evaluation of a New Surgical Assessment

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https://youtu.be/aIx1y--hmoc

Background Surgical skills assessment has low perceived educational benefit. The focus is on completion of the assessment forms, rather than the learning that comes out of the process. Trainers and trainees find that completion of assessment forms is too time-consuming. The rating scale has a profound floor-and-ceiling effect, making it difficult to demonstrate progression. We present the evaluation of a novel, concise assessment form using Kirkpatrick's model that was designed to refocus surgical assessment on what matters Parts of this assessment have now been adopted by ISCP.

Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Short Communication

Paper no. 277

Great Expectations – student expectation of Obstetrics and Gynaecology at St Michael's Hospital, Bristol

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Background The Reproductive Health and Care of the Newborn (RHCN) placement is an 8 week placement in the fourth year at the University Of Bristol Medical School. Students are placed in an Academy which is based around a hospital. Students at the South Bristol Academy have their 8 week placement at St Michael's Hospital, a tertiary maternity hospital, with a level 3 neonatal intensive care unit (NICU). The majority of their placement is clinical, but students also have tutorials, lectures and small group teaching. At the end of their placement they have simulation training and OSCE practice.

For many students, this is the first time they have experienced Obstetrics and Gynaecology (O+G), which is a unique specialty combining medicine and surgery. It may also be the first (and last) time they witness a baby being born. Students satisfaction is borne from student expectations and if they are fulfilled or not (Oliver, 1996). Students are more likely to leave their course if there is discord between their expectation and experiences (Smith and Hopkins, 2005). The aim of this research was to gather students' expectations prior to starting the placement to see if there were any particular teaching sessions we could deliver to achieve harmony between their expectations and experiences.

Methodology An anonymous online survey was emailed to students three weeks prior to starting their RHCN placement at St Michael's. They were asked questions on demographics, and relating to their expectations relating to each part of the placement: Obstetrics, Gynaecology, Sexual Health, and Care of the Newborn. They were specifically asked if they were apprehensive about anything.

Results There has been one round of questionnaires so far – the results from the questionnaire prior to starting the placement have been completed.

Response rate was 82%. 17 students were aged 18-22 years old, 1 was aged 23-25 years old, and no-one had children. 2 students had prior experience in O+G.

Students were worried about not being able to experience/see things as male, doing intimate examinations, theatre and seeing miscarriages and meeting learning needs but not getting in the way or getting burnt out during their placement.

2 students said they were worried about Obstetrics – being in theatres, and being allowed to be at a delivery. 2 students were apprehensive about Gynaecology – ensuring women weren't embarrassed at the student being there, and performing intimate examinations. None of the students were apprehensive about neonatal or sexual health.

When asked where they would go for support if they were affected by any of the topics, answers included friends, clinical teaching fellows, family and course tutors.

A post-placement questionnaire will be sent to students in their last week of placement to see if they felt these concerns were addressed and if they feel less apprehensive about O+G.

Discussion Most apprehensions were about intimate examinations and worries about being male, or being allowed to be part of deliveries. For the majority of students, O+G, was completely new to them. O+G does involve intimate examinations, that aren't done by other medical specialties. As clinical teaching fellows we help students feel less nervous and teach them how to perform examinations in order to reduce these worries. After seeing the results, we made examinations on pelvic models a compulsory component of their course – previously it was optional. It will be interesting to see if this helped to reduce their apprehension around examination when they examined real patients. We ensured that they were able to come and talk to us about any barriers to clinical experience, and if they were affected by anything they have seen, we were there to talk to them about it. We spoke to students about theatre and what they may see in theatre; we advised them about theatre etiquette and what they could do to enhance their theatre experience. We hope the results of the post-placement questionnaire reflect changes we have made.

Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Short Communication

Paper no. 278
Impact of formal peer-led and tutor-led feedback on quality of third-year students' medical documentation

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Background The skill of writing clear, accurate and complete medical notes is an essential duty recognised by the General Medical Council to ensure timely and appropriate patient care[1]. Poor documentation risks medical error and poses a litigation risk[2]. Third-year medical students at the University of Bristol practice documenting patient reviews through a 'clerking' portfolio of 37 patient cases, which are verbally presented to doctors and reviewed by tutors at appraisals[3]. We aimed to evaluate the impact of a formal teaching on the progression of students' clerking documentation.

Methodology Tutorials comprising of clinical tutor-facilitated, peer-appraisal of clerking cases using example documentation were delivered to four groups of third-year medical students, mid-way through their first clinical placements. We retrospectively assessed two clerkings from 15 students (2-5 in each group), equally spaced during a six-week period before and after the intervention session. Clerkings were anonymously assessed by two markers with prior instruction using a modified version of the Physician Documentation Quality Instrument (PDQI-9)4 5-point scale for the following attributes: thorough, useful, comprehensible, succinct, synthesised, internally consistent. They were also assessed for inclusion of errors, the date and time, and document headings. Data were analysed for the median and interquartile range and a 1-tailed Mann Whitney U test was performed using IBM SPSS Statistics for Windows® (v. 16) assuming non-parametric, ordinal data range.

Results Data collection is still ongoing. Using the percentage alignment model, interrater agreement was low (40-55.6%). The data, expressed as median with interquartile ranges (IQR) for the pre- and post-intervention demonstrated no significant differences in any category: thorough 4(1) vs 3(2) (p=0.24); useful 4(1) vs 3(1) (p=0.36); organized 4(1) vs 5(1) (p=0.09); comprehensible 4(0.75) vs 4(1) (p=0.19); succinct 5(1) vs 5(1) (p=0.41); synthesis 2(2.5) vs 2(2.25) (p=0.2); internally consistent 4(1) vs 4(1.75) (p=0.21). Similarly, there was no reduction in errors (p=0.27) post-intervention, nor did students' documentation of the date and time (p=0.4) nor labelling their documents (0.39) improve post-intervention.

Discussion Skills of good documentation is a key issue for students to develop early. Although our data are incomplete, it currently suggests that tutor-facilitated, peer-appraisal of clerking documentation did not improve the objective quality of the student's work, although anecdotally, the students suggested they highly valued the sessions. One explanation of this is because the students scored relatively highly (4-5) pre-intervention on most categories using the PDQI-9 model, and given our current clerkings (15), there wasn't enough power to demonstrate significance. The data do highlight, however, that students struggled most with synthesis (of clinical problems) given their low median values (2). This correlates with the students' subjective views, that formulating problem lists is where they had most difficulty and perhaps where further intervention should lie. As some students prefer written to oral feedback, we plan on providing full written feedback to students on their clerking documentation, with the continuing aim of improving the objective quality of clerking documentation.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Short Communication

Paper no. 279
Improving Foundation doctors satisfaction and clinical confidence within their psychiatry rotation at Southmead Hospital by creating a new teaching programme

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Background Mental health is rapidly becoming recognised as one of the main public health issues around the world, with increasing population needs(1). Doctors in all specialties require a solid grounding of psychiatry: Nearly a quarter of the UK population will suffer with a mental health illness during their lifetime(2).

Recruitment to psychiatry remains an issue(2). Evidence suggests that postgraduate exposure is one of the most important determinants of choosing a specialty, and influential placements can even change prior career choices(3): Foundation doctors who undertake a 4-month rotation in psychiatry are almost 10 times as likely to apply to become a psychiatrist(2).

Research suggests that learning opportunities and feeling a valued member of the team are critical to a Foundation doctor's experience of a rotation(4). Psychiatry in particular has many concepts unique to the rotation, and the Royal College of Psychiatrists have recommended the creation of a specific mental health teaching programme for Foundation trainees rotating through psychiatry(2). Formal teaching can increase confidence and a meaningful rotation, and could increase recruitment to the specialty(5).

Southmead Hospital does not have a formal teaching programme for Foundation Trainees rotating in psychiatry. This project assesses trainee's views on teaching, and investigates whether a weekly teaching programme will improve clinical knowledge and trainee satisfaction.

Methodology A survey was sent to all Foundation Trainees at the end of their 4-month psychiatry rotation. This assessed satisfaction of formal teaching, their confidence in their psychiatric knowledge going forward, and whether they felt there had been appropriate forums to ask questions. A teaching programme was designed to broadly reflect the curriculum suggestions as outlined by the Royal College of Psychiatrists(2), as well as from gaps in knowledge highlighted by the

Junior doctor forum and our baseline survey. Topics were delivered in a weekly hour small-group tutorial by previous psychiatry Foundation trainees (peer-to-peer teaching), specialist registrars and consultants. This course will be repeated for each cohort of rotating Foundation trainees.

Results Prior to our teaching programme, only 20% of trainees felt satisfied with the amount of formal teaching they had been given, and 0% agreed that the teaching had been specific and aimed at their level. 40% of trainees were not satisfied with their psychiatry knowledge for their future careers, having had a rotation in psychiatry, and mean ratings for specific knowledge of psychiatric topics was 5 out of 10.

In progress: Further surveys will be dispensed at the end of each 4-month rotation, as well as an audit on seclusion review documentation compared to CQC guidance pre and post initiation of the teaching programme.

Discussion Specific psychiatry teaching is important for clinical knowledge and patient care, trainee contentment, and recruitment to psychiatry. Foundation trainees at Southmead Hospital had no formal psychiatry teaching, and were not satisfied with the learning opportunities available or their own psychiatry knowledge. As a QIP, we created an educational teaching programme, and will re-audit to evaluate for any positive impact on trainee satisfaction, confidence or clinical competence.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Short Communication

Paper no. 280

Learning on the acute take: a medical student perspective

Author(s): Dr Luke Rutter, Dr Bethany Brockbank, Dr Sarah Clements, Dr Charlotte Hayden, Dr Abhishek Oswal

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Background A key part of the undergraduate medical curriculum is learning how to assess and manage acutely ill patients (1). The acute take has the potential to provide a range of clinical exposure required to learn these skills (2). Unfortunately, anecdotal evidence from local medical students suggests that they struggle to benefit from these learning opportunities, whilst doctors often feel unable to meet the learning needs of students while working on a busy medical take. The primary aim of this study was to understand students' lived experience of learning on the acute take. Our secondary aims were: to identify factors that contribute to positive learning; to identify common barriers to learning during the acute take; and to establish suggestions for improving the educational experiences during the acute take.

Methodology Third year medical students were invited by email to take part in semi-structured focus groups facilitated by a member of the teaching team. The focus groups were held in locations away from the workplace and all efforts were made to prevent interruption. All focus groups were audiotaped and subsequently transcribed verbatim. Grounded theory was used, and transcripts were independently analysed by three researchers using thematic analysis (3,4). Sampling is planned to be continued via an iterative process with further focus groups until saturation is reached. Ethical approval was granted by the Faculty Research Ethics Committee (ID 93362).

Results Results suggest that learning on the medical-take is a diverse and variable experience. Students report developing explicit skills related to consultations, investigation interpretation, management planning and procedures. Less explicitly, they also recognised the value of exposure to functional aspects of clinical work such as the contribution of different teams in the delivery of acute care and what the medical take is. The approach to learning is typically case-based and students value the apprenticeship-style of learning; they benefited from proactively seeking opportunities for learning and supervision from other MDT members.

Commonly emerging challenges include the students' perceived lack of learning goals and a poor understanding from supervisors about a student's ability and objectives. Furthermore, supervisors were often difficult to locate and subsequently not expecting the student's presence. Reports were common of feeling useless and like a burden on an already busy doctor.

Reflections on potential areas to improve range from simple to complex. Simple suggestions include arriving for the morning handover to better locate supervisors and feel more engaged in the team, to improving doctor and student education to increase expectations and highlight learning opportunities. More complex interventions discussed include altering proposed shift duration and frequency and initiating a fellow on the take specifically there for teaching; both of which received mixed reviews.

Discussion This study has provided an interesting, early insight into the perception of learning on the acute take. The varied learning opportunities are highly educational for explicit skills and knowledge and more implicit functional aspects. Our work has shown that small and achievable changes are possible and could make a significant difference to the students' experience. Future focus groups will include students with insight from multiple hospital trusts in the Severn Deanery, allowing for a wider understanding of important factors affecting experiences.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Short Communication

Paper no. 281

Understanding junior doctors' experiences of teaching on the acute take: a mixed-methods study

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Background Learning the key skills in recognition and management of acutely ill patients is vital for undergraduate medical students(1). A common approach to ensuring undergraduate exposure to acutely ill patients is through clinical attachment to junior doctors working in acute care settings(2). Our study aimed to explore junior doctors' experiences of teaching undergraduates on the acute take.

Methodology Fourteen junior doctors from FY2 to CT2 (equivalent) with an expressed interest in medical education completed a short web-based questionnaire before taking part in semi-structured focus groups (4-6 participants in each group) which were audio recorded. Transcriptions were coded independently by two coders (CH, AO) and analysed thematically using NVivo® software.

Results Most junior doctors (86%) reported having medical students attached to them for 'most' or 'occasional' shifts and that they typically spent 2-4 hours with them per shift (50%). Eleven respondents reported it was difficult to find time to teach and only 36% felt their teaching was effective. The majority felt it was difficult to find useful resources to supplement teaching (86% agreed) and that

teaching is 'rarely' or 'never' planned (79% agreed), but most still felt they delivered teaching relevant to students' needs (57% agreed).
Focus groups highlighted key factors in education provision including need to ensure adequate supervision, continuity of attachment to clinical teams and the broad range of knowledge and skills that can be gained through attachments. Team factors included approachability and a senior-driven culture of teaching. Junior doctors highlighted their own lack of confidence of managing acutely unwell patients and perceived deficiencies in their knowledge and ability to teach effectively, which is reflective of previous findings(2). They identified anxiety over supervision of students and competing pressures to deliver service alongside providing engaging teaching – which is corroborated by previous work from the Royal College of Physicians(3).
Service factors included a need to maintain patient safety which is recognised as a key priority of the CQC in the delivery of education(4) and highlighted a need to provide a clearer role for students which echoes previous research findings(5, 6). Resource factors including availability of patients, computer facilities, physical space and dedicated resources to support teaching, were also recognised. These results are interpreted in context of the increasing demands and reduction in real-terms funding seen by acute-care services in recent years(7, 8). Doctors also recognised the clinical acuity and complexity of patient cases as important factors, which could reflect an increase in a comorbid ageing population attending secondary care(8, 9).
Discussion This exploratory study provides valuable insight into the provision of teaching and focus for targeted improvement to the delivery of education in an educationally valuable but clinically pressured environment.
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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: Short Communication

Paper no. 282
Understanding the Barriers to Medical Students Learning in Theatre

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Background Operating theatres offer medical students great learning opportunities in anaesthetics and surgical specialties. However previous research shows that many students are reluctant to attend theatre and take up these opportunities. (1) In this study we explored what the potential barriers to student attendance in theatre might be, both from the point of view of the students and the doctors. Armed with this knowledge, new teaching interventions can be designed to specifically overcome perceived barriers and increase student engagement in learning in the theatre environment.
Methodology Student attitudes were explored through a series of focus groups. Students in their first year of clinical medicine were invited to discuss their thoughts on attending theatre. Subsequent thematic analyses of the transcripts were undertaken in order to identify the main themes that had emerged.
In addition, a questionnaire was circulated to surgeons and anaesthetists. A series of 1-5 Likert-scale questions were answered detailing respondents' experiences of having medical students present in theatre.
Results The main themes emerging from the focus groups regarding students' attitudes towards learning in theatre were as follows:
Theatre is an exciting place to learn Theatre is an intense/high pressure learning environment Not understanding the logistics of attending theatre is a barrier Students worry about not knowing theatre etiquette (where to stand, what not to touch etc) Students are unsure of the roles of the wider MDT Students feel they lack certain clinical skills required to help in theatre. Students would like to have more of a role in the team
Sexism against female students is something they worry about in theatre. The survey of doctors showed that teaching medical students is something they enjoy (88% positive response rate). However, only 36% of respondents agreed that students were proactive in seeking out learning opportunities. 36% agreed that students were sufficiently well prepared to attend theatre and no respondents agreed that students came to theatre with a good knowledge of the day's cases. 48% of doctors felt that students were punctual, with 60% agreeing that students were good at introducing themselves at the beginning of the day.
Discussion This work highlights a number of clear barriers to student attendance and engagement in learning in the theatre environment. Simple steps can be taken to provide students with the skills and knowledge they need to feel more comfortable in theatre and understand what is expected of them. At our hospital we have used this information to contribute to the design of a one day surgical and anaesthetic skills and simulation course which seeks to address the barriers highlighted.
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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: e-poster

Paper no. 283
Improving engagement of medical students in theatre

Author(s): Katherine Turner
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Background East Lancashire Hospitals NHS Trust (ELHT), which comprises Burnley General and Royal Blackburn Teaching Hospitals, is one of the largest acute trusts in the UK and provides both secondary and tertiary services to a catchment area of 650,000 patients. It is also provides clinical education and training for medical undergraduates from the region's two medical schools [Lancaster & UCLan].
An integral part of medical undergraduate training takes place within the surgical theatre environment where there is a wide-range of rich learning opportunities. We have identified certain challenges and potential barriers to learning in the theatre environment, they can broadly be classified as challenges of theatre environment and culture; theatre staff concerns regarding trainees and the student's own concerns.
The theatre environment and culture can pose a challenge because of worries about security and identification issues. Theatre staff have previously raised concerns over trainees in theatre in terms of identification, learning outcomes, professionalism, skill set required and impacts of students within theatre. Students have raised their own concerns about learning within the theatre environment; it is a very different to other learning environments within the hospital, it is often particularly busy, there are often issues about identifying themselves and other professionals in theatre and taking ownership over their own learning.
Methodology 1. Online questionnaire sent to nursing staff in theatre on the anaesthetic and scrub side.

2. Responses analysed to identify themes in relation to staff responses and challenges identified.
3. Standard Operating Procedure developed based on responses and fed back to respondents for comment
4. Series of engagement talks given to theatre staff regarding students in theatre. This will be repeated at the start of each attachment [then semester when established] to staff & students.
5. For the purpose of this QI project. Online questionnaire will be sent to same staff following a surgical attachment.

Results We have identified themes in relation to staff responses in terms of feelings towards having medical students in theatre. We have also identified ways that we can improve the engagement of theatre staff with students in theatre by highlighting to the theatre staff key learning opportunities that they can participate in. We have also introduced a written 'Student Agreement' for the students to follow that encompasses their behaviour in theatre and what to expect.

Discussion The surgical theatre environment offers a wide-range of rich learning opportunities to medical undergraduates, the nursing staff in theatres are in a unique position to be able to help in the delivery of medical student teaching. By highlighting to students the importance of theatre etiquette and highlighting to staff the key role they can play in teaching in theatre we hope to improve both the staff and students experience in theatre.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: e-poster

Paper no. 284
Improving FY2 Preparedness for Emergency Department Rotations in a busy Major Trauma Centre

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Background At Manchester Royal Infirmary (MRI), almost all Foundation Trainees rotate through the Emergency Department (ED) during their Foundation Year 2 (FY2) year. The ED is unlike any other rotation and clinical environment in the Foundation Programme. As a result, many juniors experience anxiety prior to their placement as they can feel underprepared for the role. The aim of this project was to draw attention to this issue and find trainee-led solutions that would help reduce any stress associated with transitioning into ED for FY2s and improve their confidence in dealing with this unique training and work environment.

Methodology Phase 1: FY2 doctors at MRI were surveyed at the start of the year to assess their current preparedness for their ED rotations. The results were analysed using descriptive statistics and presented locally to the FY2 ED Lead.

Phase 2: In line with induction requirements of the ED and the responses from FY2s two formal documents were created – a clinical survival guide and an introductory guide to address issues raised in survey responses. This was approved by senior clinicians in both the adult and paediatric ED. The guides were disseminated to the next group of ED FY2s. Additionally, the induction programme was also extended to include feedback-specific tutorials. The FY2s were then re-surveyed to assess their preparedness and confidence for their ED rotations.

Results Following Phase 1, it was found that there was a large range in the level of preparedness amongst FY2s ranging from 1–8/10. Following Phase 2 improvements the range decreased with all but two respondents rating their level of preparedness as over 5/10 with 27% responding over 9/10.

Additionally, it was found that FY2s felt the least prepared to manage paediatric conditions with average confidence in this area averaging 4-5/10 compared to 6-7/10 in adult conditions. 100% of respondents reported increased confidence in managing both paediatric and adult conditions following Phase 2 improvements.

81% of Phase 1 respondents reported that the Foundation Programme did not include enough ED-specific teaching with 85% preferring to have this during an ED-specific induction period. This correlated with 52% of respondents preferring small group teaching to large lectures. 28% reported wanting a written guide to support any formal teaching.

Discussion As we can see from the results, it was clear that prior to any intervention FY2 doctors at MRI did not feel prepared for their ED rotations, particularly in the paediatric department. Following our first intervention, Phase 2 results showed that confidence had not only improved objectively but also subjectively, with respondents reporting that they were more prepared to handle paediatric conditions following induction and receipt of the guides.

Currently we are working on Phase 3 where using the feedback regarding induction and guides collated during Phase 2, further changes are being made to improve preparatory sessions. We will resurvey the final group of FY2s at the next changeover in April and further assess any future improvements to preparedness and confidence.

In conclusion, many Foundation Trainees in the UK rotate through the ED and this can be associated with work-related anxiety due to feeling unprepared. This project has shown that confidence and preparedness amongst FY2s can be successfully improved by increasing pre-rotation education and training.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: e-poster

Paper no. 285
Medical students' perceptions of the value of teaching methods and teaching experience in the clinical setting

Author(s): Joseph Holdsworth, Rebecca Holdsworth
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Background There are recognised challenges for teaching in the clinical environment: in particular time constraints, the balance between the clinical responsibilities and teaching, an unpredictable environment, and the varying stages of professional development of the learners, such as medical students, foundation year doctors or junior registrars The clinical setting is varied and challenging, but is an important part of a medical students' undergraduate training. It is part of a duty of a doctor to teach, yet doctors are not always as confident in their teaching role compared to their clinical role. The value of a teaching method and teaching as perceived by medical students can alter the engagement of the medical student in their teaching, therefore this is a topic necessary to research. The aim of my research is to understand the perceptions medical students have regarding the value they place on the teaching they experience in the clinical setting during medical school.

Methodology This research took an interpretivist stance, following an Interpretative Phenomenological Analysis methodology. IPA combines ideas from both phenomenology and hermeneutics, creating a method which is both descriptive, and interpretative as it recognises that all phenomena are interpreted. A total of eight medical students expressed interest in participating: two fifth-year, four fourth-year and two intercalating students. Three of these dropped out. A sample size of five was suitable for the purposes of this research. Semi-structure interviews were used to collect qualitative data from five medical students at the University of Liverpool. Interviews were transcribed and analysed, this produced multiple themes. I listened to the audio recording and transcribed each interview myself as this allowed familiarity with the participants responses, I used NVIVO to aid this.

Results Twenty-nine themes and three superordinate themes were produced from the data. These demonstrate the participants' views of their teaching methods and teaching experienced in the clinical setting, and they value the perceived from these.

The interpretation of the themes, lead to the emergence of three superordinate themes, the teaching, the teacher and the learner. Due to the complexity of the

themes, these superordinate themes were not definitive, themes sometimes fell under the ideas of more than one superordinate theme. A thematic diagram illustrates the relationships between the themes and superordinate themes.

Discussion The understanding of perceptions medical students have regarding the value they place on the teaching they experience in the clinical setting during medical school is a complex matter. Teaching methods identified by participants' were broader than those recognised in the literature. The value of teaching methods changed for participants, both over the progression of their degree but also over the individual years of their degree, due to patient involvement in teaching methods and the extent to which participants' motivational factors were addressed. Participants valued greater independence in the clinical setting as they progressed through their degree, active engagement and group size also affected the perceived value of teaching. The value of teaching methods in the clinical setting changed, teaching methods were valued if they were perceived as able to address the participants' motivational factors. The extent to which teaching methods incorporated patient involvement changed the perceived value of the teaching method itself. Participants valued increasing independence in their teaching experiences in the clinical setting as they progressed through medical school. This was not well documented in literature, and so this is an area this study has helped highlight. If participants were actively engaged with their teaching, which was encouraged through questioning, increased value was also perceived. A smaller group size created a perception of more learning opportunities which was valued.

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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: e-poster

Paper no. 286
Should Teacher Training be Compulsory within Undergraduate Medical Degree Programmes?

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Background In Good Medical Practice, the General Medical Council outline the role of the doctor in teaching, training, supporting and assessing (1). Moreover, the medical profession relies heavily on doctors as teachers training the next generation. However, there is currently no formal teacher training within the University of Birmingham MBChB programme. In this study, we endeavoured to determine medical student opinions regarding implementation of formal teacher training into undergraduate medical programmes.
Methodology A questionnaire was distributed amongst third- and final-year medical students at Sandwell and West Birmingham Hospitals trust in December 2019 involved in a near-peer teaching programme. Students were asked whether they felt teacher training should be a compulsory component within undergraduate medical programmes, justifying responses. Qualitative data has been thematically grouped and is pending formal thematic analysis.
Results A majority (75%) of third year (n=32) and 53% of final year medical students (n=17) felt that formal compulsory teacher training course should be part of the medical school curriculum. Preliminary analysis of qualitative data demonstrated that both groups expressed the importance of teacher training as teaching is an expected duty of a doctor, both for trainees and patients. However, there were students in both groups that felt that teaching motivation must be intrinsic as it is only beneficial if teachers have a desire to teach. There were also concerns that formalising teacher training could pose additional pressure in addition to existing components of the curriculum.
Discussion In this study, we identified a tension between students who recognise that teaching is an expected duty of a doctor and those who felt that teaching should be left to motivated, enthusiastic individuals. This raises the question of how the autonomy to teach should be balanced against the expected duty of the doctor to teach. There is clearly a risk of training doctors who are unmotivated to teach, which clearly has profound implications for both the quality of medical training and patient safety. It is therefore important to consider how medical schools can effectively incorporate an assessment of willingness to teach into undergraduate interviews. It is also pertinent to determine the state of teacher training currently occurring at different medical schools across the UK.
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Theme: Teaching, Learning & Assessment On Clinical Rotations

Accepted as: e-poster

Paper no. 287
Using quality improvement to deliver improvements in undergraduate education within breast surgery at Royal Free Hospital

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Background Background:
The Royal Free NHS Foundation Trust has adopted the Model for Improvement (MFI) which is championed by the Institute of Healthcare Improvement (IHI) as the preferred approach to delivering improvements in patient outcomes and organisational performance [1-2]. In 2019 a pilot was undertaken to apply the MFI to undergraduate education within haematology. Results were very promising.
In the academic year 2018/19 student evaluation questionnaires demonstrated the overall student satisfaction score in breast surgery was below the target of 95%. In order to improve undergraduate education within this department the MFI has been adopted.
Breast surgery is a one week clinical placement undertaken by all fifth year students at University College London Medical School at one of three hospital sites. The most recent student evaluation questionnaires demonstrated that only 54% of students at Royal Free Hospital reported a positive experience.
Aims:
1. Increase overall positive feedback in breast surgery at Royal Free Hospital from 54% to 95% by the end of the 2019/20 academic year
2. Gain further understanding of how the MFI can be applied to undergraduate education
Methodology Measures:
Percentage of students providing a score of 4, 5 or 6 out of 6 for overall satisfaction with the placement.
Methodology
In November 2019 a project team was formed consisting of a project sponsor from the medical school, a clinical teaching fellow, breast surgery departmental undergraduate teaching leads, members of the breast surgery team, a medical student and a quality improvement coach. Focus groups were conducted in order to identify drivers for change and change ideas. Change ideas were then tested using Plan-Do-Study-Act (PDSA) cycles. Feedback was collected on a weekly basis using questionnaires and focus groups. Implemented changes were then refined through several PDSA cycles in response to the feedback.
Results At present the following changes have been implemented: appointment of departmental education lead, reintroduction of induction, modifications to timetable, and consolidation of information sent to students prior to the placement.

Initial results have been promising. After one PDSA cycle the % of students who were satisfied with the breast placement has increased from 58% (baseline feedback collected for this project) to 80%.

Discussion One of our primary drivers was to increase the amount of dedicated teaching time students receive. However despite the introduction of a weekly tutorial, the % of students who felt they had dedicated time for teaching has decreased from 67% to 20%. Based on these results and the feedback provided from focus groups we have been able to plan further timetable changes which will be tested using PDSA cycles. Although initial disappointing, it illustrates the benefits of adopting the MFI as an approach for improving undergraduate education.

Results have otherwise been positive with an increase in the % of students feeling welcome and prepared for the placement, as well an increase in overall satisfaction.

Additional changes we are planning to implement include the introduction of a student orientated section of the weekly multidisciplinary team meeting and the production and display of a poster which highlights the breast surgery undergraduate curriculum.

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Theme: Technology Enhanced Learning

Accepted as: Prestigious Oral Presentation

Paper no. 288
Barriers and Drivers to the Use of Technology Within Undergraduate Surgical Skills Training and Assessment: A Qualitative Study

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Background Despite comprising a series of core clinical competencies, medical graduates continue to remain unconfident, and potentially incompetent, with the execution of basic suturing skills [1 -4]. Technology-enhanced resources are reported as effective and reliable resources that improve clinical competence through trainee teaching, self-directed learning and assessment [5-7]. However, acceptability among stakeholders, both locally and nationally, remains unexplored across the literature. When plotted against the Medical Research Council's "framework for complex interventions", these are important data points which could potentially impact the implementation of such novel resources [8]. This study explores stakeholder perceptions of the current approaches to undergraduate suturing skills training and assessments, and the feasibility and acceptability for the use of technology-based resources.

Methodology Phenomenography was used to investigate how stakeholders conceptualise the acceptability of technology-based resources, contextualised against their current perception of surgical skills acquisition, assessment, and the wider literature. Clinical-year medical students (Year 3, 4 and 5) and staff with undergraduate clinical skills training roles were invited to participate in semi-structured focus group discussions and interviews, respectively. Sessions were transcribed verbatim. Following transcription, all transcripts were thematically analysed using a standardised thematic approach.

Results Twenty-nine stakeholders were interviewed. This comprised of three focus groups (twenty-one medical students) and eight separate faculty semi-structured interviews. Two distinct but related conceptualisations of acceptability were identified: (1) Drivers: Resource adaptability, the ability to supplement and enhance faculty-led teaching; Trainee motivation, factors which initiated, enhanced or sustained motivation within clinical and classroom environments. (2) Barriers: Feedback provision, inability to apply feedback and loss of mentor-mentee interaction; Trainee dissuasion/deterrence, limited valuation of resource due to lack of assessments, increasing diversity of training needs and delayed uptake or neglect of surgical skills; Resource awareness, limited transparency of use and impaired understanding of available resources; Overarching environments, ambient factors governing acceptability and use such as curriculum, clinical opportunities, and access to resources.

Discussion Resource acceptability is dependent on the peripheral factors around usage, and not necessarily its effectiveness or validity. Within its current format, technology-enhanced suturing skills resources are a viable and feasible tool to enhance faculty-led teaching sessions. In order to enhance its adaptability and acceptability within student-directed learning, development of the feedback mechanism is required to make it more applicable to students. Furthermore, immediate and sustainable intrinsic and extrinsic values must be demonstrated to stakeholders to initiate and propagate engagement. Therefore, currently, such resources can only supplement the existing teaching and assessment landscape.

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Theme: Technology Enhanced Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 289
A novel hybrid video e-learning and national interview course to prepare applicants for the Academic Foundation Programme - a pilot study

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Background The Academic Foundation Programme (AFP) is a variation of the foundation training in the first two years following graduation from medical school, which places additional focus on academic interests alongside clinical learning. This is often via a protected 4-month rotation to pursue research, medical education or leadership opportunities during the second year. It is a highly competitive process with 2,778 applications for 562 posts (1), a competition ratio of 4.94, which often involves a separate written application in addition to mandatory interviews. There is great variability in the amount of application preparation provided by each medical school to final year students, and many students rely on personal contacts with previous applicants, purchase books to assist with preparation, and attend courses. These measures place additional financial strain and time pressures on final year medical students.

There is a current recognised crisis of recruiting clinicians into academia with calls to assist with recruitment by providing exposure and mentoring to clinicians early on, including measures to widen participation (2). Hence, a pilot study was conducted to review if the production of online, easy to access teaching material and a free preparatory interview course would be beneficial and informative for AFP candidates.

Methodology A series of five lectures covering key content was developed, shot, edited, and uploaded to YouTube (3). A free national mock interview course was developed and held on a single day at a London location, with current AFP doctors acting as examiners. A pre-course questionnaire collected data on candidates' use of the online material as well as their knowledge of what the AFP interview process entails and confidence in key domains such as abstract critique, statistical analysis, and the assessment and management of unwell patients. Candidates answered these questions using a 5-point Likert scale. This was followed up by a post-course questionnaire to examine if knowledge had improved from baseline. Paired t-testing was performed to compare pre- and post-course feedback.

