

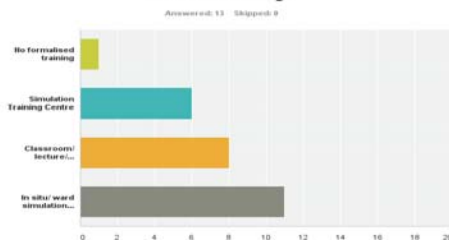
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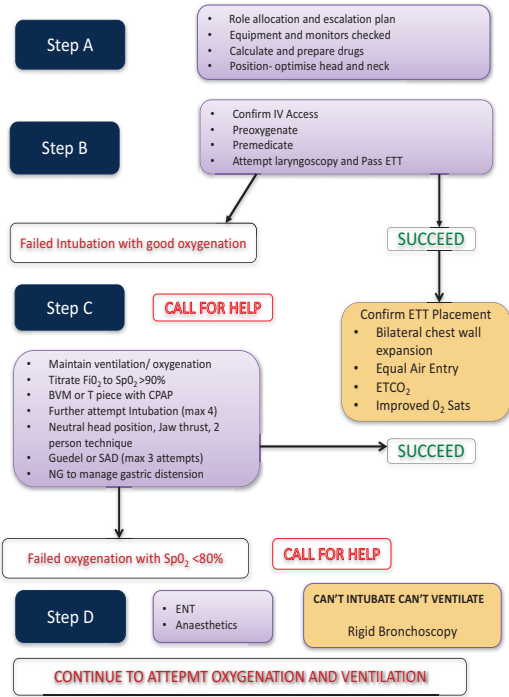
Aims

- To create a simulation course focusing on improving the confidence and competence of junior Paediatric trainees who were entering their Neonatal Medicine rotation. In our hospital, the Paediatric trainees, normally ST3 will be the most senior resident doctor overnight, with consultant on call cover from home. They are likely first attenders at NICU airway emergencies.
- Standardise the approach to preparation for intubation and planning in this instance of a difficult intubation.
- Provide education on the equipment and common drugs used to intubate a Neonate.

Q6 Have you received formalised airway and intubation training?



NEONATAL INTUBATION ALGORITHM



Method

A survey was developed to explore the current confidence and competence levels of all Paediatric Trainees and Advanced Neonatal Nurse Practitioners (ANNPs) in NHS Tayside. As a result of the survey, it became clear there was a need to further teaching on Neonatal Intubation for the junior Paediatric trainees.

The course design was split into 1 hour didactic teaching followed by 2 hours simulation on Infant Sim. The didactic session covered drug mechanisms, common equipment and ran through the newly designed Neonatal Intubation Algorithm for NHS Tayside. The candidates were given a scenario based in the NICU and worked in a group of 3 to prepare and intubate a 36 week old infant.

Feedback was collected from the 8 participants at the end of the course.

Feedback

The main learning I will take away from this session is.....

- Improved knowledge of drugs for intubation and potential side effects
- Neonatal intubation algorithm
- Good communication is key
- Task allocation.

The session would be improved by.....

- Full day- theatre scenarios.
- Smaller group for simulation.
- Either less people of longer session- went by very quickly.
- More time for scenarios to ensure mask ventilation, jaw thrust and two handed also covered as well as intubation

It would help me to know more about or be more skilled in.....

- Run through pf Step C part of intubation algorithm i.e. difficult airway techniques.
- How to manage bradycardia/ other complications occurring during intubation.
- Correctly holding a laryngoscope to the endotracheal tube.

I would also like to add.....

- Very good session, good hint about lifting laryngoscope to see cords.
- This was really useful, thank you so much! I particularly liked the theoretical background.
- Difficult airway scenarios- unable to ventilate- increased steps.

Discussion

Our course is designed to provide Paediatric Trainees and ANNP's with a safe simulated environment for technical skill acquisition in Neonatal airway management in elective and emergency scenarios. Simulation based training is becoming an acknowledged method of improving cognitive and behavioural skills in high intensity situations². A structured approach to Neonatal intubation and preparation for unexpected difficulty will lead to improved proficiency and experience before real clinical scenarios are encountered. Standardisation of Neonatal intubation prevents the "see one, do one" teaching style historically experienced by trainees¹.

Conclusion

Eight participants demonstrated a positive experience gaining both technical and non-technical skills. This will help us tailor and develop the course which we intend to run bi-annually.

References

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Interprofessional simulation for acute medicine; aiding learners and faculty development

Dr Wendy Russell (Consultant Acute Medicine)
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Introduction

Experiential learning through simulation is known to increase team-based communication, cognitive thinking and skills-based actions during stressful situations^[1].

Non-technical skills (NTS) are increasingly recognised as a key part of patient safety and specialities such as surgery (NOTSS^[2]), anaesthetics (ANTS^[3]) and Emergency Medicine (ESLE^[4]) are developing tools to assess behavioural markers of these.

Whilst there is not yet clear evidence on which NTS are key to working within Acute Medicine, there are similarities when dealing with acute medical emergencies in terms of multiprofessional teamworking, decision making, and situational awareness. Dealing with an acute medical emergency requires not only clinical knowledge but 'crew resource management' (CRM) skills.

Aim

We developed an interprofessional course within the Standards Framework^[5] to improve clinical and non-technical skills in acute medical scenarios for nursing and medical staff of various grades. As part of the course development we tested and utilised course evaluation techniques and faculty development opportunities.

Methods

Faculty members have simulation and debrief training or significant interest and experience as well as clinical work within acute medicine. Participants are staff nurses from the Acute Medical Unit and trainees from medicine as well as Advanced Nurse Practitioners.

Course Materials

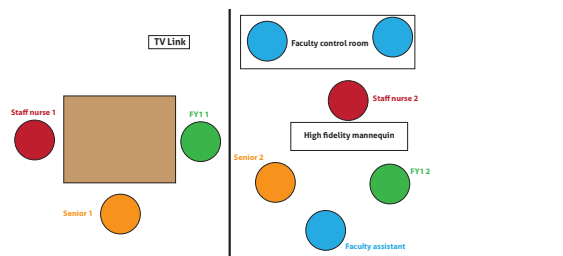
Acute medical emergency scenarios^[6] represented commonly encountered clinical situations were modified to optimise NTS learning.

Pre-course materials provided a brief introduction to NTS providing a foundation for candidates' learning.

More recently, the Extended Supervised Learning Event (ESLE) from the Royal College of Emergency Medicine (a behavioural marker assessment framework) was modified to provide additional pre-course knowledge and a structure for candidate debrief of their own and colleagues' behaviours.

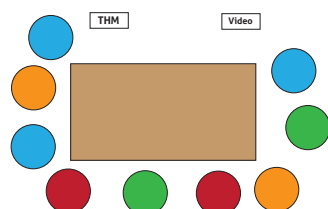
Course Summary

- Introductions and orientation
- Objectives - set by the learners. These align with the intended learning from the scenarios and match Foundation, Core and higher speciality curricula 'common competencies', and The Code for nursing staff to evidence for revalidation.
- Scenarios – half candidates participate in sequence order (nurse, FY1, Senior). Remaining candidates observe via video link, using NTS framework.



Pictorial view of each scenario

Debrief – immediately follows each scenario. Facilitated by trained faculty member using observation and enquire techniques. Participant and observer analysis is encouraged. Discussions and take home messages (THM) are aligned to learning objectives.



Pictorial view of debrief

- Scenario and debrief repeat for 3 scenarios switching participants and observers.
- Summary of all THM, revisit of learning objectives
- Faculty debrief – occasional use of Objective Structured Assessment of Debrief (OSAD^[7]) tool utilised for faculty development.

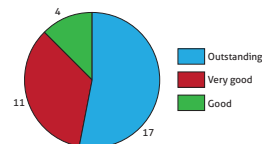
Post Course

Certificate of attendance, summary of THM and invitation to complete DASH-SV^[8] (via the Scottish Centre for Simulation^[9]) emailed to all participants. At 3 months, follow-up feedback emailed for self-rated retention and application of learning in clinical practice.

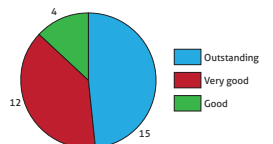
Results

Course Feedback

The DASH-SV scores indicate the faculty offer supportive and beneficial debriefing skills. Comments consistently demonstrate a positive experience, realistic to clinical practice with value from active participation and observation.

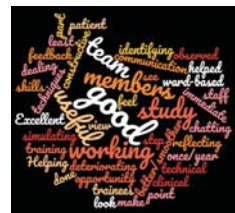


DASH-SV Element 4:
The faculty provoked in-depth discussions that let me to reflect on my performance

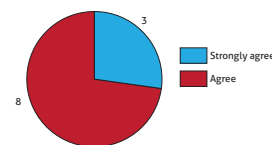


DASH-SV Element 6:
The faculty helped me see how to improve or how to sustain good performance.

Word cloud of comments made on feedback from attendees.



Quotes from attendees' feedback.



Application of Learning

Evidencing clear benefit to clinical practice outwith the simulation suite is challenging, but user rated follow-up feedback, whilst small numbers suggests learning is transferring to clinical practice.

Follow-up feedback element 3:

I have managed to put into place some of the learning outcomes in my practice.

Faculty Development

Local and regional simulation faculty have observed and assisted, utilising OSAD for post-course meta-debrief and personal development. Latterly, videoing debriefs encouraged 'self-OSAD' and course modifications, which may be shared with the wider local simulation community for further development. Whilst not directly measured, faculty have intimated that their own behaviours and non-technical skills in clinical practice have changed on the basis of facilitating the course.

Conclusion

Professional bodies are increasingly recognising the role of simulation in medical education^[10], and Non Technical Skills within patient safety. This is an example of interprofessional learning with positive learner experience linked to clinical practice in line with the Standards Framework^[5]. The willingness of the simulation community to share ideas and resources enables robust and effective courses to develop. Future developments include securing a simulation technician to assist, and possible in-situ simulation scenarios.

