Using In Situ Simulation to direct a Quality Improvement Project (QIP) in the Emergency Department

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Introduction

Emergency Medicine trainees repeatedly cite 'Paediatric Emergencies' as an area of the curriculum where they feel less confident, and would appreciate further training in.

Thankfully, despite children making up a significant proportion of overall attendees to general A&E departments, life-threatening events are rare. However, when they do occur, in addition to unfamiliarity and often limited previous exposure, the require alteration in in doses can act as a barrier to efficient and safe care, even with experienced staff present. The rarity of these presentations leads to sparse opportunities for practical management experience amongst junior staff, and therefore the identification of the exact areas quality improvement projects should be directed.

By using simulation as an education technique it allows the participant to gain an emotive and immersive learning experience and the recreation of a clinical experience without risk to patients, allowing us to identify areas where improvement is most needed.

Aim

Anaphylaxis was identified as a rare paediatric emergency that none of the current juniors had previously encountered.

Aims of the project were:

1. To elicit the areas of management found most **challenging** by junior doctors
2. To elicit the main **obstacles** to delivering time critical, safe patient care
3. To develop and test a suitable **aide** to assist in management
4. To improve **confidence** in management amongst junior doctors

Method

• **Clinical simulated scenarios** were developed involving children of varying ages.

• Doctors from the junior rota, without warning or briefing, each undertook a scenario in a simulated environment, using the paediatric resuscitation bay, without assistance.

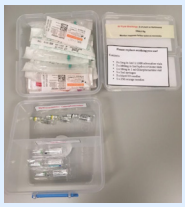
• Time was recorded from the recognition of anaphylaxis to appropriate treatment, including correct dosages, with the doctor expected to independently locate, draw up and administer medications.

Fig1: Clinical simulated scenario in action, using the department paediatric resus bay, set up as it would normally be for everyday use >

• Post scenario participants were asked which areas of practical management they found most challenging.

• This formed the basis for the development of a **'paediatric anaphylaxis box'**,

Fig 2: The paediatric anaphylaxis box, including algorithm



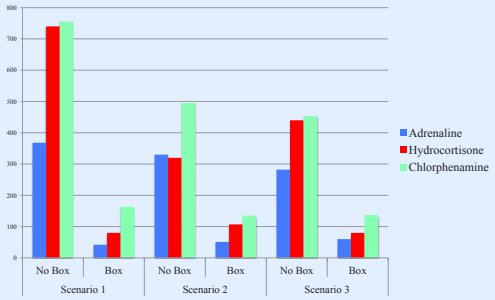
< Fig 3 & 4: inside the box different compartments for drugs, appropriate sized syringes, needles, individual age-based drug doses and box contents list

• Scenarios were then repeated several weeks later, each doctor assigned to a different scenario, with access to the box.

• Doctors were then again timed as detailed above and required to fill in an anonymous retrospective questionnaire regarding confidence after simulated practice.

Results

Fig 5: Comparison of timings of drug administrations with and without the box for each scenario in seconds



• Time to adrenaline with box <1min, compared with >5min without
• Time to IVF/ 2nd line drugs significantly reduced
• No dosage errors with the box, compared to 22% occurrence without
• Time to 2nd adrenaline dose, if required, halved in scenarios with the box

Feedback from participants was collated via anonymous survey, using a 1-5 scale
• Drug dose finding/ drawing up of drugs was found difficult to impossible by all in initial scenarios
• In scenarios with the box all participants found it easy to very easy

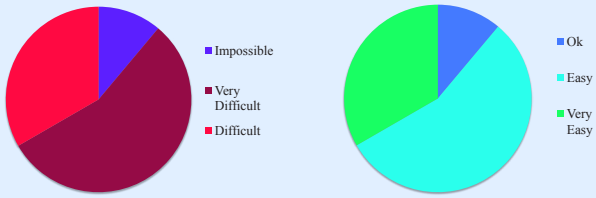


Fig 6: Candidates feedback re ease of finding and drawing up drugs in initial scenarios (Left), and a second scenario with the anaphylaxis box (Right)

• All were confident or very confident post scenarios
• All participants felt the box was a useful addition to the paediatric resus bay

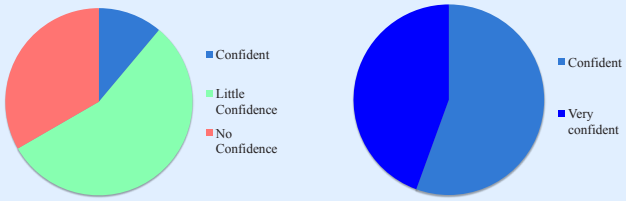


Fig 7: Confidence levels in presentation management before participating in simulated scenarios (Left), and after the scenarios with the anaphylaxis box (Right)

Conclusion

The use of simulation in replicating rare presentations, although not a substitute for practical experience, can improve confidence in management and provide learning opportunities amongst trainees.