Results 47 students from 6 medical schools attended the interview course, of which 41 completed both the pre and post questionnaire fully (87% response rate). 24/41 (59%) had attended previous AFP courses, and 32/41 (78%) used the online material and rated it 4.16 out of 5 as a preparatory resource. There was an increase in candidates' understanding of the format of the AFP (p 0.01), question types expected at interview (p 0.01) and how to answer these questions (p 0.01), the assessment and management of unwell patients (p 0.01), and interpreting medical statistics (p 0.01). Mean confidence with regards to the interview increased from 2.88 to 4.12 (p 0.01). The fact that the course was free was deemed highly significant as a reason why candidates attended the course. Overall, the course was rated 4.80 out of 5 by candidates.

Discussion To the best of our knowledge, this was the first course of its kind combining publically available online lectures as the sole method of didactic teaching alongside mock interviews to prepare candidates for the AFP application. The course demonstrated significant improvements in all tested domains with universally positive feedback received. Online material allows students access to AFP-specific content at their own pace without the geographical, temporal or financial limitations associated with a traditional lecture based course, whilst resources could be focused on providing a comprehensive interview experience with personal one-to-one feedback. This comes at a time when there have been calls to increase exposure and opportunities for people applying to academic medicine.

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Theme: Technology Enhanced Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 290

Immersive 360-degree video for clinical vicarious learning and reflection - from research into practice

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Background Following on from this research being awarded best Technology-Enhanced Learning e-poster at ASME Scientific Meeting 2019, and best plenary oral presentation of National Medical Research Conference 2019, this study applies findings of original research by a staff-student group on the use of virtual reality (VR) video as preparation for clinical study, to new workshops held with students preparing for the workplace. Issues include vicarious learning as effective preparation for clinic (1), experiencing clinical counters in virtual reality with discussion and reflection as a way to build empathy (2), and the use of immersive, candid 360-degree video of authentic clinical events to sensitise students to clinical workplace environment and demands. This presentation will offer participants aspects of a 360-video workshop with Google Cardboard and participants' own phones installed with YouTube app, and will seek participants' views as to the development of this fascinating and disruptive learning method.

Methodology The original research found that 2nd year students improved understanding ward round demands, and felt more empathetic and confident to assist a doctor on the ward, after experiencing 360 degree ward round video, while this method did not improve their patient documenting.

Subsequent workshops were then requested by students in the School Student-Staff Liaison Meeting, and were done with 2nd year students. Watching appropriate 360 clinical video was the main content of the workshops, video now having been annotated with helpful teaching text to help improve students' documenting skills. Sandwiched between the 360 video, students were taught about patient documentation by higher-year students, and led in reflective discussion about empathy and dealing with distractions in clinical events. N=10 students attended the workshop and gave their thoughts in similar pre- and post-event surveys to those in the original research.

Results Workshop surveys found 1) confidence to assist a doctor on a ward round - increased from 30% agree/strongly agree pre-workshop, to 85% post-workshop. 2) Awareness of what responsibilities I may have as a medical student on a ward round improved from 23% agree / strongly agree pre-workshop, to 73% post-workshop. 3) Understanding the various distractions that can occur on a ward - 72% agree / strongly agree pre-workshop to 100% post-workshop. General discussion revealed overall positivity for the workshop and innovative delivery method, but with some hesitation to embrace VR learning in medicine, on the basis that 'it should not replace face-to-face,' which the team wholeheartedly endorses.

The original research and workshop have given rise to new teaching workshops, with results to report in the conference, including on the topic of how to help the deteriorating patient, and also to teach issues of confidentiality and professionalism including empathy in a primary care course.

Discussion Our positive findings are reflected in other research: 360-degree interactive video has been found effective to help nursing students learn to treat patient trauma (3). Vicarious learning has been found as effective as hands-on in some cases (1). Empathy and issues of "how should I react in that situation" have been found to be effectively taught by helping students experience the patient's point of view, and giving chances for supported reflection on their actions (2); this kind of learning happens in our designed workshop offering both vicarious immersive VR video and reflective discussion. Our template of teaching clinical issues through 360-degree video in a workshop with fellow students is a successful model of positively disruptive learning.

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Theme: Technology Enhanced Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 291

Using augmented reality to improve constructive alignment in the assessment of anatomy – a proof-of-concept study

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Background In academic education the use of virtual 3D learning platforms is increasing in popularity. Virtual 3D visualisation techniques allow for active and stereoscopic exploration of holographic models and are easily adopted into medical curricula. These have been shown to be acceptable alternatives to traditional anatomy teaching, increasing anatomical knowledge while stimulating the learners' motivation and engagement (1). There is, however, a clear lack of constructive alignment between the emerging 3D education technologies and the persistence of 2D (pen-and-paper or monoscopic) assessment models (2). Further, lack of alignment exists between the scope of 2D assessment and the use of clinical anatomy knowledge in a 3D clinical environment.

Methodology Using DynamicAnatomy (3), an augmented reality application used for teaching applied 3D anatomy of the lower limb, we designed an assessment scenario for undergraduate medical students. The assessment consisted of a 10-minute session with real-time interaction between the assessor and examinee, both wearing Microsoft HoloLens goggles and sharing the same holographic model. The assessment tested both simple recall and higher order thinking in the form of applied anatomy. The proof-of-concept was evaluated by a team of pre- and postgraduate students, and anatomy teachers for feasibility and acceptability using a Likert scale survey, as well as free-text comments.

Results All participants were able to effectively demonstrate their anatomical knowledge and found the application and the device easy to use. Participants remarked on the assessment's ability to test multiple aspects of anatomy, including function. All participants judged the 3D assessment scenario as fair compared to traditional assessment methods and preferred it over a traditional paper-based assessment. All participants enjoyed the assessment method, particularly the real-time interaction with the assessor and would prefer the 3D assessment

scenario over a paper-based examination. No significant adverse effects of the assessment modality were reported.

Discussion In this study we demonstrated the feasibility and acceptability of virtual 3D assessment in a mixed reality environment. Teaching staff highlighted the assessment's suitability to ask low, as well as high order questions using the same assessment materials, and particularly liked the active virtual dissection tools to assess spatial and functional knowledge. The virtual assessment also allows for greater standardisation of the assessment material, permitting better oversight of the assessment process. The ability to demonstrate 3D functional anatomy allows examiners to easily assess the students' understanding of clinical scenarios in relation to basic anatomy.

In conclusion, the augmented reality 3D assessment using DynamicAnatomy may achieve better constructive alignment between anatomy teaching, assessment and clinical practice.

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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 292
360 degree video to simulate the patient perspective in paediatric simulation and improve student empathy

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Background Empathy in medical students has been shown to decline through medical school[1]. It has been shown that a variety of interventions focussed on teaching empathy and communication skills can mitigate this decline[1]. While simulation is a highly effective teaching method[2] that attempts to be as realistic as possible there is always a layer of artificiality, this can impact upon the participant behaviour and immersion. Often the patient is a mannequin which does not inspire as much empathy or direct communication from the participants as a human surrogate patient would. In paediatric simulation using a human surrogate in a simulated emergency is not feasible so models must be used.

360-degree video is an emerging classroom technology[3] which can be utilised in a variety of settings for virtual reality. 360-degree video enables students to view a scenario from a particular perspective and is interactive as the students may choose which direction to look in. Therefore this offers a unique opportunity to place the students in the patient role within the scenario and enables them all to observe from this perspective rather than as onlookers through a window or from the side of a room.

Video-assisted debriefing is an established method within technology-enhanced simulation[4-6]. However this is not known to have been previously used to show the patient's perspective during the debrief of a paediatric simulation.

Methodology We have gained full ethical approval for this study from the University of Bristol in January 2020 and data collection is ongoing.

We will utilise a 360-degree camera to record simulation scenarios in paediatrics from the patient perspective and use these videos in debrief to illustrate the point of view of the simulated patient to the participants. University of Bristol medical students placed at the South Bristol Academy receive a full day of medical simulation during their paediatrics attachment, allowing us to study the students pre and post intervention. The scenarios are kept the same across each day, but the order varied to increase the reliability of observations.

We are using both qualitative and quantitative methods to analyse study outcomes. Scenarios are recorded, and the amount of eye contact made with the patient and attention directed towards the patient are measured. Additionally, student feedback about the perceived usefulness of viewing the footage in debrief sessions and of the effect of increasing their empathy for the patient will be collected.

Results Data collection is ongoing for this study so results are not yet available. The simulation days are scheduled to be completed by the end of May 2020 allowing ample time for data analysis prior to presentation.

Discussion We anticipate that this technique will help to increase observer engagement with the simulated scenarios and that reflecting on their engagement with the simulated patient will increase their empathy and in-scenario interactions with the simulated patient.

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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 293
An exploration of health and social care professionals' experiences of using the MDTea podcast for learning and developing practice

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Background Older adults are the largest users of health and social care services. Comprehensive Geriatric Assessment (CGA) is now well established as the gold standard of care for older adults and works best when carried out by a multidisciplinary team (MDT) working towards a common goal. It is therefore essential that all health and social care professionals (HSCPs) working with older adults have the appropriate knowledge and skills to manage their complex needs.

Within their standards for continuing professional development (CPD), the governing bodies of HSCPs state that members should engage with independent learning activities that are relevant to current and future practice. Podcasts have become a popular and effective resource for independent learning, as they allow professionals flexibility in how, when and where they access learning materials. The goal of this podcast is not only to benefit professionals but also the people receiving their care and support. Whilst the popularity of podcasts is growing, there is limited research and evidence to inform what makes a quality resource, or to demonstrate the real impact these resources are having on learning experience or practice.

The MDTea (MDT Education on Ageing) podcast was started in 2016. It provides free, open-access educational materials (in addition to the audio itself) on various topics within geriatrics and the care of older adults. The faculty consists of a full range of HSCPs working with older adults and is led by two geriatricians. Production is funded by Health Education England (HEE). Scripts and published "show notes" are planned carefully and reviewed by the faculty team prior to recording. The MDTea have created eight series of podcast episodes focused on older adults with the fundamental aim of driving service improvement in health and social care through education.

Previous analysis has shown that the MDTea podcast has reached a large audience, comprising a variety of disciplines representing a typical MDT. Listeners' responses to an online CPD survey demonstrated that the podcasts had positively influenced clinical practice, with self-reported increases in knowledge, confidence and use of content for patient benefit.

The purpose of this study is to explore HSCPs' experiences of listening to the MDTea podcast, their use of the associated learning materials, and how they feel it has affected their clinical and learning practice.

Methodology A qualitative approach was used to explore participant experiences through focus group interviews, with a mix of disciplines represented in each group. The aim of this approach was to explore the perceptions that became apparent to both the researchers and the participants after their experience of listening to the podcasts.

Participants were recruited through purposive sampling. All were qualified HSCPs working with older adults, who had listened to at least one episode of the MDTea podcast and were attending the Autumn 2019 British Geriatrics Society (BGS) Conference. Information related to the study was disseminated via the BGS newsletter, blog and social media before the conference. We aimed to have a balanced representation of HSCPs in each focus group.

Results The focus group interviews were recorded and saved as audio files. These have been transcribed verbatim and are in the process of being coded, themed and analysed by a multiprofessional team of experienced researchers. The research team will analyse and triangulate their findings to draw the conclusions which will be presented.

Discussion We will present the findings of this thematic analysis and will use the emerging themes to create a greater understanding of the perceived experiences of the participants with regards to listening to the MDTea podcast.

Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 294
Anatomizing barriers to learning in the operating theatre: A multimedia approach to empower students to see through the eyes of a surgeon

Author(s): William Flynn, Naveen Kumar, Russell Donovan
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Background A sound understanding of anatomy is fundamental for surgeons in training. While both students and surgeons agree on its importance (1), the student's understanding may be conceptually different from the surgeon's. Traditionally, most undergraduate anatomy teaching is delivered in a non-clinical context involving lectures and laboratory-based dissections or practical sessions, and there is an assumption that students will automatically be able to apply this knowledge intra-operatively. A surgeon's understanding of anatomy, however, is advanced through visual and tactile experiences acquired in many operations. A well-prepared student may struggle to apply prior anatomical knowledge to the different context and perspective seen in the operative field.

Our aim is to bridge the gap between understanding of basic anatomy in the dissection laboratory and understanding of surgical anatomy in the operating theatre. We are developing a pilot teaching series that aims to enable participants to apply basic anatomical knowledge to a surgical context. We will run multimedia case-based seminars employing a co-constructionist approach with students interpreting select intra-operative videos with the assistance of faculty members. This we will allow students to experience anatomy through the eyes of a surgeon. This approach is both innovative and reproducible. Seminars will focus on the fields of Neurosurgery and Otolaryngology, in which students at our institution feel their experience is particularly limited.

Our primary research question is: "Does surgical anatomy teaching, through guided interpretation of intraoperative videos, improve the affective experience of undergraduate students in the operating theatre?"

Methodology Two individual weekly sessions lasting 90 minutes will use a case-based approach to cover pertinent anatomy and common interventions in the fields of Neurosurgery and ENT.

Prior to each session participants will use clinical cases to develop individual learning objectives. For each session students will be directed to relevant pre- and post-session reading material. A final session will culminate in a case-based practical session involving students interpreting imaging, intraoperative photography and prosections.

A seven-point Likert scale survey will be used pre-course, post-course and at a three-month interval. This will assess:

- Interest in a surgical career
- Affective experiences in theatre
- Ability to relate existing anatomical knowledge to surgical context
- Contribution of understanding anatomy to experience in theatre
- The efficacy of guided interpretation of intraoperative videos to aid preparation for attending theatre
- The efficacy of the course in improving the affective experience in theatre

We will run a focus group pre-course and at three months to identify common factors influencing a student's affective experience in theatre at our institution, their own opinions on the importance of understanding the anatomy in shaping this experience, and their general feedback on the effectiveness of the course.

Results 22 students attended the first seminar and completed a pre-course survey. 18 students completed all sessions were invited to complete a post-course survey. 16 students (89%) reported that their preparation for theatre included anatomy revision, and 14 (78%) reported that it included use of online surgical videos. Most students (16; 89%) agreed or strongly agreed that this preparation helps them learn more from the theatre experience and all students felt that understanding anatomy was important for their learning experience in theatre. However, only 7 (39%) felt that anatomy teaching at medical school was applicable to theatre and only 4 (22%) reported feeling confident identifying anatomy in the operating theatre. Following the course, 14 students (78%) reported feeling more confident identifying anatomical structures in operative videos, and 15 (83%) felt that they had learnt aspects they could not have gained from the existing anatomy curriculum. 17 students (94%) agreed or strongly agreed that they would like more operative videos to be shown during their anatomy teaching.

Discussion The operating theatre can be an unfamiliar and intimidating environment, to which medical student exposure is limited but important. Helping them to prepare adequately can improve the learning experience (2,3). This pilot course demonstrates the feasibility and acceptability to students of using operative videos in surgical anatomy teaching. Student retention was good with 18 out of the 22 original attendees completing the full course. Survey results found our approach improves student confidence in identifying anatomy in operative videos, however long-term follow-up is required to assess the impact on student experiences in theatre. This was planned but made impossible due to the COVID-19 pandemic.

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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 295
Back to the Future of Feedback: Exploring the potential impact of technology-assisted student feedback on teachers and their teaching

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Background As banking education (1) has transitioned to a more active, student-centred approach (2), teachers are increasingly viewed as self-directed, lifelong

learners themselves. Indeed, continuing professional development has received substantially more attention in recent years, emphasised by both the Academy of Medical Educators (3) and the General Medical Council (4). For medical educators, it certainly seems feedback from students (student feedback) has never been more needed. It not only provides opportunities to shape one's identity and cultivate self-efficacy, but may also encourage reflective practices and transform the teaching landscape altogether. However, can this process be accelerated? If yes, how so?

Despite the meteoric rise in technology and growing calls for sustainability, paper continues to permeate the higher education sphere. Physical feedback forms remain commonplace. While technology itself cannot make feedback more constructive or specific, it can certainly make it more rapid and comprehensive. We recognise technology-assisted student feedback is gaining traction amongst higher institutions worldwide. Within the literature, however, the combination of technological efficiency and student feedback is still rather rare. A study by a Dutch team last year reinforced the existence of such a research gap (5). Other investigations have solely focused on the pre-university level (6). Its potential within higher education seems too high to ignore, however, for it to be implemented successfully, the following questions must first be addressed:

1. What are teachers' perceptions of technology-assisted student feedback, in terms of interest, necessity, feasibility, hopes and fears?
2. Can it be used effectively as a stimulant for self-reflection and influence changes in teachers' approaches to teaching?
3. What place does it have in curriculum design and professional development?

Methodology To answer the above, we will be conducting a qualitative study grounded in interpretivist and critical paradigms. It seeks to explore lecturers' perspectives on QR-code-assisted student feedback and possible implications on their teaching. It will involve two sets of semi-structured interviews on three medical lecturers, separated by a pilot study. In the pilot, students will be shown a QR code enabling access to a survey on the teaching they have received. Using readily available online software, a personalised teacher profile will be constructed based on students' responses and sent to the corresponding lecturer for their perusal. The second set of interviews will follow up on their experience and explore any changes in perceptions, attitudes and practices. A combination of thematic and discourse analyses will be utilised.

Results All data will be collected and analysed by mid-May.

Discussion We strongly suspect our study has the power to not only disrupt medical education, but higher education at large. Ultimately, our vision is for technology-assisted student feedback to be implemented widely, efficiently and effectively. While 'efficient' and 'effective' are often used to advertise innovative technology, maximising the potential of existing technology is a form of innovation in its own right. Rather than dive head first into the foreign, futuristic depths of tomorrow's technology, allow us to demonstrate how what is easily accessible and readily available can be used to revolutionise the present.

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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 296
Blended learning child-safeguarding teaching for undergraduates

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Background A new format of child safeguarding teaching for Leicester medical School (LMS) phase 2 undergraduates was adopted in November 2015.

The overall aim was to deliver a new style of child safeguarding teaching blending a more traditional small group teaching format with an e-learning component that was engaging and learner-centred promoting communication and collaboration. (1)

Methodology The aims established were to:

- To deliver a novel blended safeguarding experience to LMS undergraduates utilising more contemporary teaching tools
- To utilise technology enhanced learning to augment the teaching experience
- To obtain structured student feedback to ensure the sessions were appropriate and well received.

Student objectives were to:

- To develop a broader awareness of child safeguarding issues underpinned by evidence base and best practice
- To develop an awareness of when further safeguarding action is needed

The session was split into 2 parts:

1). Small groups of students (up to 4) delivered a PowerPoint based peer-teaching session around any child-safeguarding topic of their choosing, with discussions facilitated by the tutor. They received emailed instructions about this in advance.

2). The Second part of the session incorporated the technology enhanced learning aspect and involved students participating in 10 online questions (True-false/MCQs/situational judgment tests) around various child-safeguarding topics with real-time immediate online and then tutor facilitated feedback.

The pre-requisites for the online-educational tool were:

- Simple to use
- Free
- App-based
- Allow real-time engagement and performance monitoring
- Have the ability to analyse performance statistics.

The app chosen to deliver this was Socrative (https://socrative.com).

Student feedback was initially collated in the form of paper questionnaires but later via a QR code linked to a Leicestershire Partnership Trust held Survey Monkey account in March 2019. Feedback was sought in terms of overall satisfaction but also aspects of course delivery.

More specific feedback was also sought on the blended learning elements of session

Results March 2019 to December 2019, n=98, version 3 (latest cohort data).

Likert scale responses were sought to questions asked (1- Very unsatisfied to 5 -Very satisfied) or simple Yes/No answers.

Positive feedback was received in terms of overall satisfaction (4.31) but also course content (4.43), pace of course (4.54), tutor's knowledge base (4.91) and appropriateness of venue (93.9%)

Less positive were responses for prior information received (3.83)

Overall students performed reasonably well across the 10 questions (average % correct for each question ranged from 47 to 97%)

Discussion Blended learning experiences can positively augment traditional small group teaching in child safeguarding. Most students performed well on the online child safeguarding questions. They were satisfied with most aspects of the general teaching delivery (content, pace, tutor's knowledge base and venue). Whilst still satisfied overall, less positive responses were reported in the adequacy of pre-session information delivery. Most students had not previously received child-safeguarding teaching delivered as a blended learning experience before (56.1% vs. 43.9% for those who had). Most felt that the technology enhanced elements helped them engage with the learning (93.9%) and added to their knowledge of the subject matter. Overall, students indicated they would

recommend the session to a colleague (96.9%) and that it would help them in future independent practice (99.0%).

The use of technology in this teaching format shows a transition from simply substitution of teaching to augmentation of learning with functional improvement (2).

Of note, this TEL child-safeguarding teaching also exemplifies aspects of future-facing education and transformative capabilities, but also with the future potential to "cross boundaries" by promoting inter-disciplinary learning (3).

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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 297
Disrupting simulation without disrupting patient care - Using an online platform as part of an interactive point of care 'ward cover' simulation

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Background The majority of UK medical graduates are not prepared for their first year as a junior doctor (1). Amongst others, prescribing, clinical reasoning, handover and understanding the clinical environment have been highlighted as particular issues (2). One important aspect of being a junior doctor that incorporates all of these is the ward cover shift. Whilst traditional simulation training highlights the emergency management of patients, it does not replicate the experience of working within the hospital itself, with all its attendant distractions. For this reason, several medical schools have started running 'virtual on calls' (3).

Use of clinical areas as teaching spaces can be limited owing to the priority of patient-need over teaching and dedication of resources to the clinical team rather than medical students. To circumvent these difficulties, we designed an online platform accessed via students' smartphones to help deliver a simulated on-call experience. Designing it in this way meant that students still had to attend wards and interact with staff to find the required information, but meant that students did not have to vie with other clinical staff for access to the hospital IT systems normally required for such tasks. The other advantage of the online platform is that it is easily re-usable or even transferable to other facilitators. Over time a bank of online scenarios can be created to facilitate a variety of on-call experience which, once set up can be easily delivered by the facilitators.

Methodology 35 medical students will take part in the simulated ward cover. They will be given a pager and will be bleeped at intervals with a handover of a patient or task to complete. The majority of these tasks will require them to attend a ward where they can then scan a QR code giving them access to an online platform where they can see a simulated patient's notes, blood results, X-ray, ECG, as applicable. They will be directed to complete a prescription, act on an X-ray or blood result or directed to immediately attend to a sick simulated patient. They will complete a questionnaire following the 2 hour long 'ward cover' which will assess their experience of using the online platform in terms of fidelity, applicability to their training, difficulty of the scenario using a 4 point Likert scale and free text questions.

The facilitators of the simulation will also be asked to feedback regarding their experience of delivering the session.

Results 12 students so far have attended a pilot version of the final ward cover simulation. 12/12 reported that they found that the online scenarios realistic, relevant and appropriate to their level of training. Further data will be gathered from the 35 students taking part from January to March 2020.

The facilitators of the pilot reported that it was "easy to set up and run" and highlighted an advantage of using online notes being that they "couldn't be mistaken for real patient notes". Additionally the necessity to log in to an online system "added fidelity in terms of time taken to complete tasks".

Discussion Using an online platform accessed at the point of care via student smartphones enables facilitators to provide a reliable, easily replicable experience of being on call. The students found the online platform to be a realistic approximation of F1 on-call and were appropriately challenged by the tasks set. The advantages of using an online platform rather than paper resources are that there is less risk of it being mistakenly removed or disposed of from wards by hospital staff, it is more environmentally friendly, it is easy to run multiple times and it is easy to expand the bank of on-call tasks. Setting it up in this way means that it is accessible for future teaching staff and can easily be exported to other teaching hospitals. Lastly, the design of this simulation means that the traditional paradigm of simulation within a sim suite is disrupted but without disrupting patient care on the wards.

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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 298
Exploring emotional engagement of Electronic Patient Record (EPR) classroom teaching with educational videos: a focus group study

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Background Background: Medical education is dynamic and constantly changing (Guze, 2015). The shift towards new pedagogy and teaching methods is influenced by numerous factors. Altered student expectations, societal expectations, medical sciences and advancement in technology (Guze, 2015) motivate educational institutions to rethink employment of different instructional methods (North, 2015). In particular, there is more emphasis on the use of educational videos in higher education in the last two decades (Salina, 2012). Numerous studies have supported the use of educational videos in higher education when compared against student learning outcomes (Schmid et al, 2014). The role of educational videos can also elicit positive emotions when learning, affecting our cognition and processing states (Hurtubise, 2013). Whilst there is currently good evidence that educational videos can benefit cognitive, behavioural and emotional engagement, there is a paucity of information surrounding video assisted learning in the learning context of medical students (Kyaw, 2019). There is a requirement for more research on digital learning to assess medical students' engagement with video assisted learning.

The increasing use of Electronic Patient Records (EPR) in healthcare has been a result of these dynamic changes, including changes to societal expectations and advancement in technology. This research aims to explore emotional engagement with educational videos as a learning tool for medical students in a classroom environment, when learning about EPR.

Methodology The epistemology of this methodology is based on social constructionist theory. Social constructionism suggests that discourse can be subject to multiple interpretations and that numerous versions of the world are legitimate (White, 2004). Knowledge is constructed and validated through social interaction with others. In particular, I want to assess and understand the social interactions and the language being used between participants to gauge emotional engagement during these teaching sessions.

Two groups of students will be exposed to classroom teaching with video-assisted learning on EPR. A total of two focus groups will be set up to analyse emotional engagement on classroom teaching and classroom teaching with video-assisted learning. This qualitative data collection method stimulates group interaction between participants, guided by a facilitator. The objective is to encourage student discussion to reveal emotions about the way EPR was taught and around the use of educational video in higher education.

Results Transcriptions of each group discussion will be analysed through discursive psychology (Potter and Wetherell, 1987). My analysis will focus on "how specific stories are constructed, including the ways in which links between emotions and scenarios can be discursively worked up and made relevant (Edwards, 1999)." The use of discursive psychology in data analysis aims to reveal the

underlying emotions in a classroom learning environment with video assisted learning.

Discussion Discursive psychology will study the emotional states of students' learning experiences inside a classroom environment, with educational videos. This will help to gain a deeper understanding of medical student engagement with video in higher education, specifically in the context of teaching medical students. This research could contribute to the wider literature of video-assisted learning and its benefits in higher education (Lee, 2016. Chi DL, 2014. Coyne E, 2018). At the same time, this research can fill in the gaps in existing literature, surrounding the utility of educational videos as a beneficial learning tool for medical students in undergraduate education (Kyaw, 2019).

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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 299
Facilitating structured teaching and learning on the acute take using innovative, free and open-access web-based resources

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Background Acute admission units present a unique opportunity for medical educators by allowing exposure to a broad range of clinical problems(1), alongside numerous challenges in teaching delivery including clinical pressures, unpredictable workload and issues with supervision(2,3). Students have been shown to value interactive learning methods, patient contact but surprisingly rate attachments to the admissions team poorly(2). Facilitation of workplace-based learning is recognised as a key area for improving learning in the medical admissions setting(3), though anecdotal evidence suggests delivery of teaching is rarely supplemented by practical teaching resources. We developed an online, collaborative database of teaching resources(4) to support teaching delivered by junior doctors in the acute admissions setting. This study aimed to evaluate the role and utility of these resources in improving teaching delivered to undergraduate medical students.

Methodology Student self-directed resources and teacher-facilitated resources were developed around common clinical cases aligned to third-year and fifth-year learning outcomes by FY2 to ST3 level doctors with an interest in medical education. These were compiled on an online mobile-friendly website which is free to access. We have so far evaluated their effectiveness through a questionnaire distributed to students following a teaching session delivered using these resources.

Results Preliminary data from 6 medical students (five final-year and one third-year student) suggest teaching delivered using these resources was well planned, structured and delivered at an appropriate level for them (100% agreed). Of those who received teaching in the admissions setting, 100% of students reported they received enough teaching, learned a lot and made the most of their attachment to the admissions team. Further evaluation of resources is planned via focus groups and further qualitative data collection.

Discussion Whilst results may be influenced by the delivery of resource-supplemented teaching by enthusiastic clinical teachers, initial suggestions are these resources are valuable in supplementing clinical encounters in the admissions setting. There may be broader utility of the resources beyond the admissions setting as they encourage student-directed learning and interaction with patients and the clinical team whilst ensuring achievement of learning objectives outlined in the curriculum.

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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 300
Intra-operative video-recording from the trainee's Point-Of-View in Oral and Maxillofacial surgery training

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Background Intra-operative video recording from the surgeon's Point-Of-View (POV) has become more feasible with recent advancements in technology. There is the potential to improve surgical trainee experience and skill acquisition through real-time intra-operative POV video recording in maxillofacial surgery. No previous relevant research has been identified.

This pilot study aimed to identify the perceptions of all stakeholders directly involved in the use of POV video in the real time operating environment of maxillofacial surgery, including trainers and theatre staff.

Methodology From November 2017 to January 2020, over 30 surgical POV videos were recorded, including tracheostomy, neck dissection, mandibular osteotomy and skin cancer excision. These videos were utilised for self-reflection and further discussions with the trainers.

Comments and reflections were collated and analysed into themes.

Results Three main themes were identified: 1) Video recording, 2) Reflection and 3) Feedback.

1. Video recording

The timing of obtaining consent from the patients and also from theatre staff members was reviewed. Continuation of the patient information sheet being given to the patient prior to the surgery and verbal consent from the theatre staff was recommended.

The video quality was satisfactory for most operations including intra oral procedures except those which require magnifications by loupes. Therefore, specialised magnified video camera will be required for these procedures.

The cooperation of the theatre staff was invaluable for setting up the video camera and adjusting the camera angle. The video camera was mounted with a head strap and it caused discomfort after a prolonged use. Hence, the video-recording should be limited to a focused segment of the procedure.
2. Reflection
Self-reflection was perceived more efficient when the video capture was focused on a specific-aspect of the operation, rather than the entire operation. Listening to the trainer's advice on the recorded video was educational. The video recording helped the trainee to identify the learning points to discuss with the trainer. Overall, it was considered as a powerful adjunct for self-reflection.
3. Feedback
Arranging a convenient time between the trainer and the trainee to review the video together was challenging. The video review sessions were considered productive to discuss the surgical techniques by both the trainer and the trainee. The trainers were able to provide clear learning objectives for the next session.
Discussion POV videos has the potential to enhance training in maxillofacial surgery. Several important challenges were identified and these recommendations will inform future application. We recommend further research with a larger sample of trainees and trainers.

Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 301
Millennial Learners a Blended approach to Simulation for Sepsis

Author(s): Cleone Pardoe, Rachel Ventre, David Cripps
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Background The UK Foundation Programme curriculum highlights the need for competency in the identification, assessment and immediate management of the acutely unwell patient 1. With the introduction of NEWS 2 and the 'Surviving Sepsis' campaign, we identified a requirement to update our trust induction; the aim of which, to align with national updates and provide an educational tool for employees on early identification of unwell patients, including recognising and managing sepsis 2,3.
Technology has transformed healthcare and learning preferences, bringing diversity through e-books, podcasts, social media and videos 4,5. Teaching can harness technology to reflect this 6. Particularly, millennial learners prefer interactive and innovative teaching and pedagogy needs to reflect their learning styles and needs 4. Interestingly, students feel this is more important than content, a concern of most educators 4. Learning facilitated by a blended approach, combining knowledge and skill acquisition may be acceptable to both educators and our modern-day learners 4,7. Simulated videos are interactive resources which enhance engagement with an added education value 8. Iorio-Morin et al applied Mayer's cognitive theory and recommended four interventions to optimise video learning: content, voiceover, visuals and planning 9. Literature suggests videos of 8-10 minutes improve engagement 8.
Methodology Clinical teaching fellows and the Simulation department developed a video (8 mins 42 secs) demonstrating early identification, escalation and assessment of an acutely unwell patient within a simulated environment. The aim was to provide up to date information about Sepsis in a succinct, relatable and engaging format, with the ability to revisit information if required. The video content was aimed to be beneficial for all grades of health-care workers who would be involved in patient care within our acute trust.
The video followed a real-time A-E approach for an unwell patient performed by a junior doctor and nurse. During the video, written keywords highlighted and reinforced important aspects of the assessment. Using screen-capture technology and voice-overs we embedded a demonstration of how to access Sepsis Trust UK guidelines, local antibiotic guidelines and trust sepsis bundles from both computers and mobile applications. These demonstrations aimed to encourage uptake and use of these evidence-based resources and supports a need to develop training packages to reflect the availability of such technologies, particularly favoured by next generation employees.
We collected feedback and support from stakeholders within the 'Deteriorating Patient' management group. A pilot was run during FY1 teaching, feedback considered engagement with the simulated video and self-assessed knowledge, confidence and learning preferences after this blended learning activity. Feedback from the FY1 pilot was collected using a combination of 5 point Likert scale and open questions. Feedback was collected immediately following the teaching intervention.
Results Overall, the feedback was positive; all learners reported excellent or good level of overall satisfaction with the teaching. Feedback was collected from 19 learners. 95% learners found the presentation style easy to follow, and all found the audio-visual was of excellent or high quality. Open question responses emphasised the benefit of using short video as an effective method to recap prior learning. Additionally, learners appreciated the tool as a reference source, particularly by incorporating guidelines, and transformation to an e-learning resource would be beneficial to allow access in their own time.
Discussion This pilot study has demonstrated benefit of blended teaching using video technology. Further analysis of the program and variables affecting this intervention is required. Evidence supports the production of an e-learning induction program to standardise training and development of other video packages for core topics.
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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 302
My students are "app-y" to ask questions - Amalgamation of technology enhanced and inquiry based learning for the millennial's

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Background Inquiry based learning believes that science should be taught as a process and way of thinking and not as a subject with facts to be memorized.[1] Effectively, these skills need to be scaffolded by the teacher until students are able to develop questions, methods, and conclusions on their own.[2] Specific learning processes that people engage in during inquiry-learning include: Creating questions of their own, obtaining supporting evidence to answer the questions, explaining the evidence collected, connecting the explanation to the knowledge obtained from the investigative process and creating an argument and justification for the explanation.[3,4] Combining technology with the foundation of inquiry-based learning is the innovation we present in this research.
Description of Innovation:
This research introduces an innovative dental app, which involves dental students to use their skill in questioning to arrive at a diagnosis. It is based on the principles of inquiry based and technology enhanced learning. The app gives an initial clue to the students, who need to ask a chain of question to the app to arrive at a diagnosis.