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10. Enhancing UK Core Medical Training through simulation-based education: an evidence-based approach. A report from the joint RCPTB/NE Expert Group on Simulation in Core Medical Training. October 2006

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Background

Clinical reasoning (CR) lies at the heart of medical practice. However, there is no established method of teaching this multi-faceted skill.

Simulation is increasingly utilised within undergraduate medical education. It is used for developing psychomotor, affective and lower order cognitive skills i.e. knowledge acquisition. However, its utility for developing clinical reasoning is unclear. Durning et al (2012) developed a post-encounter form (PEF) validated against OSCE performance, a similar setting to high-fidelity simulation.

Aims

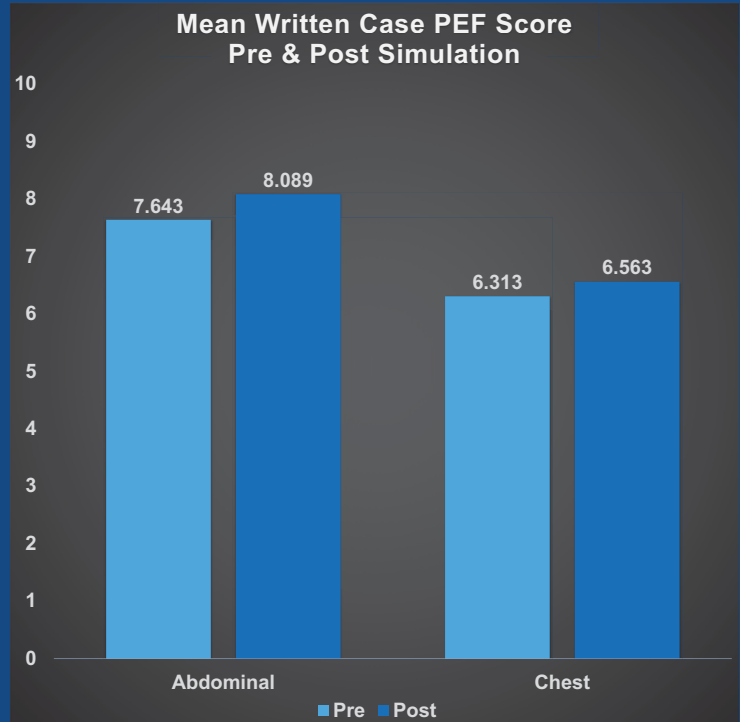
We sought to evaluate if, in final phase medical students, high-fidelity simulation improved clinical reasoning ability, as measured by PEF performance.

Methods

A pre-test post-test quasi experimental design was performed, with a convenience sample of 48 fourth year undergraduate medical students. Students were invited to participate in high-fidelity simulation sessions. Students participated in 5 groups of 8-10 students. CR ability was evaluated before & after the session using two written cases (abdominal pain and chest pain) with post-encounter forms; faculty agree on appropriate answers in advance. Paired t-test was used to compare results.

Results

28 students completed before & after PEFs for the abdominal pain case and 32 of the same students completed both PEFs for the chest pain case. Results are displayed in Table 1.



Discussion & Conclusion

Mean student PEF scores improved marginally for both cases. However, this was not statistically significant (Abdominal pain: $p = 0.068$; Chest pain: $p = 0.231$).

It was noted that higher pre-test scorers may be at risk of expertise reversal effect. The simulation package utilised focuses on non-technical skills. Debrief time was absorbed by discussing these skills, and filling knowledge gaps. Little, if any time was devoted to discussion of CR. The small sample size also limits the findings.

We still believe simulation has a role in CR development. We plan to re-run this study, with a CR focussed debrief.

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Can a Faculty New to Simulation Deliver a Safe and Effective Programme?

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Introduction

Simulation is an effective method of teaching communication skills in a safe environment. It can improve candidate confidence in their communication skills ability, and is widely used in postgraduate medical education.¹ Commonly, simulation sessions are facilitated by trained and experienced individuals. We aimed to show that simulation can still be effective when facilitated by clinically experienced faculty who are new to simulation.

Feedback from FY2 doctors in previous years identified areas of communication in which they were uncomfortable, due to relative inexperience or lack of exposure during clinical duties. To target this, a simulation session was designed around the most common of these scenarios, and was piloted with a cohort of FY2 doctors in NHS Greater Glasgow and Clyde (GG&C).

Aim

We aimed to examine whether this simulation session can be delivered safely and effectively by faculty who are clinically experienced, but new to simulation based teaching.

Method

A half day simulation course was designed for FY2 doctors, which included 4 clinical scenarios developed to address challenging aspects of their curriculum, as identified from feedback in previous years. The scenarios involved situations which an FY2 could feasibly encounter in a clinic setting.

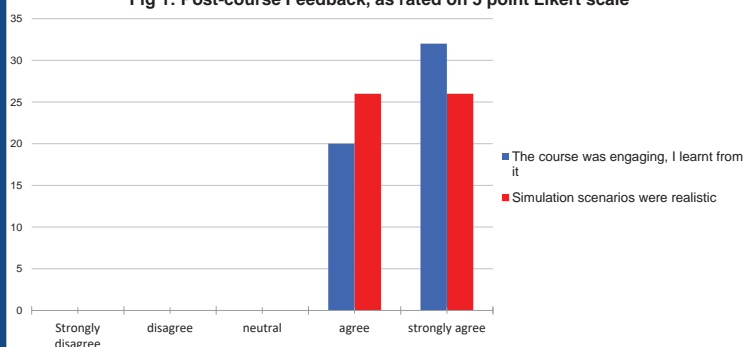
7 new simulation faculty were given one day of training in simulation and debriefing from experienced simulation faculty. Sessions were run by these new faculty members, facilitated by an experienced clinical skills and simulation technician. New faculty were observed by experienced simulation faculty and participated in meta-debrief with the simulation lead post-course. This ensured quality of sessions, and identified areas to improve future performance. Meta-debrief provided feedback to the simulation faculty regarding performance, and allowed further development of skills.

Effectiveness of these simulation sessions was assessed using candidate feedback. Pre-course and post-course questionnaires consisted of confidence rating on a 5-point Likert scale, and free text. The questionnaire asked candidates to rate confidence in dealing with issues involving:

- End of life care
- Mental health
- Confrontation
- Assertiveness under pressure

Post-course they were asked to rate the learning gained from the sessions.

Fig 1: Post-course Feedback, as rated on 5 point Likert scale



Results

Between August and November 2017, 8 sessions were run with a total of 52 candidates each participating in one session each.

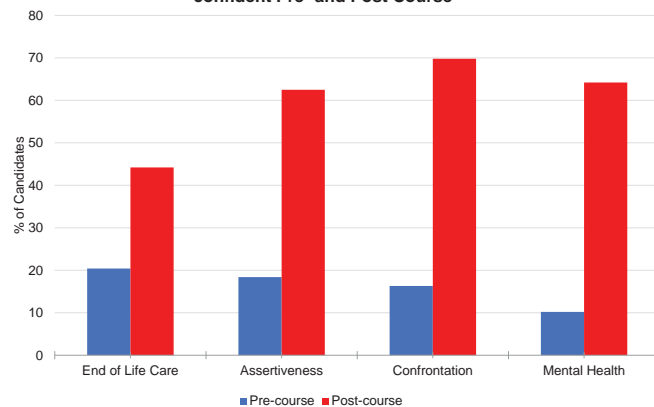
All candidates (n=52) completed feedback forms pre- and post-course. Post-course, all candidates agreed or strongly agreed that the course was engaging and they learned from it. All agreed/strongly agreed that scenarios were realistic in terms of content and setting (Fig. 1).

There was an overall improvement in confidence between pre-course and post-course, with 0 candidates rating 'not at all confident' in any of the 4 scenarios post-course, compared with 11 pre-course. Post-course a mean of 90.8% (82.3%-98.1%) of candidates rating neutral, confident or very confident over 4 questions, compared with 58.7% (46.2%-69.2%) pre-course.

There was particular improvement in confidence in areas the scenarios were designed to focus on, namely:

- Being assertive under pressure
- Dealing with confrontation
- Dealing with mental health issues (Fig. 2)

Fig 2: Percentage of Candidates Who Rated Confident or Very confident Pre- and Post Course



Conclusion

We have shown that effective simulation sessions can be run with experienced clinicians who are new to facilitating simulation, with the guidance and support of experienced simulation faculty members. These simulation sessions, run by new faculty, have demonstrated an overall improvement in candidate confidence in these challenging scenarios.

Following this successful pilot, this FY2 simulation course has now been rolled out across other sites in NHS GG&C, with the aim to have sessions delivered to all FY2 trainees working across the health board.

Training of further new faculty will be required, alongside use of existing faculty, in order to provide these sessions to a large number of candidates. However, this study has shown that new faculty can deliver the sessions effectively and safely.