In addition, using in situ simulation can aide the identification of areas to target Quality Improvement Projects (QIPs).

This method of identification could be extrapolated to further rare presentations in both children and adults.

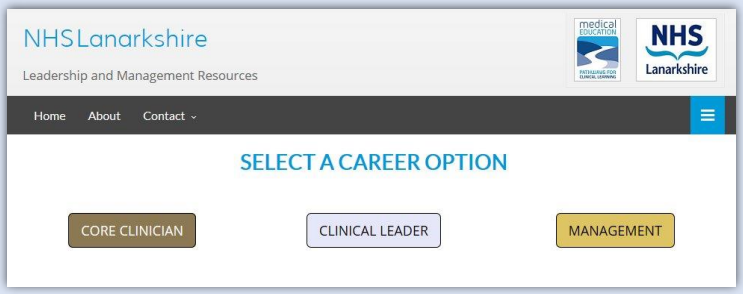
Acknowledgements

Thanks to Stuart McInnes for giving permission to use his image (Fig 1), and to Laura MacGregor for her assistance.

Aspiring to Excellence:
The NHS Lanarkshire Leadership Resource

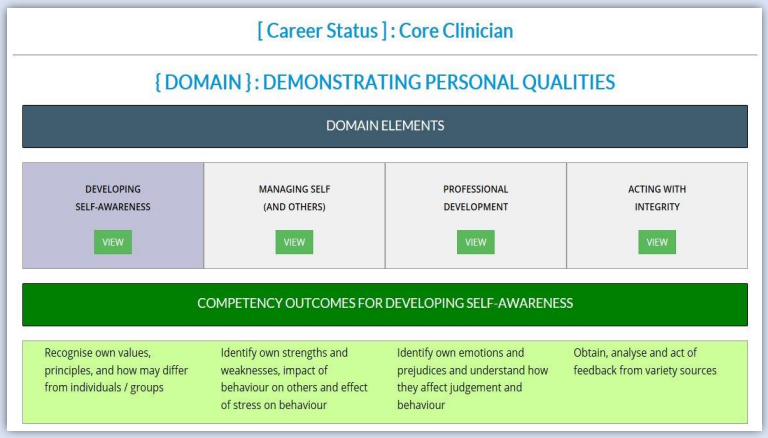
Scott W. Oliver, Juliette Murray, Laura Cameron, Ann Chapman, Morag MacDermid and Ian Hunter
Medical Education Department, NHS Lanarkshire

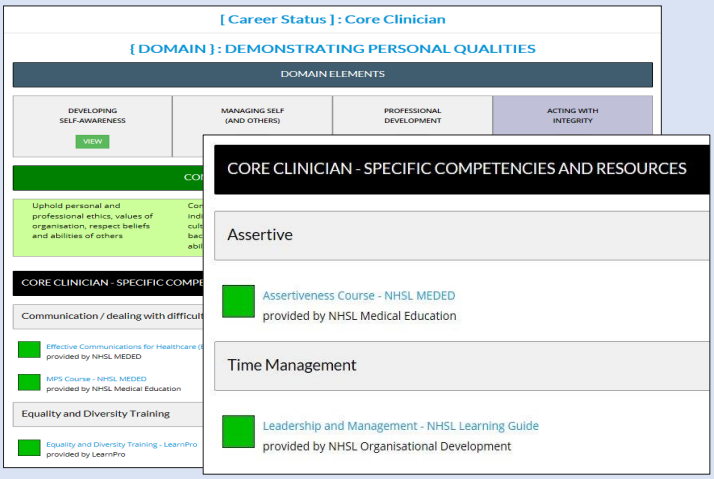
- The importance of leadership training for clinicians is increasingly recognised;
- Our intranet resource connects clinicians with locally available courses that are mapped to national clinical leadership curricula;
- Over 20% of the career-grade medical workforce have accessed the resource;
- Minimal setup and maintenance costs make this an attractive educational tool