Aims and Objectives:

- Development of a student friendly App "Who am I" based on inquiry based learning principles.
- Assessment of questioning skills by the undergraduate dental students using the newly developed app.
- Qualitative assessment of student perception on learning, using the newly developed app

Methodology A dental app 'who am I' was developed based on the principle of inquiry based learning. The app requires the students to ask continuous leading questions to derive at a diagnosis. Pilot testing of the app was done. 60 final year dental students were selected based on their summative performance (low achievers (n=30) and high achievers (n=30)). These 60 students were randomized into two groups - intervention group (where app was used) and control group (where a clinical scenario was discussed in class). In the intervention group the app displayed a clue at the beginning of the session pertaining to a clinical condition. The students had to type relevant questions and finally decipher what condition the app is inquiring about. The number of attempts taken by the students to arrive at the diagnosis along with the series of questions asked was recorded by the app. The summary given by the app was used to give feedback to the students. After 4 weeks of this training session, OSCE was conducted to both the group of students and the performance in diagnosis of simulated patients was compared.

Results Aberrant questions asked by the low achievers decreased over the 4 week period and was statistically significant. However, the high achievers showed no difference. The sequence of questions asked by both the low and high achievers improved over the 4 week period. Comparison of OSCE performance revealed better performance of low achievers in intervention group and was statistically significant. However, high achievers in both the groups showed no difference. Perception of students and faculty was thematically analysed. 4 themes each were generated in student and faculty perceptions.

Discussion There was an overall reduction in aberrant questions and overall improvement in sequencing of questions over 4 weeks. OSCE performance of App group was better than traditional group, especially in the low achievers. This could be attributed to the feedback given based on the summary generated by the app, leading to a reflection by the students. Also, the students felt the app gave them an opportunity for practice and triggered their thinking.

Conclusions:

1. Questioning skills (selection and sequencing of questions) of undergraduate BDS students improved over 4 weeks when "Who am I app" was used.
2. Performance in OSCE was better in app group compared to traditional group and showed statistically significant results in the low achievers
3. Perception of students and faculty revealed positive results.

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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 303
Telephone referrals: A technological workshop to promote practise before practice

Author(s): Dr Rory Morrice, Dr Olivia Buckeldee
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Background Making effective telephone referrals is a crucial skill as a newly qualified doctor. Lack of training in this skill may be contributing to the recognised unpreparedness of junior doctors as they transition into clinical practice. Technological solutions could provide authentic learning environments for medical students to encounter this learning need and promote onward development in clinical placements prior to clinical practice.

Issue to be addressed

The aim of this project was to investigate whether a simulated referrals workshop with a reflective e-logbook could better prepare final year medical students in this skill prior to clinical practice.

Methodology A simulated referrals workshop was developed and integrated into the core teaching programme of final year undergraduates placed at West Middlesex Hospital. This workshop required candidates to summarise complexed case notes and perform a telephone referral to an authentic senior speciality colleague. The workshop was interrupted by a mid-point debrief. Pre and post-session evaluation identified prior experience of making telephone referrals and measured self-rated confidence in core domains. Students were provided with a reflective e-logbook following the session to practise referrals in clinical placements. Qualitative insights were gathered around preparedness for performing this skill as a junior doctor. Reflective comments were analysed using an inductive approach to explore emergent themes.

Results Four cohorts of final year medical students enrolled in workshops over a 4-month period. None of the candidates had experienced prior teaching in telephone referrals or had ever made a telephone referral in an authentic clinical environment. Candidate confidence in core skills surrounding summarising clinical notes and concisely making a telephone referral significantly increased across multiple domains following the simulated workshop. The majority of candidates successfully completed a minimum of 1 specialty referral in a clinical environment following the workshop. Inductive findings from reflective comments suggest an impact on student motivation for seeking out opportunities for learning relevant to future clinical practice as well as strategies for effective clinical communication and managing uncertainty.

Discussion Undergraduates readily recognise telephone referrals as a skill integral to the duty of a junior doctor but do not receive any structured teaching. A simulated workshop can increase confidence in core competency domains around summarising clinical notes and making concise referrals. Use of an e-logbook can prompt further learning and development of referral skills with students engaging in authentic practise in their clinical placements.

Undergraduate medical curricula need to better address core skills required in clinical practice such as telephone referrals. Use of technology in simulated workshops and reflective e-logbooks can empower students to practise this skill independently in preparation for practice.

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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 304
The use of Whatsapp to enhance Medical Education on a Cardiology Attachment

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Background Social media is widely used communication use in daily life. Previous studies have demonstrated that use WhatsApp can be an effective medical learning tool [1, 2, 3]. Penultimate year medical students rotate through a 2 week

attachment in a Cardiology firm at St Helier hospital, a District General Hospital in Sutton and we are keen to devise ways of maximising learning opportunities during their short placement. This study was designed to assess whether use of a Whatsapp group during a Cardiology clinical attachment would be acceptable for medical students and to investigate how they perceived its impact on their learning. We aimed to assess whether students would engage with this form of educational tool and identify any barriers to engagement.

Methodology A Whatsapp group created and all students were invited to join via a welcome link. Each group was active during each 2 week Cardiology attachment. Group members included Consultant Cardiologists, a Cardiology Registrar, Teaching Fellow and Foundation Year 1 doctor, in addition to the students. A series of clinical vignettes were posted for each cohort of medical students rotating through the firm. These were irreverent in nature – for example, 'The Curious incident of the Bump in the Night time' – and designed to maximise engagement.

Students were encouraged to post questions and responses to these clinical cases. They were also encouraged to share their own cases. Guidance was on the importance of maintaining patient confidentiality. Data on the number of messages in the group was collected from October 2017 to June 2018.

A SurveyMonkey questionnaire with Likert scales from strongly disagree (1), to strongly agree (5) was distributed to all students to investigate their experience of using the Whatsapp group and their perceived advantages and disadvantages of the approach.

Results All 34 students rotating through the firm accepted participation in the Whatsapp group. There were 2705 posts in total. 975 (36%) of posts were from students, 1256 posts were from Consultant Cardiologists (46%). Mean number of posts per student was 29, the median was 30. The range was 0 – 97. Two students did not post any messages.

31 of 34 students completed the SurveyMonkey questionnaire. The Whatsapp group was rated well on perceived learning. 'Positive impact on knowledge' (mean score on 1 – 5 Likert scale: 4.4, SD±0.6) and 'generates learning opportunities' (4.4±0.6). Highest scored limitations of the approach were: feeling 'intimidated by too many members' of the group (2.56±1.07), and 'confusion due to multiple views' (mean: 2.74±1.07). There were perceived improvements in learning in multiple domains of the curriculum, including ECG interpretation (4.35), diagnosis (4.46) and treatment (4.31).

Discussion The use of Whatsapp in supporting medical education during a Cardiology clinical attachment was generally well accepted by medical students and perceived to be effective in improving learning. Engagement with the group was good with a reasonable number of posts per student. There was no formal qualitative analysis of the contributions but the quantitative analysis gave a good indication. Barriers to engagement were highlighted in the survey and although majority of students disagreed that they felt intimidated by 'too many members' in the Whatsapp group, further strategies such as introducing students to group members have since been employed to minimise this limitation. In summary, this novel method of supporting medical education is well accepted by students, is perceived to be effective in learning and can be easily applied to other venues. Further study is ongoing to assess whether learning outcomes are enhanced through this intervention.

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Theme: Technology Enhanced Learning

Accepted as: Short Communication

Paper no. 305
Who wants to be millionaire as a game for pharmacy curriculum

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Background In response to Stage 1 undergraduate pharmacy students reporting difficulty with particular topics of biology, we have developed seminar sessions to support students' learning. To assess the optimal teaching strategy, an experimental design was adopted. For the past two academic years, half the cohort experienced seminars requiring students to work in groups to answer open questions on the topic [Seminar 1: S1], whilst the other half of the cohort experienced a seminar adopting elements of the game "who wants to be a millionaire" [seminar 2: S2}. Students played competitively in small teams. The hypothesis is that the competitive interactivity of the educational game would improve student knowledge retention.

Methodology For the academic year 2018-19, eleven open questions were designed to test student knowledge and used for [S1]. Three sets of 15 multiple-choice questions (MCQs) were designed and used for [S2]. Prior to both sets of seminars, students undertook a pre-test of 12 MCQs to assess their knowledge, and then a post-test, using six of the same pre-test MCQs and six new MCQs, to capture knowledge attainment. Results were compared within and between groups and a t-test used to assess for difference.

For the academic year 2019-20, the design of the sessions was optimised to reflect students' feedback from the 2018-19 sessions and to accommodate changes applied to the timetable of the current year.

A feedback form including five 5-point Likert scale questions, was distributed requiring students to rate components of the session, including the level of engagement, stimulation to learn and team-work.

Results In 2018-19, the Stage 1 cohort of students attending the game sessions [S2] showed a statistically significant (p=0.03) improvement between pre-test and post-test scores, while the difference for students attending [S1] was not statistically significant. In 2019-20 conversely, the Stage 1 cohort of students attending [S1], improved significantly in the post-test scores (p=0.0025), while no statistically significant difference was seen in students attending the game sessions [S2]. The combined results obtained in the academic years 2018-19 and 2019-20 showed that both student groups attending [S1] and [S2], improved in a statistically significant manner in the post-test scores, when compared to the pre-test scores.

In the feedback form, consistently in both years, students who played the game found the session more engaging, more stimulating to learn and valued team-work as more important to stimulate their learning, compared to students who attended the seminar session.

Discussion After adopting the described experimental design for two years, it appears that both types of seminar sessions [S1] and [S2] facilitate knowledge retention. While further optimization of the game sessions will be still required, it is conceivable that several factors may have influenced the performance of students attending the game sessions in 2019-20. This could include changes applied to the sessions, teacher performance, timetable and environment constraints and intrinsic differences between different student cohorts.

Students' feedback in both years consistently showed that students favoured the game session. indeed, students who played the game found the sessions more engaging and stimulating to learn. Importantly, the competitive nature of the game made students valued team-work as more important to stimulate their learning, suggesting that the competitive nature of the game can also be applied for the purpose of developing team-working skills in the students.

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Theme: Technology Enhanced Learning

Accepted as: e-poster

Paper no. 306
A retrospective analysis of pre-clinical medical student usage and preferences for lecture capture over time at the University of Sheffield Medical School

Author(s): Elliot Checkley, Dr Louise Robson
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Background Lecture capture is a common feature in an inclusive curriculum within many institutions. It is the recording of an educator's presentation, typically audio and presentation slides which is later disseminated to students via an online platform. There has been much research focussing on student usage and

preferences of lecture capture but little concentrating on the change in its utilisation over time both within and between academic years. This paper provides a longitudinal assessment of medical student lecture capture usage over time in a programme level curriculum. This research analysed the lecture capture usage of pre-clinical medical students at The University of Sheffield Medical School (UoSMS) over their first 2 years of study. The aims were to: identify students' lecture capture usage patterns, determine whether or not they change over time and assess the impact of usage on attendance.

Methodology This study utilises quantitative lecture capture usage and attendance data from a single cohort of 239 pre-clinical medical students at UoSMS. This data spanned across their first and second year of study and was extracted from the internal virtual learning platform 'Minerva'. The usage data provides information on when a student accessed the link to a specific lecture capture recording, ie a 'hit'. Similarly, attendance data signified when a student logged their attendance through an online register hosted on the virtual learning platform. Lecture capture usage was analysed both between and within academic years in differing proximities to the end-of-year assessment. Furthermore, the combined entire data set was analysed to ascertain pre-clinical medical student lecture capture usage patterns. The data was analysed using descriptive statistics, correlation analysis and tests for statistical significance.

Results The analysis showed changing lecture capture usage between academic years in some respects but not all. There was no change in the number of lecture capture hits in Year 1 compared to Year 2. The students in Year 2 showed a significantly lower number of lecture capture hits when compared to Year 1 at one month before assessment. The opposite was true at 5 months before assessment. When looking within academic years, there was a significantly lower number of lecture capture hits at 1 month before assessment compared to 5 months in both Year 1 and Year 2. Student lecture capture usage patterns by time of day demonstrated a bell curve distribution of hits peaking between 15:00 and 16:00 aligning with existing literature findings (1, 2). Lecture capture recordings of other academic years were available to students to either prospectively prepare for upcoming lectures or integrate prior learning into current course content. However, this functionality was infrequently used with no students in Year 2 accessing previous Year 1 content and 17 total hits of Year 2 students accessing future Year 2 content.

Correlation analyses were performed on the number of lecture capture hits and attendance per student. No correlation was found in Year 1 but a significant positive correlation was found in Year 2.

Discussion A differing distribution of lecture capture usage in proximity to assessment was found between Year 1 and Year 2 suggesting a developing integration of its usage into the student's learning strategy. Furthermore, significantly lower usage in closer proximity before assessment in both years perhaps demonstrates that students utilise lecture capture preferentially in a spaced learning strategy. The positive correlation found between attendance and lecture capture hits in Year 2 suggests students utilise lecture capture to supplement live lectures and not as a substitute. It is hoped these findings can inform lecture capture implementation in other institutions.

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Theme: Technology Enhanced Learning

Accepted as: e-poster

Paper no. 307
Hub or Hubbub: Does technology enhance or disrupt learning?

Author(s): Dr Benjamin Walters, Dr Esmé Bain, Dr George Thomas, Mr Kevin Jones
Corresponding Author institution: Swindon Academy, Great Western Hospital

Background The University of Bristol (UoB) Medical School provides its clinical teaching through 7 academies across the south west, each attached to a specific Hospital. This allows students to experience a diverse range of patients and to learn about the variation in services that are available in different trusts.

Previously, the main limitation and difficulty with this method was ensuring standardisation of the teaching received and that it mapped to the core curriculum. To bridge this gap, in 2017 UoB invested in Microsoft Surface Hubs [1] at each academy. This offers conferencing and interactive live streaming of content and the ability to share content quickly and easily. Two years on, we wanted to assess how this technology is being used and if students feel it enhances their learning. Third year students for the first time this year were scheduled to have a weekly hub session. This loosely involves pairing with another academy to allow for more varied case-based discussions. Once a month, UoB delivered a central teaching session where all academies would join in the same session and this aimed to deliver core content and relevant helical themes.

Methodology We conducted a survey to 3rd year medical students across academies. We decided to survey three months into the year to allow enough time to ensure the accuracy of responses. From this we have conducted thematic analysis as well as some populated quantitative data in order to draw some meaningful conclusions. Due to the results received (see below) we arranged a meeting with Unit co-ordinators for year 3 at the UoB and subsequently are in the process of implementing key changes – see discussion. We are due to re-survey to identify if the changes made have led to any improvement in March 2020.

Results From our initial survey conducted in November 2019 we received 50 responses distributed from six academies. 98% felt that the use of the Hub did not enhance their learning and 96% would not recommend its use for future Bristol students. Only 6% agreed that the Hub allows for cohesive learning across academies. 40% of students felt Hub sessions did not run to time, and 38% felt they discouraged participation. We received an overwhelming amount of verbal feedback and the most notable themes were "technical difficulties" and that the Hub acts as a barrier by "complicating simple learning opportunities" and "blocking communication". Many students stated they would much prefer to use that time to have case-based discussions within their own groups. Others also called for it to be "outright removed" from the teaching programme.

Discussion In collaboration with the UoB, we agreed to emphasise the relevance of topics at the start of each session linking to clinical practice. We will revise the pre-reading material/content so that it is not a burden on student workload. We have decided to adapt where the Hub is most useful within the curriculum, unfortunately for logistical reasons these are unlikely to be introduced until the 2020-21 cohort and therefore won't be reflected in our March 2020 survey. Finally, in order to address technological difficulties, locally we have increased the strength of wireless internet connectivity in Swindon and also have a back-up ethernet connection if required.

We eagerly await the results of our re-survey and hope that the changes made have led to improvement in the delivery of technology enhanced learning.

Regardless, this survey does beg the question of are we using technology for the sake of technology? Does technology lessen the value of the student-teacher relationship? As described by Dror et al [2] we need a change in focus, rather than transcribing from another medium.

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Theme: Technology Enhanced Learning

Accepted as: e-poster

Paper no. 308
Infographics as a multidisciplinary learning resource in healthcare

Author(s): Dr Alice O'Connor, Dr Iain Wilkinson
Corresponding Author institution: Surrey and Sussex Healthcare NHS Trust

Background Technology-enhanced learning (TEL) is becoming increasingly mainstream in health and social care education, including post-graduate professional development. It is therefore important that we continue to examine the validity of TEL resources and learners' experiences of using them.

The MDTea (Multi-Disciplinary Team Education on Ageing) produces a podcast and other free, open-access learning materials for use by all health and social care professionals (HSCPs) looking after older adults. Each episode of the podcast is accompanied by a poster or "infographic", summarising the key points about the topic discussed. The infographics are created using Canva, an online simplified graphic design tool.

A survey of MDTea podcast listeners in 2017 showed that 51.5% of respondents had used the infographics.
The purpose of this study is to explore how people are using the infographics and if interacting with them influences their learning.
Methodology Each episode of the MDTea podcast is published on the main website and promoted via Twitter and a mailing list.
The infographics are available on the website and are used in tweets and the mailing list when a new episode is mentioned.
Those accessing the podcast via the website have the option to complete a "CPD log" using a short online survey, which asks respondents whether they feel the stated learning objectives for the episode have been met. Additional questions will be included within this survey and also distributed via Twitter, focusing on whether they have downloaded the infographic for a particular episode and in what context they have used it. There will also be a question about whether they have accessed further learning resources as a result of using the infographic.
Results We will present results from both sources (Twitter and the CPD log) and compare and contrast these with regards to how the interaction with the infographics led to a change in their learning (i.e. listening to the relevant episode, searching for further evidence or other resources).
Discussion Based on the previous evaluation of infographic downloads and the growth of our Twitter followers since this time we expect that a larger number of people will be interacting with the infographics via Twitter. The key aspect from an educational standpoint is whether interaction with a given image on Twitter or the website leads onto further learning.

Theme: Technology Enhanced Learning

Accepted as: e-poster

Paper no. 309
RheumCast - Creating Peer-Led Video Podcasts for Medical Students

Author(s): Kristen Davies
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Background he role of interactive multimedia is becoming increasingly used within medical education. Educators utilising technology as a method of supported learning due to limitations of cost and reduction in dedicated teaching time. The potential for using such interactive multimedia and web-based learning has been used in professions allied to medicine, such as dentistry and nursing. One such example of this technology is a video podcast - where audio is played over a slideshow. A small number of studies have shown video podcasts to lead to a more positive learning experience when used alongside more formal methods of teaching, such as live lectures. No such video podcast has been created for aiding the teaching of rheumatology. This project aims to create a series of peer-led video podcasts on rheumatological conditions for medical students to use alongside their formal teaching.
Methodology Nine video podcasts focusing on rheumatological conditions were created as a part of a Special Study Module (SSM) undertaken at Lancaster Medical School. These video podcasts were created using Camtasia recording software and uploaded to ScreenCast where students could access them via their university online portal. A document of rheumatology notes were also created summarising the content of the video podcast for students to use as an adjunct whilst watching them. Video podcasts were created on the following: Rheumatoid arthritis, Crystal Arthropathy, Spondylarthritis, Autoimmune Rheumatic Diseases, Vasculitis, Osteoarthritis, Joint and Bone Infections and Chronic Pain Syndromes.
Results Faculty feedback from the creation of these video podcasts was overwhelmingly positive. As such, for the last two years these video podcasts have been incorporated as a 'recommended resource' for second year medical students to use whilst undertaking the rheumatology problem-based learning module. Feedback delivered to faculty have indicated that students have found both the video podcast and accompanying notes helpful in their studies.
Discussion The use of the rheumatology video podcasts has been overwhelmingly positive and has led to this student-led resource to be formally incorporated as a resource for medical students to use. Our experience in creating, distributing and utilising video podcasts in the field of rheumatology should act as encouragement for others hoping to create a similar resource at their own institutions.

Theme: Undergraduate Medical Education - Assessment

Accepted as: Prestigious Oral Presentation

Paper no. 310
Comparing graduate entry medicine and traditional undergraduate medicine student performance in clinical examinations: a meta-analysis over the past 10 years

Author(s): Gillian Pinner, Gillian Doody, Mohsen Tavakol
Corresponding Author institution: University of Nottingham

Background The University of Nottingham BMBS medicine course has two distinct routes of entry; an accelerated four-year course for graduates and a five-year course for school leavers. Whilst the early years curricula of the respective intakes follow distinctly different pathways, all students join a common two and a half year clinical phase curriculum, comprised of three phases, with end of phase examinations for each. Graduate entry medicine is favoured in a number of countries outside the UK, and its accelerated route is appealing at a time when the UK is seeking to maximise the impact of increased entry numbers to medicine and improve diversity into the medical workforce. This study uses a meta-analysis approach to systematically aggregate and statistically analyse the results of multiple examination outcome studies over the course of 10 years to reach a total overall effect size with great statistical power to obtain a clear picture of potential differences (ref 1).
Methodology We performed a meta-analysis of 10 years of all clinical examination data from the clinical phase of the course, for medical students at University of Nottingham. We investigated differential attainment between those students who entered the clinical phase course via the graduate entry route and those who were direct school leaver entrants.
We located 41 clinical examinations administrated during the clinical phase from 2010 to 2019 that were suitable for inclusion, all being Observed Structure Clinical Examination (OSCE) in format.
Course entry status differences for each individual test were measured using the standardised mean difference (SMD) to calculate the effect size (ref 2). A random-effects model was employed to estimate the mean and SMD of distribution of true scores across the overall or combined assessments (ref3). Forest plots were generated to gain a complete picture of the differences among individual tests, the differences across each year and overall performance.
Results A statistically significant difference between graduate entry medicine students and school leavers, SMD = 0.09 [95% CI = 0.03 to 0.14], was found for overall examination performance across the clinical phase of the course.
However, when broken down by the year of study, the average SMD was statistically significant only in the final year of the clinical phase SMD= 0.2 [CI = 0.13 to 0.27] favouring non-graduate entry medicine students. This was not apparent in the earlier clinical phase clinical examinations (end of clinical phase 1, SMD = 0.05 [95% CI = –0.09; 0.19 and end of clinical phase 2, SMD = 0.02 [95% CI = –0.06 to 0.09].
Discussion During the initial years of the clinical phase of the medicine course there was no difference in clinical examination performance between those students on the accelerated Graduate Entry route compared with those on the traditional five year course. However, by the final phase clinical examination the results reveal a superior performance of non-graduate entry medicine students that had not been previously apparent. It is difficult to speculate why this may be the case. Possible areas to consider are the pressures of an accelerated course, with less time to assimilate practice skills, or wider psychosocial pressures, which may have more impact on an older student population. These results may or may not be generalizable, but this nonetheless raises important issues for students coming from non-traditional backgrounds and the current political drive to encourage School to consider accelerated courses to ease the workforce crisis.
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Theme: Undergraduate Medical Education - Assessment

Accepted as: Oral Presentation in Parallel Session

Paper no. 311
Failure, remediation and professional identity formation. Can communities of practice help?

Author(s): Dr James Read
Corresponding Author institution: Plymouth University, Peninsula Medical School

Background Professional identity formation is an important role of undergraduate medical education, with poorly formed identities associated with increased risk of burnout, error and associated patient harm (1). This research aimed to establish if communities of practice, based on Wenger's Social Theory of Identity Formation (2), support or hinder students during their remediation journey following episodes of failure, and to explore if they subsequently encourage positive identity formation.
Methodology Thirteen students who had experienced remediation following academic failure took part in interviews discussing their experiences of failure, remediation and their subsequent feelings about being a medical student and future doctor. Interviews were recorded and transcribed before analysis. Student narratives were identified regarding their experiences pre-failure, peri-failure and post-failure. These narratives were used to develop a conceptual framework as to how remediation impacts on professional identity formation, including the impact of different communities of practice on student experiences.
Results Students found failure and subsequent remediation a significant challenge to their professional identities. These challenges were both experienced through, and supported by, multiple communities of practice. All students experienced challenge through their peer community of practice, with students who identified a narrative of 'competitiveness' most negatively impacted by this community. Within the established medical communities of practice, the hidden curriculum posed significant challenges to the professional identity formation of students, predominantly through a reluctance to accept failure as a normal part of learning. Interestingly, broader social networks were viewed in both positive and negative lights, with recent high profile media cases of perceived failure and associated consequences impacting significantly on external views of failure. Those students who created their own social networks of "struggling students" received the most positive impact from their community.
Discussion As a result of this research, adjustments to the approach to clinical skills remediation have been made, drawing on the positive impacts on professional identity formation that communities of students who have experienced remediation can offer. This new approach will be offered following the high stakes Year 4 Integrated Structured Clinical Examination this year, with further results available at the time of the conference. Other organisations may wish to consider the communities of practice that students operate in, and consider creating their own communities to support and promote positive identity formation, especially in the context of academic failure and subsequent remediation.
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Theme: Undergraduate Medical Education - Assessment

Accepted as: Oral Presentation in Parallel Session

Paper no. 312
Investigating how Single Best Answer Questions (SBAQs) and Very Short Answer Questions (VSAQs) are standard set relative to performance

Author(s): Kate R Millar, Amir H Sam, Rachel Westacott, Celia A Brown, Prof Colin Melville
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Background Single best answer (SBAQs) are widely used in medical assessments but are criticised for being subject to cueing and not reflecting real life clinical practice. Very Short Answer Questions (VSAQs) are not subject to cueing and may be marked efficiently with recent advances in technology(1–4) However, students find this question type more difficult (1–4). Whilst several standard setting methods have been established for SBAQs, the optimum standard setting methodology for VSAQs has not been examined.
We set out to determine if for common stem items the question format – VSAQs versus SBAQs – affects the pass mark set by standard setting judges, in relation to student performance. In addition, we will investigate if there are different pass marks set when standard setting judges have access to the answers in VSAQs vs SBAQs. Finally, we will use a 'think aloud' approach to explore judges' reasoning behind setting standards for the different question formats.
Methodology The items selected for this study had been used in a formative assessment of 1,417 volunteer medical students preparing for their final exams. Exams consisting of 50 items will be standard set using Angoff, Hofstee and Cohen methods. Teaching faculty at Imperial College School of Medicine were randomised into 4 groups: Group 1 standard set VSAQs first then SBAQs and had access to answers; Group 2 standard set VSAQs first then SBAQs and did not have access to answers; Group 3 standard set SBAqs first then VSAQs and had access to answers; Group 4 standard set SBAQs first then VSAQs and did not have access to answers. Following each session two participants from each group will be invited to take part in a 'think aloud' study.
Results We will present data comparing the standards set for VSAQs versus SBAQs using three different methods, and how this relates to student performance. We aim to show that widely accepted standard setting methods – Angoff, Hofstee and Cohen – can be used in this question format in high stakes examinations and we will show the effect of different methods on pass rates for each question format. We aim to explore the judges' reasoning behind setting standards for different question formats and use this as a basis for proposing "a way forward" for standard setting VSAQs.
Discussion We will be showing the use of widely accepted standard setting methods in VSAQs in high stakes undergraduate medical exams. This will support the acceptability of the use of this question format in routine practice. We aim to highlight any limitations or benefits that must be considered when standard setting exams in this question format, so as to provide guidance to further institutions who are introducing VSAQs into their assessment programme.
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Theme: Undergraduate Medical Education - Assessment

Accepted as: Oral Presentation in Parallel Session

Paper no. 313
Levelling the playing field: an amnesty of assessment materials

Author(s): Eliot Rees, Anjali Gondhalekar, Dan Ntuiabane, Alison Sturrock
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Background Exam recall' is a recognised phenomenon whereby students recall and record questions after leaving the examination hall (1). At UCL Medical School, several groups including sports clubs and societies have developed banks of these questions.

This posed two main problems. First, as these questions were only available to members of the clubs/society, students believed that members of these clubs had an unfair advantage in assessments. Secondly, these banks posed a threat to the validity and defensibility of our assessments.
In order to address the first of these problems, we developed an amnesty enabling students to submit material related to assessments to an on-line site.
This study sought to explore the factors that influence students' contributions to an amnesty of assessment material.
Methodology We conducted a qualitative study using semi structured focus groups. We used convenience sampling and recruited participants from years one to six of the undergraduate medical programme at UCL. The focus groups were facilitated by a medical student peer to reduce the power imbalance and encourage participants to discuss candidly. The focus groups were audio recorded and transcribed verbatim.
Two researchers independently analysed all transcripts using thematic analysis (2) and the research team met regularly to discuss emergent findings.
Results Twenty-six individuals participated in six focus groups lasting a mean of 48 minutes. Six themes were identified through the analysis, which were categorised into motivating factors and de-motivating factors.
Participants welcomed the introduction of the assessment amnesty and described it as a useful resource for learning and for preparing for summative assessments. They described three main reasons for why they may contribute assessment materials. First, they felt that the introduction of an assessment material amnesty 'levelled the playing field' and helped moved towards overcoming inequity. Secondly, they described concerns regarding getting in trouble if they did not submit the materials they had. Finally, they felt that sharing assessment materials may be useful resources for all students.
Participants, however, were cautious that not all materials had been submitted. They described three main reasons for why students might not contribute materials to the assessment amnesty. They described a culture of competition, in which students may choose to withhold materials from the amnesty in order to preferentially advantage themselves and their friends. They also described a lack of incentive for students to contribute their materials to the amnesty. Finally they were cautious about the motivations of the medical school in creating the assessment material amnesty.
Discussion We found that the establishment of an amnesty was acceptable to students and students were motivated to contribute materials. However, the competitive nature of medical careers and the stakes of summative assessments meant that students felt that some peers might still not contribute their materials. Nevertheless, students felt that the school were listening to their concerns regarding inequity and this led to a better dialogue between students and faculty regarding the issue of cheating.
Further research will investigate the effect of the assessment amnesty on the performance of corresponding assessment items in our question bank.
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Theme: Undergraduate Medical Education - Assessment

Accepted as: Oral Presentation in Parallel Session

Paper no. 314
Promoting assessment literacy in undergraduate medical education

Author(s): Harish Thampy, Henry Rush
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Background Assessment literacy can be understood as an individual's knowledge and understanding of assessments they face and the role the assessment and their consequent results play in the overall learning trajectory. In traditional assessment processes, there is a dominant focus on the assessment itself in terms of its design, delivery, utility and quality-assurance mechanisms with less attention paid to how those who sit the assessment understand how and why the assessment is being used in the way it is and how that assessment method fits in the overall assessment strategy of the programme.
The concept of assessment literacy has become well established in the general education literature and is increasingly becoming important in medical education. Promoting learners' assessment literacy is not only directly educationally beneficial, but also helps create trust, transparency and improved satisfaction amongst the learners who encounter these assessments.
Methodology This work reports on a literature review conducted across higher education and medical/healthcare education literature specifically to explore current thinking and strategies to promote assessment literacy.
It also reports on results from a survey of UK medical school assessment leads that explored their views on the importance of promoting assessment literacy amongst medical students. The survey used both numerical-scale response items and free-text comment fields.
Results 17 papers were identified for inclusion from the literature review. 26 medical school assessment leads completed the survey component of the study.
Discussion The literature review revealed key components that underpin assessment literacy - particulary relating to promotion of self regulated learning. Strategies for promoting assessment literacy were collated from across all included studies and will be presented categorized under teacher-related and student-related approaches. Results from the survey of medical school assessment leads revealed that the all respondents felt that promoting assessment literacy amongst their students was important but only 2/3 of schools reported having a formal policy/strategy in place to achieve this. This work will report on examples of approaches that are currently being used or considered by medical schools to help students navigate and understand the assessment processes in place at their institution.