Acknowledgements

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Induction Bone School

Creating a simulation programme for new Orthopaedic trainees

Authors: Jamie A Nicholson, Gavin Brown, Julian Maempel and John Annan

Aim

- First year Orthopaedic Trainees have a steep learning curve
- They are required to manage Orthopaedic emergencies whilst learning to perform practical skills for the emergency department and theatre



- The use of simulation can reduce the learning curve and anxiety with managing potential complex clinical situations and procedural skills
- Furthermore, this upholds patient safety

The following learning needs of Junior STs which simulation can address were adapted from ISCP

- 1- Management of ATLS and orthopaedic emergencies
- 2- Peri-operative care in orthopaedic patients
- 3- Non technical skills for surgeons (NOTSS)
- 4- ED Skills-Casting, reduction and splintage
- 5- Instrument handling and power tools
- 6- Basics of arthroscopy and hip fracture surgery
- 7- AO principles and fracture fixation methods



Methods:

- We proposed the introduction of a tailored simulation programme for our first year trainees
- Support by NHS Lothian MED and granted access to the post graduate education centre at RIE Simulation suite and Technician support
- Orthopaedic kit donated by implant companies
 - Smith & Nephew / Stryker
- Three days for all first year trainees (n=8-10)
 - Combination of Immersive simulation and Skill sessions
 - Cover learning needs from ISCP content
 - Opportunity for work based assessments (WBAs)
 - Reinforced by targeted reading before and after event



Results:

Programme of learning objectives for each simulation day
PBA, DOPS, mini-CEX and CBD available (~3 per session)

Simulation Session 1	Skill
Polytrauma with distracting injury	ED Survival skills
• Open fracture management with a concealed abdo injury	DHS Simulator
• Task fixation and maintaining situational awareness	Arthroscopy Simulator
Post-op deterioration requiring escalation	
• Recognise fat emboli/ARDS	
• Effective communication and graded assertiveness	
Simulation Session 2	Skill
Anticipation for tibia fracture with vascular compromise	Power tool orientation
• Task anticipation	Hip Hemiarthroplasty
• Recognition and management of Vascular injuries	
• Co-ordinating team activities including effective theatre briefing	
Simulation Session 3	Skill
Delirium in orthogeriatric patients	AO boot camp
• Differential and management of delirium	• Lag screw and plating
• Appropriate use of AWI	• Distal radius plating
Difficult consultation in clinic	• External fixators
• Exchanging information and resolving conflict	
• Duty of candour with medical errors	

Feedback from trainees over different learning domains with perceived confidence **before** and **after** training day

Feedback from Trainees n=10	Confidence of specific tasks before and after training day					
	Confidence	1	2	3	4	5
Useful skill/scenario 1 disagree – 5 agree	Task planning					
	Communication					
Day 1 = 4.8 Skill Session 1= 4.8	Situational Awareness					
	Resolving conflict					
Day 2=5.0 Skill Session 2=5.0	Graded assertiveness					
	Open fractures					
	Vascular injuries					
	ED Skills					
	Power tools/DHS/Hemiarthroplasty					

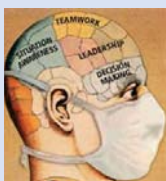


Image from the Non-technical skills for Surgeons RCSEd

Discussion and Conclusions:

- Promising first year with good feedback from all trainees
- Plan to continue regular induction programme for all first year trainees
- Will allow the opportunity to acquire competency in the simulated environment prior to 'first go' in theatre
 - Maximise time spent in theatre and protection of patient safety
- Additional benefit of simulation WBA opportunities for first year trainees
- Aim to expand to senior trainees
 - NOTSS training
 - 'Master class' skill sessions for difficult PBAs

This study was carried out by NHS Lothian Clinical Teaching Fellows

Development of a wet lab simulation course to develop the technical skills required for surgery of the newborn

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Aim

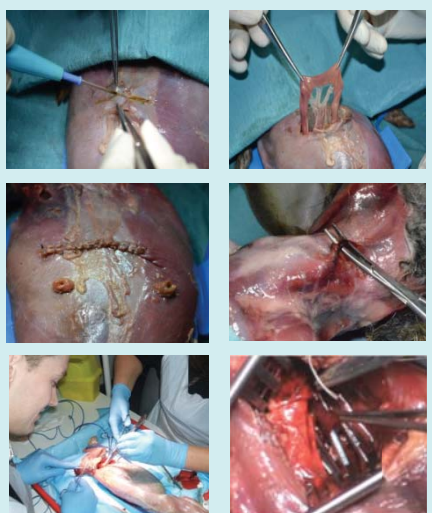
Neonatal surgery is the most challenging aspect of paediatric surgery. In early training, surgeons have not developed the refined skills necessary to operate on this fragile group. To address this gap, our aim was to develop a cost-effective wet-lab simulation course to enhance paediatric surgical skills training in a safe environment.

Methods

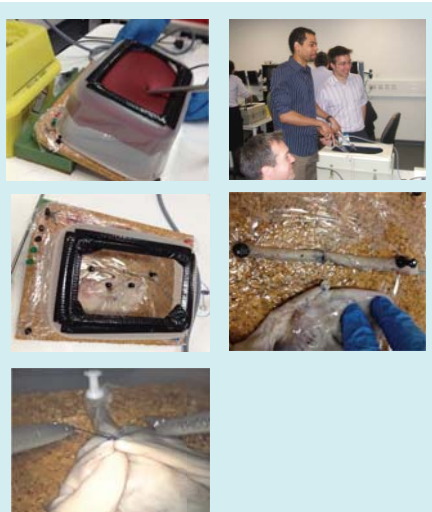
A one-day course supported by the Royal College of Surgeons Edinburgh was established, comprising a mixture of pre-course online learning material, surgical anatomy and embryology lectures, and simulated operative exposure (Figures 1-4). Animal models (rabbit and piglet) are used to simulate central line placement, thoracotomy, oesophago-oesophagostomy, laparotomy, stoma formation and laparoscopic fundoplication in the neonate (Figures 5-8). Supportive faculty give immediate feedback to participants, and feedback on courses has contributed to course evolution. For example, to meet the growing need for laparoscopic and thoracoscopic skills in neonatal surgery, box trainers have been added (Figures 9 -13).



Figures 1-4: The course comprises a mix of pre-course online learning material, surgical anatomy and embryology lectures, and simulated operative 'wet lab' exposure.



Figures 5-8: Rabbit models simulate laparotomy, stoma creation, Broviac catheter insertion, thoracotomy and oesophageal atresia repair.



Figures 9-13: Minimally-invasive simulations, e.g. thoracoscopic oesophageal atresia repair, tracheo-oesophageal fistula ligation and laparoscopic fundoplication in piglet stomach.

Outcomes/results

Since 2013, the course has run on 8 occasions. The current cost is £165 (competitive compared with mandatory courses in training, e.g. APLS approx. £450). The median participant number is 10 (range 7-13). Feedback has been positive (Figure 14): 82% of participants rated the course as being 'excellent', 97% felt it met their expectations, and 97% would have recommended it to a colleague.

The British Association of Paediatric Surgeons has reviewed the course, rating it 'excellent', and the course has been awarded 7 CPD points.

Please comment on up to three aspects that you LIKED:

"Close supervision and feedback, lots crammed into one day and good use of simulation"

"Practical experience, excellent review e.g. anatomy of neck and thorax and online resources"

"Good faculty to delegate ratio, rabbit tissue – very good to practice delicate tissue handling and very engaging anatomy/embryology sessions with particular relevance to subsequent sessions"

Please comment on up to three aspects that you DISLIKED:

"More areas of anatomy – however I appreciate this would increase the length of the course."

"Lots crammed in, appreciate that aim to keep costs down on one day but extra practice time is invaluable."

Any other comments?

"Really good course! Wish it was 2 days"

"The most beneficial course I have done as a trainee"

"Best course I have been on in some time"

"Excellent specimens simulating neonatal tissue"

"Great faculty"

Figure 14: Examples of positive and negative feedback received.

Conclusions

We have developed a cost-effective course that fulfils the needs of trainees through blended learning and responding to feedback. Future efforts focus on incorporation of procedure-based assessments and advanced simulation challenges.

Acknowledgements

We would like to thank the Royal College of Surgeons Edinburgh for their pivotal role in supporting the development and maintenance of the course, as well as all faculty members that have helped to teach on the course.

“Patient Centred – always keep in mind” Year 3 Healthcare Students Handover Huddle – Multi Professional Simulation

A. Meldrum¹, L. Chalmers²

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² School of Health Sciences and School of Nursing and Midwifery, The Robert Gordon University



Introduction

The GMC¹ in their Promoting Excellence document recognise the importance of communicating effectively with patients and colleagues in a medical context. Ongoing pressures on higher education and the NHS continues to be challenging. Thus, educators must strive to become innovative and imaginative when delivering undergraduate medical education and all other multi-professional undergraduate healthcare education. An opportunity arose with two large Scottish Universities to collaborate to develop and deliver low fidelity simulations for year 3 undergraduate healthcare students for example (medical, nursing, occupational therapy, and pharmacy).

Methods

9 professions were invited to attend the simulations. Sessions took place within Aberdeen Royal Infirmary simulated ward environment. Simulations took the form of a clinical handover “huddle” with the multi-disciplinary team. The students were tasked with a 6 bedded ward, where due to winter pressures they had to decide who was fit for discharge or moved to a step down ward.

The aim of this pilot study was to gather feedback in the form of a questionnaire. Two questionnaires given out to the healthcare students that attended; One prior to the simulation occurring and one directly afterwards. Free text comments were used to explore their experiences.



Results

70 students in total from both Universities took part in the pilot. Data analysis showed that students highly valued the opportunity to experience the multi-professional team clinical handover “huddle”. One of the themes which emerged relate to not having the fear of embarrassment when asking questions of other professions and to also keep the decision patient centred.



Conclusion

Given the overwhelming positive feedback from all study participants, the simulated multi-professional clinical handover meetings will become part of the core curriculum across both Universities for year 3 students.



¹ General Medical Council. Promoting Excellence: London: GMC 2010



COME HERE. GO ANYWHERE

"BLEEP ME, I AM THE FY1 ON-CALL!"