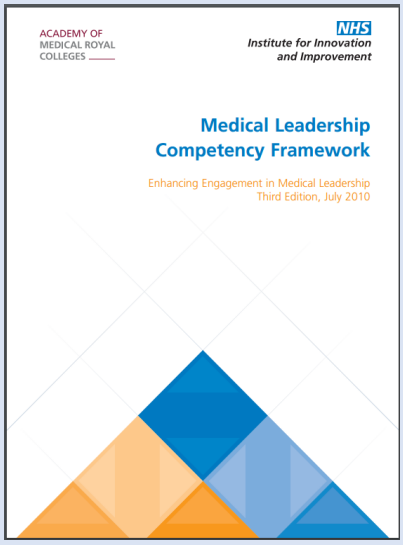


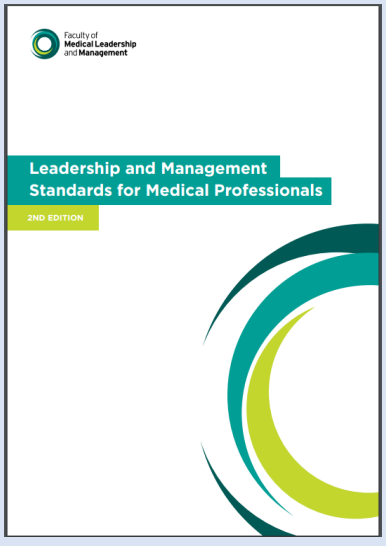
- FMLM's 'Medical Leadership Standards' and the NHS Leadership Academy's 'Medical Leadership Competency Framework' describe the required competences for medical leaders;
- The NHS Lanarkshire Leadership Resource maps these competences with locally available resources, grouping them by 'career stage';
- Clinicians can target the training most relevant to them using a simple online interface.

- Clinicians find that the resource makes it easy to address their professional development needs – including those who feel 'leadership training' is not something they are naturally drawn towards.
- 118 unique users have used the site since launch;
- The only ongoing costs are for staff time to populate and update the resource.









FMLM Medical Leadership Standards: https://www.fmlm.ac.uk/node/3073
NHS Institute for Innovation and Improvement Medical Leadership Competency Framework:
https://www.leadershipacademy.nhs.uk/wp-content/uploads/2012/11/NHSLeadership-Leadership-Framework-Medical-Leadership-Competency-Framework-3rd-ed.pdf

Skills Workshop For Consultant Interviews

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Introduction:

Consultant interviews can be a daunting prospect for higher trainees applying for their first consultant posts. The aim of this workshop was to provide final year higher trainees in psychiatry (ST6 trainees) with practical experiences of commonly encountered aspects of the consultant interview process, with individual and group feedback.

Method:

*The interview workshop was a half day workshop open to all ST6 trainees in psychiatry in the West of Scotland. Six trainees participated in the workshop.

*Sample job descriptions for each trainee's subspeciality were provided in advance.

*On the day, trainees rotated around six interview stations, each with two interviewers drawn from a range of:
- consultants
- Training Programme Directors (TPDs)
- Clinical Directors (CDs)
- non-medical managers.

The interviewers worked in all psychiatric subspecialities.

*Individual stations consisted of a ten minute interview and five minutes of individual feedback.

*Each station focussed on one aspect of the consultant interview, with stations on:

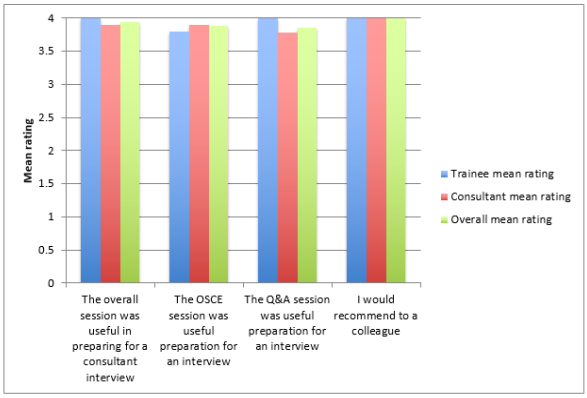
- CV
- clinical leadership and management
- audit and research
- job-specific questions
- teaching and training
- team working

*After the trainees had rotated around all six stations, a Q&A session was held, which facilitated discussion among the trainees and interviewers.