Theme: Undergraduate Medical Education - Assessment

Accepted as: Short Communication

Paper no. 315
An exploration of assessor and BM6 students' experiences of OSCEs

Author(s): Chloe Langford
Corresponding Author institution: University of Southampton

Background The globalisation of Higher Education, along with the introduction of widening participation (WP) initiatives, has led to increasing numbers of both international students and students from backgrounds which would not traditionally have yielded academically-inclined individuals. Despite additional support and interventions being put in place for these students, there is evidence of differential attainment between them and their traditional entry counterparts, and anecdotal evidence from these students indicates that OSCE assessments are an area in which they feel particularly disadvantaged. Due to the performative nature of OSCEs, and the relative lack of experience WP students generally have of this form of assessment, their discomfort is not unexpected. Concerns about language use and potential accent bias are particularly prevalent, and this exploratory study aims to examine the views held by both WP students and assessors about communication and language in OSCEs.
Methodology This is a qualitative exploratory study, and will be conducted through a series of individual interviews with students and OSCE assessors. It is expected that 10 interviews will be conducted in total (5 students, 5 assessors), each lasting between 20 and 60 minutes. Interviews will be semi-structured and will be framed in such a way that comments on language use and/or accent is elicited organically from participants as far as is possible in order to avoid investigator bias. Interviews will then be transcribed using semi-naturalised conventions so that relevant paralinguistic features can be included in the analysis. Inductive thematic analysis will be conducted using NVivo on each set of interviews in order to identify key themes conveyed by both students and assessors. These will be reconciled and compared, with a key focus on disparities in perceptions of the two sets of interviewees.
Results As language use has been identified as a cause for anxiety among students, it is expected that these participants will be more likely to bring up concerns about their language use without it being explicitly mentioned by the

interviewer. Assessors are predicted to be less likely to make spontaneous comments about language use, as their primary focus will be the formal assessment criteria, with judgments about language use being subconscious. It is hoped, however, that any preferences or inherent biases will be elicited throughout the course of the interview.

Discussion While it will be interesting to learn about both student and assessor perceptions of OSCEs, of particular significance will be whether the views of the two sets of participants align. If students present concerns which assessors do not mention then this would warrant further investigation as it could either imply that students are worrying unnecessarily, or that assessors are unaware of the fact that they are judging students on a certain aspect. Conversely, if assessors express negative opinions of an issue which students do not mention, this indicates that students are not fully informed about the criteria against which they are being assessed: this conclusion would require swift redressive action in order to maximise potential attainment.

Once this exploratory study is complete, and all potential outcomes have been fully explored, subsequent research could have implications for assessment planning and preparation, as well as curriculum design and extra-curricular support, in order to ensure student potential is maximised.

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Theme: Undergraduate Medical Education - Assessment

Accepted as: Short Communication

Paper no. 316

Assessing surgical trainees – a systematic review and quality assessment of published evidence

Author(s): John Hanrahan, Terouz Pasha, Michail Sideris, Aikaterini Dedeilia, Apostolos Papalois, Vassilios Papalois

Corresponding Author institution: Lister Hospital, Stevenage

Background Ensuring competence for surgical trainees requires holistic assessment of the qualities and competencies practice safely and effectively. We conducted a systematic review to characterize the content of the current literature and summarise current assessment approaches.

Methodology We searched MEDLINE and EMBASE until December 2018. Three reviewers conducted a tailored quality assessment of studies included in the final analysis. A constant-comparative approach produced a panel of assessment domains to analyse each assessment tool. We compared assessment approaches and quality between surgical specialties and individual countries.

Results From 7059 citations we included 91 studies in the final analysis comprising of 6563 trainees. Only 10 studies (11.0%) were deemed low risk for bias. 10 defined assessment domains (themes) were extracted across 12 surgical specialties. Limited differences in the approach to assessment, were observed between specialties and geographical regions. However, we identified assessment domains neglected by individual surgical specialties and also categories which need validated assessments.

Discussion This review highlights the low quality of evidence and fragmented research efforts aiming to optimise surgical assessments. The minor differences observed demonstrate a common approach, globally and across specialties. A unified approach with international collaboration is required to optimise efficiency and efficacy of research efforts.

Theme: Undergraduate Medical Education - Assessment

Accepted as: Short Communication

Paper no. 317

Competence and Confidence with Pediatric Procedural Skills: The Experience and Opinions of Fifth-Year Medical Students at A Single Institution

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Background Simulation-based training can be a way of teaching students and early career doctors to develop professional health skills, knowledge and attitude. Because confidence can influence the ability to perform the procedure and practitioner may put the patient at risk for an adverse incident if it was not competent enough or their performance was inaccurate. We aim to assess the students' perception and experience of the pediatric clinical skills program in the newly introduced curriculum and to compare their self-confidence with the observed competence for several pediatric clinical procedures.

Methodology A group of 65 medical students in their final year were enrolled in this study during August 2017. All of them had attended the comprehensive week of pediatric skills course using simulation-based manikin with different types of clinical scenario to simulate real-life cases.

All subjects completed a questionnaire concerning their confidence using a 4-point Likert scale designed to measure their self-reported confidence performing skills. After that the examiners assessed the competency of the students by competency-based assessment objective structured clinical examination (OSCE) model concerning five procedural skills (Lumbar puncture, nasogastric tube insertion, umbilical vein catheterisation, intraosseous access, and suprapubic aspiration) and their rating was recorded on a four-point Likert scale by examiners. Difference between various levels of agreement of the questions was calculated by nonparametric chi-square test for goodness of test fit for single sample. Wilcoxon's matched-pair signed-rank test was used to test the hypothesis. Statistical analysis was done by SPSS 25.

Results All students completed the questionnaire and all OSCE stations with consent rate 100%. They comprise 65 participants, with female predominance 44. All of them completed both the questionnaire and the OSCE self-assessments. The difference among frequencies of students responding to the questionnaire for various levels of the agreement was statistically significant. Different ranges of competency levels were revealed by the clinical assessments. Differences between medical students' self-reported levels of confidence with selected procedural skills and levels of competence assessed by OSCE per each skills as follows; Lumbar puncture ($Z = -0.28$, $p = 0.978$), Nasogastric tube ($Z = -1.161$, $p = 0.246$), Umbilical vein catheterization ($Z = -1.853$, $p = 0.64$), Intraosseous infusion ($Z = -0.192$, $p = 0.848$), and Suprapubic aspiration ($Z = -1.032$, $p = 0.302$).

These results showed that self-reported confidence and competence were not different; as a result, there was no significant difference between both confidence and competency displayed by Wilcoxon's matched pair in all procedural skills. Thus, students were able to perform the procedures at their similar perceived level of confidence. Also, the results showed that medical students with a low level of confidence have a higher level of competence despite their perception.

Discussion These results show a higher level of competence and support the implantation of this educational program as standard curriculum, also necessitate the need for positive feedback and increase confidence levels among medical students. Further development and improvement of competency-based assessment are necessary to improve the health care system.

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Theme: Undergraduate Medical Education - Assessment

Accepted as: Short Communication

Paper no. 318
Gender differences in clinical examinations: a meta-analysis over the past 10 years

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Background For all assessment, the variation in students' marks should be due to differences in student ability rather than differences in the characteristics of students such as gender or ethnicity. Ensuring fairness is an essential component of good assessment governance. Prior to higher education studies, female students in the UK tend to slightly outperform male students academically and the numbers of females entering medicine has increased to more than 60%. This study uses a meta-analysis approach to systematically aggregate and statistically analyse the results of multiple examination outcome studies over the course of 10 years to reach a total overall effect size with great statistical power (ref 1) and obtain a clear picture of potential differences in gender performance at University of Nottingham Medical School.
Methodology We performed a meta-analysis of 10 years of clinical examination data in the clinical phase for undergraduate medical students at University of Nottingham, to examine gender difference.
The clinical phase of the course is comprised of three phases, with end of phase examinations for each. We located 41 clinical examinations administrated from 2010 to 2019 during the clinical phase of the course that were suitable for inclusion.
Gender differences for each individual test were measured using the standardised mean difference (SMD) to calculate the effect size (ref 2). The SMD varies from zero, when there is no difference between groups to 0.80 or higher when difference is large. A random-effects model was employed to estimate the mean and SMD of distribution of true scores across the overall or combined assessments (ref3).
Forest plots for gender were generated to gain a complete picture of the differences among individual tests, the differences across each year and overall performance.
Results With respect to gender, a significant overall difference SMD of 0.31 [95% CI = 0.26 to 0.36] favouring females was found.
This was consistent across all years of the clinical phase clinical examinations. When broken down by each of the three years covered by the clinical phase of the course, the differences in performance were less marked by the final year (year 5): 0.23 [95% CI = 0.15 to 0.31] with end of clinical phase 1 SMD 0.22 [CI = 0.14 to 0.30] and end of clinical phase 2 SMD 0.41 [0.34 to 0.48].
Discussion Overall gender differences in the clinical examinations are significant across the clinical phase of the course. The magnitude of female superiority in clinical examinations is consistent over time though slightly reduced by the time they reach the final year. The clinical examination is only one component of the assessment of medical student performance; whilst females may have some advantage in this domain, it will be important to investigate further whether this holds true for other elements, notably tests of knowledge.
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Theme: Undergraduate Medical Education - Assessment

Accepted as: Short Communication

Paper no. 319
What is the experience of examiners receiving objective feedback on their examining performance in medical school finals?

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Background Medical school finals are high stakes examinations which determine the progression of students to newly qualified doctors in clinical practice. In objective structured clinical examinations (OSCEs) one of the sources of variation with the greatest effect is examiners' performance, frequently described in terms of leniency or stringency. The literature widely acknowledges this variation and has sought to reduce this via the provision of feedback to examiners. This has been shown to be ineffective. There is a paucity of literature investigating why this is the case.
The purpose of this study was to help inform future approaches to providing examiners with feedback on their performance in order to generate more reliable assessments of final year medical students. The examiners' reception to and understanding of written feedback was explored to see what could be learned to improve the use of feedback by examiners.
Ethical approval University of Nottingham Faculty of Medical and Health Sciences Research Ethics Committee. Reference number: 177-1712.
Methodology Examiners from the February 2018 Nottingham Medical School final year OSCEs were ranked using Multi Facet Rasch Modelling to generate a leniency/severity score from 0, most lenient, to 100, most stringent. Participants were purposively sampled to represent a range of lenient/stringent tendency and invited to the study by written invitation. Respondents were interviewed using a semi structured interview schedule. They were provided with objective feedback on their performance prior to interview. This feedback was in written form with an accompanying histogram to demonstrate the range of leniency/stringency scores for the whole examiner cohort. Box and whisker diagrams were provided for each station that the participant had undertaken to show their distribution of marks in comparison with their peers who examined the same station. Each interview was undertaken by the lead researcher. The interviews were transcribed and thematically analysed by two analysts to identify emerging themes.
Results Eight participants were interviewed. Their stringency scores ranged from zero to one hundred. The scores of examiners who marked multiple stations suggested a stable leniency/stringency tendency in their marking. Three meta themes were identified: "What is the standard?;" "Marking;" and "Use of feedback." Three horizontal themes of: "Experience as examiner;" "Student influence;" and "Perception" were found to interact with the meta themes.
Discussion Exploration of the meta and horizontal themes revealed: conflicting frames of reference; inability to understand or utilise feedback; and refusal to change. This is in concordance with the existing literature. Whilst a selection of leniency/stringency tendencies were sampled this did not appear to influence their ideas expressed during interview except the most stringent examiner did not show any acknowledgement of their feedback score and did not use this to inform their self-perception. All participants did not intend to change their behaviours having received feedback. The theme of "Perception" revealed participants felt social pressures to conform when marking. This has not been described previously and may have implications for examiner debriefing if they are unwilling to express their views in group discussion. The raters' judgements were influenced by differing frames of reference to determine their marking including their own clinical and undergraduate experiences. There was a suggestion that allied healthcare professionals were more lenient when examining compared to doctors. Further research with larger multi-centre studies is recommended to see if these findings are reproducible and to investigate the "perception" phenomenon further.
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Theme: Undergraduate Medical Education - Assessment

Accepted as: e-poster

Paper no. 320
Preparation for practice and the arguments for standardisation in view of the forthcoming medical licensing exam: a literature review

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Background Numerous strategies are employed by stakeholders in medical education to improve the quality of teaching and preparedness of UK medical graduates for their foundation training for example the introduction of the prescribing safety assessment by the British pharmacological society (Maxwell et al. 2017). Each medical school in the UK must ensure that the outcomes specified in the GMC's Outcomes for Graduates Tomorrow's Doctors are attained by students upon their graduation (GMC 2018). The GMC are also working on a new method considered to enhance the preparedness of medical graduates and ensure a consistency of standards, the Medical Licensing Assessment (MLA) (Rimmer 2017). This literature review aims to address the question of whether the introduction of a national licensing exam will improve preparedness for practice. Firstly, this review will explore and identify the areas in which UK medical graduates are feeling underprepared. This review will also discuss the need for the MLA in the UK, with appropriate references to the literature throughout.

Methodology A literature search was performed using MEDLINE (accessed by PubMed), Scopus and JSTOR in December 2018. These search engines were chosen to cover a wide variety of literature and ensure all suitable studies were included in this review. The search strategy involved combining several relevant phrases: "Medical licensing assessment", "UK Medical graduates", "Standardised testing" and "Preparedness for practice". Studies which identified the areas in which medical graduates were prepared/unprepared for, and also those which explored whether or not UK medical schools were adequately preparing their graduates for practice, were included in this review. Included studies had the following data extracted and collated in a datasheet: author, publication year, study methodology, size of cohort and key finding(s).

Results A total of 673 articles returned using the search strategy in December 2018. After removing duplicates, a total of 622 papers remained. Abstract screening was performed, and 28 papers were chosen for more detailed review of the full article with 2 papers added after a review of the relevant references. 16 articles met the final inclusion criteria. All studies were cross-sectional and were conducted utilising either questionnaires, surveys, interviews and audio diaries or a combination of methods. Studies included medical schools, junior doctors and medical students.

Discussion A decisive conclusion on whether UK medical graduates feel prepared to work in the hospital environment after medical school, will inevitably be in debate due to the objective and varying subjective standards in the assessment of preparedness. Overall, the trend within the papers included in this literature review conveys that junior doctors are mostly underprepared in aspects surrounding acute and emergency work. The MLA is another written exam for medical students to sit and may not directly address the areas in which students feel underprepared in, for example emergency skills. Current literature indicates that the principal benefits of standardised assessments can be summarised into two main points; to provide reassurance and quantifiable evidence that all UK medical graduates have met a minimum standard to practice, and that all medical students in their final year are ranked in a fairer order, prior to the start of the UK foundation programme. The implementation of the MLA for these reasons is advantageous and the true utility of a national licensing assessment lies here. In conclusion, current literature suggests that the implementation of the MLA is a positive step for undergraduate medical education, however the preparedness of UK medical graduates may remain unaffected by it.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 321
3D Printing in Anatomy Study for the Formation of Anatomical Cognitive Maps

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Background Early-year medical students struggle to learn anatomy, often focusing on memorising lists of names at the cost of a mental grasp of the body's components, their location, connection and function: an anatomical cognitive map. Tolman's notion of a cognitive map can describe the mental map a medical student creates as she learns the systems of the body (1). Traditional anatomy teaching includes studying bodies in the dissection room (DR), or studying photos and drawings. These are necessary but have limitations to support students' formation of an anatomical formative map. Our study examines whether and how

3D printed bodily systems can help medical students form an anatomical cognitive map.

In 2018, a student society and anatomy lecturer began to explore the use of 3D printed anatomy artefacts, starting with 3D-printed brains and Circle of Willis. This led to a workshop at the NMRC Inspire Conference November 2019, in which participants assembled 3D printed carpal bones and solved questions to learn wrist anatomy. This study shares workshop findings to demonstrate the value of developing the anatomical cognitive map with the aid of 3D printing. The presentation will demonstrate 3D printed artefacts.

Methodology For the workshop, sets of carpal bones were printed in double size by the Anatomy Lead on the Medical School's printers. Students collaboratively designed the learning task to assemble carpal bones and answer further questions about function and location in the arm. Each workshop group was given printed instructions, a set of bones, and an iPad with the 3D-visualisation app Complete Anatomy©, for reference. Participants were also taught the 3D-image edition software 3D Slicer©, and were surveyed regarding the learning value of different aspects of 3D printing for anatomy. N=60 participants attended the workshop; N=30 participants submitted feedback, which was analysed for emerging themes

Results Participants were absorbed in the task of assembling the bones and solving questions. 95% of respondents agreed that working with 3D printing aided their understanding of carpal bones, in it helps to understand orientation and articulation of bones. Participants further suggested 3D printing to help students translate two-dimensional (2D) images to 3D, to visualise pathologies, to understand surfaces of each bone and their articulations with each other, to rotate organs and systems, to enable hands-on, kinesthetic learning, and to make the learning fun. 100% of respondents agreed that the 3D Slicer software – used to edit scans and plans - would be a good learning tool for undergraduate medical education.

Discussion The overwhelmingly positive responses are illustrative: translating the 2D image on the question sheet to the 3D carpal bones indicates developing a 3D anatomical map - an improvement from looking at images. Handling the bones allowed appreciation of surfaces and how bones match to each other – another indication that their cognitive map is forming in sensing the relation of one landmark to another. Positive comments about the kinesthetic and hands-on learning with 3D printed items are also interesting if we consider that the DR is also hands-on. 3D printed artefacts add to DR learning by allowing organ isolation and rotation and alteration of size and colour.

Participant feedback echoes findings in research of the viability of 3D artefacts for learning. The object-based learning theory suggests that interacting with 3D models may help increase the mental rotational skills of learners (2). Tactile manipulation (hands-on approach) is known to help strengthen the relationship between spatial information and theoretical concepts, promoting greater retention of information (3) (4) (5). Including 3D printed media for anatomy study should improve students' anatomical cognitive map formation, as well as making it engaging and fun. Further research may include holding pre-exam revision sessions with 3D artefacts and mapping students' attainment.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 322

A fun break from placement? Student perceptions of escape rooms

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Background Within undergraduate education, gamification is an evolving field. Game mechanics can be incorporated into teaching methods to encourage participation and attainment, often in video game settings.[1] Gamification principles can be applied to simulation-based training, by designing escape rooms. Escape rooms potentially encourage the acquisition of knowledge, skills and non-technical expertise, by solving puzzles placed within a clinical simulation scenario. Understanding of student perceptions of escape rooms is limited, and therefore would benefit from qualitative consideration.

Methodology Final year undergraduate students completed a series of three different escape rooms, with each scenario using a high fidelity simulation manikin. Each room required a combination of clinical management and puzzle solving. Ten students completed free-text preconception sections before the first scenario, and feedback after the third scenarios, with responses thematically analysed.

Results All students who completed the programme completed feedback. There were three themes identified for preconceptions and feedback. Students' preconceptions were: 1) Escape rooms were likely to be fun and relaxed. 2) The different approach could improve non-technical skills, with teamwork commonly quoted. 3) Finally, escape rooms may be good for practical learning, but there were concerns about whether they would have any extra benefits compared to simulation. Feedback themes were: 1) Escape rooms were a fun way to improve communication, with less of an emphasis on developing clinical management skills. 2) It was felt that the rooms were an effective introduction to clinical scenarios, and were effective to recap knowledge. 3) An important benefit was the focus on breaking down a scenario into smaller component parts, with learning derived from rewarding each correct step.

Discussion Students had a broadly positive approach towards escape rooms before starting the series, with many expecting, and subsequently finding, the sessions to be fun and enjoyable. Whilst the students anticipated a benefit to non-technical skills and practical learning, they were surprised how useful they found escape rooms at testing knowledge recall, with the step-by-step process integral to escape rooms identified as contributing to this.

When introducing escape rooms to students, faculty should be aware that the group may have preconceived notions that such tasks may not improve their knowledge. Despite this, there is a benefit to designing escape rooms with knowledge tasks included, as these are found to be rewarding. Escape rooms are considered positively, with their logical nature providing a novel perspective to be included in teaching programmes.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 323

An Exploration of the Challenges Faced by Senior UK Medical Students on Electives to Low and Middle Income Countries and the Attendant Effects on Professional Identity Formation

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Background For senior UK medical students electives provide an opportunity to design and organise an individualised educational experience to study in any 'safe' part of the world. 40% choose to travel to developing countries where it is

generally assumed that they will develop both personally and professionally (Miranda et al., 2005). Moral, ethical and safety challenges are commonplace on such placements. Yet, despite being a popular and consistent feature since their introduction in the 1970s, it has been suggested that electives are the least researched component of undergraduate curricula (Jolly, 2009). Moreover, the large costs and risks associated with travel; the huge degree of student choice and the minimal, often student-set, learning outcomes all lead to highly variable learner experience (Lumb and Murdoch-Eaton, 2014). At a time of outcome driven curricula and institutional accountability there are those questioning why the elective warrants its inclusion in time-pressured undergraduate medical curricula (Ibid).

In contrast, professional identity formation (PIF) has seen a recent emergence of interest in medical literature. It is the transformative process by which students transition from lay individual to medical practitioner and internalise the values, beliefs and behaviours that define the profession. I became interested in how those who complete electives to low and middle income countries were able to rehearse challenges similar to those that they will encounter in their future working roles. I set to investigate whether those challenging experiences made senior UK medical students act, think and feel like 'real' doctors.

Methodology From a constructivist stance, I used hermeneutic phenomenology methodology. Data was collected from four post-elective students via semi-structured interviews and transcribed verbatim. Data was analysed using the hermeneutic cycle of close reading, reflective writing and interpretation.

Results My participants told incredible stories of tragedy, danger and joy. It is my personal understanding that challenges on electives to low and middle income countries do not develop the clinical skills. They do however develop 'humanistic qualities' and the 'global citizen', which may enable learners to act, think and feel like the patient-centred and internationally-competent doctors modern medicine necessitates.

Discussion The challenges my participants encountered were complex and heterogeneous in nature but the impact was similar. Challenging experiences did not significantly develop clinical skills. Professional socialisation, as described in the wider literature, appears to explain why this anticipated outcome was not possible. Cultural and contextual differences in healthcare; poor relationships with local professionals and resource challenges limiting opportunity, all prevented the internalisation of the technical skills required to be a doctor.

Although socialisation was not possible, personal and professional development still appeared to occur. Learning took place that transcended the community of practice. My participants described experiences that developed a desire for social justice, expanded their empathetic potential and nurtured self-awareness. Moreover, their experiences provided global health learning and developed cultural competence. The significance of these results is discussed in light of the wider literature, educational theory and professional identity formation. Praxis - the art of experience, reflection and action in the pursuit of social justice - and experiential learning appeared paramount.

Is it appropriate to include medical electives in undergraduate medical education? I believe my study provokes necessary discussion. If electives to low and middle income can be shown to significantly contribute to professional identity formation, it may further legitimise one of the most exciting periods of medical school.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 324

Bridging the Gap: Creating a "Virtual Ward" in preparation for medical student assistantships

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Background Despite their highlighted importance (1), in recent reviews of assistantships (2,3), students were found to be poorly prepared for integrating into teams and wider aspects of ward work including handover, error and ward environment familiarity.

The Newcastle Medical School curriculum involves a 3-week classroom based module prior to assistantships called 'Preparation for Practice' (PDS6). Whilst the above topic areas are in the learning outcomes, feedback for the module is often mixed, with a lot of students failing to see the relevance of the topics covered.

In 2018 we introduced a longitudinal 'virtual ward' simulation to contextualise PDS6, demonstrating improved student confidence in non-technical skills (4,5). We are following up last year's students and re-evaluating a second cohort, focusing on how well this prepares students for practice and assistantships.

Methodology All students were at South Tyneside Hospital where they underwent the PDS6 curriculum either in 2018 or 2019. Individual classroom sessions and learning outcomes for the module were the same as previous years. The difference was the creation of a virtual ward.

The 'virtual ward' encapsulated the PDS6 curriculum within a longitudinal simulation. Final year medical students were assigned the role of ward F1s. A list of patients was populated, with all sessions relating to patients on the ward. These patients were clerked in clinical reasoning sessions, discussed, with relevant 'jobs' completed, during handovers every morning; and reviewed during evening 'on-call' sessions through acute simulations or on-call tasks, which would require handover the next morning.

Focus groups contain either students from the 2018 cohort (now F1s) or a control group of F1s who studied at Newcastle last year but underwent PDS6 at another hospital site (without the intervention). Both were asked to judge how much the virtual ward intervention prepared them for assistantships and practice. Structured interviews were/will be carried out on students upon completion of assistantships focusing on how well the intervention prepared them for assistantship. Data is analysed using thematic analysis.

Students underwent a pre/post-PDS6 confidence questionnaire based on Outcomes for Graduates domain 9b (6), repeated post- assistantship.

Results 34 students undertook the intervention (16 in 2018, 18 in 2019). Across both years, 99% of feedback from students has been positive (95% strongly agree, 4% agree, 1% neither agree/disagree). The Outcomes for Graduates confidence questionnaire showed a 58% average increase in confidence across all domains after PDS6.

Initial qualitative data (3 F1 focus groups, structured interviews with 2018 cohort in March '19, free-text feedback comments) is strongly suggestive that students feel that a virtual ward approach improves preparation for practice. Key themes so far: increased immersion through longitudinal SIM, increased student sense of responsibility, impact of action-consequence.

The current student cohort will be interviewed after assistantships (March) and not all F1s have yet been followed up in focus groups.

Discussion Lave and Wenger's work on Communities of Practice (7) outlines the process by which medical students may achieve full participation in a team through the gradual build-up of legitimate tasks. However, if confidence is low due to the busy ward environment or unfamiliar tasks, this process may be stilted.

The concept of a virtual ward may bridge this tension, allowing students to address tasks alone and observe the results of their actions. However, students can be allowed to take these risks with no potential of patient harm, with the added value of debrief. A virtual ward could encapsulate classroom-based curricula preceding /within assistantships.

Despite the limitations of this study, we feel there is enough evidence to suggest further research into this method of framing educational courses to improve students' preparedness for practice and assistantship.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 325
Can we change undergraduate student perceptions of technical and non-technical skills training during simulation?

Author(s): Dr Lucy Paterson-Brown, Dr Melanie Ranaweera, Dr Morwenna Hodin, Dr Peter Darkin, Dr William Stephenson
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Background Simulation based learning (SBL) is widely used in paediatric postgraduate medical education to improve technical and non-technical skills at each level of training. There is much literature showing that simulation has a positive effect on learning outcomes (1) and clinicians' communication and teamwork during emergencies can be improved through simulation training. SBL is now increasingly integrated into undergraduate teaching programmes. Through our involvement in the design, successful implementation and review of a recurrent undergraduate paediatric simulation (UPS) programme at St George's University London (SGUL) we now understand that our students have had little or no prior exposure to simulation training, especially paediatric simulation. The aims of our UPS programme are to facilitate the development of both technical and non-technical skills in a safe environment. We also have accountability for the relevance and quality of learning for our students (2). We take the evaluation of our programme seriously and constantly discuss potential improvements. In view of recent feedback, we pose the question: "do undergraduate students understand the importance of developing both skill sets, and if they do not, how can we adapt a curriculum to achieve this?" We aimed to evaluate whether students have more emphasis on technical or non-technical learning from simulation sessions and whether we can alter the curriculum in accordance with this information.
Methodology All SGUL students undertaking their paediatric placement at St George's completed questionnaires before and after their UPS programme. These were designed to assess changes in individual confidence levels and assess key perceived learning outcomes. Free text comments were summarised as part of a full curriculum evaluation following Kirkpatrick's model (3). A summary of this qualitative data was compiled into a word cloud, which clearly shows a larger font for more frequently used words.
An initial data analysis highlighted lack of prior knowledge and experience of SBL as an area of concern for students, which we felt could cause a hindrance on the quality of learning during the programme. As a result we added an introductory session before the first simulation session. This interactive Small Group Teaching session explored the aims of the programme and discussion of technical vs. non-technical skills learning in SBL. The post course data were then analysed to assess if key perceived learning outcomes had changed.
Results The initial qualitative data collected demonstrated a heavy student focus on technical skills. Key perceived learning outcomes from UPS included "ABCDE approach", "management", "protocols" and "guidelines". Non-technical skill learning was commented on much less frequently such as "SBAR", "handover" and "delegation". After the programme was changed to include an introductory session the new wordcloud still showed the largest focus on "ABCDE", however the next most frequent words included "teamwork", "support", "skills" and "help" (which was used in the context of calling for help at the appropriate time).
Discussion This data highlights that undergraduates at SGUL initially perceived that their learning during the UPS programme was mainly technical skills. As facilitators we observed a huge improvement in student non-technical skills during the course and therefore after initiating an introductory session exploring the goals of UPS and explaining learning opportunities in SBL we were able to demonstrate that the students learning perceptions changed. The emphasis of their learning outcomes moved to include non-technical skills, which was in line with our intended learning outcomes as faculty.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 326
Can we influence medical student education by understanding the underlying clinician perspectives of empathic practice?

Author(s): William Calvert
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Background Benefits of empathy within medical practice are well documented. Despite this, numerous reports exist that claim it decreases with time over a medical degree course. Confounding these reports are demonstrations of multiple definitions of empathy, poor understanding of the underlying construct of empathy, and multiple tools for "teaching" empathy to medical students. All these elements have added confusion to the research of empathy in medical education and highlighted the need for clarity of a basic knowledge of the phenomenon through new work. I previously reported on a medical student study using patient shadowing as a means of educating about empathy highlighting themes identified by students through their observations of practicing clinicians. This new study expands on that work addressing whether student observations about clinician empathy correlate to the clinicians own perspectives of the phenomenon.
Methodology In my previous work I detailed how students observing clinicians reflected that multi-yield highly repetitive interactions with patients appeared to lack empathy. In order to understand this observation further I performed 10 semi-structured interviews of clinicians (inclusion – 4 regionally local hospitals to study centre and a valid GMC registration). Within these interviews I explored themes including the understanding of empathy, the development of empathy, and the realities of empathy in practice. The interview review process was iterative allowing pursuit of new topics in subsequent interviews. The aim of the interviews was to generate new knowledge from practicing clinicians about the underlying context of empathy in practice and ascertain if these findings could be related back to medical student education and help to provide explanation or understanding on student observations.
Results The interviews were audio recorded, transcribed and then coded using NVivo. After initial coding, relationships were identified and then interpreted. With this presentation I will present a number of these themes and interpretations demonstrating how empathy as experienced by clinicians in practice relates to the observations made by medical students. I will clarify the observation of changing empathy with years of practice or "triviality" of encounter, presenting evidence of situations, such as the observed high frequency interaction types, where a clinician is unable, either through choice or situation, to practice empathy and how these occasional context specific scenario manifest and are acceptable to practice and not detrimental to patient care. Further to this I demonstrate how the underlying construct for empathic communication develops within the grounds of patient contact.
Discussion By exploring how empathy is experienced and practiced in a clinical context we can generate important messages and learning points for the education of medical students. By giving students both a grounded knowledge in the benefits, development and manifestations on empathy in clinical practice as well as practical guidance on how they may observe empathy within clinical interactions during their training, we will provide future doctors with the means to understand, develop and utilise this important and protective tool in their own careers.

Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 327
Dissection or Prosection in Anatomy Education? A Systematic Review and Qualitative Study

Author(s): Timothy Shun Man Chu, Aye Moh Moh Oo, Iain D Keenan
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Background Once considered to be the 'gold standard' in anatomy education, conventional cadaveric dissection is gradually being replaced by prosection in medical schools around the world(1-3). There is also an increasing trend in the integration of physical and technology-enhanced learning (TEL) activities to supplement traditional approaches. Some factors responsible for these changes include logistical and financial constraints, the growing popularity of TEL, and an increased curricular focus on self-directed learning. Nonetheless, substantial evidence supporting the preservation of cadaveric resources as valuable means of enhancing student learning has been presented(4-6). We therefore aimed to investigate the relative pedagogic value of dissection and prosection, to identify their respective strengths and weaknesses, as well as the factors influencing their successful delivery within the context of modern anatomy education.

Methodology Medline, Embase and PubMed for the terms Prosection and Dissection and Medical Education were used for the literature search, yielding 130 articles. Implementation of PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) resulted in 18 articles being included in our qualitative synthesis. Studies not including medical students in the population studied, not including the comparison of dissection with prosection, and studies that are not primary research are excluded in our review.

Results Dissection has been reported as a method that is able to provide a tactile and emotional learning experience while supporting the development of transferable practical skills. On the other hand, prosection is described as efficient and cost-effective. It also demonstrated the capacity to clearly demonstrate complex anatomical structures. However, the variabilities in methodological design and study aims, inconsistencies in the level of supplementary learning resources used, together with the lack of universal parameters for the objective measurement of teaching effectiveness have hindered the formulation of meaningful comparisons and conclusions from published studies.

Nonetheless, several points worthy of interest have been raised in the literature. Firstly, it appeared that the extent to which prosection or dissection was most effective depended on how students understanding and learning of the concepts was measured. For instance, one study(7) identified that dissection provided only a small advantage to students based on assessments involving cadavers. Furthermore, the appropriateness of the commonly used competency-based examinations as a parameter to evaluate the quality of education was also challenged. It has been concluded that the knowledge, skills, and attitudes learned in gross anatomy instruction are not well measured by a licencing exam(8). As students may just make up for any weaknesses in teaching methods by studying, any results generated through examinations may be skewed.