Simulated on-call sessions help improve medical student confidence

Dr Nur Ayne Zaharoff*, Dr Fatima Yusuf*, Dr Pratik Solanki*

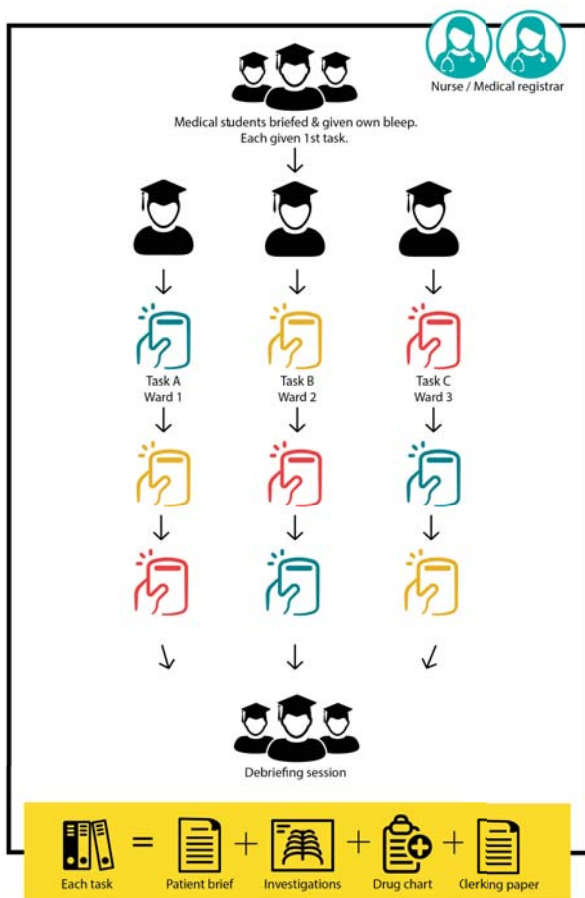
*The Princess Alexandra Hospital NHS Trust

Introduction

There are few teaching sessions that focus on preparing medical students for being on-call.¹ Being on-call is frequently cited in the literature as being a source of stress for many newly qualified doctors.² Thus, at Princess Alexandra Hospital, we designed simulated on-call sessions for 3rd year medical students.



Methods



In total, there were 5 sessions each containing between 3 and 5 students. Each session was module specific and comprised of 5 cases located on different wards within the hospital. Each case contained mock patient briefs, relevant investigations and drug charts. Each student was given individual bleeps along with contact details for senior advice.

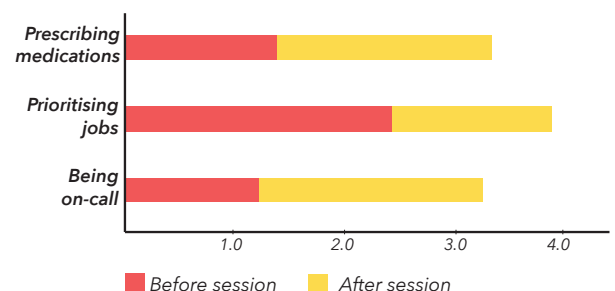
Throughout the session, the facilitators would bleep the students with different tasks to complete and students were expected to prioritise the cases. After the simulation, all students attended a debriefing session.

Results

In total, we received 19 feedback forms. Students' evaluations of the sessions were very positive. Students rated on a likert scale from 1 to 5, with 5 being strongly agree, with the following statements.

Confidence Rating

All these results had a p value <0.0001 on paired t-test analysis



Cases were useful for my learning **4.58**

I would recommend this session to other students **4.74**

Material was well organised **4.47**

The session was of high quality **4.53**

I feel more confident asking for help **4.21**

Conclusion

Students enjoyed the hands-on experience of being on-call and the ability to make clinical decisions safely with senior support. Many have requested similar sessions to be organised more frequently and at later years. More studies are required to explore the clinical impact of these sessions.

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Using Simulation to Improve the Management of Medical Emergencies by 3rd and 4th Year Medical Students

Dr Carron Meney, Dr Fiona Catterall, Dr Kimberley Shields, Clinical Teaching Fellows, Dr Derek McLaughlan, Assistant Director of Medical Education, University Hospital Ayr, NHS Ayrshire and Arran

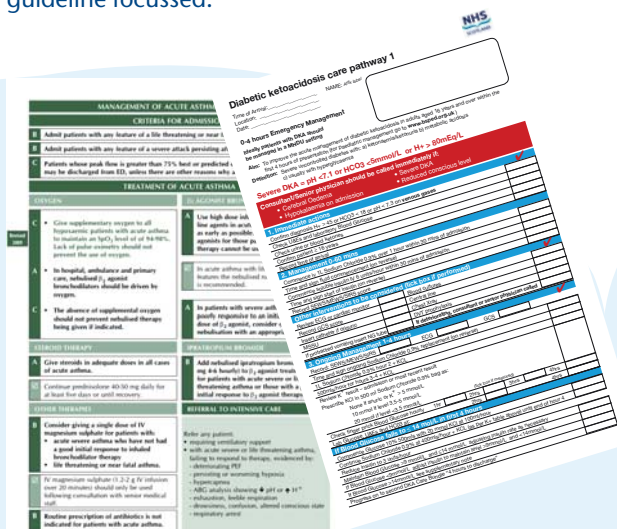
Introduction

Medical students informed us they would like more exposure to emergencies while on their medical placements to prepare them for being junior doctors. The GMC's "tomorrow doctors" also stipulates that simulation should form part of the medical curriculum.¹ As medical emergencies on the ward are unpredictable, we felt exposure through simulation would be beneficial. Simulated environments are a good place to learn new skills as it is a safe environment where mistakes can be made and lessons learned without any harm being caused.²



Method

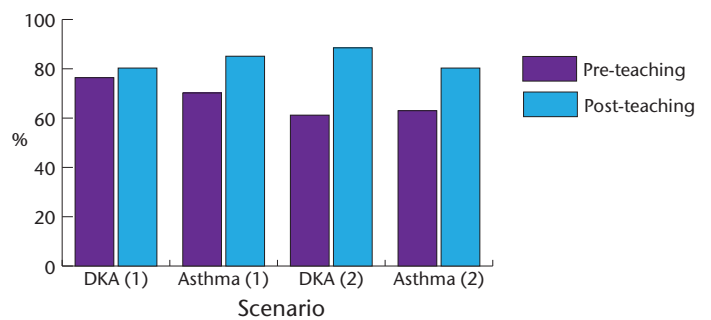
We designed two questionnaires and scenarios focusing on asthma and DKA. 16 students participated in the initial session. They completed the questionnaire, then, we delivered a short tutorial followed by a SIMMAN scenario allowing the students to apply their knowledge followed by debriefing. The students then repeated the questionnaire and the results evaluated. The next sessions involved between 6 and 8 participants. We used the same scenarios and questionnaires, but tutorials were more guideline focussed.



Results

- 42 students participated in the study.
- In Group 1, pre-teaching average score = 70.2% for asthma and 76.4% for DKA increasing to 80.3% and 85.1% respectively following teaching.
- Average improvement of 18.8%.
- In subsequent groups, the pre-teaching average score = 63.0% for asthma and 61.2% for DKA; increasing to 80.3% and 88.5% respectively.
- **Average improvement of 26.9% after changes implemented.**

Average Scores



Feedback

All 42 participants either agreed or strongly agreed with the statement that the Medical Emergencies session was a valuable learning experience’.

97.6% stated that by the end of the session they felt confident in assessing patients in an A to E manner and 95.2% participants stated that the session was effective in helping them integrate theory into practice.

Conclusion

- Simulation training is effective.
- Smaller groups of 6 – 8 students showed a greater improvement in their knowledge than a group of 16.
- Integrating a guideline focused tutorial improved students management of DKA and asthma.
- According to students, simulation training is more useful than lectures for exams and for working on the wards.

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Simulating paediatric emergencies: improving undergraduate confidence in assessing and managing the sick child.



Dr Jennifer McGowan¹ and Mrs Margaret MacLellan²

¹Institute of Education in Medical and Dental Sciences, University of Aberdeen

²NHS Highland

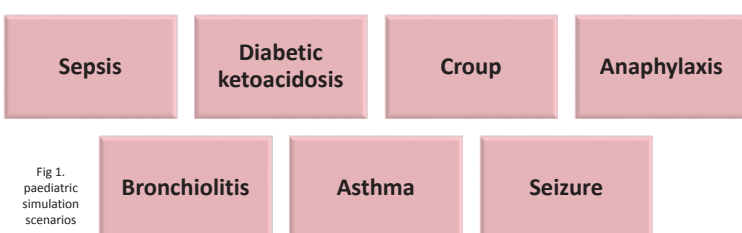
Introduction

Providing exposure to acute paediatric presentations to undergraduate medical students can be challenging. Simulation is a valuable method to bridge the gap between theoretical and practical knowledge and skills.

Simulation scenarios using a high fidelity mannequin and a simulated patient to act as a parent create a realistic clinical environment in which to give students an opportunity to assess and manage the unwell child.

Methods

A range of acute paediatric scenarios were created (figure 1) to be used in a simulated training ward with a high fidelity mannequin and simulated patient (parent/grandparent).



6 fourth year students attend each session with 2 acting as the foundation year doctor (FY1) in each scenario.

A 30 minute debrief follows each scenario to reflect on the learning outcomes.

Results

31 students have participated between September 2017 and March 2018. Self-perceived confidence increased by an average of 1 Likert point in each of the following 6 areas:

- Assessing an unwell child
- Managing an unwell child
- Calculating medication and fluids
- Prescribing
- Communicating with parents
- Handover

Thematic analysis was performed of student feedback which indicated they were able to achieve a number of objectives they were unable to on the ward including:



Assessing and managing an unwell child

Putting everything together – history, examination and treating the patient...we rarely get opportunity to do this



Communication with a parent

Speaking to "parent" in a really acute scenario (not just relaxed family members on wards)



Practising in a safe environment

Having to do things in a realistic scenario without getting too stressed of real harm

Conclusions

Using high fidelity simulation scenarios with a simulated parent is an effective method of improving confidence in assessing and managing the unwell child. Students find this a valuable and realistic session which will prepare them for real life emergencies.



Introduction:

Formal simulation training for newly qualified doctors in Glasgow has seen recent expansion. In July 2017, 252 FY1 doctors participated in half-day simulation training sessions across three hospital sites during the 4 days immediately prior to commencing work.

