

**P398 DEVELOPMENT OF VIRTUAL REALITY TRAINING CURRICULUM FOR ERCP**

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**Introduction** Assessment of Endoscopic skills involved in performing Endoscopic Retrograde Cholangiopancreatography (ERCP) in procedural environment is complex. Tutors and experts emphasize the need to develop and use precise and significant assessments measuring tools that are valid for evaluating trainees' progress in obtaining essential gastroenterology-related procedural skills. The purpose of this research was to develop a structured evidence-based virtual reality training curriculum and set a proficiency performance benchmark for a set of objective metrics of endoscopic skills during ERCP procedures using the Symbionix GI Mentor 2 Simulator. Our second aim of the study was to form a face and construct validity of the simulator for the ERCP module to show significant differences between competent and non-competent operators in that module.

**Materials and Methods** In this study, a total of 39 participants were divided into three groups according to their level of experience and number of endoscopies performed in their career (Novices, Intermediate, and Experts). They were required to perform ERCP procedure, case number 2 in Module 1 in the GI Mentor 2 Simulator, and upon completion of the study, they were asked to fill a questionnaire about the simulator, simulation in general, and their previous experience. The time taken for task completion, number of papillary contacts before cannulation, number of cannulation to the Pancreatic Duct, and other metrics calculated from the simulator along with the questionnaire results were collected and compared between the groups. The first group consisted of novices; medical students, foundation doctors, and core trainees, with no previous knowledge or exposure to ERCP or endoscopic procedures.

The second group were categorized as intermediates; specialty trainees from all levels, whom had some experience with endoscopy and has done or assisted in at least 250 procedures. The third group was the expert group, which consisted of consultants in Gastroenterology specialty and each one of them at least has done 2500 procedures in order to be eligible to be placed in the group.

**Results** We have analysed the data of the participants performance collected from the simulator and compared the results of the three groups together. It was clear that the expert group have done better with shorter time than other groups (264.4 sec); intermediates (321.14 sec), and novices (822.05 sec). The results were analysed further using the IBM SPSS® Software. The date generated showed a statistical significance between the groups having a p value of (P< 0.022). Then the experts' results were isolated to define a set of benchmark ranges for the ERCP Module. The average of experts' performance was collected, then we have calculated the Standard Deviation of each mean. Later, the mean of each task was trimmed by excluding any consultant performance beyond the standard deviation by 1 ±. six out of twelve metrics were considered significant based on literature ad up do date practice which were included; total time of procedure (178.2 – 361.8 seconds), papilla contact before cannulation (2.25 – 3.25 times), number of cannulations to

the PD (1 time), number of cannulations to the CBD (1 time), number of contrast injections to the PD (9.6 – 19.6), and number of contrast injections to the CBD (6.6 – 18.4). The new recalculated mean was used to set a reference criterion and a benchmark range for the performance of the ERCP module in the GI Mentor 2 Simulator.

Afterwards, we recruited these results as a reference in our syllabus. Through analysis of operators' performance and psychological dynamics in practice, we created an evidence-based curriculum that we deemed to be suitable for training ERCP using virtual reality simulator and demonstrated that is possible to define and develop a virtual reality training curriculum for ERCP using structured scientific methodology.

**Conclusion** The ERCP module in the Symbionix GI Mentor 2 simulator demonstrate face and construct validity as they show statistically significant differences between novice, intermediate, and expert groups as proved in our results and has been done previously in other studies.

We have defined a reference criterion level to develop proficiency performance benchmark for all metrics obtained from our studies on the ERCP procedure based on 5 experts. And we have demonstrated and managed to set a proficiency performance benchmark range in the ERCP module to be used as a baseline when comparing any operator performance on the simulator. Also, our study further our understanding and knowledge of endoscopic expertise and provides trainees with predefined proficiency performance benchmarks that can be used to help and support in their learning of endoscopic skills.

Furthermore, this study has demonstrated that it is possible to define and develop a virtual reality training curriculum for ERCP using structured scientific methodology.

**P399 TURNING OUT OF PROGRAM RESEARCH (OOPR) EXPERIENCES INTO S'OOPR EXPERIENCES!**

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**Introduction** A significant proportion of trainees are interested in an out of program research (OOPR)<sup>1</sup> to enhance their training and career prospects. 70% are discouraged from applying due to financial costs.<sup>2</sup> High quality ward and outpatient based undergraduate training programs are challenging to design and deliver within the day to day working of gastroenterologists.

**Methods** Our aim was to assess the impact of offering an out of program research trainee a uniquely designed role (education fellow) for one day a week to organise and deliver an additionally funded high quality undergraduate education program in our directorate. This offered an opportunity to improve the financial offerings to the trainee whilst improving and performance managing our training program. The latter was to be delivered through collaboration with the undergraduate education centre, individualising student timetables, formalising induction, organising supervised teaching events and integrating educational governance into the program.