Discussion We propose that prosection is unlikely to completely replace dissection, as no convincing data that supports one method over the other has been identified. Future studies aiming to determine the value of these pedagogical approaches should address limitations in the existing literature, through adopting rigorous methodologies with standardised designs and outcome measures.

We aim to address these aspects in our current work by seeking to identify the relative value of dissection and prosection through generating qualitative data from focus group studies. The study population will comprise students who have experienced both dissection and prosection, therefore will give a more valid and balanced view. Two focus groups have been performed to-date and transcripts have been thematically analysed. This study will be the first in the literature targeting a specific population and will enrich our understanding on the comparative effectiveness and students' perceptions on dissection and prosection.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 328
Driving learner motivation from exams to preparedness for practice: an evaluation of the impacts of surgical SECO clinics

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Background Undergraduate teaching of breast surgery is typically delivered via lecture-based teaching alongside clinical experience in breast clinics or inpatient settings. There is an increasing awareness of a feeling of lack of preparedness amongst junior doctors in practising the clinical aspects of surgical disciplines despite extensive undergraduate education. Safe and effective clinical outcomes (SECO) simulated clinics have been used in undergraduate medical education to provide students with an authentic clinical learning experience and may address learning objectives that are better aligned with future clinical practice.

We aimed to compare student and teacher experiences of traditional classroom teaching and a simulated SECO clinic in teaching breast surgery and to investigate how this aligned with students' educational priorities in preparing for clinical practice or for assessments.

Methodology A case-study of three cohorts of Year 3 medical students undergoing their first surgical clinical attachments was performed at a London teaching hospital. Students were enrolled in a teaching programme that delivered two independent teaching sessions focused on breast surgery. A classroom based teaching session was delivered to address the core learning objectives related to breast surgery. A SECO-based simulated clinic was delivered with four independent consultation stations addressing the same core learning objectives. Evaluation forms collected quantitative and qualitative data related to students' experiences of each teaching session. The SECO clinics concluded with debrief discussions which were recorded and transcribed with student consent for them to be used for evaluation purposes. Students were asked to reflect on their own educational priorities with relation to preparing for assessments or for clinical practice. Analysis of data generated from debrief discussions was classed as evaluation of teaching by Imperial's medical educational ethics committee. Facilitators perspectives were captured in short focused interviews with ethics approval EERP1819-006. Transcripts were coded and analysed using a deductive approach to identify content relating to existing theories for motivation of student learning including self-determination and goal oriented theories, and an inductive approach to explore emergent themes. Content was coded consensually by two researchers and audited by a third.

Results Results from the first cohort have been analysed; results from cohorts two and three are underway and will be presented.

Preliminary findings suggest the experience impacted student motivation with evidence of a shift towards intrinsic motivation in response to the clinical scenarios. Additional motivational reactions of students feeling 'out of their depth' in a clinical scenario included both external regulatory factors (avoid failing final exams) in addition to internal regulatory factors (the desire to become a better junior doctor). Inductive findings included the value of learning to draw on real

world clinical resources including colleagues and guidelines and strategies for communicating and safely managing uncertainty. Facilitators' perspectives included the value of SECO clinics in bridging the gap between clinical knowledge and practice.

Discussion SECO simulated clinics provided an immersive learning environment for Year 3 medical students to learn clinically relevant material to breast surgery. When presented with an integrative clinical scenario, students were forced to find ways forward that took them beyond the competencies assessed through summative assessments such as multiple choice and OSCE. For some this was troublesome to process, for others it encouraged the development of competencies relating to the social and material aspects of safe clinical practice, and for some it was transformational in their approach to learning with students describing a change from extrinsic to intrinsic motivation.

Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 329
Evaluation of 2.5D models in the teaching of sectional anatomy of the brain

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Background 3D printing is a relatively new concept that has been introduced into medical education. Limited research has been done into this subject. However, evidence suggests that tactile manipulation improves information retention (1) and mental rotational skills (2).The aim of this study is to investigate and review the use of novel 2.5D models designed for anatomy teaching in our medical school curriculum. We introduced the term 2.5D to our educational materials to describe a 3-Dimensional model created from a 2-Dimensional image outline that can be subsequently made from transparent or opaque material.

Methodology Two millimetre thick transverse-section brain slices at the location of the basal ganglia was printed using white PLA filament and transparent acrylic. The study was divided into two sessions. At the first session, the students were randomly divided into two groups and were taught the same material. Group A (control) was taught using the traditional way by using an iPad and Group B was taught using 2.5D models. The second session was carried out 10 days later where students were given a quiz to identify parts of the basal ganglia on an MRI image. All participants were given a questionnaire to input their comments at the end of the study. The data was analysed using SPSS. A Mann Whitney U test was used to compare groups with the null hypothesis that there was no difference between cohorts ($p>0.05$). The study received university ethical permission and only consenting students participated.

Results Nineteen student participants were recruited (2 students did not attend session 2). Quiz outcomes were not statistically different between both groups ((Median 50%, range 10-100%), Mann Whitney $p>0.05$). Questionnaire data demonstrated students significantly favoured the 2.5D method in learning neuroanatomy as compared to controls ($p=0.01$). Qualitative feedback was complimentary for the use of 2.5D anatomical teaching with both groups requesting the use of this method for learning anatomy.

Discussion Strengths and weaknesses of the 2.5D models were identified by both researches and participants. Students particularly enjoyed the 2.5D models for their learning experiences and requested further use of the models in future. However, teachers noticed that there was insufficient time allocated for teaching using the models. We accept that the sample size was small; however, due to the overall positive feedback, we have introduced the use of 2.5D models for the neuroanatomy module of our medical curriculum.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 330
Global Health Education in UK Medical Schools (GHEMS) Study

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Background Global health can be defined as the study, research, and practice of medicine focused on improving health and achieving health equity for all persons worldwide [1-3]. There have been repeated calls for more robust global health education within the UK medical training programme from students [4 - 6] and faculty alike [7 - 11]. The Global Health Learning Outcomes Working Group (GHLOWG) consulted a consortium of global health stakeholders, comprising universities, the public, the Royal Colleges, and other professional, educational, and civil society bodies to develop a comprehensive list of global health learning outcomes for compulsory teaching at all UK medical schools [8]. It is unclear whether medical schools have integrated these mandatory learning outcomes into their syllabi due to a paucity of data evaluating the current state of global health teaching in UK medical schools. The aim of this study was to inform medical schools and regulators, who share the responsibility in providing standardised and adequate medical education to students across the UK, about the extent of timetabled global health teaching activities in medical schools across the UK.

Methodology GHEMS was a national, multicenter study evaluating global health education within UK medical school curricula during the academic year 2018/2019 against the recommendations put forth by GHLOWG. The study was conducted as per the study protocol [12].

Results On average, medical courses taught 33/42 (78%) global health learning outcomes as part of compulsory timetabled teaching [95% CI: 73%, 83%]. Four medical courses taught all global health learning outcomes as part of compulsory timetabled teaching: two undergraduate medical courses and two graduate-entry medical courses. On average, each global health learning outcome is taught at 31/39 (79%) medical courses [95% CI: 73%, 84%): 22/28 (78%) undergraduate courses [95% CI: 73%, 84%] and 9/11 graduate entry courses (78%) [95% CI: 72%, 84%]. Only 3 learning outcomes are not taught as part of compulsory timetabled teaching by at least 50% of all medical courses: 'access to surgeons with the necessary skills and equipment in different countries' (14/39, 36%), 'diversity in the workforce' (16/39, 41%), and 'private sector involvement in the NHS' (17/39, 44%).

Discussion This study affirms that the majority of the learning outcomes produced by the GHLOWG are being taught as part of compulsory timetabled teaching at the majority of UK undergraduate and graduate-entry medical courses. However, there is considerable variation among medical schools on which learning outcomes are being taught as part of timetabled teaching. Therefore, graduates from different medical schools have had distinctly different standards of global health education. By gaining a greater understanding into global health topics administered to UK medical students, we are able to ascertain the key lessons being instilled in our future NHS workforce. Translational topics such as being informed of cultural differences from people from that culture, the ethics of healthcare delivery and diseases commonly seen in certain migratory communities are universally applicable to all students' future careers as NHS physicians. However, topics such as global surgery, climate change, and war and conflict also necessitate attention in order to ensure these needs of rising global importance do not go unmet [13-14]. The chronic under-representation and variance of these learning objectives within medical school curricula warrants further investigation into the reasoning behind curricula development. Similar research has been conducted in both the US and Canada [15 -16], and they have also revealed considerable variation in global health learning opportunities among American medical schools. Given the success of the framework used in our study, we perceive and hope that this study will be replicated internationally, as there is a paucity of international data in this area that needs to be addressed.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 331

"I don't belong here": The role of the hidden curriculum in undergraduate surgical education

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Background Despite significant curricular changes there remains dissatisfaction in undergraduate surgical education from both students and clinicians, neither feeling that new medical graduates are adequately prepared to care for increasingly complex surgical patients. In Bloom's words there has been 'reform without change'. It seems necessary that we look beyond the curriculum and identify other factors which may be influencing students' surgical learning.
The hidden curriculum is described as "that which the school teaches without, in general, intending or being aware that it is taught". It is present in all areas of medical education from resource allocation to documentation; assessments to colloquial language. It is probable that these elements of the students' experiences have a significant impact on learning.
This study aims to investigate how the hidden curriculum operates and determines what undergraduate students learn in surgery. It will examine whether students and surgeons differ in their understanding of these influences and their effect on learning.
Methodology The theoretical perspective is critical realism, with the researcher taking an ontological outlook of realism and the epistemological perspective is constructivist.
Data was collected iteratively using semi-structured interviews of final year medical students and consultant surgeons who teach them at a single university. The interviews were transcribed, coded and general thematic analysis was carried out with the aid of nVIVO until thematic saturation occurred. Ethical and clinical governance approval was obtained from the university educational research committee and health boards involved.
Results 13 interviews were carried out with students and 14 with surgeons. Analysis has shown that students focussed on the 'learning environment' (particularly theatre as a unique setting) and 'interactions' with surgical team members including staff and other learners. The influence of 'rules and etiquette in surgery, most notably in the operating theatre, was frequently raised along with the fact that they weren't always made apparent. Another interesting aspect of the student dialogue was the feeling of 'belonging' and its influence on learning. Being made to feel welcome and a 'useful' part of the surgical team subjectively improved learning.
Reassuringly consultants agreed that a 'positive relationship', getting to know students both professionally and personally, was necessary to facilitate learning. Many identified the impact 'external factors' such as placement organisation and service delivery had upon this. Interestingly, the clinicians differed on the necessity of active participation, particularly in theatre; in fact some felt that theatre attendance was unnecessary.
Discussion This study has undertaken a comprehensive assessment of undergraduate surgical education and the role of the hidden curriculum, examining this from the viewpoint of surgeons and students. There are areas of agreement particularly regarding the structure of placements around the unique surgical schedule and environment, with the resultant impact on the student-educator relationship. There is recognition of the importance of this relationship in engaging students to maximise learning. However not all clinicians recognised the importance of active participation and social belonging in student learning, and this is likely to contribute to feelings of anxiety described by students as they interact with the surgical team.
By understanding the influence of the hidden curriculum we can ensure that future reforms of undergraduate surgical teaching are made in a more rounded manner with collaborative involvement of all stakeholders. This should ensure satisfied surgical educators, improved patient care and students that feel like they belong with the spark of interest in a surgical career ignited.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 332

Internal Medicine Enrichment & Development (IMED): early exposure to medicine subspecialties and its influence on students' perceptions of a career as an internist

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Background There are limited pre-residency opportunities for students to experience the breadth of internal medicine (IM). IMED is a 2-week program involving observerships, career talks and hands-on workshops in nine medicine subspecialties. Our objectives were to investigate whether the current IMED structure appropriately altered documented biases regarding a career in IM and which aspect of IMED students found most helpful in exploring these misconceptions.
Methodology Surveys were administered to three groups (n=16): IMED participants who completed pre- and post-program surveys; "General control" participants who did not apply to IMED and "applied Control" participants who

unsuccessfully applied. Scores were compared using Wilcoxon signed-rank and rank-sum tests for paired and unpaired data, respectively.

Results 81% of participants reported a change in perception about the hours, work-life balance and job prospects as an internist, while 63% of participants reported a change in perception regarding procedural skill required. 81% of IMED participants reported that they were more likely to pursue IM following IMED. When students reported a change in their bias towards a career as an internist, 79% of the time this change was attributed to career talks. However, despite these self-reported results, there were no significant differences in misconception scores between groups.

Discussion IMED successfully improved pre-clerkship students' self-perceived understanding of a career as an internist. Career talks were the most valuable resource for students in altering misconceptions. In the future, our questionnaire needs adjusting. Participants felt that they had a change in their perception; however, due to the way questions were posed and scored, our objective data was not consistent with participants' opinions.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 333

"It's like opening up a whole new world" Patient perceptions of the impact of their involvement in undergraduate communication skills training

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Background Patient involvement in medical education (PIME) has gained attention in recent years and is now a regulatory requirement of medical curricula in the UK[1]. This can be partly attributed to an ageing population with increased chronic disease prevalence[2], both of which are primarily managed in the community. This impacts medical student training twofold. Firstly, there are fewer opportunities to interact with patients as hospital stays are shorter[3]. Secondly, it may be inappropriate for students to interact with inpatients who are acutely unwell[4]. The shift from paternalism to patient-centred care has also driven PIME. With patients at the centre of the NHS5, students need to interact with patients to gain an appreciation of factors beyond a condition such as patients' values and emotional needs which are key aspects required to work in partnership with patients[6]. Without patient involvement ventures, the opportunity for medical students to interact with patients would be threatened which has national implications for the provision of patient-centred, holistic care.

Learner outcomes from patient involvement ventures dominate existing literature, neglecting the patient voice[7]. Research calls that this research aimed to address were: the exploration of patient perspectives across a range of medical educational activities[8], exploring the psychological impact of PIME on patients[7] and exploring the added value of patient involvement[4].

This research aimed to explore how Patient and Carer Community (PCC) members view their role in the communication skills training of year two medical students and what they perceive the impact of this role to be.

Methodology This research adopted a qualitative approach in the form of a case study. Participants were recruited via a gatekeeper from Leeds Patient Carer Community, a group of over 200 patients and carers working with Leeds medical students who have been recognised nationally for their work[9]. Following this, 1:1 semi-structured interviews (n=6) were conducted, recorded, transcribed verbatim and analysed thematically.

Results Three themes were elicited: 1) working in a partnership 2) nurturing talent 3) uniqueness.

Participants viewed their role as a partnership in terms of both parties learning from the encounter as well as supporting each other. Participants felt responsible for the success of the interaction and perceived their role as a supportive one. In year two communication skills, PCC members use their real medical histories in a consultation with a student. Participants took a role in adapting their stories according to student need, thus making for an authentic interaction. They perceived the impact of their role to be positive and reported learning more about their conditions, feeling supported by students, a positive impact on mental health and better relationships with their doctors and families. Perceived benefits to students included the encounter exposing them to new perspectives, thus facilitating their learning about the impact of disease on patients.

Discussion Findings including patients feeling responsible for the interaction and the striking sense of support provided by patients to students contribute something original to existing literature which furthers the opportunities for future research. Something equally important about these findings is that they challenge the notion in existing literature that expert patients lack authenticity. Expert patients have been described as 'professionalised' meaning their interaction with students is no different to a healthcare professional's involvement[10]. They have also been described to repeat the same story to all students[10]. Instead, this research found that expert patients are authentic and their longstanding involvement leads to the development of skills needed to adapt their stories. To challenge something with negative implications to the involvement of expert patients in medical education is significant for the continuity of such ventures.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 334

It's question time! Does teaching students to write multiple choice questions enhance perceived learning?

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Background The introduction of case-based learning (CBL) raised concerns from the students and facilitators that "deep learning" was not being achieved in the

new 'MB21' curriculum at The University of Bristol.[1] The clinical teaching fellows at The Great Western Hospital, Swindon and The Bristol Royal Infirmary piloted a programme of students writing multiple choice questions (MCQs) as a way of enhancing learning from CBL.

To write a good MCQ, a student must demonstrate an understanding of the topic, risk factors and distractors to put in the clinical vignette. The answers should be written in such a way that the "wrong" answers are plausible but subtly incorrect to challenge those answering the question [2].

Literature on whether students writing MCQs enhances learning is mixed when used as a solitary intervention or revision tool before exams.[3-5] However, our study differs by incorporating question writing into an entire programme on a weekly basis over 5 months to enhance learning.

Methodology A pilot group of twelve year 3 students underwent both standard topic presentation in CBL and student written MCQ based quizzes. Every week each student submitted 3 clinical vignette style MCQs and a clinical summary on an allocated topic. The questions were used during game-show style exercises such as "Million Pound Drop" and "Blockbusters" to consolidate learning at the end of each week.

We conducted 2 semi-structured focus groups, each with six year 3 students who underwent both standard topic presentation in CBL and student-led MCQ based quizzes using an independent researcher. Transcriptions of the focus groups were analysed with an open coding thematic analysis. We expect to recruit a further 100 students, who will undergo the same programme using focus groups to further our results until we achieve saturation. We will commence the next stage of our data collection in January – May 2020

Results Students felt writing MCQs aided their learning by teaching them to apply learning to a case. Gaps in their learning were highlighted by; self-evaluation of how difficult they found the task, the feedback they received from teaching fellows and how difficult they found it to answer other students' questions. These ideas were incorporated into the theme of 'deep vs. surface learning'.

They commented on the use of learning to write "wrong" answers. It encouraged them to think about subjects that related to the question, and how to work through a question, therefore helping them make connections throughout the course and learn exam technique. This demonstrated that the students were achieving 'deep learning' through constructive alignment [1] rather than rote learning.[6]

By using game-show style exercises, a competitive element was introduced. The students explained that this increased their motivation to learn the topics and read the clinical summaries beforehand as they were afraid of judgement from their peers and didn't want to let their team down. Equally, they were motivated to write high quality questions in order to prevent the opposing team from winning with easy questions. They were able to learn from hearing feedback on other's questions and learned what the standard of question should be from answering other's questions. This reflects a strong element of social learning.[7]

Discussion Our preliminary data suggests that using MCQs in conjunction with fun teaching exercises aids learning by teaching students; exam technique, deep-learning and ensuring a wide coverage of topics. Limitations of this study include using a small number of students however with the expansion of this project to include 100 students, further data will increase its reliability and validity. It is also plausible that the social learning element discussed above is confounded by the game-show element teaching method.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 335

Positive Community Interactions can drive learning through teaching

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Background The majority of trauma deaths occur at the scene of injury, often before the arrival of emergency medical services, particularly in rural areas. Although bystanders can play a vital role in delivering help in case of a sudden injury the frequency of first aid given by laypeople to trauma casualties worldwide ranges widely from 10.7% to 65% (Sasson et al 2010)

Third year medical students (n=34) undertook a week long 'Student Selected course' that focused on teaching members of the local community Basic Life Support (BLS) and First Aid skills. During the initial days of the course the students were trained as First Aid trainers before spending a day at a local shopping centre teaching BLS and First Aid skills. Embedded within the short course curriculum were a number of transferable skills including communication appropriate for medical practice.

In this study we evaluated the impact of medical students delivering first-aid training to the community and the effectiveness on the students of learning by teaching.

Methodology A cross sectional study was conducted to assess the awareness about BLS and First Aid in the local population. Members of the public were selected randomly from the to the local shopping Centre and taught key BLS and First Aid Skills. Willing participants (n=70) answered a pre-and post-teaching questionnaire to collect qualitative and quantitative data. The short pre-demonstration questionnaire contained simple questions about responding to common medical emergency case scenarios. Post demonstration, the participants were asked to use a Likert scale of 1-5 and free text questions to record their satisfaction and usefulness of the medical student training.

The confidence of the medical students in teaching BLS and First Aid was assessed at various points throughout the course and their opinion on the whole experience at the end of the course using a 5 point Likert score questionnaire and free text questions.

Results The level of awareness about emergency care in the general population is an important determinant of positive patient outcome. Prior to teaching 24% of the participants suggested that they were less likely to perform First Aid on trauma victims because they were scared they might accidentally hurt the victim; however, after training there was a significant increase (36%) in the number of people confident in performing First Aid on a trauma victim (p .0001). This study demonstrated that the teaching the medical students provided to the community had a positive impact; not only did it increase the knowledge of BLS and First Aid in the lay community but it also significantly increased bystander confidence (p .0001).

99% of the community that participated in the training, and answered the questionnaire, agreed that they found it a useful experience. While many enjoyed all aspects of the students teaching, some in particular highlighted the clear communication skills the students had used to teach BLS and enjoyed that all age groups could take part. This highlights that using teaching as a method of learning provides an opportunity to practice and hone key communication skills

100% of the Medical Students on the course either agreed or strongly agreed that the teaching strategies encouraged them to be active learners. Qualitative data from student feedback indicated that gaining insight through first person stories from members of the community was an excellent motivator to engage and teach First Aid skills.

Discussion In conclusion, learning by teaching is an effective method to teach medial students core and transferable skills. The course has provided a meaningful learning experience for students, it has developed their BLS, provided an opportunity to demonstrate their communication skills, increased their confidence in First Aid training and given the students an appropriate understanding of the patient perception and the importance of positive community interactions.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 336
Preparing for finals: A mock OSCE course

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Background Stepping Hill Hospital (SHH) has an excellent reputation as a teaching hospital, however had no established formalised OSCE preparation programme for medical students. Having identified this educational opportunity, an OSCE revision course aiming to prepare medical students for finals was conceived and implemented by junior doctors in 2017. Forming a steering committee in 2018, a number of foundation doctors used constructive feedback to modify and develop the course further. A secondary aim included recruitment of junior doctors seeking experience in medical education and enabling them to contribute to station design and implementation.
Methodology Building on the success of the 2017 OSCE, the steering committee sought out dedicated junior doctors with an interest in teaching to develop new stations based on the University of Manchester curriculum. Fundamental feedback from the previous year; such as the addition of more medical stations and opportunities to practice clinical skills, was incorporated. Consequently, the 2018 course was divided into medical and surgical themed stations, delivered separately. The SHH simulated ward was used to ensure a realistic experience and facilitated 40 students to practice 20 varied stations under exam conditions. In 2018 notable changes included the addition of both supplemental lecture-based teaching and individualised mark schemes alongside a prescribing station.
Results A total of 20 examination stations in 2018 demonstrated a 40% increase from 2017. Progression was also noted in the number of attendees, in particular the surgical OSCE (50%). Overall, 95% of students were completely satisfied with the station content of the medical OSCE. Feedback for both courses combined suggested 96% overall satisfaction with curriculum relevance at 100%.
Discussion The OSCE courses have delivered excellent quality practical revision opportunities for over 50 students, as evidenced by overwhelmingly positive feedback. This unique educational experience provided both a formalised teaching opportunity for junior doctors, and a supportive and dynamic learning environment for students. As a result, the course has now been established as an annual event. Future cycles may benefit from expert observation and feedback, from individuals with a. background in medical education, in order to direct course improvement and individual teaching styles.

Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 337
The impact of lecture capture on student engagement and performance at a UK medical school

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Background Lecture capture (LC) is a an online lecture recording programme that is seeing increased use across UK universities (1). It allows recorded material to be made available to students on their electronic devices at home (2). It claims to support learners by augmenting in-classroom learning (3).
There is an increasing literature surrounding the use of LC in medical education. This study is a contribution from the University of Sheffield in the UK. Here we use qualitative and quantitative methods to explore patterns of use, student attitudes and opinions (including a wider flipped classroom model (4, 5)), and effect on attendance and attainment.
Methodology First, a questionnaire was sent to all 2nd and 3rd year medical students at the University of Sheffield. 277 responses were obtained. The questionnaire consisted of multiple-choice and white-space questions exploring use, attitudes and outcomes. A focus group was also conducted with three students, exploring discussion points further. Quantitative data underwent statistic analysis using Pearson's correlation coefficient, and qualitative responses were analysed using thematic tools.
Results Across both student cohorts, approximately 50% of students reported using LC at least once a week, confirming that they are making use of the resource when made available.
Major advantages reported included: the ability to revisit difficult lecture topics at home and control the pace of learning, the ability to gain a deeper understanding of topics resulting in improved retention, and the option to catch up on missed content. Questionnaire responses revealed that 49% of students felt that LC enhanced learning, and 42% felt it had a positive impact on their grades.
Concerns were also raised which centred on reduced student-teacher engagement and student-student interaction. Qualitative responses highlighted concern around self-motivation to use the recordings, the lack of social interaction associated with reduced lecture attendance, and the time and attention required to go over the recordings in sufficient detail.
When asked specifically, the majority (63%) did not agree that LC reduced the likelihood that they would attend. Other factors offered included complexity of lecture content (35% agreed) and the lecturer (50% agreed).
Students were also able to suggest improvements. Many asked for a platform to allow them to ask questions online, whereas others highlighted the need to improve recording quality. Overall, support for a flipped classroom model was high, with 51% in favour (this was also seen in the focus group).
Finally, we attempted to correlate first year exam results with LC use, and while trends were demonstrated these did not reach statistical significance. There was also no significant difference when comparing the 2nd and 3rd year students.
Discussion Overall, our data suggests that LC improves student engagement and understanding of curriculum content. In particular students found it useful for consolidating conceptually challenging material, as it allowed them to work at their own pace. This confirms that LC is becoming an important and valued component of a successful medical student's toolkit, Our data also reiterated familiar challenges associated with LC, with emphasis on the idea that providing lecture material outside of the lecture theatres reduced student engagement (6, 7) – our data reports that this is the case for some students. In conclusion, this is a further contribution to the increasing research on electronic resources in medical education. Most students like and feel they benefit, though challenges remain. Looking to the future and to the wider integration of a flipped classroom model, we must be mindful that a focus on academic attainment may fail to acknowledge wider benefits (such as training doctors for lifelong learning), and continue to study these changes to ensure students are not left behind by these paradigm shifts.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 338

The role of teaching methods and the learning environment in assessing medical students' evidence based medicine competency in clinical practice- a qualitative study

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Background An outcome-based Evidence Based Medicine (EBM) teaching should not only improve knowledge and skills, but also influence behavior through demonstration of EBM skills in clinical practice. In the 2018 version of "Outcomes for Graduates" outlined by the GMC, medical graduates should be able to 'apply scientific method and approaches to medical research and integrate these with a range of sources of information used to make decisions of care'. However, research suggests that only a minority of health professionals regularly apply an evidence-based approach in their professional practice. EBM is being integrated across the MB ChB curriculum in the University of Buckingham Medical School. In addition to written assessments and OSCEs which assess students' EBM knowledge and skills, a new formative assessment has been introduced to promote applying EBM in actual clinical practice. This study explores students' perceptions of the role of EBM teaching methods and the learning environment in applying EBM in clinical practice.

Methodology We introduced the online educational prescription (EP) from the University of Wisconsin for the assessment (www.ebm.wisconsin.edu/ep). Students in their third year of the MBChB curriculum were asked to complete at least one EP by turning a clinical uncertainty into an answerable question, searching and appraising relevant evidence before applying it to the clinical scenario. Students were also invited to participate in a focus group discussion to share their experience and identify enablers and barriers to completing the assessment. The students who took part in the focus group were chosen by stratified sampling. The coauthors led the discussion with a premodern structure of questions and the participants' input was recorded then transcribed by an impartial and unrelated member of staff from the University.

Results To date, 44 students out of 78 (56.4%) have completed the assessment. Nine students participated in a focus group discussion. While students appreciated the relevance of EBM to clinical practice, their views on the new assessment was mixed-with some finding it easy; some needing more guidance. Students did not feel confident to raise queries about clinical decisions made by consultants and preferred thinking of a clinical query themselves or if a clinical question was given to them. Some students felt that at times there was lack of evidence or difficulty identifying relevant evidence. Students suggested EBM teaching as small group workshops and further integration of EBM questions into their clinical formative assessments.

Discussion Reinforcing EBM using blended teaching methods in clinical rotations, a supportive learning environment and continued guidance to accessing evidence could encourage students in applying EBM in clinical practice. EBM teaching should focus on implementing clinically integrated approaches with assessments. Further longitudinal studies are needed to evaluate medium to long-term outcomes of EBM teaching. EBM understanding can be further analyzed in the future by comparing exam results before and after the intervention. The authors will assess for any changes in learning style by conducting a follow-up focus group in a few months.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Oral Presentation in Parallel Session

Paper no. 339

Using bleep simulation to enhance undergraduates preparedness for on-calls

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Background This bleep project entails educational immersion for the medical student in order to simulate their experiences on the hospital ward when they become foundation doctors.

The aims of this project were to assess confidence in carrying an on-call bleep, and prioritisation abilities of clinical tasks. Subjectively, the student's confidence levels were ascertained pre and post 'bleep sessions' to assess their readiness for foundation training. During the debrief session, their prioritisation abilities were objectively assessed by the project lead and discussed with them. This is a continuation of a project previously performed in the same district general hospital last year, with hopes to quantify data.

Methodology The study cohort consists of final year medical students undergoing their medical or surgical ward attachment in a district general hospital. These students will experience two simulated 'Bleep sessions', lasting three hours each in length. During these sessions, they will undertake their expected clinical attachments but are allocated an "on-call bleep" that will go off at any point in those three hours.

The bleeps they receive are from a fictitious ward based in the simulation suite of the hospital. These bleeps will range from medical emergencies such as review of a septic patient or high NEWS, non-urgent tasks such as re-writing full drug charts or tasks that are not appropriate for them to respond to.

Established research suggests that medical simulation is key to acquiring clinical skills through deliberate practice.(1) In this project, an additional layer of disruption is added to the simulation in order to test the students and push them beyond their expected stress levels. This disruption is in the form of unanswered bleeps, multiple urgent bleeps within a short space of time or bleeps missing key information that would influence decision-making.

To increase the objective aim's reliability, the same scenarios are to be used for all of the students. To improve validity, real-life scenarios encountered by the project leads during their foundation training are used.

Results The subjective data regarding their confidence levels will be collected using a 5-point Likert scale.

For objectively assessing a students' prioritisation, bleeps are categorised into urgent, semi-urgent and non-urgent. The three-hour session is clearly structured in a way that enables the assessor to identify if bleeps were responded to appropriately. The data collected will be focusing on how many bleeps were responded to appropriately, when the bleeps were acted on, the prioritisation of tasks, and how appropriate the management of the acutely unwell patients in the simulation suite is. Comparisons will be made between the two sessions to see if repetition of this exercise yields improved results.

Discussion Managing an on-call bleep is a key part of foundation training that is often not formally addressed in medical education. The data last year showed that bleep simulation teaching notably improves medical student confidence. It also provides greater exposure to urgent scenarios they may experience once working. This novel teaching session allows medical students to develop skills needed for foundation training such as prioritising jobs.

Following the success of the already collected data, we hope to incorporate this into Foundation training and "human factors" training days. There is scope for using increasingly complex scenarios in order to target higher trainees.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 340
A co-created clinical apprenticeship model; personalised medical education Medicine for Older People (MfOP) placement for 4th Year Oxford Medical Students at Stoke Mandeville Hospital

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Background Medical student ward-based placements do not always maximise learning potential. It is known that engaging students in active learning improves learning outcomes, motivation and attitudes (Bonwell & Eison, 1991; Bransford et al., 2000; Freeman et al., 2007). Therefore, assigning responsibilities to medical students within the supervision and mentorship of a senior member of the ward team, akin to an 'apprenticeship', may enhance learning. At Oxford Medical School, the course is 6 years in duration divided into preclinical (years 1 to 3) and clinical (years 4 to 6). Students undertake their first extended clinical placements in their 4th year of study. This includes 3 weeks each of medicine and surgery at a District General Hospital (DGH). One of the medicine placements at Stoke Mandeville is Medicine for Older People (MfOP). The purpose of this audit was to assess whether a co-created clinical apprenticeship model of medical student teaching improved student-reported experiences during their MfOP placement.
Methodology Our co-created clinical apprenticeship model involved the student working with faculty (GH) to co-create a bespoke timetable for their placement on MfOP. This utilised a clear and easy-to-use syllabus from the University of Oxford geriatrics curriculum. The student would then be assigned to shifts and clinics having identified potential roles a medical student could undertake. We collected student feedback after their placement. GH emailed both the pre- and post-intervention groups a 10-item online anonymised questionnaire link to which they were asked to select a response from a 5-point Likert Scale. Students were also given the chance to provide free-text entries for any comments. GH sent one reminder email to both groups to complete the questionnaire.
Results A much smaller proportion of students who undertook the placement prior to our intervention (2/21 (9.5%)) completed the feedback questionnaires compared (5/6 (83%)) of post-intervention students. Post-intervention students reported their placement week to be better organised and to have clearer learning objectives compared with pre-intervention students. Both pre- and post-intervention students reported feeling welcome in the team, achieving their learning objectives, developing their basic knowledge to prepare for becoming competent Foundation doctors, and improving their confidence in approaching patients. Neither the pre- nor post- intervention model appeared to influence students' career aspirations.
Discussion The implementation of the co-created clinical apprenticeship model in the MfOP placement improved student engagement as evidenced by the greatly increased response rate to feedback questionnaires. The apprenticeship model also lent itself to clearer learning objectives and a better-organised ward experience. The model could be used to augment the learning experience of medical students on ward placements in other departments and centres. Central to this is adopting a model of co-creative curricular design in addition to discussing and setting clear learning objectives with medical students for their placements. This is consistent with the findings of another study concerning learning objectives on medical student rotations (Larsen et al., 2017) as well as a systematic review and meta-analysis on the effect of goals on changing behaviours (Epton et al., 2017).