Methods:

Each site used identical scenarios with intended learning objectives (ILO's) derived from recent serious clinical incidents within the trust. Participants were asked to complete validated questionnaires before and after simulation, that included both rating-scale and free text responses. Participant-derived learning objectives were collected at the start of each session by the group facilitator

Scenarios:

These scenarios which were used have been derived from recent serious clinical incidents in NHSGGC:

1. Unconscious patient with hypoglycaemia
2. Decreased GCS with recent head injury on anticoagulant
3. Mislabeled nasogastric tube
4. Identification and treatment of sepsis in deteriorating patient

Results/Discussion:

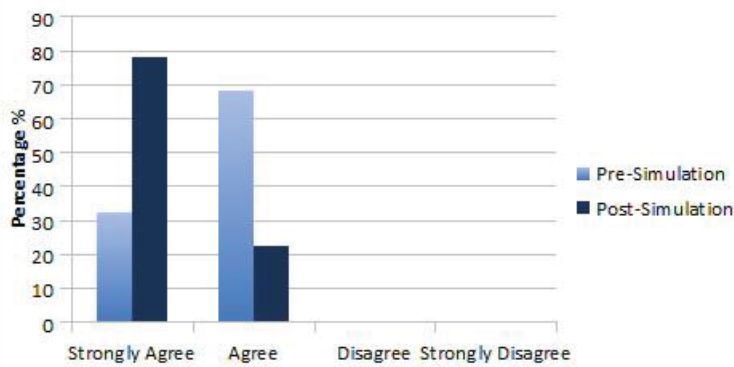
In pre-simulation rating-scale responses, 99% of participants agree or strongly agree that simulation-based education (SBE) promotes improved working relationships in patient care teams. 75% agree or strongly agree that they are worried about showing weakness in an inter-professional setting.

In general, post-simulation rating-scale responses demonstrated substantially reduced concerns around showing "weakness" in an inter-professional setting. Participants reported improved confidence and communication skills from practice in a realistic environment

Participant – derived learning objectives recurrently identified generic skills e.g. "review ABCDE approach", in addition to themes of importance of clear handover and timely escalation.

Suggested participant improvements include addition of cardiac arrest, prescribing and single-person scenarios, however this may be the result of an attenuated preparation for practice in Glasgow in 2017, where these issues are usually addressed.

SBE promotes improved working relationships in patient care teams (RAH site, n=50 pre-simulation, n=46 post-simulation)



Intended Learning Objectives (ILO's):

- Technical:
 - Consider differential diagnosis for fall/reduced GCS
 - Recognition of reduced conscious level and utilisation of tools for assessment of this – AVPU vs GCS
 - Appropriate referral for further treatment of head injury
 - Basic airway management
 - Recognition and treatment of hypoglycaemia/seizure/respiratory compromise/sepsis/renal failure
 - Acid base balance and illness severity assessment
- Non-technical:
 - Demonstrate effective closed loop communication strategies
 - Demonstrate effective team working/leadership skills
 - Handover – importance and understanding
 - Effectively communicate using SBAR
 - Duty of candour – patient communication
 - Clinical decision making/problem solving

Selected Participant Derived Learning Outcomes (pILO's):

- Technical:
 - Understand and prescribe insulin and fluids
 - Understand how to operate the defibrillator
 - Ability to locate protocols
- Non-technical:
 - Refresh ABCDE approach to core practical skills
 - Review "common scenarios"
 - Know when to escalate and who to call
 - Prioritise appropriately
 - Increased confidence

Participant Free Text Feedback:

- "Improved confidence"
- "Safe environment"
- "Knowing when to ask for help"
- "Realism of scenarios"
- "Learning from watching others"
- "Practical experience for FY1"

Participant-generated 'Take Home Messages':

- Medication dosing
- Common sources of sepsis
- Early escalation
- NG tube protocols
- Documentation
- Communication - SBAR

Limitations:

- Missing data – no pILO's from QEUH site, no data from GRI site available
- RAH questionnaire – 4 fewer post-course feedback forms completed
- Exam repeats at Glasgow University – students had less preparation than they would normally have – some of the perceived course weakness would have already been covered, and the preparation for practice would have included a day of simulation training.

Conclusion:

There is belief in the benefits of simulation as an educational tool and recognition of the importance of inter-professional learning.

Delivery of SBE immediately prior to starting work helps FY1's transition from a "student" mind-set due to the imminent prospect of responsibility.

Ideas for future developments include surgical scenarios and annual development of new scenarios based on recent serious clinical incidents to close the educational governance loop

“Oh no you don't!”

Challenges to the delivery of multidisciplinary paediatric emergency simulation training...and some solutions.



Dr S Scott, Dr M Curren

Emergency Department, Victoria Hospital, Kirkcaldy

Introduction

The Royal College of Anaesthetists (RCOA, 2017) recommends all anaesthetists involved in the provision of elective or emergency care for children participate in annual multidisciplinary and scenario-based training to maintain their competencies.

Method

Monthly in-situ multidisciplinary simulation training is hosted in the Emergency Department of Victoria Hospital, Kirkcaldy. Approximately 16,000 children under 16 years present to this ED each year. Medical and nursing staff of all grades from paediatrics, anaesthetics, critical care and emergency medicine participate. Scenarios lasting 45 minutes followed by a debrief have included trauma, sepsis, epiglottitis, severe diabetic ketoacidosis and drug overdose.



Discussion

Participant feedback has been overwhelmingly positive. The debrief is informal and seeks input from all participants including observers. This ensures all attendees are engaged in learning, helps facilitators focus on scenario delivery and reduces a 'top-down' approach to feedback ensuring people don't feel intimidated or assessed. Feedback focuses on non-technical skills such as teamworking, task management, situational awareness and clinical decision making.

Future Development

We have struggled to engage with senior clinicians across the specialties. Involvement of senior clinicians would improve realism and training.

- Plans to survey senior staff to identify and address reasons for limited participation
- Design scenarios with learning objectives for all grades.



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Introduction

Trauma and orthopaedic surgery is a post graduate speciality in which proportionately low undergraduate exposure is granted. In our trust, the junior tier is compiled of Foundation Year 2 (FY2) and GP(GPST) trainees and speciality trainees. The disparity in experience between juniors, coupled with expectation to manage on-call situations led to dissatisfaction from juniors. An opportunity arose to customise a one day skills and simulation course to complement the hospital departmental induction programme and address these issues.

Aims

We aimed to introduce and evaluate a single day, off site training day to prepare junior doctors for the technical and non-technical skills required to manage on calls in orthopaedics.

OrthoSIM

Registration (30 mins)

Tutorial - Xray Interpretation (30 mins)
Tutorial - Hot Swollen Joint (20 mins)
Practical - Joint Aspiration (45 mins)

Coffee (20 mins)

Tutorial - Open Fracture Management (20 mins)
Tutorial - Hand and Wrist Injuries (20 mins)
Practical - Application of Backslabs (60 mins)

Lunch (50 mins)

Tutorial - Cauda Equina and Spinal Injuries (20 mins)
Immersive Simulation - Perioperative Management of hip fracture (10 mins scenario, 30 mins feedback)
Immersive Simulation - Polytrauma (10 mins scenario, 30 mins feedback)

Coffee (20 mins)

Immersive Simulation - Compartment Syndrome (10 mins scenario, 30 mins feedback)

Feedback and Close (30 mins)

Figure 1: OrthoSIM Programme

Methods

Verbal feedback from previous trainees regarding insufficiencies of their induction was used to construct content for the course. A pre-course manual including the minimum knowledge required was distributed to a pilot sample of 12 GPST/FY2 trainees across 2 sites. The course included 4 short seminars, 2 practical skills sessions and 4 simulation scenarios. Participant feedback was collated by anonymised formal written feedback with Likert scales (0-8) and free-text, alongside a verbal debrief. Informal feedback was sought from participants several weeks later by senior clinicians to ascertain the application of the knowledge and skills covered in the course.



Figure 2: Knee aspiration (left) and plaster application (right)

Results

The course consisted of 3 types of teaching; tutorials, clinical skills and simulation sessions (figure 1).

Feedback from Likert Scales for the sessions were generally good to excellent overall mean 7.0 (range (6.3-7.4)). Simulations sessions ranked below traditional sessions, however not significantly so (6.7 versus 7.3, Mann-Whitney $p=0.095$). Free-text feedback and debrief feedback indicated that participants felt the course was necessary and relevant. Particular value was placed on utility of the practical skills and clinical sessions. There were conflicting opinions on the relevance of the simulation scenarios, particularly when candidates derailed from the scenario script. Feedback several weeks after the course confirmed that the juniors had implemented successfully the skills encountered in the course

Student Rating of Components

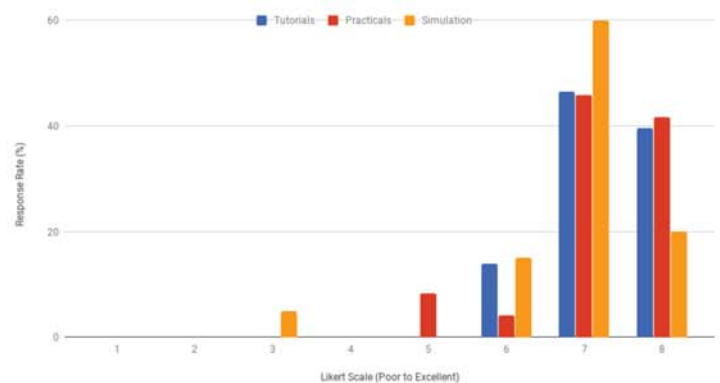


Figure 3: Cumulated mean ratings by session type

Quantitative Feedback

"This course was very useful and would be great to do as part of the T&O induction"

"Good hands on practise on polytrauma"

"A little confusing with the different classifications in depth"

"Useful to know what seniors expect"

"Fun but not useful for those not planning surgery career"

"Excellent practice with plastering. Introduction to skill I have not done yet"

"Useful however not enough time dedicated"



Figure 4: Pilot course faculty and participants

Conclusion

An off-site simulation and skills day proved valuable to trainees and can aid implementation of skills in practice. Further work on the fidelity and structure of the simulations scenarios may prove of benefit in future iterations.