Feedback:

*Feedback forms were completed by the trainees and the interviewers.

*Respondents were asked to rate out of 4 (1 = disagree, 2 = neutral, 3 = agree, 4 = strongly agree) their agreement with these statements:
- "The overall session was useful preparation for an interview"
- "The OSCE session was useful preparation for an interview"
- "The Q&A session was useful preparation for an interview"
- "I would recommend to a colleague"



*Respondents also provided comments on their experiences:

"Desensitises trainees to the acute anxiety [of the] experience"

"Useful for both consultants and trainees"

"Constructive feedback was enormously useful"

"The consultants were all very approachable and provided useful feedback"

"Quite eye-opening"

*Interviewers suggested the inclusion of stations covering oral presentations and a full interview panel for future workshops. Trainee feedback also suggested an accompanying session on writing a CV for consultant job applications.

Reflection points:

*The workshop was resource-intensive with regards to the number of senior medical and non-medical staff involved. However, senior staff were keen to be involved and it was straightforward to identify sufficient interviewers for the session.

*Feedback from the trainees and interviewers was generally positive.

*We will explore the inclusion of additional stations on oral presentations and a full interview panel for future workshops.

Real Ward Simulation - A Non Threatening Environment for Junior Medical Students

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UNIVERSITY OF ABERDEEN

Introduction

The GMC[1] recognize that ongoing pressures on higher education and the NHS are challenging. Gaining access to patients and availability of clinical teachers adds to this. Thus, educators must strive to become innovative and imaginative when delivering medical education. An opportunity arose to provide a ward simulation session for Year 3 medical students, to provide them with a safe area to overcome challenging situations which they may encounter in the clinical environment. 4 scenarios were devised, focusing on challenging/ complex situations that Clinical Educators have encountered with students. Sessions where delivered in Aberdeen Royal Infirmary. Simulated sessions where supported by the Peer Assisted Learning Scheme (PALS).

Methods

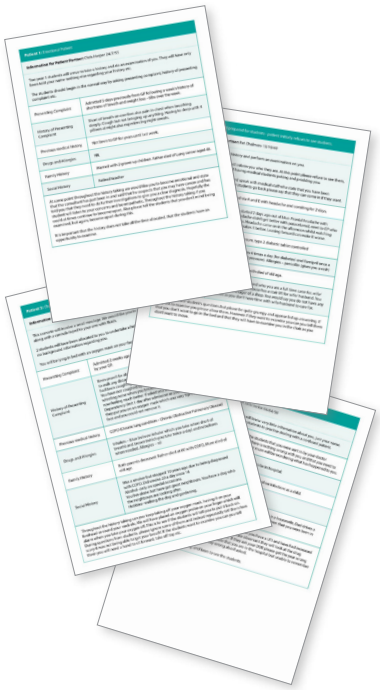
The aim of this pilot study was to gather feedback from all Year 3 students and simulated patients (SP) immediately after they had participated in the simulated ward activity. A Likert scale and free text comments were used to explore their experience of both the simulated environment and the clinical scenarios.

Results

160 students and 20 SPs completed the questionnaire. Data analysis showed that students highly valued the opportunity to experience managing challenging situations without fear of causing harm to patients or feeling embarrassed. The input from the PALS students was also very well received. In addition SP's appreciated giving students immediate feedback as well as receiving feedback from students and facilitators.

Conclusion

Given the overwhelming positive feedback, simulated ward sessions will be part of the Year 3 MBChB curriculum. We are keen to share our findings and the value of this simulated ward project. We plan to explore this further with Inter-professional Learning and believe this work is transferrable to other teaching institutes.



Acknowledgments

We would like to acknowledge and thank The Peer Assisted Learning Students (final year students) for their ongoing support and commitment to the delivery of these sessions and Dr Angus Cooper (Director of Clinical Skills, Institute of Education in Medical and Dental Sciences, University of Aberdeen) for the support and guidance for this new curriculum activity.