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 341
Bringing consultations into the 21st century - student and tutor experience of a Remote Consultation Skills teaching session

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https://youtu.be/SxvhIglLDf0
Background There is a critical need to improve patient access and reduce carbon emissions - remote consultations using telemedicine is one solution. Currently teaching these unique skills does not currently form part of any medical school curriculum, however is a recognised competency of outcomes for graduates. The University of Aberdeen, which serves the Highlands & Islands, have developed a novel teaching session co-produced by faculty and students on developing senior medical student's skills in conducting such remote consultations.

Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 342
Countdown to Finals: a near-peer revision programme for final year medical students

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Background Near-peer medical education is playing an increasingly important role in both undergraduate and postgraduate training (1). It offers numerous benefits for both the teacher and student, as well as for larger scale healthcare and teaching institutions (2). Near-peer teaching programmes have shown to be valuable and effective methods of teaching (3), however there is limited evidence on the benefits a structured revision series can provide undergraduate students in preparing for their final year examinations as well as the practicalities of life as a junior doctor. This study aims to evaluate whether 'Countdown to Finals (C2F),' a near-peer revision programme delivered by junior doctors within one year of graduation, improves confidence of final year medical students prior to their final examinations and work as Foundation Year doctors.
Methodology We designed a 21-week lecture series for final year medical students at the University of Birmingham, United Kingdom. The revision series consisted of weekly one-hour lectures and an OSCE preparation half-day, all delivered by Foundation Year doctors in the West Midlands. Attendance at the programme was voluntary. The topics covered were constructively aligned with the University's final year learning outcomes. Questionnaires distributed following each lecture and at the culmination of the programme were used to assess confidence on a Visual Analogue Scale (VAS). Other variables including relevance and preparedness were evaluated using a five-point Likert scale.
Results 100 students completed the overall programme questionnaire (n=100). Mean levels of confidence prior to and following the C2F programme were 40.03 (SD = 22.28) and 68.46 (SD = 18.23) respectively, on a 100-point VAS. Mean improvement in confidence was 38.43 (SD = 23.16) which represents a 71.02% increase in confidence ($p = 0.001$). Student's reported increased confidence following all 21 teaching sessions, regardless of the topic covered. Students also commented on the overall relevance of the programme to their medical training with 95% of students rating the programme as excellent or very good.
Discussion A structured near-peer revision programme delivered by junior doctors, is an effective method of improving the confidence of final year medical students prior to final year examinations.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 343
Evaluating Medical Students Knowledge of Anaphylaxis: Do we know enough to spot the signs?

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Background Anaphylaxis is a severe, rapidly developing, life-threatening allergic reaction which is considered a medical emergency. Despite this, vital knowledge such as the recognition of relevant signs and anaphylaxis management is sparsely evaluated in the literature with regards to UK medical students. This project is part of a wider multicentre study taking place in the West Midlands, which seeks to assess understanding of the difference between an allergic reaction and systemic anaphylaxis across healthcare professionals as well as understanding of management. This is the data collected from medical student participants, with the aim to improve the teaching they receive surrounding allergy.
Methodology A questionnaire testing knowledge of symptom recognition of an allergic reaction versus systemic anaphylaxis, based on the BSACI allergy management plan, was distributed amongst years 3 – 5 medical students from the University of Birmingham and Keele University. The questionnaire also included questions relating to anaphylaxis management. We also specifically asked how comfortable the student would feel in recognising anaphylaxis independently. The questionnaire was distributed in both an electronic and paper format, the results were subsequently collated and analysed in an excel spreadsheet.
Results Of the 57 medical students who were surveyed, 26% correctly identified all the relevant features of anaphylaxis, of which 73% over diagnosed allergic symptoms as anaphylaxis and 20% identified the correct treatment. 39% of students stated they were confident in recognising anaphylaxis alone, of which a minority correctly identified the symptoms (27%) and management (27%) of anaphylaxis. 27% of third year students correctly identified the signs of anaphylaxis compared with 29% of fifth years. 8% of third years correctly identified the correct anaphylaxis treatment versus 41% of fifth years.
Discussion These results suggest an overall poor understanding regarding the difference in features between an allergic reaction and systemic anaphylaxis amongst UK medical students. Very few of those who reported feeling able to recognise anaphylaxis ultimately demonstrated the ability to correctly recognise the signs. The results also suggest a disparity in the level of understanding of anaphylaxis management between third and fifth year students. Our results demonstrate the need for allergy to be included as a regular component of the curriculum across all years. We hope with the revision of the undergraduate curriculum at the University of Birmingham that allergy education will be included in a more focused manner.

Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 344
Guess The Drug: Evaluating student attitudes towards a clinical pharmacology game

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Background Junior doctors require a basic knowledge of clinical pharmacology and therapeutics (CPT) to safely prescribe for patients (1). Prescribing errors occur frequently and are a significant cause of patient harm in medical practice (2,3). The reasons cited for the occurrence of drug errors include lack of training and confidence in prescribing and an increasing amount of novel treatments for diseases (4). Resources, including e-learning, have been introduced to improve knowledge of CPT at the undergraduate level (5). However, significant work needs to be done to improve the prescribing competencies of future doctors (6). Some medical students find pharmacology boring and uninteresting (7,8), which can reduce interest to learn the subject. One possible way of improving learning in CPT could be gamification. The use of games in medical education can help to enhance student motivation to actively learn (9,10). The aim of this study was to introduce and evaluate a game called 'Guess The Drug' to final year undergraduate medical students' to teach prescribing in a more interactive way and improve attitudes towards learning CPT.
Methodology 'Guess The Drug' is a game where students had to guess a drug name based on the information (including its purpose and side effects) provided by the facilitator on a prompt card. Students were divided into two teams. The first person from either team to answer with the correct drug name following its description won a point for their team. The winning team guessed the most drugs correctly. Students completed anonymous feedback forms and a five-item questionnaire, including five-level Likert-scale questions. This enabled collection of qualitative and quantitative data to evaluate students' attitudes towards the game and its usefulness in learning CPT. The qualitative feedback forms were also analysed to ascertain students' opinions on the game further. The combination of both methods allowed for a wider capture of students' opinions rather than restricting them to answering solely pre-determined categories (11,12).
Results From the data collected so far, eleven final year medical students aged between 22 and 24 years old have taken part in the study. All eleven students completed anonymous feedback forms (100% response rate) and ten out of eleven medical students completed questionnaires (90% response rate). From the students who answered the questionnaire, 90% of students had not done this activity before. 60% of students selected the antibiotic edition of the game only as the favourite version of the game they played. On the other hand, 10% of students selected the warfarin interaction edition of the game only as the favourite version of the game they played. 30% of students were unable to decide on the favourite version of the game they played (the antibiotic edition or the warfarin interaction edition), so they selected both options on the questionnaire. Moreover, 100% of students felt their confidence in knowing different drugs in treating various illnesses had increased following playing the game. In addition, 100% of students enjoyed the game and would recommend it to their friends.
Discussion Although the sample size was limited, preliminary results were positive. Potential reasons for this were that the game encouraged a fun environment to reinforce prior knowledge about familiar drugs and enabled students to learn about unfamiliar drugs. This game provides a wide range of applications as it can be applied to any drug or drug class to create multiple versions of the game. Second, it requires minimal resources and time to prepare prompt cards. Third, prompt cards created can be used as a revision tool for upcoming examinations to learn about commonly prescribed drugs. In conclusion, although initial results seem promising, both versions of the game will be repeated in Spring 2020 on a new group of students to gather additional data to further evaluate attitudes towards the game.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 345
How do learning behaviours, mindset, self-efficacy and personal attributes vary according to academic attainment in undergraduate clinical learning?

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Background Existing literature suggests academic performance during undergraduate study predicts clinical performance as junior doctors (1,2). However, there is a lack of research analysing how and why high achieving students achieve their results, particularly during later clinical years. Learning in the clinical environment is often more self-directed, requiring both student engagement and an inclusive learning environment. Therefore our research aims to explore student-level factors: which behaviours, attitudes, and attributes are associated with academic success. By identifying these factors, our aim is to support medical schools in addressing differential attainment in the interests of student learning and patient safety.

Methodology A scoping review of the literature identified a range of learning strategies and attitudes to learning associated with academic success: active learning, spaced learning, self-testing, deliberate practice, self-efficacy, social capital and mindset. Semi-structured interviews explored how these items relate to clinical learning with current medical students and 'near-peer' recent graduates at Imperial College. The literature review and interviews were used to generate a mixed methods questionnaire, simultaneous nested design. This asks students to rate learning activities according to time spent engaged with them and how helpful they found them alongside white-space questions. Validated scales were used for mindset, self-efficacy and tangible/intangible social capital. The questionnaire is being tested for acceptability, usability and comprehensibility, and will be distributed to all senior clinical students (years 4,5,6) at Imperial College London to complete optionally and pseudo-anonymously with research ethics committee approval. Participants will be invited to consent to an administrator linking their responses to their exam results (written and practical) prior to full anonymisation and analysis. We will compare distributions of ranked learning behaviours across groups (exam results and student attributes) using Kruskal-Wallis non-parametric 1-way ANOVA, with secondary analysis to explore the direction of association, supplemented by qualitative insights to explore causative and contextual factors. Qualitative questionnaire data will be analysed to identify themes and differences between groups of learners, comparing responses of high achieving learners to their peers. Finally semi-structured follow-up interviews will be held with high achieving students to illuminate topics identified in the study, triangulated against their results and questionnaire data.

Results Data generation and analysis are ongoing. Preliminary findings suggest the following themes: study strategies used by students; student's beliefs on what effective study methods are; and how students balance workplace-based learning with independent learning. Correlates between academic success and mindset, self-efficacy and tangible/intangible social capital will be presented alongside the following attributes: gender, ethnicity, widening participation, graduate entry, age, learning disabilities, and whether students were brought up in the UK.

Discussion Through analysis of the student-level factors that are associated with academic attainment we aim to identify any common themes of high achieving students when compared to their peers. We aim to identify and share the study habits of successful students thereby both raising general attainment and addressing differential attainment. These will be linked to the existing literature on strategies to build the attributes identified as differentiating. Where these attributes are fixed e.g. gender we will identify links to the literature on strategies to address these factors. Ultimately our aim is to improve clinical learning for all medical students and to consequently improve the clinical practice of junior doctors in the interests of patient care.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 346
How do you decide what to teach students? : The interaction of explicit and hidden curriculum in undergraduate surgery

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Background In recent decades developments in medical education have led to a broadening of the undergraduate medical school curriculum without any increase in the length of study. Consequentially, some subject areas are receiving less attention than previously. Concerns have been raised by students, foundation doctors and those who supervise them that the current undergraduate curriculum is not adequate to ensure newly qualified doctors have the knowledge and skills to care for patients presenting with surgical complaints who represent 25% of hospital admissions.

Like everywhere else in medicine the written surgical curriculum has been reformed and updated but has not experienced the improved outcomes seen elsewhere. It seems necessary that we look beyond the written curriculum and identify other factors which may be influencing students' surgical learning. The hidden curriculum was described by Cowell as "that which the school teaches without, in general, intending or being aware that it is taught".

The majority of undergraduate surgical education is delivered by surgeons themselves, generally consultants. It seems that whilst they do not feel graduates are prepared to care for surgical patients, they are well placed to influence what the students learn.

By asking surgeon educators the question "How do you decide what to teach medical students?" we aimed to explore the interaction between the written curriculum and the hidden curriculum in undergraduate surgical education.

Methodology As part of a larger study into the hidden curriculum, semi-structured interviews were undertaken with consultant surgeons from two health boards involved in teaching medical students at a single institution. Data was collected iteratively and the interviews were transcribed, coded and thematically analysed, concluding when thematic saturation occurred.

Results Whilst all those interviewed mentioned the explicit curriculum many stated that they had not tried or were unable to access it and others questioned the existence of a written curriculum pertaining to their area of specialism. In order to compensate they then would ask students what they needed or wished to learn thus engaging adult learners in designing the learning experience. This is a valuable exercise but surgeon educators risk falling foul of unconscious incompetence, when a student does not know what they do not know.

The other approach was to disregard the curriculum. By allowing the clinical circumstances to guide learning clinicians felt they gave students experiential education. But this must be balanced by enabling opportunities to acquire knowledge and skills pertaining to all relevant presentations. This was not always recognised by those interviewed and is why application of a variety of teaching methods is necessary. The curriculum was also overlooked where clinicians felt it did not adequately prepare students for clinical practice, both in surgery and

elsewhere. These same clinicians often felt passing exams was the main curricular aim.

Discussion In simple terms it is the aim of a curriculum to guide learners to achieve consistent learning. This study has demonstrated that the mere existence of an explicit curriculum is not adequate when you consider the influence of the hidden curriculum in how it is utilised.

The variability in visibility and accessibility of the written curriculum seems a fundamental issue with a potentially simple solution. Considering why clinicians chose not to access a curriculum or elect to disregard it is more interesting. Clinician engagement with the curriculum, its design, delivery, accessibility and assessment is imperative if we are to balance the concerns of passing exams versus preparation for future clinical practice.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 347

Improving prescribing skills for final year medical students

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Background Prescribing medications is a complex task. Medication errors have the potential to cause serious harm to patients and the estimated annual global cost is US $42 billion.[1] From 2016 to 2017 in Australia, 33% of adverse events during inpatient care were due to 'adverse effects of drugs, medicaments and biological substances'.[2] Prescribing errors are multifactorial and include factors such as the knowledge of the prescriber, the degree of supervision, patient factors and prescribing system failures.[3-5] Data presented at the 2016 National Intern Readiness Forum6 and in both 2017 and 2018 Australia Medical Council / Medical Board of Australia surveys[7, 8] highlight that interns and supervisors have concerns that they are not sufficiently prepared to prescribe upon graduation. Current error rates among new graduates are between 7-10%.[3, 9] Opportunities for hands-on experience are limited due to legal restrictions on student prescribing. The aim of this project was to introduce and evaluate the efficacy of a small-scale pilot series of extra-curricular hands-on prescribing tutorials.

Methodology We developed a pilot series of interactive tutorials covering important areas of prescribing within the current medical curriculum for final year medical students at the University of Melbourne, Australia. Sessions were case-based and students had the opportunity to practice hands-on management of a range of prescribing topics. Students were invited to attend the tutorials via an online sign-up, on a first-come first-served basis (max 12 per session). Before and after each session, students were asked to respond to the statement 'I feel confident in prescribing…' regarding each topic. Scores ranged from 1 (strongly disagree) to 5 (strongly agree). In addition, students were asked to provide specific feedback relating to the prescribing tutorials.

Results Sign-up for each session was full within a matter of minutes of being released, and each session was oversubscribed. Quantitative improvements were noted in self-rated prescribing skills following each session. Mean score (before and after, n) for each session were as follows: antimicrobials (1.9 to 3.8, n 10); insulin (2.1 to 3.5, n 12); fluids (2.3 to 3.4, n 12); electrolytes (2.5 to 3.8, n 11); oral anticoagulation (2.4 to 4.0, n 9); injectable anticoagulation (2.7 to 4.0, n 9); analgesia (3.3 to 4.4, n 5). On reviewing qualitative feedback, three key themes were identified: 1) students appreciated the ability to practice hands-on prescribing on local drug charts; 2) students were able to make mistakes without impacting patient safety; 3) students wanted more tutorial availability owing to the popularity of the sessions.

Discussion This small scale pilot project has identified a clear desire for better prescribing teaching within a cohort of final year medical students. The overwhelming response to tutorial sign-up as well as student response to pre-tutorial questions supports recent studies that students are not sufficiently prepared to prescribe upon graduation.[6-8] This study has demonstrated both quantitative and qualitative evidence in support of the use of hands-on prescribing tutorials. A key aspect of success was the opportunity for students to practice writing prescriptions as they will be asked to do so as interns. The next steps will be to roll-out the prescribing tutorials on a larger scale and build them into the current curriculum. We would advocate the use of similar practical and hands-on tutorials in other institutions teaching medical students.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 348

Junior Emergency Medicine: Using peer-led simulation facilitation to improve clinical competence and acquisition of knowledge

Author(s): Navin Leanage, Justin Dobson, Victoria Ball
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Background Junior Emergency Medicine (JEM) is a 2-day widening participation to higher education course that uses emergency and acute simulations to encourage a pursuit of a career in healthcare. It is run in collaboration between the University of Leicester and De Montfort University. The course requires a large number of Medical Students and Student Nurses to facilitate the workshops and emergency simulations. For this to be maintained at a high level our volunteers must be trained outside of their clinical and educational commitments. Our aim is to complement their learning needs whilst also improving their human factors development, confidence in clinical environments, overall grades, interprofessional working and employability. We aim to give an overall beneficial experience to our student volunteers allowing them to develop themselves both professionally and personally in the 6-8 month training window.

Methodology From January till September a robust training programme is run for volunteers. A total of 3 training sessions are run with Junior Doctors and Nurses acting as mentors assigned to equal groups of students to guide them and provide feedback. All training sessions centred around the ABCDE approach to assessing and managing a deteriorating patient. Training session 1 had the mentors directly supervising simulated scenarios and offering feedback on clinical knowledge, competence, communication and team work. Training sessions 2 and 3 were dry runs of the JEM course itself with 1st year Medical Students playing the part of the 5 college students in each group. Mentors regularly checked in on the

student volunteers and provided extra support if necessary. On the day of JEM, they were required to facilitate the learning of a group of 5 college students from a widening participation background as a pairing of 1 Medical Student and 1 Student Nurse. An electronic survey was sent to all volunteers with results collected. A total of 48 students were sent the survey with 26 of these responding.
Results Of the 26 responses, 2 are now Registered Nurses and 3 are now Foundation Year 1 Doctors. The rest remaining as University Students. 100% of participants felt that taking part in JEM had a positive impact on their learning. By taking part in JEM; 23% felt it improved their grades, 81% felt it improved confidence in a clinical environment, 35% felt it gave them a wider insight into other professional roles, 62% felt it improved their teamworking skills, 77% felt it improved their teaching skills, 27% felt an improvement in their presentation skills, 31% felt an improved employability by taking part, 50% felt they developed their inter-professional working and 58% believe it consolidated their own learning.
Discussion The results are strongly suggestive of a positive impact on volunteers involved with JEM. It is also suggestive that JEM is beneficial in multiple desirable skills and outcomes for a student enrolled on a healthcare degree. With free text responses in the survey providing us with feedback to improve the course and its training we always aim to ensure our student volunteers get the best experience when giving their time. Moving forwards there is a desire to improve the Student Nurse experience as training does tend to be more beneficial for Medical Students. Further to this we aim to analyse this as a potential intervention in 5th year training.

Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 349
LETS Teach: a student and clinician-led programme to deliver educational theory and practice to medical students

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Background Peer-teaching plays an important role in the holistic education and training of medical students and junior doctors, helping them to "work effectively and appropriately as a mentor and teacher for other learners in the multiprofessional team" as per the General Medical Council's requirements (1). As well as providing a platform for students to develop into competent clinical teachers, peer-teaching serves as a means to reinforce medical knowledge and to build leadership skills and confidence (2, 3). Although effective peer-teaching arguably requires a sound understanding of educational theory and practice, there are few reports of structured training programmes for peer-teachers at UK medical schools (4). We report the results of such a course, the Leicester Education Training for Student Teachers (LETS Teach), which was designed by medical students and delivered through a collaboration of academic clinicians and student-run academic societies.
Methodology A six-week peer-teaching course was set up by students at a UK medical school for all years in training. Two-hour sessions were split into a clinician-led and a student-led component, covering fundamental aspects of medical education including: small-group teaching, bedside teaching, lecture delivery, theories of teaching, technology and collaborative learning, collecting and giving feedback. At the end of the course, students demonstrated their knowledge and progress by delivering a presentation to their peers, with the intent to teach a challenging topic, either medical or non-medical. These presentations were assessed by a panel of academic clinicians. Application and feedback forms were used to evaluate students' responses through thematic analysis of free-text statements in the application form and summary measures of rating scales of end-of-course feedback forms.
Results Thirty-three students applied and 24 completed the-end-of-course feedback. Of these, 96% said they would recommend the course to their peers. Students' main aims were to improve their understanding (75%) or the quality of their teaching (n=38 statements) and to prepare for teaching commitments at medical school (71%, n=21 statements). Participants reported improved understanding of educational theory and practice (96%) and greater confidence to engage in peer-teaching (100%). While both types of sessions were positively regarded for their relevance (n=60 statements for clinician-led sessions, n=27 for student-led sessions) and interactivity (n=51 for clinician-led sessions, n=28 for student-led sessions), participants highlighted the value of clinicians' personal experiences (n=10 for clinician-led sessions, n=1 for student-led sessions) and the practical exercises in student-led sessions (n=1 for clinician-led sessions, n=28 for student-led sessions).
Discussion Feedback from LETS Teach demonstrates the value of a structured programme to improve medical students' understanding and confidence to engage in peer-teaching and thus prepare them for their careers as clinical teachers. Moreover, it highlights the benefit of harnessing both clinicians and students to transmit knowledge of theory and practice of clinical teaching to medical students, which can serve to foster a shared academic culture at medical school. By drawing on existing student societies to train future peer-teachers, LETS Teach also shows how such a programme may create a positive feedback loop between existing and potential peer-teachers, to increase interest in and improve the quality of ongoing peer-teaching efforts at a medical school. Based on our results, we believe that a peer-teaching course of this format may be a valuable contribution to undergraduate medical education. We hope more Medical Schools integrate such programs into their curricula to enhance their student's learning and skills.
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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 350
Medical students' perspectives on the most effective ways of teaching human factors

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Background There is an increasing awareness in the field of medicine of the importance of human factors, and their relevance to the provision of safe and effective healthcare (1). In fact, the Generic Professional Capabilities framework created by the GMC (2) states that all doctors should have at least a basic understanding of human factors principles. Research has shown that simulation-based training can be an effective method of promoting understanding of human factors principles in healthcare professionals (3, 4). However, at present there is a lack of educational research looking into the most effective methods of instilling human factors principles into medical students. Throughout their undergraduate clinical placements, medical students experience a vast range of structured and unstructured learning experiences, involving various different teaching modalities; these can range from simulation, to lectures, to time spent shadowing clinicians on the wards. It would be beneficial for undergraduate clinical educators and medical schools to have an appreciation of the value of different teaching methods with regards to developing an understanding of human factors principles. This research project therefore aims to explore the perspective of medical students on how human factors can most effectively be taught at an undergraduate level.
Methodology 34 fifth-year medical students were given identical questionnaires at the beginning and the end of their 15-week 'Acutely Ill Patient' clinical placement. During this hospital-based placement, students undertook a range of structured and unstructured learning activities, including: simulation, lectures, small group tutorials, bedside teaching, and time spent shadowing clinicians. The pre- and post-placement questionnaires, addressed three areas: firstly, the students' awareness of human factors and their importance within healthcare; secondly, the students' confidence at implementing a range of human factors principles

into their future clinical practice; and lastly, the students' opinions on the effectiveness of different teaching modalities with regards to developing confidence in applying human factors principles to clinical practice. Each item in the pre- and post-questionnaires used a numerical rating scale. The data was analysed to assess for any statistically significant differences in the students' responses before their placement compared to after their placement, across the three aforementioned areas. The data from the post-placement questionnaires will be analysed to evaluate the cohort's perception of the effectiveness of different teaching modalities at developing confidence in applying human factors principles to clinical practice. Additionally, following the students' completion of the placement, qualitative data was collected on what aspects of the learning activities helped them to understand and implement human factors, and their perspectives on why they feel this may be the case.

Results Full results awaited (project completion April 2020).

Discussion Full discussion and conclusions awaited, pending results. Discussion will comment on the following: what influences medial students' understanding of human factors and their perception of the importance of human factors to safe and effective healthcare; what are the key non-technical skills that students should develop before graduating; which teaching modalities do students feel are the most effective at boosting confidence in the use of human factors, and what are the reasons for this; how can undergraduate clinical educators and medical schools best promote the development of students' abilities to implement human factors principles in their clinical practice.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 351
Moan and Groan No More: Making It Meaningful - Learning from Reflective Practice to Transform the Teaching of Reflection

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Background Reflection is an essential attribute of competent medical practitioners and a formal part of licencing and revalidation. Consequently, teaching reflective practice is an important part of medical training (GMC 2018). Despite different definitions, theories and understandings of reflection, little is known as to the best ways of teaching it (Aronson et al., 2012). It is also known that structured reflection is often met with resistance from both students and tutors alike, along with growing concern that the transformational potential of reflection has been lost (Driessen 2017). This study explores GP lecturers' experiences of teaching reflection, and draws on their own experience of reflecting within professional practice, in order to consider how best to improve reflective practice teaching for students.

Methodology This was a qualitative study consisting of semi-structured interviews that were carried out with lecturers in primary care from two London medical schools. The interviews were audio recorded, transcribed and analysed using a thematic analysis approach in order to identify themes. An interpretivist stance was used to explore the behaviour, perspectives and experiences of GP lecturers' reflective practice and teaching.

Illeris' (2009) theory of learning was used as a framework through which to consider reflective learning, and the educational principles of threshold concepts, social constructivist theory and transformative learning provided the lenses through which to understand the different aspects of teaching reflection.

Results Lecturers reported that both they and their students have negative perceptions of structured reflection, identifying it as a box-ticking exercise that is detached from meaningful reflective practice. However, the data suggests that lecturers operate from a transformed perspective where reflection within clinical practice is seen as innate and recognised as valuable, whereas lecturers perceive that students are yet to develop that same transformed perspective and struggle to recognise its value. For reflection to be meaningful lecturers felt it needs to be linked to relevant clinical experiences and facilitated through timely, integrated discussions.

Discussion Identifying reflection as a threshold concept can help us see reflection as a process that occurs over time and to recognise the transformative learning journey the students are on. In order to support students through the liminal state of learning to becoming reflective practitioners, we need to bring reflective practice back into view. To do this, clinicians need to recognise reflection in their daily practice and role model it in an integrated, meaningful way that is evidenced for students to see. We need to differentiate between documentation of learning and reflection, in order to remove the negative labels associated with structured reflection. Instead reflection needs to be tutor facilitated rather than portfolio driven, through relevant, timely, clinically integrated discussions. By changing the focus of how we teach reflection, we can change student perceptions of reflective learning, thereby supporting them as they master the necessary skills for becoming competent reflective practitioners.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 352
Near-peer mock-OSCEs: preparing final year medical students

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Background Objective structured clinical examinations (OSCEs) are a reliable and valid method of assessing clinical competence (1). The OSCE is a high-stakes examination reported to cause stress and anxiety in undergraduate medical students (2). Due to constraints of time, costs and staff-availability, mock-OSCEs prior to summative examinations rarely form part of undergraduate curricula. Near-peer medical education is an emerging trend in medical education, both in the undergraduate and postgraduate spheres (3). Mock-OSCEs delivered through peer or near-peer education have shown to improve confidence and reduce anxieties associated with OSCEs (4). We aim to evaluate whether a structured mock-OSCE experience, designed and delivered by Foundation year trainees improves final year medical student's preparedness for their summative OSCE examination.

Methodology We designed a near-peer mock-OSCE weekend for final year medical students studying at the University of Birmingham, United Kingdom. This consisted of four cycles of twelve OSCE stations over two days. All stations were designed and assessed by Foundation Year trainees in the West Midlands. Students received verbal and written feedback on all stations and stations were changed between student cycles. Attendance was not mandatory. Questionnaires distributed after the session were used to assess student's level of preparedness, on a Visual Analogue Scale (VAS), for their summative OSCE. Other variables such as how reflective the mock-OSCE was of their final examinations and the importance of feedback were evaluated using a five-point Likert scale.

Results 90 final year medical students participated in the mock-OSCE weekend (n=90) with a 99% questionnaire return rate (n=89). On a 10-point VAS, mean levels of preparedness prior to and following the mock-OSCE weekend were 4.21 (SD = 1.80) and 6.93 (SD = 1.29) respectively. Mean improvement in preparedness for their summative OSCE was 2.71 (SD = 1.51), representing a 64.4% increase in preparedness (p = 0.001). Students commented on the usefulness of receiving individualised feedback following stations and how accurately it reflected final year OSCE examinations.

Discussion Near-peer mock-OSCE experiences, are an effective method of improving undergraduate preparedness prior to final year examinations. They are valued by students when they are well-organised and reflective of their university's summative OSCEs. They also provide an excellent opportunity for structured feedback within a formative environment. Further research is needed to determine whether this translates to improved scores in OSCE examinations.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 353
Specific Learning Difficulties in Medical Students: their perceptions of themselves as medical students and future doctors

Author(s): Emily Bryan, Sandra Nicholson
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Background A specific learning difficulty (SpLD) is when a person has a difference or difficulty with a specific aspect of learning. Examples of SpLDs include dyslexia (most common), attention deficit disorder, dyspraxia, dyscalculia (The Dyslexia Association, 2019). The NHS estimates that 10% of the UK population are dyslexic, and it is the most common cause of reading, writing and spelling difficulties (NHS, 2019). There is limited literature on dyslexia in medical students; exploring their experiences at university, learning needs and examination results. It has been reported that with appropriate adjustments in examinations such as extra time, exam results of student's with SpLDs are on par with their peers without SpLDs. However, it has also been noted that many students with SpLDs often struggle and underperform in the first year of medical school (Shaw & Anderson, 2018) (MacDougall, 2019).

This research focuses on students' perceptions of their SpLD, how they understand it has affected their medical studies and may impact their performance as a future doctor. Thereby increasing our understanding of medical students with SpLDs' views on their progress through medical school, any issues they have faced, and explore their thoughts on how their SpLD may affect their future career as a doctor.

Methodology Ten one-to-one semi-structured interviews with medical students with a diagnosis of at least one SpLD will be completed. All students will be current students at Barts and the London School of Medicine, and will be recruited via the student office. Students should have completed 3rd year of Medicine as this gives them an appropriate level of insight and experience of their future career as a doctor, having completed a year of clinical medicine, therefore will be able to answer questions about their thoughts on being a doctor with SpLD.

Both students who were diagnosed with an SpLD prior to university and at university will be interviewed to explore any differences in students' attitudes between these groups to their SpLD. This will be achieved this by asking any potential participants when they were diagnosed before making final selection of participants, which will be random from each pool of pre or post-starting university diagnoses.

One-to-one interviews will provide a safe confidential environment to encourage disclosure of any sensitive information as opposed to focus groups where they may feel challenged by other participants (Tausch, 2016). The questions asked in the interviews will be informed by the literature, but focused around the students' own perceptions of their SpLD as a medical student, and for their future as a doctor.

Results Data collected will be thematically analysed coding arising from key themes from the interviews.

Discussion It is anticipated that medical students will have strong views about how an SpLD impacts upon their university experience. In addition, due to the limited amount of literature exploring the effects of SpLDs on doctors conclusions from this study will help inform medical educators of any required curriculum development.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 354
Structured clinical teaching within modern surgical education: a 2 week programme in paediatric surgery delivered to pre-clinical medical students

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Background Perceived pressures on funding and the shift of curricular objectives onto community healthcare have resulted in reduced exposure to surgical teaching (Agha et al., 2005a, 2005b; Fitzgerald et al., 2012). This has been linked to decrease in uptake of surgical posts, with subsequent long-term impact on patient care. Agha et al. (2005b) have suggested the first step in resolving this is recognising students as motivation-driven adult learners, encouraging surgical learning beyond traditional lecture-based curricula. This involves structured programmes within shorter time frames, where relevance in both formal and informal settings is explained to best engage them in the learning process (Eraut, 2004; Kember, Ho and Hong, 2008; Kaufman and Mann, 2014). We present a novel 2 week student selected component (SSC) on the theme of paediatric surgery which aims to introduce pre-clinical students to clinical settings.

Methodology A structured 2 week programme was devised and delivered to groups of 3- 4 students over 2 academic years. This included: case-based tutorials; surgical skills sessions; supervised ward rounds, and theatre. Assessment was through an oral case presentation. A survey investigating students' perceptions to surgery and surgical teaching was completed, with a response rate of 71% (n= 7). Statements were rated across a Likert scale.

Results Following the SSC, 100% [n=5] said they agreed/ strongly agreed with statements relating to confidence in theatre, confidence with basic surgical technique and having good understanding of the speciality, compared to 40%, 60% and 0% respectively. 0% stated they agreed/ strongly agreed with the statement 'I felt able to take a thorough history'; this increased to 80% after completion of the SSC. All students agreed the SSC had met their expectations and that they would recommend the programme to their peers.