A. Mclean (1), C. Niciu (2), K. Leighton (3), L. Conway (1), M. Moneyppenny (3), J. Dickson (3), S. Lavery (3), R. Cheape (1)

1. Mental Health Unit, Forth Valley Royal Hospital. 2. Queen Elizabeth University Hospital, Glasgow. 3. SCSCHF, Forth Valley Royal Hospital.



Introduction

Mortality rates among people living with major mental illness remain higher than the general population. In 2013 the Royal College of Psychiatrists asked all mental health professionals **"what can be done?"** and challenged us to find ways of improving physical healthcare for mental health patients¹.

We surveyed 117 mental health doctors and nurses across Scotland about their experiences of dealing with physical health emergencies and found that confidence was low in this area and demand for more training was high.

Our solution was to provide high fidelity simulation sessions designed to recreate the type of physical health emergencies we find in the mental health setting. Our colleagues at the Scottish Centre for Simulation and Clinical Human Factors (SCSCHF) have endorsed our project and provided access to their world class resources to provide this training.



Methods

The scenario designs have been led by our survey correspondents most frequent suggestions based on the emergencies they see in practice **1. Opioid overdose with respiratory arrest 2. Ligature with cardiac arrest.** Training time was supported by medical and nursing clinical leads. Three MDT simulation sessions have been run to date, including a live demonstration at the regional Scottish Patient Safety Programme learning event in March 2018.



Results



On average, the 14 candidates who took part in our simulation sessions last had physical health training over 1.5 years ago (median 2 years). Fourteen (100%) candidates said their confidence had improved following the training sessions and 13 (93%) rated the course as excellent.

"clinically relevant scenarios" **"fun"**

"excellent! We need more of this"

"very realistic"



Conclusions

Our simulation based teaching for mental health professionals has been successful and very well received. The feedback has reflected the safe learning environment and realistic scenarios we have delivered.

Our results demonstrate that immersive simulation provides an ideal learning environment for mental health teams to develop confidence in managing physical health emergencies. We have received funding support from NHS Forth Valley to continue providing simulation sessions to our mental health staff over the next three years.



SCSCHF Faculty
Forth Valley Royal Hospital

T3

TEAM TRAINING TUESDAYS

The development of an in-situ inter-professional simulation teaching programme in the emergency department

J. Medhora, R. Mistry, J. Sinclair, C. Brown, A. Cooper



INTRODUCTION

In-situ simulation in the emergency department (ED) can improve teamwork and clinical performance within multidisciplinary teams, and thus enhance patient safety (1, 2). Regular interprofessional in-situ simulation training within a Paediatric ED is feasible and can improve staff confidence in dealing with many emergency presentations (3). This project aimed to utilise this framework to develop an interprofessional in-situ simulation teaching programme in the ED at Aberdeen Royal Infirmary (ARI) and to assess user perception. The learning outcomes of the teaching programme were to improve team performance of common and rare ED presentations, encompassing both procedural and non-technical skills.

"Really useful session. Would have liked it to have been a bit longer."
(Physician Associate Student)

"I really liked that all tiers of ED care were represented and it was held in the ED...I also think that (for all staff) having to go through the process of making up certain infusions that they don't normally do and set up equipment/troubleshoot equipment failure (battery etc) would be useful learning for all." (ED Registrar)



"More days. Even a full day once a month? Longer scenarios then."
(Staff Nurse)

"It was very educational and enjoyable. Perhaps some warning beforehand that we could participate in it as medical students."
(Medical Student)

"[The sessions] were informative and a good chance to spend time in resus to get familiar with equipment in a non life threatening environment. Good for team building and well run."
(Physician Associate)

REFERENCES

1. Steinmann S, et al. In situ, multidisciplinary, simulation-based teamwork training improves early trauma care. *Journal of surgical education*. 2011; 472-477
2. Patterson MD, et al. In situ simulation: detection of safety threats and teamwork training in a high risk emergency department. *BMJ Qual Saf*. 2013; 22: 468-447
3. Sunley R, et al. 'Mini Sim'- Innovating bite sized simulation teaching in a busy children's emergency department. *Emerg Med J*. 2017; 34: 899-900

METHODS

Weekly in-situ simulation sessions were established in the ED at ARI, taking place every Tuesday at 08:30am. Participation was voluntary and available to junior doctors of all grades, physician associates, nurses and medical/nursing students. The sessions comprised of a 15 minute simulation involving the team's assessment and management of an emergency scenario in the resuscitation department, followed by a 15 minute debrief led by the resuscitation consultant and/or trained simulation facilitators. Participants completed an online survey evaluating their perception in terms of feasibility and usefulness.



RESULTS

The content of the sessions comprised of the management of the following scenarios: septic shock, femoral fracture, and unstable tachyarrhythmia. Preliminary results from the survey suggest the timing of the sessions to be suitable for all staff. The teaching programme was perceived as useful and an effective tool for improving teamwork. However, more can be done to facilitate the development of procedural skills. In the event of session cancellations, reasons included staff shortages and unavailability of simulation facilitators. Participants were asked to identify what they found particularly useful or helpful and to make suggestions for improvement. Some of their free text responses are shown on this poster.

CONCLUSION

An interprofessional in-situ simulation teaching programme in the emergency department may be an effective tool for improving teamwork and procedural skills, however, scenarios require further development to meet individual and team needs.

Medical student perception of uncertainty & complexity in simulation training



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AIM

- Undergraduate simulation scenarios are commonly designed around a single diagnosis to steer participants towards a specific treatment protocol.
- This ensures common conditions and treatment protocols are covered in the curriculum.
- This may not prepare students for the reality of life on the wards.^{1,2}
- The GMC's Generic Professional Capabilities identify working with complexity and uncertainty as key professional skills.³
- We aimed to evaluate student perceptions of uncertainty and complexity in simulation scenario design.

METHODS

- Final year medical students completed 3 surgical scenarios in groups of 7-11.
- 2 scenarios included a single diagnosis amenable to protocol driven care, scenario 3 was complex with no defined diagnosis as below:

Scenario	1	2	3
Information	PR Bleeding On Warfarin Tachycardic Hypotensive	RUQ pain Deranged LFTs Tachycardic Hypotensive Pyrexial	Post op colectomy Vomiting Distended abdomen Reduced O2 sats Pyrexial Fast AF
Diagnosis	Major haemorrhage	Cholangitis Severe Sepsis	Undefined Multiple differentials
Treatment Protocol	Warfarin reversal Major haemorrhage protocol	Sepsis 6	NA

- After the course, students were asked to identify which scenario:
 - Best reflected working as an FYI
 - Prepared you best for work
 - Was most valuable
- They were asked why they had made these choices.
- Narrative responses were coded using QDA miner lite [Provalis Research, 2017] with coding frequency used to identify themes.

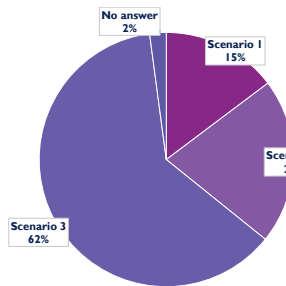
CONCLUSIONS

- Final year medical students identify uncertainty and dealing with complex patients as common experiences in FYI.
- Opportunities to practice working through uncertainty, complexity and stress in the simulated environment are felt to be good preparation for work.
- Students place high value on working with complexity and uncertainty in simulation.
- Educators should work to include more complex scenarios with ill-defined diagnosis in undergraduate education.
- Opportunities to work with uncertainty and complexity are welcomed by student learners.

RESULTS

- Feedback from 77/103 (75 %) participants was analysed.
- Equal numbers participated in each scenario.
- Six took part in more than one scenario.

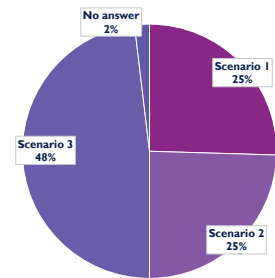
Which scenario best reflects real working as an FYI?



Participants choosing 1 & 2 felt sepsis & haemorrhage were common problems to manage as an FYI (28.6%) and common conditions generally (33.3%).

Participants choosing Scenario 3 felt FYIs commonly felt uncertain (42.1%) and regularly encountered complexity (18.4%).

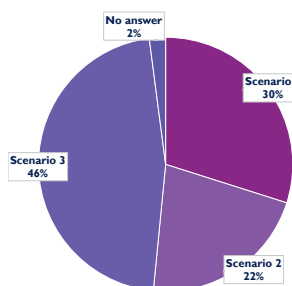
Which scenario has prepared you best for work?



Participants choosing 1 & 2 commonly identified participation in the scenario (25%), understanding how to apply knowledge in practice (25%), or clarifying knowledge gaps (17.5%) as reasons for their choices.

Participants choosing Scenario 3 identified dealing with uncertainty (29.5%), complexity (16.4%) and developing strategies to work under stress (14.8%)

Which scenario did you personally feel was most valuable?



Participants choosing 1 & 2 identified developing knowledge of the condition or protocol (28.9%), participation in the scenario (26.3%) or understanding how to apply knowledge in practice (21.1%) as the reasons for their choices.

Participants choosing Scenario 3 identified dealing with uncertainty (23.8%), working through periods of stress (19%), working with complexity (14.3%) and developing knowledge of the condition or protocol (14.3%)

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ACKNOWLEDGEMENTS

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QI Connect: Learn...Share...Innovate!

Authors: Jessica Yuill, Jennifer Graham, Dr Brian Robson

Introduction

QI Connect¹ began in 2014, providing an opportunity for clinicians in Scotland to learn from international leaders in quality improvement. Its scope and audience has grown to encompass over **750 organisations** and over **4,000 professionals** in the quality improvement community across **57 countries**.



Aims

The aims of QI Connect are as follows.