General Medical Council. The State of Basic Medical Education: Reviewing quality assurance and regulation. London: GMC 2010

COME HERE. GO ANYWHERE

What's the message? Common themes in Human Factors simulation debrief

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Background

Local audit of all serious clinical incidents (SCI) undertaken in 2015 demonstrated that 80% of all SCIs are related to human factors, principally communication errors. As a result of this, an Inter-professional Human Factors (IPHF) course was developed, in order to provide training to medical staff. The course was aimed at a multi-disciplinary group, consisting of staff nurses, foundation doctors, core medical trainees and consultant physicians. A half day course was provided over a two week period during August 2016 in a large district general hospital. The focus of the course was to highlight non-technical skills (NTS) in the context of medical emergencies, and highlight the importance of these in time-critical situations.

Methods

Each session consisted of four scenarios, focusing on common medical emergencies, such as major haemorrhage, hypoglycaemia, acute myocardial infarction and septic shock. These were all followed with a debrief session, where the participants explored the scenario and discussed what went well and what they found challenging. A selection of these sessions and the themes explored were randomly selected for analysis. At the end of each session, 'take-home messages' were explored, and these were also randomly chosen, in order to establish what had been achieved by the participants.

Results

From the debriefs selected at random, the discussion points were split into the four main topics: Situational Awareness, Clinical Decision Making, Leadership & teamwork and Communication & handover, as illustrated in the pie chart below. There were a variety of topics and discussion points noted throughout all debriefs chosen. In order of commonality:

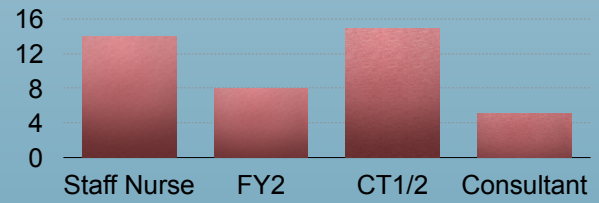
1. escalation of sick patients (42.2%), as part of clinical decision making.

2. Situational awareness and communication and handover (34.1%).

3. What makes a good team lead and knowing and defining team roles was the least discussed topic (27.4%).

Conclusions

All clinical scenarios presented to the inter-professional cohort of participants were based around complex medical cases, all of which had been encountered as real patients by members of the faculty. In spite of this, items on the debrief agenda, the subsequent discussions had and the final take home messages in each of the half day training days all related to specific categories of NTS. This demonstrates acknowledgement of their importance by the inter-professional team, over and above the traditional technical learning objectives.



Clinical Simulation for Psychiatric Trainees

Dr Thomas McCabe, CT2 Psychiatry and Dr Heather Welsh, ST6 Learning Disability Psychiatry, West of Scotland Psychiatry Training Programme

Introduction

Clinical simulation is a well established educational technique, where artificial experiences are designed to emulate the real world, to improve individual, team and system performance and ultimately improve patient safety. It is a routine part of medical education, particularly for teaching technical skills and emergency management.[1,2]

There are clear arguments for its use, to provide realistic practice in a safe environment, to improve clinical skills in complex or infrequently encountered situations and to support exam preparation. In psychiatry in particular, clinical simulation provides an opportunity to hone history-taking and communication skills, which are the cornerstones of psychiatric practice.[3,4] The final examination to gain membership of the Royal College of Psychiatrists (MRCPsych) is a 16-station, OSCE-style exam called the CASC (clinical assessment of skills and competencies), where trained actors are employed to act in each station.[5]

Aim

Organisers of the MRCPsych course in the West of Scotland introduced clinical simulation to the teaching programme for core psychiatry trainees.

Two role-play sessions are run on a weekly basis (for CT1 and CT2/3 trainees), facilitated by higher trainees. During these sessions, core trainees role play scenarios, for example playing the part of the patient or relative, while their colleagues practice their communication and interview skills. Clinical simulation was incorporated into the existing programme by employment of actors.

Methods

- A brief PowerPoint presentation on the topic (psychosis) started the session for the CT1 group. This included a refresher of symptoms and terminology and tips for asking about psychotic symptoms.
- Trainees were split into groups of 3 to 4 people with a higher trainee allocated to each.
- There was a small group discussion for CT2/3, following a semi-structured format.
- Actors were invited in and simulated scenarios took place in the groups.
- Following the simulation, feedback was provided by peers, higher trainees and actors.
- The same scenarios were used for both trainee groups, with the actors made aware of the expected level of experience of each group.
- An additional higher trainee was available to time-keep and direct actors to move between groups, to allow trainees to practice a second scenario and work with different actors.