Discussion Structured programme compatible with modern medical school curricula, utilising adult learning theory applied to surgical scenarios and environments. We present a successful undergraduate surgical programme. Further work

includes ensuring reproducibility amongst cohorts, and long term follow up of students. to assess overall impact on surgical undergraduate training.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 355
The effects of undergraduate Trauma and Orthopaedic curriculum change: a cohort study

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Background Recent pressures to recruit more newly qualified doctors into primary care and other undersubscribed specialties has resulted in reduced surgical training within undergraduate curricula across British medical schools. Scheduled teaching and clinical exposure to Trauma and Orthopaedics (T&O) have been sacrificed to make way for other specialties, leading to concern for the effects of such changes.

This study aims to examine the effects on student confidence, performance and overall satisfaction with orthopaedic teaching at a leading London medical school which introduced an entirely new curriculum recently.

Methodology Over the course of two academic years spanning either side of the curriculum change, students completed a questionnaire which asked about their knowledge and skills in musculoskeletal (MSK) conditions and whether they felt prepared to deal with MSK presentations as a Foundation Doctor.

Results A total of 237 responses were collated; 137 from the traditional T&O curriculum, and 100 who commenced the new shortened program. There were significant reductions in understanding of knowledge and skills expected at undergraduate level. 68% of new curriculum students believed they had insufficient exposure to T&O teaching, compared to 14% on the previous curriculum. Similar significant reductions in exposure to outpatient clinics and operating theatres. Subjective preparedness for practical and written examinations were 3% and 16% respectively, compared to 83% and 56% on the previous curriculum. 4% of students on the new curriculum felt prepared to manage MSK conditions when qualified.

Discussion T&O is the largest surgical specialty in the UK and a core service in any acute hospital. MSK conditions form a significant burden of disease within primary and secondary care. Reduced attention to T&O and surgical teaching poses a serious threat to safe and quality patient care. Comprehensive dedicated MSK teaching must be a priority within any modern undergraduate curriculum, being addressed at national and local level to ensure standardised high quality education.

Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 356
There's Nothing Quite Like The Real Thing: Results of a Teaching Programme ('Bleep Week') Exposing Medical Students to Carrying The Crash Bleep

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Background Simulation-based resuscitation teaching for medical students is effective. However, student knowledge surrounding resuscitation is poor[1], and there is paucity in the literature regarding student confidence in real-life resuscitation. Studies highlight the importance of real-life experience in effective resuscitation[1], but this is rarely available to students before active participation in resuscitation efforts as foundation doctors. A junior doctor led teaching programme, named 'Bleep Week' was created to bridge this gap in education, and implemented in 3 hospitals across 2 NHS Trusts.

Methodology ILS-qualified final year medical students voluntarily participated in Bleep Week. This involved an induction teaching session, allocated days with the 'crash' bleep, and a final 'Debrief Session'. A pre-programme questionnaire was completed by each participant, with their confidence in 8 different domains rated using a 5-point Likert Scale. The same questionnaire was repeated on completion of the programme. The change in confidence ratings in each domain were analysed, and percentage change calculated.

Results Ninety-one students completed Bleep Week (100% volunteer rate) with 33 paired questionnaires obtained. Overall, there was improvement in confidence in all domains, with a median average percentage increase of 30% (IQR=14.7). The biggest confidence improvement was in 'Initial Management of a Medical Emergency' (+53%) and 'Understanding of the Medical Emergency Team' (+51%). The lowest increase was in 'Performing an A-E Assessment' (+21%). However, pre-programme confidence in this domain was already high. The usefulness of the programme was rated '4/5' on average. All 33 students would recommend Bleep Week to someone else.

Discussion Bleep Week has demonstrated beneficial results amongst a large number of students. Furthermore, Bleep Week has successfully run in multiple hospitals, to good effect. With little published evidence on projects like this in medical schools nationally, and successful multi-site use already, there is significant scope for further widespread implementation of this programme.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 357
Undergraduate Human Factors Education in Secondary Care – A Multimodal Approach

Author(s): Kerry Fisher
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Background The discipline of Human Factors (HF) is thought to be implicated in most adverse events in healthcare[1]. In 2017 the General Medical Council mandated that newly qualified doctors be able to demonstrate and apply a basic understanding of HF principles as part of their role in patient safety and quality improvement[2].

Despite this, it is yet to have an explicit place on most UK university medical student curriculums, with the vast majority of learning by observation on clinical placements. This often results in a poor, unstandardised understanding of HF in clinical practice, and thus difficulty in mitigating HF at a postgraduate level.

This project aimed to improve undergraduate understanding of HF principles, its importance in clinical practice, and how to apply this to promote patient safety alongside optimising individual and team performance.

Methodology Workshops were attended by fourth and fifth year medical students from two local universities attending secondary care placement. These students completed a pre-workshop questionnaire, comprising of 8 questions regarding previous education in HF, the perceived importance of HF in clinical practice, and which factors they feel are most relevant to their current training.

Workshops included a brief introductory presentation exploring what is meant by HF and current HF theory. HF discussed included communication, complacency, knowledge, distraction, stress, resource availability, pressure, teamwork, situational awareness, social norms, fatigue and assertiveness.

Workshops took place once a month in the form of case-based discussion, simulated patient interactions as part of a multidisciplinary team, or interactive seminars with a range of clinicians. These sessions were deliberately delivered in small groups of 2-10 students so as to allow maximal student engagement. Discussion was encouraged to be student-led and based on student experiences.

Following the workshop, students completed feedback as to whether they felt their knowledge of HF improved, the now perceived importance of HF in clinical practice, and specific questions regarding delivery of the session.

Results At this time of writing, two case-based discussion workshops have taken place involving a total of 12 students with further multi-modal workshops planned for the future.

60% of student felt they understood the term HF, and 90% of students felt it was important to have an understanding of HF. 67% of students had no prior HF training. Of the 12 listed disciplines, communication, fatigue, and knowledge were felt to be the most important factors in their clinical practice.

After the workshop, 91% of students now felt they understood the term HF and 96% felt and understanding of HF was clinically important. 100% of students felt the introductory presentation gave them a greater foundation knowledge with students reporting it was "Nice and succinct giving us time to go the case studies". 100% felt that the case studies were effective to open HF-based discussion, before transgressing to student experiences of this HF. Students felt this was "Great reinforcement by talking about [their] own experiences"

Discussion This Human Factors programme of education is in the early stages of development. Initial results show that majority of students could not identify any previous training on the topic offered by their medical schools, but do have a clinical interest in the discipline and feel it is relevant to their training.

Case-based discussion workshops received positive feedback, and were effective in improving general HF understanding.

As mentioned, this programme will continue on a monthly basis until June 2020, with multiple educational opportunities and involvement of other healthcare professional to promote interdisciplinary cohesion.

In the interim, results from the first two workshops suggest that there is improvement needed in the provision of HF education, and that undergraduates would be happy engage in further training if offered.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 358

What is the best way to increase the engagement and participation of observers during a paediatric simulation session?

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Background Simulation is increasingly used in medical education to expose students to the decision-making and emotional aspects of medical emergencies (1). Fourth year medical students at the Bristol Children's Hospital all attend a one day simulation course comprising five scenarios based on common paediatric emergencies. Approximately 10 students attend each course, with three students actively participating in each scenario.

It has been reported that observing simulation is a valuable experience that provides broader situational awareness, but students tend to place higher value on participating than observing (2). It has been shown that directed observation is superior to non-directed observation in learning and satisfaction of observers (3). However, there is no consensus on the best method of directed observation. We therefore sought to compare different methods.

Methodology We produced five different methods of directing the observing students for each of the simulation scenarios:

1. Checklist: Worksheets with key aspects of assessment, management and non-technical skills to tick off when performed or achieved.
2. Positives/negatives: Worksheets to write three positive and three negative aspects.
3. Specific domain worksheets: Each observer given questions about a specific domain (Assessment, Investigations & Management, Communication)
4. Verbal direction: Each observer asked to focus on a specific domain (Assessment, Investigations & Management, Communication)
5. Non-directed

A different method was used for each of the five scenarios over one day. The method-scenario pairings and the order of the scenarios were rotated over different simulation days.

Data was collected in two ways. Firstly, we assessed students' contributions to debrief by tallying the number of contributions and assigning a score from 1 to 5 of subjective quality of contributions. Secondly, a focus group-style discussion was had at the end of each course to ascertain students' opinions about the different methods.

Results Data collection is ongoing. Preliminary results show the average number of contributions per observer ranges from 5.18 for positives/negatives to 6.46 for verbal direction. There appears to be greater variation in quality of contributions: When checklists were used, 39% of observers received a quality score of 4 or higher, compared to 27% for positives/negatives, 21% for non-directed, 18% for verbal direction and 11% for specific domain worksheets. Discussions with the students revealed a wide range of opinions about the different methods with no clear consensus emerging thus far. Opinions about checklists were most polarised, with some students valuing them highly as a learning tool whilst others felt that focusing on the checklist actually distracted them from the simulation. Statistical and thematic analysis will be performed once data collection is complete. The final results will be available by presentation at ASME.

Discussion Our preliminary results suggest that the method of direction used has a noticeable impact on the quality of observer contributions to the debrief, with checklists facilitating high quality contributions. The average number of contributions per observer does not vary widely based on the method used.

Interestingly, the two methods that resulted in the lowest quality contributions were the methods in which each observer was focusing on a specific domain. It is conceivable that having such a specific focus distracted observers from the scenario as a whole.

Contrary to existing literature, our results suggest that non-directed observation is not necessarily inferior to directed observation, as the quality of contributions from non-directed observation were higher than the methods focusing on specific domains. From these results we can conclude that directed observation of simulation is a useful way to improve engagement of observers, but the method must be carefully constructed to encourage attention to a breadth of aspects of the simulation.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: Short Communication

Paper no. 359
What would YOU do? Teaching Medical Ethics through Simulation

Author(s): Dr Esme Bain, Dr Ryan Youde, Dr Rachel Nigriello
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Background Challenging ethical scenarios are commonplace in clinical medicine. Producing doctors who are able to explore such dilemmas with moral and legal integrity has long been part of the 'hidden curriculum'(1) of medical education, and since 1993 has been formally recommended for inclusion across UK medical school curricula since the first publication of 'Tomorrow's Doctors' by the General Medical Council(2).

In spite of the increasing amount of ethics education within medical schools, research suggests that junior doctors feel poorly prepared for the real-life application of ethical and legal principles upon graduating (3,4). Across the UK the majority of medical ethics education is delivered via lectures or small group tutorials (5). We propose that by relating ethical concepts to clinical scenarios explicitly via the use of simulation training in place of tutorials, we may improve understanding and recall of key ethical concepts. This in turn may increase the preparedness of newly qualified doctors for dealing with similar scenarios in real life clinical practice.

Methodology The University of Bristol (UoB) considers medical ethics as one of the core 'helical' themes within their medical school curriculum. Specific teaching is delivered across all years, with exemplar cases developed to illustrate key themes relevant to the module within which they are being taught.

Two ethical cases are currently provided for discussion with 4th year UoB medical students during their Obstetrics and Gynaecology clinical attachment. These are based on the themes of confidentiality, foetal rights, and termination of pregnancy. We delivered one case within a traditional tutorial setting, and adapted the other for delivery via a simulation. Pre and post course questionnaires were used to collect data surrounding student engagement and enjoyment of each teaching session.

Results At time of writing data collection is on-going; three further groups of students will take part in both teaching sessions, with data collection expected to be complete by May 2020.

Initial results demonstrate that a minority of students have experience of simulation as a means of teaching medical ethics (17.6% (n=17)), with lectures being the most common mode of delivery. Results are at present divided as to whether students prefer simulation or tutorial based teaching of ethical concepts, however qualitative findings are more supportive for simulation, suggesting that it is 'more relevant to my future job' and enables practice 'seeing where I would struggle in real life'.

Discussion Producing junior doctors who are confident in how to practice ethically is a key outcome of modern day medical education. The need to develop engaging and relevant teaching resources remains a challenge for all medical educators, and a rise in the popularity of simulation style training may pose a novel method for teaching ethics in the future. Further data collection is required to better understand the acceptability of this method of education to undergraduates, with future research into its efficacy as a teaching method the logical next step.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 360
Dermticulate: A novel, interactive game designed to improve students' ability and confidence in describing dermatological conditions

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Background Effective communication and handover between teams within healthcare settings is vital to patient safety[1,2]. Studies have shown how a structured approach to telephone referrals leads to improved communication content and increased clarity between teams[2]. There is little documented on telephone referrals for dermatology specifically, however anecdotally this is known to be a problem. Skin disease is vast, and with primary morphology, secondary morphology, size, demarcation, colour, border, distribution, dermoscopic features[3, 4], all to be commented on, it can be complicated, daunting task for less experienced doctors.

Current medical schools do not provide adequate training to meet recommendations for graduate competences in recognising skin cancers[6, 7], and with skin cancers being the most common malignancy in Caucasian populations[5], it is important we try to address this. This session was designed to be a fun, playful way to better equip medical students with the knowledge and ability to confidently describe skin lesions to specialists when necessary.

Methodology Data was collected via a pre and post-teaching assessment, where students were first presented with a clinical photograph of a skin condition and asked to 1) name as many clinical features as they could identify and 2) attempt a possible diagnosis. They were then asked to phone the 'on-call Dermatology Registrar' and refer the patient from the clinical photograph. Students were also asked to provide optional written feedback for the session.

Data was assessed quantitatively comparing the assessment marks pre and post-teaching, plus qualitatively looking at Likert-scale data on self-perceived confidence in describing dermatological conditions. A thematic analysis of the student's feedback was also completed to assess the overall feelings regarding this type of teaching tool.

Results 11 students were recruited into the study, completed pre and post assessments, the Likert confidence scale questionnaire, and gave feedback. The average improvement in score between pre and post teaching assessment was 16% (ranging from 4 – 28.5%). The marked 'global impression' of each student's competence in referring dermatological conditions over the telephone also improved from an average 'Pass', to 'Very good' on a standard rating scale. 100% of students stated they 'enjoyed the teaching session' and 'found it beneficial to learning'. On describing the game, some of the most commonly used adjectives used by participants were as follows: fun, interactive, educational, competitive, engaging, fast-paced, innovative, interesting, refreshing and unique.

There was an overall significant increase in students' self-perceived confidence following the intervention. The percentage of positive respondents (self-rated as 'confident' or 'very confident') regarding four statements, were identified pre and post intervention. These statements and the percentage of positive respondents pre and post intervention (in brackets) are as follows; I am confident in my knowledge of dermatology terminology (0% 85%), I am confident in my ability to describe dermatological conditions (0 . 85%), I am confident in my ability to recognise clinical features of common dermatological conditions (0 . 92%), and I am confident in my ability to diagnose dermatological conditions (0 . 62%).

Discussion Both quantitative and qualitative data, suggest this is a successful teaching tool which students find exciting, enjoyable and beneficial to learning. Data shows participants particularly enjoy the fast-paced, competitive element, which forces them to challenge themselves in front of their peers. They also enjoy that, by nature of the game, they must be continually expansive in their description until their partner answers correctly. This encourages students to utilise all of the descriptive vocabulary that they know i.e. primary and secondary morphology, size, demarcation, colour, border, distribution, dermoscopic features etc, to

help their partner reach the correct answer and win points. It overall allows students to build their vocabulary, confidence and skills in describing dermatological conditions whilst in a safe, fun, encouraging, educational environment.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 361
Designing, delivering and evaluating the Clinical Reasoning Special Study Module, University of Nottingham

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Background Clinical reasoning (CR) is a complex skill essential for tomorrow's clinicians; it is critical to the diagnostic process used from presentation to diagnosis. It enables further identification and synthesis of key symptoms and signs, through targeted history taking, in order to reach a diagnosis, and consequentially management. A similar process is required when reviewing the response to treatment, which is especially challenging especially if unanticipated. CR is a skill honed through experience and is particularly challenging to newly qualified doctors who lack in this area. In addition, the number of identified medical conditions and therapeutic options available in modern healthcare is growing rapidly, which presents an additional challenge to future doctors. Undergraduate education is the key to arming students for these challenges. Currently, students are taught in a 'disease to symptom' format, in system specific modules, and yet patients present with a symptom (or multiple), not a disease. This way of learning is hard to put into practice, and revising in this way is disadvantageous for knowledge recall and flexible thought, both of which are integral elements of CR. Moreover, students are not formally taught CR theories, nor are they supported in exploring different revision techniques, arguably poorly equipping them for life as a junior doctor. From this, we can identify a few gaps in medical undergraduate education: knowledge retention and recall, CR theory, and symptom to diagnosis approaches.

The Trent Simulation and Clinical Skills Centre (TSCSC) and Undergraduate Medical Education department (UMED) at Nottingham University Hospitals NHS Trust offer a CR special study module (SSM), which occurs during clinical phase 2, in the fourth year of the undergraduate medicine course at Nottingham. SSMs are an integral part of the curriculum, allowing four weeks to study the areas of their particular interest. The purpose of the SSMs is intellectual development through in depth exploration of a chosen topic.

Methodology Methodology for implementing the module

Each week one symptom (ideally broad and with multiple differentials) is selected, and the teaching for the week is focused around that symptom. The week involves self-study by the students, whereby they research differentials, their pathophysiology, and important red flags and guidelines, and collate this information into a concept map. They then attend acute medical wards, and find patients who presented with the specified symptom, so as to practice targeted history taking and see what investigations were done. The week also involves teaching on learning theory and CR and culminates in a presentation by the student.

This way, the students gain exposure to patients presenting with four core clinical problems and are guided in developing CR skills that will help guide more accurate diagnosis and support the initiation or review of effective and safe care.

The outcomes of this course are three-fold:

1. To optimise learning and retention of knowledge on 4 commonly seen symptoms and able to apply this reasoning process to other symptoms
2. To develop an appreciation of CR and its importance in practice
3. To teach evidence-based revision techniques and deduction skills that enhance medical student's CR and knowledge retention

Methodology for evaluating the module

The efficacy of this module will be evaluated using the first two levels of the Kirkpatrick Model: Reaction and Learning. Due to time constraints, the last 2 levels of the model, behaviour and results, will not be assessed.

Feelings regarding the course will be collected using a self-evaluation form and the knowledge improvement would be assessed using pre- and post- course multiple-choice questions.

Results The course finishes at the end of April. The results would be presented in the poster

Discussion It will be presented in the poster.

Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 362
Developing a Simulated On-Call Session for Final Year Medical Students

Author(s): Jack Dalziel, Lara Rimmer
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Background We have found, both subjectively and from academia, that many graduating medical students struggle in making the transition from senior medical student to newly qualified foundation year 1 (FY1) doctor. Brennan et al. (2010) reported the majority of students transitioning to FY1 found it stressful, but good clinical experience mitigated this.

East Lancashire Teaching hospitals host placements for 5th year medical students from Lancaster Medical School. The Trust recruits an undergraduate teaching committee made up of foundation year 2 (FY2) doctors and supervised by the Director of Undergraduate Education. As part of this committee, we dedicated time to improving 5th year medical student's preparation for their upcoming year as an FY1.

The aim of the project was to increase medical student self-reported confidence by 50% throughout their 7-week placements.

Methodology In order to meet our aim, we utilised a reverse driver-diagram in order to discuss which primary and secondary drivers ultimately led to a confident and safe FY1 doctor. Using this driver diagram, we were able to create a teaching programme which targeted each of these drivers.

We designed and introduced a 4-session programme. The first 3 sessions were lecture based and titled respectively; 'Acutely Unwell Patient Management', 'Practical Prescribing' and 'Surviving the Foundation Programme'. The final session was a simulated on-call session, allowing students to hold a bleep and be 'on-call' for 30-minutes in a simulated environment.

Throughout the placement we asked the students a weekly question, asking them to indicate how confident they feel as a score of 1-10. This data was recorded as a run-chart based off the average score of the students.

We ran an initial pilot study between May-June 2019, following this study we made several changes to our approach.

Results Medical student confidence increased by 43% over the course of their 7-week placement. Feedback from all the students who took part remarked they felt the sessions were useful and gave them additional insight in becoming FY1s, in addition to which they would normally get from their placement. Students remarked the simulated on-call session was particularly useful.

Students felt they would benefit from a pre-teaching survey in order to ascertain their individual learning needs and making teaching sessions tailored to meet these specifically.

Discussion Whilst we did not meet our 50% target, the reported increase in confidence was certainly positive, and overall the pilot was a success. From feedback and personal experience, the simulated on-call session was by far the most engaging and useful of the four-session programme. Additionally, it allowed us to tackle each of our identified drivers in one session alone. Whilst it is difficult to determine whether the increased confidence is due to time on placement or our teaching programme, the students still perceived that they had additional insight from the programme in regard to both the nature of on calls and their own coping strategies and mannerisms.

Utilising these results and reflections has guided the future of the programme. Reflecting on the pilot study we found the teaching programme was resource intense, requiring a large number of volunteers and equipment to successfully complete. As such we have decided to adapt the programme and run the simulated on-call session as an isolated event. To make the session more sustainable, we have created two new Simulation Lead roles in our Undergraduate Committee. Following the success of the initial pilot, we are currently working with the 5th year module lead at UClan Medical School with the aim of introducing the Sim On-Call session into their curriculum, as part of a dedicated timetable session.

The concept of learning through experience is not new; Aristotle said, 'For the things we have to learn before we can do them, we learn by doing them.' Our results have demonstrated student benefit from this experience.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 363
Development of an Undergraduate Paediatric Simulation (UPS) Programme

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Background Simulation has become widely recognised in postgraduate medical training as an incredibly powerful educational tool in enabling learners to practice treating emergency scenarios in a safe environment. Its use in the undergraduate curriculum is less widespread, but has the potential to allow students to learn both clinical skills, but also the essential team management and communication skills required when they start work as a junior doctor.

We designed and implemented a paediatric simulation programme for students in their penultimate medical school year. We aimed to explore whether students found this a useful learning opportunity in mastering acute paediatric clinical skills as well as developing an understanding of key simulation and debrief concepts. Furthermore, we wanted to assess whether the simulation sessions incremented students' confidence levels in recognising and managing unwell paediatric patients.

Methodology A four scenario, low-fidelity Undergraduate Paediatric Simulation (UPS), specifically mapped to the paediatric undergraduate curriculum, was created. Prior to the sessions, students completed a survey exploring their background confidence levels and views on simulation. An introduction to simulation and debrief methods was provided. Small group simulation sessions were run by experienced facilitators, with half the students participating in the scenario and the other half leading the debrief. On completion of the sessions, students undertook a second survey, providing programme feedback and re-evaluation of their confidence levels.

Results 100% of the students reported to feel more confident recognising unwell paediatric patients, performing initial assessments, initiating paediatric management and conducting an SBAR (situation, background, assessment response) handover following the UPS programme. The majority of students also felt an improvement in familiarity of simulation and being able to confidently debrief following scenarios.

Qualitative feedback comments from students further demonstrated the clinical value gained from the sessions as well as development of key simulation concepts: 'great sessions and so useful to put emergency situations into practice. Also great to experience simulation and learn how to debrief properly'. Students appreciated the opportunity to practice working under pressure: "useful to learn how to prioritise", "being encouraged to think on your feet". Team management behaviours were highlighted as both the most useful aspect of the sessions, but also the most challenging: "the opportunity to act out different roles in a simulation" "how to communicate in an emergency situation". They were also able to clearly describe how the sessions were stretching and challenging them:"difficult to incorporate making a diagnosis into ABC approach"

Discussion With its consistently excellent feedback and on-going high rates of confidence improvement in acute paediatric management amongst students, the UPS programme has now been formally embedded into the undergraduate paediatric teaching programme. This study has truly demonstrated the value and feasibility of introducing paediatric simulation into the undergraduate teaching curriculum. We would therefore suggest that all undergraduate curricula consider incorporation of paediatric simulation into their teaching programmes.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 364
From mountainside to bedside: Do the skills learned from a Wilderness and Expedition Medicine student selected component translate into practice for junior doctors?

Author(s): Christopher Waters, Rachel Nigriello, James Ross, Kevin Jones
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Background A wilderness and expedition medicine student selected component (WEM SSC) has run for 6 years at the Great Western Hospital, Swindon. Work undertaken previously has confirmed students believe the SSC has taught them vital skills in terms of leadership, teamwork and communication skills.[1] These skills closely align to the GMC's 'Outcomes for Graduates.'[2] 100% of students reported they had developed skills they would use in their future careers. Now we seek to establish if this SSC has altered their practice since becoming a junior doctor.

Methodology A survey was distributed electronically via email to the former students who had attended the 2016 course and are now working as junior doctors across several different grades such as F1, F2 and SHO. The survey consisted of a mix of a modified 4 point Likert scale and free text questions.

Results There were 6 respondents to the survey, providing pilot data. 100% of respondents said that the WEM SSC impacts upon their practice. 50% of respondents reported it was important to their practice most of the time, one going so far as to say that it had a major impact on his practice daily. 100% of respondents agreed that the teamwork and leadership skills learned on the course continue to impact on their practice. 100% of respondents said their practice is still influenced by skills in triage and prioritisation which were taught on the WEM SSC, as well as skills in managing cardiac arrests and the rapid assessment and treatment of unwell patients. 33% of respondents disagreed with the statement that the communication skills they learned still impact on their practice. 50% of respondents agreed that the fracture management skills they learned continued to impact on their practice.

In the free text question about how the SSC has influenced their practice respondents talked about increased confidence in dealing with "crises", "leadership skills", "being mindful of using resources", and increased fluidity in A-E assessments. 83% of participants felt that the SSC taught skills that were not otherwise taught in the medical school curriculum such as leadership skills and communicating with third sector organisations such as paramedics and mountain rescue.

Discussion A limitation of this study is the sample size. Also there is likely selection bias in that those participants who responded are participants who had positive experiences of the WEM SSC. We hope to address this by collecting further data from subsequent larger cohorts of participants by expanding our invitations to social media platforms. Our results indicate that the WEM SSC was most useful in influencing teamwork and leadership skills which participants use in clinical practice. This indicates a gap in the current curriculum and room for improvement in teaching about these vital skills. The practical skills taught in the course have helped influence practice but perhaps to a lesser degree; the respondents highlighting A-E assessment as a crucial skill being used in their daily practice, however these skills are taught elsewhere in the undergraduate curriculum.

This study highlights how important student choice can be in determining the skills they develop for their future practice. We recognise its limitations and hope the subsequent cohorts provide a rich source of data to extract further implications of this SSC for the future practice of its participants and to characterise the ways in which the SSC can be improved.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 365

GP Simulation Course: An Introduction into the multidisciplinary and complex management within a Primary Care setting

Author(s): Lesley Megahy, Dr Meadhbh Halpenny

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Background Recent reports 'By choice, not by chance' (1) and 'Destination GP' (2) have highlighted the need to raise the profile of General Practice as a career choice.

Simulation is used effectively in specialties such as emergency medicine to teach undergraduate medical students. Simulation is not currently an embedded part of the Primary Care curriculum for undergraduate students in the West of Scotland. We feel that by incorporating Simulation into their primary care teaching, In Lanarkshire we may be able to open their minds to the challenging, exciting and often acute nature of General Practice.

An Australian study compared GP simulation with time spent in practice (3). They found that the simulated GP clinic was an 'authentic and positive' learning experience and was 'more reliable and better structured' than similar teaching in GP setting. There is research lacking in a Scottish context and we hope to explore this area further, using Lanarkshire as our pilot location.

Methodology A pilot simulation course involving specifically designed house call scenarios was carried out with Year 4 medical students embarking on their Primary Care placement. The focus of the scenarios was assessment and management of challenging patient consults. This allowed discussion and teaching around the wider primary care team and the challenges of managing unwell/comorbid patients in the community. Students were observed by a group of their peers using a simulation suite. Debrief sessions were carried out after each scenario.

Results A pre and post course questionnaire was completed using Likert scale for evaluation. Results will be shared at the time of presenting poster.

Discussion Following the completion of this pilot study the course will be adapted for future use, not only as part of undergraduate Primary Care placement but also for the education of postgraduate GP trainees and Advanced Nurse Practitioners.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 366

"Know what we are capable of" – Attitudes towards student participation in ward rounds from the perspectives of medical students and doctors in a district general hospital

Author(s): Dr Louise Gurowich, Dr Esme Bain, Dr Alexandra Phillips, Mr Kevin Jones

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Background Apprehension surrounding attending ward rounds is reflected in the common psyche of clinical medical students across the country [1], despite them being an intrinsic part of doctor and student education since the 1660s [2]. Even at a postgraduate level, ward rounds are notoriously viewed as being of limited educational value, with reasons cited as

lack of time, high volume of patients, and lack of senior interest in teaching [3]. Anecdotally, medical students can feel excluded from the clinical team, particularly on fast-paced ward rounds. This may contribute to a heightened level of social exclusivity that can develop amongst their peers compared with non-medical students [4]. Feeling a part of the team in clinical environments can strengthen professional inclusivity [4], and the ward round can offer many opportunities.

Using questionnaires to analyse our hypotheses, we considered whether medical students' attitudes were more likely be negative towards ward rounds, whilst doctors' opinions would be positive regarding student experience and educational value. We also hypothesise that exposure to documentation teaching would improve confidence on ward rounds, and thereby integration of medical students.

Methodology We constructed a questionnaire using 1-5 point Likert-type scales and free text boxes to assess agreement with several statements regarding medical students on ward rounds. These were completed by medical students in their clinical years at the University of Bristol (Years 3-5), and University of Oxford (Year 4) as part of a teaching session on ward round documentation and etiquette. The students are then reassessed using the same questionnaire at approximately 8-12 weeks.

Doctors from all training grades at the Great Western Hospital were then provided with a questionnaire with 1-5 Likert-type scales and free-text boxes along the theme of medical student involvement in ward rounds.

Results Current data collected from 51 students shows that only 16% of students (8) felt that they were included as a part of the team during ward rounds, and equally 16% (8) felt that the doctors wanted them to attend. Just 30% of students (15) described them as an "enjoyable" part of their clinical placement. Yet, 57% of students (29) found them "useful", highlighting utility in spite of presented difficulties in accessing learning.

Common themes in the description of their ward round experiences were "chaotic", "confusing", and "stressful". Most students focussed their feedback on the lack of engagement between themselves and the doctors, the pace of the ward round, and a sense of uselessness; "[I] pull curtains only" one student quoted. Several did still describe them as "educational".

When suggesting ways to improve ward rounds' benefit to learning, several themes emerged including being allocated a task or role, acknowledgement, and explanations by doctors of complex cases. Furthermore, rather than improving the ward round, 21% of students (10) suggested earlier teaching on documenting and how to help on a ward round during medical training would be beneficial.

At the time of writing, data collection is still ongoing. However, early data suggests that all doctors surveyed would prefer medical students to participate more often in ward rounds than current levels.

Students will be followed up at 8-12 weeks to reassess attitudes towards the ward round following teaching.

Discussion Analysis of the pre-test data suggests that clinical medical students find ward rounds intimidating, chaotic, and rarely a valuable adjunct to their learning. Simple methods in which the teaching could be improved have been suggested, requiring effort from the student and the doctor, with the early data

from the doctors implying they would be keen to collaborate. We postulate that a focus shift is required to see the value in ward rounds by teaching them as a skill; how to conduct one safely and be an effective foundation doctor, rather than the intricacies of diagnoses.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 367
Learning with style

Author(s): Dr Charley Heffer, Dr Amy Tomsett
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Background Doctors are a product of their learning. Specifically, junior doctors are a product of their undergraduate teaching. Nowhere is this more important than in the field of Obstetrics and Gynaecology – a speciality where there is mounting evidence that learning in an appropriate style increases junior doctors' knowledge [1]. Although this association has been demonstrated for post-graduates this has yet to be tested at an undergraduate level.

Since 1982 the Honey & Mumford Learning Styles Questionnaire (LSQ) [2] has been widely used in all sectors of commerce and education, to help people identify their learning style preferences. Being aware of your learning style preferences is now widely acknowledged as a prerequisite to more effective learning [3].

Using this LSQ, a pilot qualitative survey was performed on Bristol University fourth-year undergraduates during their eight-week Obstetrics and Gynaecology placement. In this survey, the proposition that adopting preferred learning styles enhanced the undergraduate learning experience was tested.

Methodology Two groups of fourth-year undergraduate students (n=42) were asked to complete the Honey & Mumford LSQ [2] to identify their preferred learning styles. Once ascertained and collated, the first group of undergraduates (n=21) received an eight-week conventional Obstetrics and Gynaecology teaching programme delivered in an untailored format. The second group of undergraduates (n=21) received a bespoke eight-week Obstetrics and Gynaecology teaching package modified to reflect the overall preferred teaching styles of the group. After completion, both undergraduate groups were asked to rate the quality of teaching they received. Mixed qualitative and quantitative data was collected including: enjoyment of individual teaching programme, whether learning styles had been catered for and whether learning objectives had been met.

Results Undergraduate students of both groups reported similar high attainment results for learning objectives. Interestingly, however in terms of this survey, the second group of undergraduate students receiving the tailored-made, bespoke teaching programme reported increased satisfaction with the delivery of taught content, self-confidence in learning acquired and custom-made approach of taught content.