- Link organisations in the quality improvement community nationally and internationally, and facilitate greater understanding and knowledge-sharing
- Make use of WebEx technology to be as cost-effective as possible
- Focus on key themes for each series, for example in 2017 we focused on improvement, innovation and integration in health and social care, and
- Learn from other sectors concerned with quality improvement and apply “outside-the-box” thinking to quality improvement for the wider NHS.

Method

- We provide **10 free WebEx sessions** each year, allowing healthcare professionals in Scotland to learn from international experts and connect with colleagues in health, social care and beyond globally.
- We use WebEx technology and social media to get as broad a reach as possible. **All sessions are recorded and made available online.**
- In addition, **we have reduced costs for WebEx** by encouraging organisations to bring colleagues together to log in to sessions jointly.

Conclusions

- We are an approved resource with **ISQua’s Fellowship Programme** and have a partnership with **The Health Foundation’s Q Initiative**. We have made significant links with the **National Aeronautics and Space Administration (NASA)** exploring shared decision-making, risk and safety.
- Interest in the series has expanded beyond focus on clinicians and **participants now come from many different professional backgrounds** across health and social care, the third sector, local authorities and major private sector organisations.
- Healthcare Improvement Scotland has links with **63 universities** worldwide and recordings of the sessions are used as teaching aids.



Dr Nigel Packham, Flight Safety Officer with NASA, joined us for a special QI Connect session in November 2017.

Reference:

1. www.healthcareimprovementscotland.org/our_work/clinical_engagement/qi_connect.aspx

Authors: Margaret A Connolly Associate Chief Nurse, Dr Susan Fraser Consultant Physician, Dr Catriona McNeil Consultant Intensivist, Pinky Virhia Project Simulation Nurse

Aim

The aim of the project was to prepare medical and nursing staff when caring for acutely unwell medical patients, specifically from a non-technical perspective. By focussing on human factors, the faculty hoped to improve confidence and competence of this group of staff, thus leading to the early identification of the deteriorating patient with timeous intervention.

Method

The TEAaM Simulation full day course was delivered to medical and nursing staff from acute medical receiving wards over a period of 5 weeks to accommodate rotation commitments.

Each course averaged 4 nurses and 2 doctors who were filmed throughout the simulation.

Previously evaluated scenarios were run for 15 minutes, the accompanying de-brief 45 minutes. The breadth of the scenarios ranged from major haemorrhage to discussion with family regarding futility of treatment and end of life care.

Feedback was facilitated by an experienced multi-disciplinary faculty and it afforded the group time to reflect on 'the take home messages from each scenario'.

Self-evaluation via an anonymous web-based system sought to compare the candidate's confidence/competency of dealing with deteriorating patients, pre and post course.

Questionnaires also sought candidate's reflections on learning from patient safety.



Team course number 1: faculty and students

Results –32 participants attended in total answering a sample of question below

Q. rate your confidence in dealing with a deteriorating patient?

78% of participants rated themselves to be at the highest (6) or second highest (5) rating.

Q. Was it valuable to learn as part of a multidisciplinary team?

100% felt it was valuable to learn as part of a multi professional team.

Q. Was the course relevant to your practice?

86% scored the highest rating (6)

Q. Would you recommend this course to a colleague?

89% of respondents would recommend this course to a colleague

Reflections were grouped into three themes

1. Competence

"I will be able to confidently carry out an A- E assessment and take leadership within an emergency situation as well as vocalising my thoughts and decisions"

"I feel more confident in escalating critically unwell patients but also in managing them"

2. Confidence

"I learned how to confidently work as part of a multidisciplinary team in caring for a deteriorating patient".

"I will take control of tasks I know how to do and aid the rest of my team but volunteering for a role rather than waiting to be asked"

3. Multi-professional learning

"Excellent day, very informative. Reflective feedback was very useful from both doctors and fellow peers"

"Very good interaction in the multidisciplinary team. Good way to learn."

"I wasn't overly keen on the simulation aspect of the course however it does certainly help to ensure the scenarios are as real as possible"

"Although I was initially nervous about being videoed I think this was very useful when reflecting on my practice."



The TEAaM team. L-R Dr Susan Fraser, Michael McCrossan, Dr Catriona McNeil, Pinky Virhia, Margaret Connolly.

Acknowledgements

The authors would like to thank CNO Vale of Leven Scholarship for providing the funding for this project and also the following people in recognition of their time and support to the faculty: Dr Ann McKay, Dr Jo Sarvesvaran, Dr Finn O'Sullivan, Dr Neil McGowan, Katherine Hill, Lynne Robertson Michael McCrossan,. We would also like to acknowledge Catie Paton for her support towards this project.

For further information please contact – Margaret Connolly at margaret.connolly@ggc.scot.nhs.uk

Conclusion

Improving patient safety is key priority for all staff in QEUH. The TEAaM course was devised specifically to address this. When clinical incidents occur, recurrent themes emerge around difficulties with team working and ineffective communication. This simulation course promotes team working by focusing on non technical skills in a safe environment where staff can be stretched without patient involvement. Participant feedback concurred with the authors' view that this enhanced validity of the simulations and experience for learners.

Building confidence: A modern approach to junior doctor skill acquisition

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Changing times in skill acquisition

Medical staff find themselves working in an increasingly busy and pressured environment where time for practical skills training is limited and senior staff are often unable to step away from direct clinical care to provide it. It is also recognised that the time-honoured mantra of 'see one, do one, teach one' has been superseded by simulation in terms of both skill acquisition and patient safety¹.



Quality Improvement

We sought to improve Foundation Year (FY) Doctors access to dedicated, expert-led, simulated skills training to support both skill acquisition and confidence development in a risk free learning environment.

We have delivered 3 sessions each to the FY1s and FY2s in the Dundee Institute of Healthcare Simulation annually since 2015. The sessions were designed with emphasis on 'hands-on' experience and direct expert tutor support. The skills taught were selected according to trainee grade and feedback from previous simulation sessions. **FY1s** were taught urinary catheterisation, basic ultrasound skills, suturing and airway skills. **FY2s** were taught ascitic tap/drain, arterial line insertion, emergency tracheostomy management and basic ultrasound skills.

Benefits from changing educational style

There are currently 90 FY1 and 94 FY2 doctors within NHS Tayside. 40/90 FY1s and 40/94 FY2s elected to attend our non-compulsory skills sessions. Formal feedback was collected using the Questback™ system yielded the following results;

100% of attendees rated the sessions as;

- Relevant to my training
- Well organised
- Encouraging audience participation and interaction
- Enjoyable
- Influencing or changing future practice.

Free text feedback indicated a notable improvement in confidence to perform practical procedures. FYs described the sessions as,

'probably the most useful tutorial I have had since starting FY'

The future

There is enthusiasm amongst Foundation Trainees for acquisition of practical skills and we have shown that this can be successfully delivered away from the distractions of busy clinical areas in risk free focussed simulation sessions with an improvement in trainee confidence. Demand for these sessions to cover an increasing variety of skills has been such that we intend to extend the number of sessions offered annually.

References

1. Ralhan S et al, *Effective teaching skills—how to become a better medical educator*, <http://careers.bmj.com/careers/advice/view-article.html?id=20006562>

Should newly-qualified doctors receive simulation training in non-technical skills before starting practice?

Authors: A Bamford, P Doody, O Francis, K Hulse
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Aim

The importance of non-technical skills (NTS) is well-established in postgraduate medical training. Despite this, the presence of NTS in undergraduate curricula remains highly variable. We set out to investigate whether non-technical skills training at an undergraduate level would better prepare newly-qualified doctors for the challenges they face during their Foundation years, with the hypothesis that simulation could be used to fill this need.

Methods

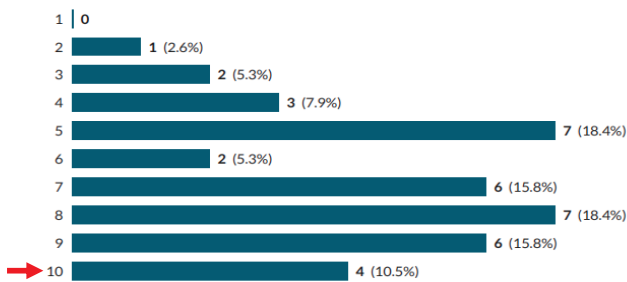
We devised a questionnaire focused on non-technical skills, guided by the content of the Foundation Programme curriculum and the themes of the Anaesthetists' Non-Technical Skills (ANTS) framework. We distributed it to all Foundation Doctors working in NHS Lothian in the autumn of 2017; we also gave the same questionnaire to doctors working in Medical Education in NHS Lothian to set the standard response that would be expected from a Foundation Doctor. The questions were designed to assess the confidence in particular situations, and the self-reported frequency of specific behaviours.

Results

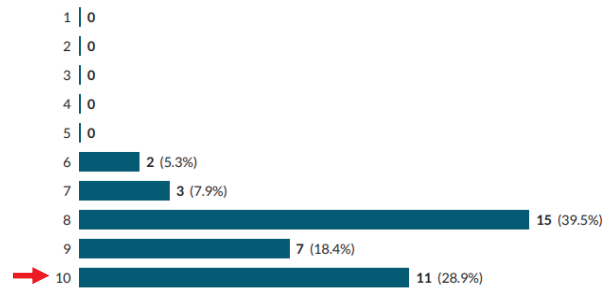
38 Foundation Doctors filled out the survey: 20 F1s (52.6%) vs. 18 F2s (47.4%). Respondents included graduates from 15 different universities spread across all regions of the United Kingdom. The median response from the Foundation Doctors fell below the expected standard in 25 of 34 questions (73.5%).

Discrepancies between the expected and actual responses were identified across numerous areas, including some which would be suitable for targeting with simulation-based teaching. Bar-charts showing the responses for 4 of the questions pertinent to these are presented below, with the expected response indicated by a red arrow.