My experience as a trainee

"The usual 'role-play' scenarios are performed with colleagues and in most cases friends. Personalities are often learned, as it is not uncommon to be within the same group of people over a few of the sessions. In many cases, the clinical situation or 'patient story' has already been encountered, making things much easier. In these situations it is difficult to get constructive feedback and often role plays can break down, perhaps due to ignorance of colleagues or indeed politeness.

My experience using the patient simulation was very positive. One of the key things was the 'real life' feel to the situation. Body language provided by the actors was much more real and this is often a key aspect to CASC stations and something that can be lost whilst practicing with friends. There was no option but to continue if getting bogged down or lost within the clinical situation which was a valuable lesson in itself, particularly for those starting out in their CASC practice.

Overall I think the best part of the session was getting feedback from the actors– who were honest about strengths and weaknesses.."

Results

- 28 core trainees completed anonymised feedback
- 11 free text comments were left. 10 were positive in their content.

Feedback question	Mean response (1 disagree – 5 agree)
The session was useful clinically	4.9
The session was useful for the exam	4.9
The presenter was a good teacher	5
I felt involved in the way the subject was taught	5
There were helpful pointers for further study	4.8
The sessions were over my head	1
The sessions were too basic	1.2

Feedback comments

"Very useful for interview skills, more realistic and helpful to have real actors"
"Excellent session with actors"
"Really useful having actors present"
"Much more useful with actors"
"Very useful!"
"Very useful. Good pointers on questions for psychosis"
"Very helpful"
"Excellent session – useful and informative"
"Concise, thorough, constructive CASC practice – feedback from actor beneficial!"
"Very good session. Much better with actor – better feedback. Should have sessions with actors more often."
"Role play is awkward enough without actors"

Conclusions

This initial session was positively received and a future session on the topic of 'difficult communication' is currently being planned. In future, clinical simulation sessions will be incorporated into the annual MRCPsych programme for core psychiatry trainees in the West of Scotland. Feedback will continue to be collated and sessions adapted to best meet the needs of trainees. Trainees in the West of Scotland found clinical simulation to be a valuable addition to their postgraduate education. Other regions may therefore wish to consider adopting a similar approach.

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Simulating a day in the life of an FY1

J McGowan[1], RD Shearer[1] , J Pollard[1,2]
[1]University of Aberdeen
[2] NHS Highland

Introduction

"Promoting Excellence" recommends undergraduates should have access to simulation based learning opportunities.[1] Thomas et al demonstrated the benefit of distraction management and error reduction using a simulated ward round.[2] We have redesigned the high-fidelity 'ward simulation experience' to meet 5 further learning outcomes based on non-technical skills including prioritisation and time management, skills expected of any foundation year 1 (FY1) doctor.

The ward simulation experience in Inverness now represents an FY1 dayshift using 3 x 25 minute scenarios:

Morning consultant/registrar led ward round
Document the WR, generate a jobs list, prioritise and delegate tasks, request radiology, prescribe

Mid afternoon
Manage an acutely deteriorating patient, continue with daily tasks, manage distractions eg bleep

Evening handover
Handover to colleagues, manage a confused patient, deal with a demanding nurse, explain CT scan results

Six students attend the ½ -day session. Two students act as FY1s in each simulation while the rest watch via a live video stream in another room. Two faculty members play various confederate roles.

Students work from a staff base on the simulated ward with 3 live volunteer patients and notional patients to simulate an FY1 workload (Picture 1).

Picture 1: In the staff base - Making phone-calls, documenting in the notes and prescribing medications.

Picture 2: Group debrief with video clips

A 30 minute facilitated debrief follows each scenario using video-clips from the simulation (Picture 2). The debrief emphasises each of our learning outcomes.

Aim

Methods

Students participating in the simulated ward experience were asked to score themselves before and after the session using 5 point Likert scales on self-perceived competence including: prioritisation, handover, writing in notes, managing the unwell patients and giving and receiving feedback.
Free-text questions included what they were able to achieve in the simulation that they were not able to on real wards and the most worthwhile aspect of the session.

Results

86 students participated during the 2016-17 academic year. Self-perceived competence in prioritisation, handover, writing in notes and managing unwell patients all increased by 1 Likert point after the session.