**Results** An education fellow role was funded via a business case for improving education in 2017 and was found to be attractive to a higher specialist trainee currently on an OOPR. Impact on the conduct of the main research project was felt

to be insignificant and this has continued to be the case with adequate delivery of research project timelines and adequate annual progression reports from the academic supervisor. The education fellow post has been extremely well received. Feedback from 92 students (47%, 40% and 13% in yrs 2, 3 and 4 respectively) reported that 91.3% graded induction as high quality, 90% felt frequency of teaching was adequate, 98% were able to attend all or most of the supervised teaching sessions organised, 98.9% felt teaching sessions were good or excellent and most importantly 90.2% of students rated our placement  $\geq 8/10$ . The fellow and the team have received a letter of commendation from the University. The OOPR trainee has applied for an additional qualification of Fellow of the Higher Education Authority thereby facilitating future roles in medical and gastroenterology education and in improving the trainee's CV.

**Conclusions** One day a week education fellow roles within OOPR are viable and offer a significant opportunity to reduce the negative financial impact of taking time out from training whilst significantly improving gastroenterology undergraduate training programs in hospital and offering an opportunity to achieve additional training qualifications. We hope this will serve to attract high quality trainees to the higher specialist gastroenterology training programs by laying an attractive gastroenterology foundation in undergraduate years and high quality trainees to OOPR placements.

## REFERENCES

1. Fogden, *et al.* *Gut* 2009;58(Suppl 1):A155.
2. Bhala, *et al.* *Gut* 2017;66:A50.

### P400 THE FIRST REVERSE MENTORING IN A CLINICAL SETTING: CAN YOU TEACH OLD DOGS NEW TRICKS?

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**Background** The BSG offers a mentorship programme aimed at those in transitional phases of their career and less at experienced consultants. Reverse mentoring, the act of junior persons mentoring seniors, has gained traction in non-healthcare settings as a means of closing the gap between Boomers and Millennials. There is no data on applying this to a medical workforce. We present the first data of real clinical experience.

**Methods** A mixed-methods feasibility study on the practicalities of reverse mentoring complete in two phases.

Phase 1: all clinical fellows in a teaching hospital were invited to provide feedback in a group semi structured interview on their supervisors in 7 domains: use of technology, clinical practice, approach to juniors, time management, approachability, strengths and areas for improvement.

Phase 2: information was fed back to consultants on a 1-2-1 basis with the opportunity to discuss the points raised.

Pre and post mentoring questionnaires were collected. Likert scales were used to assess several aspects on a scale from 0 to 35 and thematic analysis to record participants thoughts.

**Results** A total of 6 clinical fellows participated in the phase 1 feedback session (66.6% male, age range 31–40 years) and agreed to be mentors. All supervising consultants invited

agreed to being mentees (80% male, age range 35–65 years) and have been consultants for 5–20 years. Mentoring sessions lasted 45 minutes (range 28–180 minutes) and all felt the time devoted was about right.

Both mentors and mentees reported a good or excellent experience. Juniors became more confident in feeding back to seniors after the session (21vs 31,  $p=0.008$ ) and had a greater understanding of their role as reverse mentors (2.5/5 vs 4/5,  $p=0.024$ ). Seniors became more aware of how they were viewed after mentoring (25vs 32,  $p=0.04$ ). All seniors felt this was a useful experience that will change their clinical practice and 80% reported less concern about reverse mentoring afterwards. All participants believed that feedback was important both prior to and after the study (31 vs 33,  $p=0.196$ )

Common themes highlighted included the benefit of a different perspective to the norm and new ideas which can be implemented. There were concerns raised of the power gradient preventing effective mentoring and risks to relationships, however these were expressed as potential concerns and not experienced.

**Conclusion** The experience of all participants in this feasibility study were positive supporting the benefits of reverse mentoring in a healthcare setting. Junior doctors became better equipped to be future mentors. Consultants were given a new perspective which inspired them to improve their clinical practice and work environment.

### P401 IMPROVING THE SHAPE OF TRAINING: AN INTERVENTIONAL STUDY ON UPPER GASTROINTESTINAL BLEEDS TRAINING

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**Background** There are growing concerns that UK gastroenterology trainees are not sufficiently exposed to endoscopic procedures. A recent publication by BSG trainees has shown Shape of Training will present new challenges in delivering endoscopy training within a shorter period. Our centre has previously identified significant reductions in training opportunities so introduced 3 new interventions: immersive training blocks, 'tailored to the trainee' endoscopy lists and ad hoc 'buffer' lists. We present the first data assessing how upper gastrointestinal bleeds (UGIB) training may change and compare the effect out intervention has had on the training experience.

**Methods** A retrospective review was undertaken of all patients investigated for UGIB at a tertiary teaching hospital specialist UGIB unit between January 2018 and May 2019. Comparisons were then made against training opportunities in 2011.

**Results** In total, 1059 patients were investigated for UGIB (mean age 62 years, SD  $\pm 19$  years, 75% as in patients) and 32.7% were taking anti-coagulants or anti-platelet medications. Patients underwent endoscopy during weekday working hours, weekday out of hours and weekends (67.7%, 18.3%, 14% respectively). The rebleeding rate was 16.5% and 30 day all-cause mortality 6.7% of which 15.5% were due to UGIB. The most common findings were gastritis, oesophagitis and peptic ulcers (27.3%, 22.9% and 19.0% respectively). UGIB was treated most commonly by adrenaline injection 9.3%, clips 7.3% and thermal therapy 4.9%. Bleeding could not be