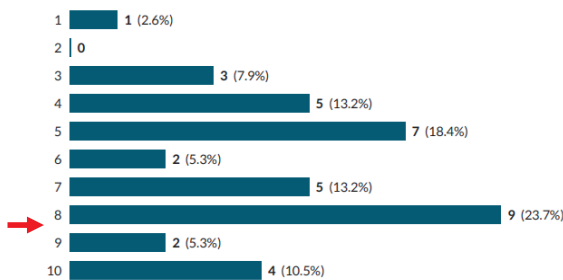
On a scale of 1 to 10 how confident do you feel putting out a crash call?



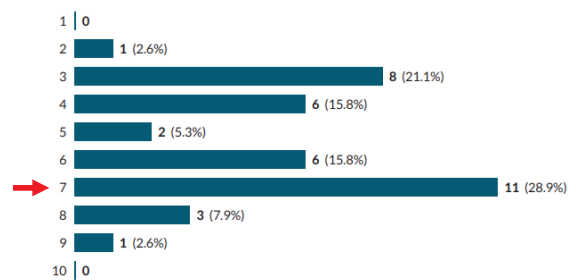
On a scale of 1 to 10 how confident do you feel asking a senior to come and help you manage a patient?



On a scale of 1 to 10 how confident do you feel activating the major haemorrhage protocol?



On a scale of 1 to 10 how confident do you feel challenging a senior when you think that they are about to make a clinical error?



Conclusions

There are deficits in the non-technical skills of newly-qualified doctors. Given the potential for this to negatively impact patient safety, we argue that more weight should be given to non-technical skills training in the undergraduate curriculum. As several of the areas involve decision-making and behaviour in pressured clinical scenarios, they would be suitable for targeting with simulation teaching.

Next Steps

We are working with simulation teaching staff at the University of Edinburgh and have devised simulation scenarios aimed at targeting areas of deficit identified by our survey. The scenarios are being delivered to the current cohort of final year medical students at the University of Edinburgh, and we will be collecting data to investigate their efficacy.

References & Acknowledgements

- The Foundation Programme Curriculum
- Anaesthetists' Non-Technical Skills (ANTS) Framework
- Survey conducted and bar charts produced using with www.onlinesurveys.ac.uk

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Clinical simulation to increase staff confidence in assessment and management of medical emergencies arising in a psychiatric inpatient setting: review of evaluation data

Dr Carla Schmall, CT2 Psychiatry; Dr Chris O'Shea, Clinical Teaching Fellow; Mr Colin Halliday, Resuscitation Officer; Mrs Brenda Binnie, Resuscitation Officer; Dr Pauline McConville, Consultant Psychiatrist

Royal Edinburgh Hospital March-December 2017

Introduction

- Medical emergencies in psychiatric inpatient settings are not uncommon, and staff report feeling anxious and ill-prepared
- Simulation in medical education is an important route to safer care for patients¹
- In 2013 Dr Birrell designed the Medical Emergencies Assessment and Management for Psychiatric Inpatients (MEAMPI) course to improve emergency care and patient safety²
- We summarise the evaluation data gathered from MEAMPI between March and December 2017 with the aim of identifying if the goal of increasing staff confidence in managing medical emergencies has been achieved, whilst identifying areas for improvement

Methods

- We held 10 simulation sessions for a total of 91 participants over a period of 10 months
- Sessions comprised of a brief interactive lecture on the ABCDE approach followed by three scenarios simulating medical emergencies reported to commonly occur in inpatient psychiatric units, followed by structured feedback
- Both quantitative and qualitative data was gathered via paper evaluation forms immediately before and after each session and analysed using descriptive statistical methods and word repetition methods respectively

Results

Fig 1 Participant job description

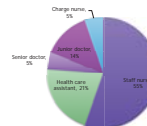
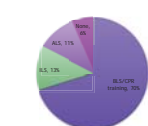


Fig 2 Pre-course level of life support training



63% of participants had been at medical emergencies in a psychiatric inpatient setting prior to the course:

Fig 3 Experiences prior to course

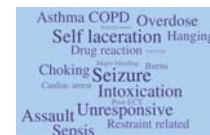


Fig 4 Emotions at emergencies

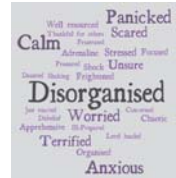
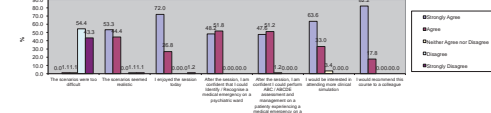


Fig 5 Quantitative evaluation data



Pre- and post-course confidence data comparison

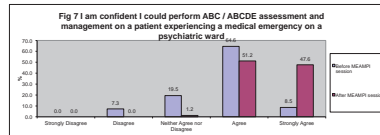
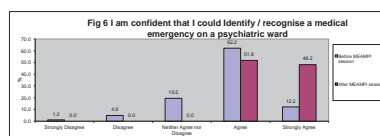


Fig 8 Participants' likes



Fig 9 Participants' dislikes



Fig 10 Participants' suggestions for future



Discussion and Conclusions

- Participants enjoy MEAMPI and would recommend it to their colleagues
- 63% of participants had been at medical emergencies in a psychiatric inpatient setting prior to attending MEAMPI and described feeling disorganised and panicked
- Patients with mental illness are known to experience health inequalities including premature mortality and reduced access to services and tackling these is an important priority³
- Regardless of the extent of previous training, after MEAMPI, participants report increased confidence in their ability to recognise a medical emergency and increased confidence in their ability to carry out ABCDE assessments and management

Further research is indicated to evaluate whether the subjective perception of increased confidence in the learning environment translates to increased confidence and use of skills in clinical practice

Given the high demand for longer sessions we have increased the session by half an hour with the addition of a fourth scenario

Further Information

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References

- Chief Medical Officer Annual Report 2008; Safer Medical Practice. National Government Archives.
- Birrell S, Harvey R, Edgar S. Scenario design for multidisciplinary staff training in

the recognition and management of medical emergencies arising in the mental health setting. Poster presented at: Society in Europe for Simulation Applied to Medicine Annual Meeting; 2013 June 12-14; Paris, France.

- Mental Health Strategy for Scotland 2012-2015. Scottish Government Publication.

Acknowledgements

Dr Steve Birrell, Consultant Psychiatrist, NHS Fife
Mr Colin Murray, Lead Resuscitation Officer, NHS Lothian
Ms Stacey Knox, Postgraduate Administrator, Psychiatry South East Scotland
All MEAMPI participants





A NEAR PEER-LED BLOOD PRODUCTS TRAINING (BPT) COURSE FOR NEW JUNIOR DOCTORS

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Foundation year 2, Salford Royal Foundation Trust (SRFT)
Dr Rebecca Wilcock
Foundation year 1, Salford Royal Foundation Trust



Background

The use of blood products can be daunting for new junior doctors/ foundation year 1 doctors (FY1s). Near peer teaching is thought to be beneficial for teachers and learners¹.

A blood products training (BPT) course was designed and delivered during the FY1 induction week by near peer junior doctors /foundation year 2 doctors (FY2s).

Objectives:

1. Introducing FY1s to the hospital policies and guidelines surrounding the use of blood products.
2. Increasing knowledge and confidence around the safe use of blood products for FY1s.

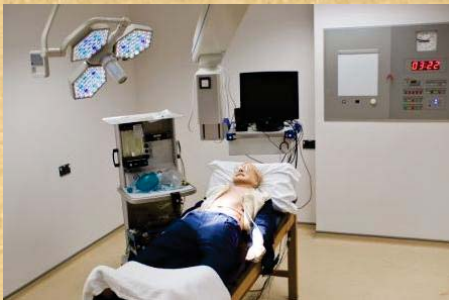


Figure 1: Simulation mannequin at SRFT (1)

Methods:

Three stations were organised. FY1s rotated between the stations in small groups of four doctors.

For two stations, simulation mannequins (Figure 1) were operated by simulation officers to simulate a clinical scenario. FY1s worked through their assessment and management of a patient with major haemorrhage and an acute transfusion reaction.

The third station has been modified based on feedback from last year. It will now include case study question and answer sessions with the addition of a prescribing exercise where FY1s will have the change to practice writing out blood prescription forms.

FY2s facilitated discussions in all three stations. Relevant handouts were provided at each station. Feedback was obtained from teachers and learners and all received a certificate for their portfolio.

Results:

21 out of 30 FY1s attended the course and all provided feedback. Feedback showed >70% increase in confidence and knowledge of all the topics discussed including 90% increase in knowledge of major haemorrhage as shown in Table 1. Most attendees commented that the use of simulation and the small group sizes enhanced the learning experience.

Suggestions for improvement included creating a section for FY1s to practice prescribing blood products using the hospital's prescription forms. This has now been implemented in the third station.

A limitation of the initial course was lack of an objective assessment. We have now implemented a short quiz that is to be completed at the beginning and end of the session allowing us to compare the average scores and objectively assess how effective this course is at improving subject knowledge in the FY1s.

	Pre-course	Post-course	Difference
Major haemorrhage	9.5	100	90.5
Acute transfusion reaction	14.3	95.2	81
Awareness of common mistakes	23.8	95.2	71.4

Table 1: The percentage of FY1s who were confident in the topics discussed before and after the course and the increase in confidence

Conclusion:

The course achieved its objectives. The feedback was encouraging and appropriate improvements have now been made to deliver the next BPT session to FY1s.

The hospital's transfusion specialist practitioner observed the training course and recommended that it should be delivered to all new FY1s at the Trust. This course has been implemented by the medical education team.

Similar success might be achieved in other hospitals and Trusts if the BPT course is employed.

The course has been amended appropriately based on feedback and will now include a blood product prescription exercise and an objective assessment before and after the course.

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2) Simulation Man at SRFT, [Accessed on 28/09/2017] {<http://www.srft.nhs.uk/about-us/hospital-redevelopment/in-pictures/the-mayo-building/>}
3) Blood Products Training (BPT) Course. Folder for running this course is available at the SRFT Postgraduate Department, Mayo Building.