Students achieved a number of things they feel they have been unable to on the ward (Fig1). Importantly they felt they were able to get feedback, which is not always possible on the wards.

Fig 1: What did you achieve here today that you are unable to practice on wards?

The most worthwhile aspect of the day ranged from being able to observe and learn from others, putting skills into practice to the debrief and being able to discuss difficult situations.

Conclusions

The simulated ward experience is known to be an effective method of improving patient safety through teaching on distractions. Our redesign has led to an increase in medical student's self-perceived competence of common FY1 skills. In addition, the simulation experience is bridging a gap by providing a number of opportunities they are unable to access on their clinical placements.

References:
1. General Medical Council. Promoting excellence: standards for medical education and training. July 2015.
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Leading the future.

Virtual leadership programme.

NHS National Services Scotland

Authors:

Calum Thomson, Heather Daniels, Kathryn Dick, Gillian Irvine, Jane Oldham, Pauline Stewart, Tina Watson, Suzanne Whyte.

Aim

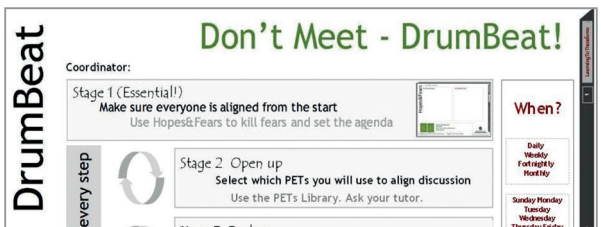
To deliver an innovative leadership programme using interactive technology and new ways of working that would reduce the impact on service and the environment.

Methods

We used QUBE to build on the Leading Better Care programme, further developing the leadership skills of band 7 nurses across NHS National Services Scotland. QUBE is a fully immersive, 4D facility that provides an environment where staff can meet virtually and facilitate group discussion, progress projects or deliver training.

- Delegates require access to appropriate software, headsets and reliable network connectivity.
- A variety of different Performance Enhancement Tools (PETs) are used for project work, to meet objectives and lead change.

Gathered in circle for group discussion



Kathryn at home (with new puppy).

Outcomes / results

- QUBE provides a more accessible and different way to truly engage people on a global level - with delegates able to participate from a range of different locations including campsites, holiday lodges, home and office, supported by facilitators in Scotland, Ireland and Brazil.
- It gives a credible alternative to face to face meetings, 2D teleconferencing, video conferencing and WebEx. Participants can meet at the touch of a mouse, with no wasted time or costs for travel.

ipad mini cut out

- Teams develop in a comfortable, innovative environment where learning is once again fun.
- It helps ongoing learning and collaboration guaranteeing sustainability by encouraging cohort members to continue to use the programme and return as facilitators on future courses.
- QUBE is a dynamic, interactive learning environment supported by the use of many different PETs, which maintain engagement and support collaboration.
- Many new projects are underway, with the first cohort busy developing their own QUBE facilitation skills to support future QUBOTS (personal avatars).
- The delivery of training and development through QUBE is not only

Simulation training for the multi-disciplinary theatre team

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Emergencies can happen at any time in the peri-operative period. It is vital that all staff have adequate skills and knowledge to deal with unexpected and rare clinical events. Multi-disciplinary low-fidelity simulation training is a valuable tool in preparing the team to deal with emergency situations and has been shown to improve outcome in Trauma Care (1) Furthermore, in-situ training is more likely to result in organisational change (2).

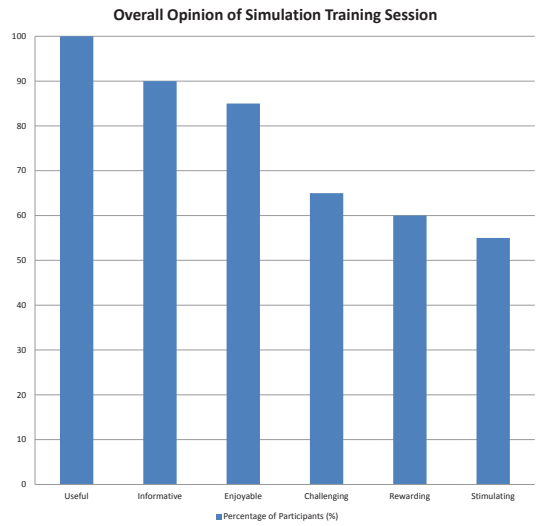
Following the introduction of revalidation for nurses there has been an increase in recognition of the importance of continued professional development for all members of the team (3). Currently 60% of the NHS England training budget is spent on doctors, who represent just 12% of the work force while 35% is spent on nurses and allied health professionals who represent over 40% of the workforce (4). By increasing investment in training, all members of the multi-disciplinary team(MDT) can feel empowered to contribute in an emergency situation.