Discussion This pilot qualitative survey is a first step to explore whether prior preferred learning methods and adapting teaching methods enhances the learning experience of undergraduate Obstetrics and Gynaecology students. Student satisfaction and self-confidence of learning acquisition markers indicate a bespoke, tailor-made teaching package based on student individual's learning styles improves educational outcomes. A more comprehensive and detailed study is needed as, if this finding were to be supported by further research, it would have significant implications for educational practice. Students differ in ability and style of learning and the best educational programmes should be adaptable to these differences and preferences to obtain best outcomes.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 368
Placement supervisors recognise four kinds of learner participation

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Background The slow professionalization of medical education is broadening the role of clinician teachers beyond 'information provider' and 'role model' to incorporate 'examiner', 'planner', 'resource developer' and 'facilitator' (1). The examiner role of placement supervisors frequently includes assessing students' learning on placement. However, insufficient is known about what placement supervisors consider to be good placement learning.

Methodology We analysed placement supervisors' free-text comments about student doctors' 'approach to learning' on an end-of-placement assessment form. Ninety-four placement supervisors, across six hospitals used an online form to assess 218 third year medical students at the mid- and end-points of a 12-week longitudinal integrated clinical placement.

Two investigators coded the comments using in-vivo coding in the NVivo software package. Where discrepancies were noted, a consensus was reached on the final codes.

Results The axial themes in both mid- and end-point data covered positive and negative comments on students' merit and personality traits, approach to learning, and advice for improvement. The dominant secondary code in relation to approach to learning was 'participation'. There were four primary codes within participation: participates in clinical activity, participates in the team, participates with patients and participates in learning.

Supervisors' comments about clinical participation covered ward rounds, clinics, taking histories and performing clinical examinations. For example, "actively engaged in ward round, clinics and shadowing junior doctors", "taken plenty of histories and clinical examination" and "attendance was lacking in the initial part of the placement". Assessors in the mid- and end-point form specifically highlighted using comments such as "makes use of learning opportunities in a clinical setting".

Comments associated with good participation with the team included "interactive with the team", "team player" and "helpful". The ability of students to be inquisitive received feedback approval. Assessors stated comments such as "performs tasks done by doctors", "actively helped junior doctors in day-to-day activities" and "helped organise the ward round", showing the depth of participation by the student.

Supervisors' comments about participation with patients covered patient-centred approach and interaction with patients. For example, "the student built a rapport with our long-term patients".

Supervisors' comments about participation in learning covered attendance, attitude, initiative, and connecting clinical and academic learning. For example, "arranged own learning event and attachment with clinical staff", "engaged with taught sessions" and "be more proactive".

Discussion Our data show that placement supervisors consider participation to be a central aspect of student doctors' approach to learning on placement. Furthermore, we found more than one dimension of participation in the data.

Clearly this corresponds with Lave and Wenger's observations from outside of medicine that learners' enter new communities of practice through 'legitimate peripheral participation' (2). Dornan has helpfully shown that student doctors need carefully designed support in order to achieve legitimate participation on placement (3).

Our data contribute two things. They show that 'jobbing' clinical supervisors recognize and value learners' participation just as educational scholars do. They

also suggest that clinical supervisors 'read' the extent of a learner's participation through several lenses.

Further work should seek to confirm whether the same dimensions of participation emerge in other learner and other clinical settings, and should begin to evaluate which dimension(s) of participation are associated with the greatest learning value.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 369

Quickfire A-E. A new way of teaching assessment and management of acutely unwell patients to medical students

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Background The ABCDE assessment structure is accepted as a gold standard framework for the assessment of acutely unwell patients[1]. When junior doctors start working they will have to independently assess patients both on the wards and in the emergency department. They will then escalate to senior clinicians if appropriate. Final year medical students at King's College London (KCL) reported feeling under confident and under prepared for this both in terms of assessing unwell patients and seeking help. We therefore developed a teaching program, called 'QuickFire ABCDE'. The aim of this session was to use simulation and an adapted fishbowl technique to help develop students' ABCDE assessments and handovers using the SBAR framework (situation, background, assessment, recommendation)[2]. To be successful it needed to be enjoyable, short compared to a usual High-fidelity simulation sessions, require minimal staff, and to cover a variety of acute medical conditions.

Methodology The sessions utilise a manikin, which can be high or low fidelity, and run for 90 minutes with groups of 6 medical students. Using an adapted fishbowl technique, students take turns to assess the manikin in an ABCDE format with their peers observing at the end of the bed. As they progress through the assessment the facilitator provides additional clinical information as requested, such as observations. We have developed supplementary printed materials such as ECGs, CXRs and blood gases to show the students as they proceed through their assessments. If the central participant needs help they first can ask their peers, and second ask the facilitator for advice. At the end of the assessment the central student chooses who they wish to escalate or handover to, and addresses their peers with a formal SBAR handover. The peers and facilitator can then provide feedback on the ABCDE assessment and handover in a short debrief.

We ran the sessions with either 1 or 2 facilitators, the principle facilitator holds a sheet or iPad with the history, vital signs and results of any investigations. The second facilitator can help plant, such as doing observations and applying oxygen at request. A questionnaire was completed pre- and post each session. These included Likert-scale questions assessing confidence in performing ABCDE assessments, SBAR handovers and managing acutely unwell patients; and free text questions to obtain qualitative data.

Results To date these sessions have been run with 59 medical students across two hospital sites. 100% reported that they would like these sessions to continue. Students enjoyed the sessions with an average score of 4.7 out of 5. Mean confidence on the 5-point Likert scale increased from 3.2 to 4.0 for ABCDE assessments, 2.5 to 3.7 for SBAR handover, 2.6 to 3.7 for managing acutely unwell patients, with an overall increase in confidence across all of these factors from 2.7 to 3.8 (all p-values 0.001).). Free text comments were supportive of this method of teaching.

Discussion QuickFire ABCDE is an enjoyable and successful method of developing confidence in final year medical students' ABCDE assessments, SBAR handovers, and management of acutely unwell patients. It is short, which appeals to both students and facilitators, and has a low burden on resources and faculty. It can be adapted to cover a wide variety of conditions, and can potentially can take place in any classroom or ward area. Students feel that this format has a role in addition to the high fidelity simulation offered as part of the curriculum. Therefore our ongoing plan is to integrate this format into the regular teaching of final year KCL students.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 370

Simulated Clinics – An Effective Tool to Prepare Medical Students for Practice in the Ambulatory Care Setting?

Author(s): Samuel Mills, Georgina Cochrane

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Background Training clinicians deliver a significant proportion of health care in ambulatory settings, such as: outpatient and primary care clinics. Therefore, it is important to prepare undergraduate medical students for employment within these clinical environments. Teaching in ambulatory settings can be challenging and is often limited by constraints associated with high patient caseloads and insufficient time(1,2). Medical simulation training has been shown to improve knowledge, clinical skills and communication skills(3). The authors of this research sought to investigate the use of medical simulation as a tool for preparing undergraduate medical students for clinical practice in ambulatory settings. The authors designed a simulated clinic teaching programme for fourth and fifth year medical students. The aim of this was to simulate common medical and surgical complaints encountered in an ambulatory care setting and facilitate students in the assessment and management of simulated patients. Our primary outcome measure was to assess student confidence in assessing and treating patients in an ambulatory setting through the use of simulated training.

Methodology An online questionnaire was sent to fourth and fifth year undergraduate medical students based at East Lancashire Hospitals NHS Trust to gather information on student experiences of simulation training and preferable clinical topics for teaching. Based on the responses, the authors designed five different clinical scenarios for students to assess and treat a simulated patient. Students who had expressed an interest in the programme were then invited to participate (n=10). Before and after the programme, students were asked complete an anonymous feedback questionnaire. Using a 10-point Likert scale, students were asked to document their self-perceived confidence in assessing and treating patients in an outpatient or general practice setting pre- and post- the simulated clinic teaching programme. Using this data, a paired t-test was performed to determine if the programme was effective at improving confidence in medical students' ability to assess and treat patients in the outpatient or general practice setting.

Results All students (n=10) reported no previous experience of clinical simulation based in an outpatient or general practice setting. Mean confidence scores pre- and post-course for all students was 6.10 and 8.80, respectively. The mean difference in post-course confidence score was +2.70 with 95% confidence intervals of 1.94 to 3.46. A paired t-test (t=8.0598, df=9) demonstrated a two-tailed p value of 0.0001. Independent of study year or affiliated medical school, all students reported individual increases in confidence levels. This was more pronounced in the fourth year student cohort with a mean increase in confidence score of 2.86 (95% CI: 1.87 to 3.85). This indicates an overall improvement in self-reported student confidence following participation in the simulated clinic.

Discussion Results of this small-scale, pilot programme suggest the use of simulated clinics in undergraduate medical education can improve student confidence in the assessment and treatment of patients in an outpatient or general practice

setting. Increases in self-reported confidence were more pronounced in the fourth year student cohort and raises the question as to whether simulated clinic teaching could be beneficial to medical students in earlier years of training. Results also vindicate further research into the use of simulated clinics as a learning tool for undergraduate medical students.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 371
Simulating an on-call experience for final year medical students without a formal simulation centre in a district general hospital

Author(s): Bindiya Shah, Jamie Kay

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Background The leap from medical school to the foundation programme is vast; 50% of students believe that medical school may prepare you knowledge wise but fails to prepare you, experience wise, for life on the wards (Illing et al 2013). A common area of concern, to both students and newly qualified doctors, relates to on-call shifts. Over a quarter of newly qualified doctors in Barnet Hospital, a district general hospital, feel less than 3/5 confident in their abilities to face an on-call shift. In keeping with previous studies (Cave et al 2007), the concerns from our local feedback revolved mainly around clinical prioritisation, management of patients alone, time management and documentation.

Previous studies have shown that simulation is a powerful tool in addressing this issue (Lumley et al 2013). These simulation sessions classically require high fidelity simulation centres, which are not accessible locally to trainees at Barnet Hospital.

A low-resource simulation session was therefore designed to immerse final year medical students into an hour on-call experience within a safe, non-judgemental environment. The aim was to better prepare the students for transition to clinical practice within a district general hospital without a formal simulation centre.

Methodology A simulated "hospital ward" was constructed in the lecture theatre. One unwell patient requiring urgent clinical review was handed over to each of four students alongside a list of jobs handed over from the ward. The patients (acted by volunteer junior doctors) were based on clinical scenarios commonly encountered on a typical on-call shift such as the management of: a patient who has fallen; a patient with a high NEWS score; the expectations of family members; and an unexpected investigation result. Whilst the clinical assessment was key, the scenarios incorporated themes such as timely escalation, capacity and confidentiality as well as delegation to and interaction with the multidisciplinary team. The need for constant clinical prioritisation was tested with interruptions from an on-call bleep. At the end of the session, students were asked to give hand over and a formal debriefing session was held.

Data was collected in the form of pre- and post-session questionnaires to capture changes in confidence, opinions regarding the fidelity of scenarios and scope for improvement.

Results 63.2% of final year medical students felt more confident in their ability to face an on-call shift after just one simulation session. Specifically, confidence in bleep prioritisation, delegation and documentation increased. Qualitative feedback emphasised the high fidelity despite the low-resource setting.

Discussion The data suggest these simulation sessions fulfil a gap in the current curriculum of final year medical students at Barnet Hospital. The main limitation of a low-resource simulation session was found to be its dependence on the voluntary efforts of doctors and allied healthcare professionals. This may hinder the reproducibility of similar sessions in small hospitals.

In the future we plan to follow up these students in 12 months' time, (after the commencement of foundation year training) to monitor the lasting educational impact of these sessions. If successful, we believe this teaching model could be applied trainees at various stages of their career, for example simulating a registrar on call for core trainees.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 372
Simulation on a shoe-string

Author(s): Alireza Yazdi

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Background Simulation is used as an educational tool across medical education. It is becoming more commonly used in post graduate training, but first exposure to simulation is now becoming well established in undergraduate education.

The purpose of this study was to assess the viability of including a very low fidelity simulation of a Medical Emergency Call - 'MET Call' – as part of the teaching programme for penultimate year medical students on a Cardiology attachment at St Helier Hospital, Sutton. St Helier hospital in common with most of other district general hospitals does not have an on-site simulation lab.

This was designed to give students a chance to apply their learning from their time on placement in a practical context, without the resources of a large teaching hospital.

Methodology Three groups of four students (12 total) were presented with a series of four scenarios during a 60 minute session. Equipment included a stethoscope, a Resusi Anne resuscitation model, and a non-rebreathe oxygen mask. The scenario would be presented on a flip chart and written down in real time. Props used included ECGs and a projected Chest X-Ray. Scenarios included chest pain and difficulty in breathing, with diagnoses including ST –elevation myocardial infarction and arrhythmias. Each student in turn would be allocated as team leader and approach the scenario emulating what they would do in clinical practice.

A brief introduction to the session would be given at the start detailing the rules of the low fidelity simulation environment. This included emulating as best as they could their approach the patient as they would on the ward. Continuous feedback was given during the session by a teaching fellow who acted as facilitator.

A written questionnaire was provided after the session with a scale of strongly disagree (1) to strongly agree (5) for questions relating to their impression of the teaching. Qualitative comments were taken for 'things [I] liked about the session' and 'the session could be improved by'. Results were transcribed and analysed electronically.

Results All students (12/12) agreed that the session was relevant to their training. 10/12 strongly agreed that the teaching method was appropriate for the learning objectives. The remaining two agreed.

Written comments were positive, with some suggestion that the low fidelity environment had exceeded expectations – 'Better than I expected'. The placement of the session toward the end of the Cardiology placement was commented on positively: 'Simulation scenarios tied up everything we learned in the placement'. No suggestions for improvement were offered in the written feedback. Informal verbal feedback identified areas for improvement including presenting a summary after the session.

Discussion Very low fidelity simulation in the context of undergraduate education is a viable and well accepted form of medical education. Students agreed that the session was relevant to their training.
Perceived barriers prior to the session, such as the low fidelity nature of the simulation did not adversely affect the student learning experience. This makes the session and set up transferable to many different learning environments.
The reported confidence after the session was notably high. There should be caution on this particular point as it would be unreasonable for a penultimate year medical student to be highly confident dealing with an acutely unwell patient and there is a risk of fostering a sense of overconfidence. This has also been noted, to a greater extent, with high fidelity simulation [1]
Students commented on the advantage of having this type of session after the core curriculum had been studied as this enabled an opportunity to apply their learning.
Effect on learning in this context is uncertain, but will be assessed through a questionnaire with the upcoming fourth cohort
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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 373
Taste-based Learning: Exploring cake as an educational tool in dermatology teaching for third year medical students

Author(s): Daniel Wright, Charlotte Thompson, Claire Rafferty
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Background Basic sciences have long been argued a necessity in a medical curriculum in order to underpin clinical reasoning. Students are required to learn large amounts of knowledge in short periods of time. The teaching of these basic sciences in a way beyond the traditional lecture-based style has lent itself to a number of innovative methods, including interactive games and simulation. With whole brain approaches to education now well supported in the literature, the following project proposes the use of a novel subcategory of kinaesthetic learning to the basic sciences underpinning dermatology - taste. We investigate whether the use of a cake designed, in taste and texture, to represent the layers of the skin improves student outcomes in acquiring this required knowledge.
Methodology Two groups of third year medical students from the University of Bristol received a tutorial on the basic sciences underlying dermatology and a brief introduction to pathology, including bullous disease. Both groups were taught using a traditional, lecture-style approach by junior doctors in a medical education role. One group received supplemental teaching with cake designed to represent the layout and function of the structures of the skin, with the ability to manipulate the model to represent disease processes. Pre- and post-session assessment of their learning was carried out in the form of multiple-choice questions. This data was analysed to determine whether there was any difference between the groups. The students who received cake-supplemented learning also received a questionnaire to determine the acceptability of such a method.
Results This project is within its primary stages, with full results available on completion of data analysis and will be presented at the conference. Initial findings indicate a positive response from students and demonstrate higher levels of engagement with the learning.
Discussion Utilising different sensory modalities within sessions remains a challenge for the clinical educator. Typically rote learned knowledge may be able to be enhanced and solidified through the use of multiple senses; taste should by no means be ignored. It also has a role in breaking barriers between the student and teacher and promoting discussion between colleagues. Further research must be conducted to further define its role in medical education.
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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 374
The Development and Delivery of a Sustainable Near Peer Medical Student Bedside Teaching Programme

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Background Bedside teaching remains an invaluable educational tool helping medical students to develop their clinical skills including history taking, clinical examination and problem solving with supervised patient interactions (1). It has also been recognised that bedside teaching is on the decline due to the significant time pressures that hospital clinicians face on a daily basis (2). We identified that senior medical students are keen to develop their own teaching skills and pass on knowledge and skills to more junior students. Our aim was to demonstrate that regular, high quality bedside teaching can be delivered through a structured programme, supporting senior medical students as clinical teachers.
Methodology As part of the Leicester Medical School Year 5 programme, students with an interest in teaching were identified by email invitation. A rota for sessions was drawn up using google spreadsheets to allow flexibility for individual student availability. Year 5 students were provided with a handbook providing details of how to successfully deliver bedside teaching, and given a point of contact (clinician) should they require any advice. Each Year 5 student led bedside teaching sessions for groups of four Year 3 students after identifying, with the help of ward doctors, appropriate and consenting patients. These sessions were unsupervised, allowing Year 5 students to lead teaching for Year 3 students using formative OSCE assessment mark schemes to guide sessions. The major focus was on history taking, clinical examination and clinical reasoning. After patient interactions, Year 3 students presented and discussed cases with the Year 5 student who was primed to give immediate feedback based on the Year 3 student's performance. Online satisfaction surveys were conducted for both senior and junior students after the session. We also gained patient feedback. In addition, we provided teaching skills feedback to the Year 5 students to help with their own development.
Results The survey results were overwhelmingly positive as junior students really valued individualised feedback with respect to their clinical skills. 92% either agreed or strongly agreed that their confidence in history taking and clinical examination had increased and 83% either agreed or strongly agreed that the session was good preparation for OSCE's. They rated the standard of teaching very highly and felt comfortable with a senior student leading the session. Junior students commented that they wanted the opportunity to have further near peer bedside teaching. Feedback from the senior students was also very positive. 100% felt that the sessions were useful for their own development as teachers. They felt adequately prepared for the sessions as a result of the handbook provided and that they had the necessary knowledge to teach students at the Year 3 level. All trainers enjoyed the sessions and responded that they would like to participate in further near peer bedside teaching. All patients also reported high levels of satisfaction, stating that they enjoyed participating in the sessions. They were pleased to help medical student education and stated that the students displayed high levels of professionalism.
Discussion Structured near peer medical student training is an excellent way of helping more senior students develop their teaching skills, whilst also providing high quality teaching opportunities for more junior medical students. Patients also found this programme to be highly satisfying. Despite the high demands of working in a busy Acute NHS Trust, we have developed a sustainable Near Peer Medical Student Bedside Teaching Programme that can be used in multiple settings with minimal senior clinician input. Future developments may also include the incorporation of medical education theory teaching for senior students prior

to embarking on the programme to further enhance their development as teachers.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 375

The element of surprise: The use of a surprise simulated deteriorating patient during a simulated on-call for final year medical students

Author(s): Dr Rachel Nigriello, Dr Christopher Waters

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Background One of the most challenging transitions a medical student will face is the transition to foundation doctor. Partly this is due to the difficulty of preparing for the increasing responsibility that foundation doctors will face.[1] Surveys show that new junior doctors are most concerned about managing the acutely unwell patient.[1,2] During a typical on-call, junior doctors will be required to assess sick patients, prioritise jobs and escalate to seniors. However literature suggests it is the management of on-call emergencies and acutely unwell patients that causes significant stress and are the least prepared for experiences.[3,4] The undergraduate academy at The Great Western Hospital designed a 3.5 hour simulated on-call for final year medical students in order to better prepare them to manage an on-call. Medical students were required to hold a bleep and respond to different tasks around the hospital. During this programme, the students were surprised by a bleep to a deteriorating patient in a high-fidelity simulation where they were required to perform an A-E assessment, start treatment and escalate to a senior. Our aim was to evaluate the use of a surprise high fidelity simulation of an acutely deteriorating patient in the context of an on-call simulation.

Methodology This programme was run twice as a pilot study with 12 voluntary final year students. Data was collected anonymously from the students via pre and post-course questionnaires using a 10 point Likert scale. We plan to run a finalised version of this programme with final year students commencing a "Preparing for Professional Practice" programme in January 2020. We will collect data on the use of a simulated deteriorating patient as part of this on-call simulation with a pre and post-course questionnaire.

Results Data from the pilot study showed that the number of students who felt confident in undertaking a ward round increased from 8.3% to 83%. During free text responses, students commented that the benefits of the high-fidelity simulation were the realism it added to the scenario and the safe environment it created to allow them to make mistakes and learn from them. They particularly enjoyed being joined by a more senior doctor to help them manage the patient.

Discussion During an on-call simulation, junior doctors will be unaware of what bleeps they will get. This uncertainty leads to a high degree of pressure and stress on junior doctors. This is something we were keen to explore during this simulation and therefore students were unaware that they would be bleeped to a simulation of an acutely unwell patient. One of the students even commented on how different this simulation was from usual due to the unexpected nature of it: typically students would wait outside the door of the sim suite to be called in but in this simulation, they were interrupted during other tasks to attend as an emergency adding to the fidelity of the simulation. Studies show that 50% of bleeps interrupt patient care, adding an element of stress to situations.5 We hypothesise that this increased element of stress is an important factor in simulating an on-call realistically. A limitation to our study is that the simulation ended with a senior member of the medical team showing up to help the student. This was commented on in the feedback as a positive aspect of the simulation, however we believe that this is not realistic. Another source of stress during an on-call is that a doctor must review patients who are unwell repeatedly throughout the night and may feel responsible. A member of the senior team showing up took away some of this responsibility, detracting from the realism and is something we will address in the next phase of this programme.

We hope to look into the use of a high fidelity simulated deteriorating patient during this on-call simulation in more detail during the next phase of the programme in January 2020.

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Theme: Undergraduate Medical Education - Teaching & Learning

Accepted as: e-poster

Paper no. 376

The transition from medical student to junior doctor: factors influencing the effectiveness of the assistantship in preparing UK graduates for clinical practice

Author(s): Michael Tilby, Kate Owen

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Background The transition from medical student to newly qualified doctor is challenging and graduates often feel unprepared to start clinical practice[1]. In a survey of UK physicians in 2011 respondents noted 'August is always a nightmare' and that the transition can compromise patient safety and care[2]. In 2009 the General Medical Council introduced a requirement for a student assistantship to provide a defined time for supervised clinical practice and the opportunity and the opportunity to take on the roles of a first-year doctor (FY1)[3]. Assistantship placements have been shown in small, single site studies to improve students' confidence[4] and perceived preparedness for practice to complete FY1 related tasks5. However, experience in assistantships can vary[6], affected by whether the placement was aligned to the same department as the first FY1 post[7] and differ depending on the level of supervised clinical practice[8].

This study explored the views of recent UK graduates' experiences of an assistantship placement and transition to newly qualified doctor. The aim was to identify factors that influence the effectiveness of an assistantship and develop recommendations for practice.

Methodology The study used qualitative methods comprised of semi-structured interviews with newly qualified graduates, within 12 months of graduation, based at South Warwickshire NHS Foundation Trust. Purposive sampling was used to include 50% of graduates from the local medical school and the remainder from elsewhere in the UK. Interview data was transcribed verbatim and thematically analysed[9].

Results Eight graduates were interviewed in April and May 2018. Interviews lasted between 15 and 25 minutes. Six themes were identified. The findings show that participants had positive experiences of an assistantship placement and valued its role. The study has highlighted the role of the assistantship in personal development and opportunity to do the job of an FY1. The study has highlighted the role of assistantship in smoothing transition through building relationships and the importance of supervision during the placement. Participants also described how they were able to form relationships that could then smooth their transition. However, participants described the transition as a challenging time, generating anxiety around taking on responsibility and working on call.

Discussion A student assistantship plays an important role in preparing medical students for clinical practice and the transition from student to doctor. This study has highlighted that participants value its place in medical school curriculum and the importance of the assistantship in personal development. This study shows that the assistantship is an opportunity to change focus from knowledge acquisition to taking on the roles of an FY1.

There are a number of factors that influence its effectiveness that need to be considered in curriculum design and faculty development. This study has

highlighted the important role of the supervising FY1 and active engagement of the wider team. Whether the assistantship was aligned to their FY1 placements also affected the experience and what students were able to gain from it.

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Theme: Wellbeing

Accepted as: Oral Presentation in Parallel Session

Paper no. 377
Take-a-Break: evaluating the impact of wellbeing activities on burnout in medical students

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Background Burnout is described as a state of complete mental and physical exhaustion secondary to work or care-giving activities (1). A systematic review of 9 studies, including one from the UK, demonstrated a prevalence of burnout ranging from 45-71% in medical students (1). Stress and burnout amongst junior doctors and medical students are known to adversely affect clinical performance and patient safety (2,3). Mindfulness-based protocols have been shown to successfully improve Perceived Stress Scale (PSS) scores amongst medical students, maintained over 8 weeks after the initial intervention (4). This suggests that well-being interventions can reduce stress, anxiety and burnout amongst medical students. Evidence suggests that as medical students transition from more scheduled, didactic pre-clinical years, into more self-directed clinical work in their third year, close attention needs to be paid to burnout (5,6). In response to this evidence and anecdotal perceptions that students are experiencing ever-rising stress levels, we have decided to evaluate burnout and potentially offer some activities to attempt to alleviate it, to our cohort of third year medical students. Our aims were to:

1. Quantify the proportion of students who may be experiencing burnout.
2. Trial measures to improve wellbeing of the students through a series of "take-a-break" sessions.
3. Quantify the impact of these sessions on the student's self-reported levels of burnout.

Methodology Ethical approval for the study was gained from the University of Bristol's faculty research ethics committee. We have collected pilot data about the prevalence of burnout amongst medical students. We used a single question survey, over a 5-point ordinal scale (where 1=no symptoms of burnout, 5=I feel completely burnt out). This has been dichotomised and validated against the more comprehensive Maslach Burnout Inventory, so that a score of 3 or more suggests burnout (7,8). We recruited 51 students, in a convenience sampling methodology to answer this pilot question.

Due to student changeover, we plan to re-survey baseline rates of burnout in our new cohort of students. We have designed a series of wellness-based interventions, branded as "take-a-break" sessions to deliver to the students on an optional, weekly basis. The initial question will then be repeated at the end of the series to reassess self-perceived symptoms of burnout.

Results There was a 96% response rate (n=49) to initial pilot survey. Following exclusion of one invalid response of the question we had a total of 48 responses (94% response rate). The median score was 2 (n=28) and range 2-5. 35% (n=17) of students had a score of 3 or more, qualifying as burnout.

Data collection for the new cohort will occur between February and May 2020.

Discussion Although our rate of burnout is lower than that quoted in the literature, 35% still represents a large proportion of students, and hence warrants further action. We want to add to the well-established support processes and network from the university using the interventions we have planned. We understand that wellness interventions have numerous limitations, including challenges in implementation, stigma associated with self-care activities and a perceived lack of benefit. We chose to rebrand the sessions to "take-a-break" to attempt to reduce stigma associated with wellbeing. As the sessions are optional, the students who volunteer to participate in such programmes are likely to seek health-promoting behaviours which subsequently reduce stress, documented as the "healthy user effect", potentially skewing results (9). We feel that we are still able to capture a significant proportion of medical students who are burnt-out, due to a high prevalence documented both in the literature and in our study. We believe that interweaving such sessions into future curricula may well amplify the potential benefit, by reducing the stigma associated with such sessions and normalising the need for self-care.

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Theme: Widening Participation in Medicine

Accepted as: Oral Presentation in Parallel Session

Paper no. 378
Exploring the Widening Participation Medical Student Experience Through an Analysis of Choice

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Background Choice is the outcome of a process, involving assessment and judgement[1]. It may be influenced by a range of factors including a person's background, preferences, beliefs and values[2]. Such factors have been shown to affect the choices made by students in their medical school applications, with students from low socioeconomic backgrounds reporting that "university is not for the likes of us"[3].

Students from low socio-economic backgrounds (SES) are underrepresented in medicine[3]. To address this widening participation (WP) programmes have been introduced in the UK[4], which specifically aim to support access and participation in medicine for students from such backgrounds.

Research has shown that WP medical students have a greater rate of attrition that students from more traditional backgrounds5 and that they can find it difficult establishing a professional identity[3]. The choices they make whilst studying may be contributing factors to their undergraduate experiences.

There is limited evidence regarding WP student experience while studying at medical school and to date, there is no research published on the choices made by WP students during their undergraduate years. This study aims to explore the choices made by WP students in the context of their undergraduate experience.

Methodology A qualitative approach was adopted using narrative inquiry to explore the meaning of choice through storytelling. An interpretive paradigm was adopted presenting the understanding of choice from the subjective experiences of the students. Interviews were conducted, digitally recorded and transcribed. Narrative analysis of the transcripts was undertaken to identify frameworks and categorical content.

Results 15 interviews were undertaken, with initial results suggesting the choices and context of choices made can affect WP student experience.

Narrative frameworks in which choices were described included, the decision to gain in part time employment during their degree; imposter syndrome throughout the degree which conflicted with, a determination to complete the degree due to the opportunity they have been given. Students narratives also explored: Self-imposed restrictions on behaviour to ensure survival in medical school and Isolation from other medical students due to a clash of cultural beliefs. There were narratives which also made a 'comparison of WP student experience compared to non-WP student experience.'

These finding indicate that background can affect the choices made in various aspects of the undergraduate experience. Several participants discussed the sacrifices made, including finances and personal wellbeing, to ensure they progress through the degree. Other participants' narratives had influences from their ethnic, and to a greater extent, socioeconomic background.

Discussion This is the first study to explore the narratives of WP students' choices whilst studying at medical school. The initial findings indicate that background can affect the choices students made, however, this varied between participants. In some cases the frameworks highlighted backgrounds as motivating positive choice and in others acting as an inhibitory factor. The wider findings of this study will form an important contribution to the understanding of the WP student experience at medical school and aims to help inform appropriate support provisions to improve retention and progression.

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Theme: Widening Participation in Medicine through innovation

Accepted as: Oral Presentation in Parallel Session

Paper no. 379

Employing a Research Practice Partnership (RPP) to widen access and participation

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Background A project was conducted to evaluate a shared learning intervention between medical students and sixth form college science based in an area of high socio-economic disadvantage. This was part of a Research Practice Partnership (RPP) between a Russell Group medical school and the college. The RPP aimed to work with partners in better understanding WP challenges and addressing these. Although progress has been made through traditional outreach, the proportion of such students entering medicine nationally remains relatively low (MSC 2014). Evidence suggests that it is not a lack of aspiration, but factors such as lack of social capital (eg lack of available role models), hinder this (Gore et al 2017; McHarg et al 2017).

The shared learning intervention involved Yr 3 medical students being taught alongside Yr 12 'A' Level Science and Health & Social Care students about 'point of care' ultrasound (US) in clinical examination. 3 shared teachings sessions were held at the college site (September- December 2018) with 90 college students & 180 medical students. They covered a core component of the medical curriculum and were linked to relevant areas of the college students' curriculum, were delivered by medical school faculty and Simulated Patients (SPs) were involved. The evaluation was conducted by a team of both college and university staff.

Methodology Intervention RQ: What impact will the shared learning experience between the medical school and college have on the students and staff involved?

A qualitative approach to enable insights into the potential impact of the shared learning experience was adopted. Volunteers who took part in the intervention were recruited and ethical approval given (MREC 18-004). The University 'Footsteps Fund provided financial support. Focus groups were held to gather data through reflection and sense-making of the experience with separate ones planned for staff and students to allow free speaking with peers. Five focus groups were conducted (College students x 3, College staff x 1, Leeds students x 1). Each focus group involved 3-6 participants. Due to difficulty in convening some focus groups, individual interviews were conducted as an alternative (Leeds student interviews x 2, Leeds staff interviews x 4). Data was analysed to identify emerging themes through an iterative approach as per Braun and Clarke (2008).

Results College students were initially daunted, but learning together in the sessions and informally seeking advice on university life from the medical students increased their confidence. They particularly appreciated the key role of the SPs and the use of US in teaching. Teaching faculty came from different medical and health specialties which broadened the students' awareness of the breadth of careers. Medical students appreciated the opportunity to consolidate their own learning and gain an insight into teaching others. It awakened the realisation that they could inspire others to pursue a medical career. University faculty noted some challenges in adapting their teaching but felt that engaging in a different teaching approach with a different group of students re-energized them. College staff enjoyed working with the university in applying different pedagogies and research work.

Discussion The shared teaching intervention was overwhelmingly positive for all and seemed to bridge the gap between the yr 3 medical and college students, providing the latter with accessible role models with whom they developed a relationship. Although the RPP work continues and longer-term impact is unknown, following the teaching intervention an increase in applications to medicine and dentistry was recorded by the college. We maintain that most outreach activities are delivered by the university leading which encompasses an approach of 'reaching out to the other' By contrast, the intervention as part of the mutual collaboration of the RRP, brought a unique dimension in raising and realizing aspirations to medicine and related professions.

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