Simulation Training

We were tasked with planning and delivering a simulation teaching session for the experienced and enthusiastic theatre team at Stracathro Hospital. Stracathro is a rural hospital offering a broad range of elective surgery including General, Urology, Plastics and Orthopaedics. As there are no critical care beds or laboratories on-site, the focus of the session was on initial management of critical incidents and preparation for transfer to a tertiary facility.

The critical incidents were: '**Malignant Hyperthermia', 'Major post-operative haemorrhage leading to cardiac arrest'** & '**Preparation for transfer to tertiary critical care facility'.**

Twenty participants took part including registered nurses, theatre practitioners, advanced scrub practitioners and healthcare assistants. Staff were divided into three groups and rotated through each scenario. Each member of the MDT played their own role during the simulation whilst one of the faculty played the role of 'hesitant anaesthetist in an unfamiliar hospital'.

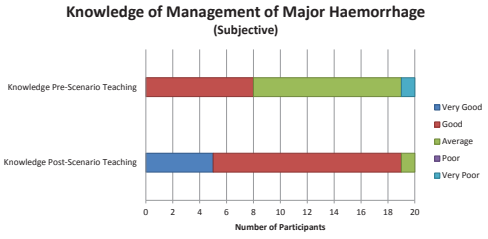


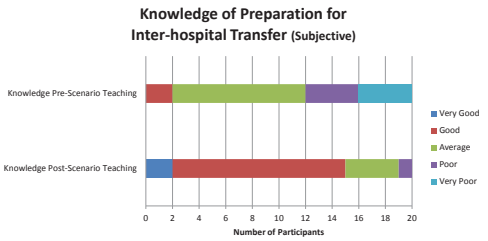
Debrief

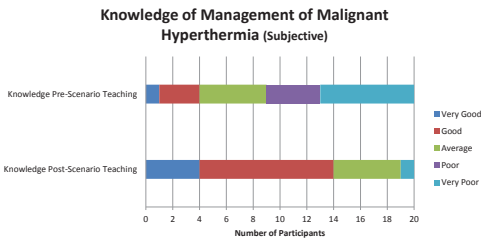
After each scenario an immediate informal debrief session allowed staff time for discussion and reflection; highlighting the following learning points.

- The importance of non-technical skills (communication, declaration of emergency, team work)
- The value of protocols in empowering all team members to engage in emergency situations.
- The challenge of performing under stress.
- The value of becoming familiar with the roles and equipment used by the other members of the MDT.

Anonymous feedback forms were completed by all 20 participants, the results of which are summarised in the following graphs:







Faculty Reflection

•Our session focussed on the practical aspects of managing clinical emergencies. Performance whilst under stress can further be improved by formal training in non-technical skills (5). To date, most non-technical training has been targeted at doctors, but there is a need to broaden access to all members of the MDT to maximise the benefits to quality of care.

Conclusion

Feedback from participants indicated that simulation training provided a valuable learning opportunity. The scenarios were described as 'realistic and intense' whereas the debriefs were welcomed as a 'relaxed and informal' way to reflect upon the learning needs of all members of the team. We plan to respond to the feedback and roll out similar simulation sessions across Tayside.

Acknowledgments

Thanks to Dr Lois Fell, Dr Hilary Robb, Dr Jayne Halcrow & Charge Nurse Morag Gray

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Evaluation of the Educational Contribution of SCRUMCAPS to Pitch-Side Practice and Practitioners

GE Hopkins[1], KE Alexander[2], J Cleland[2], PW Johnston[2]

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2. Institute of Education in Medical and Dental Sciences, University of Aberdeen

INTRODUCTION

Recognising and dealing with injuries in sport requires advanced technical and non-technical skills (NTS). With the safety of rugby facing increasing scrutiny[1], SCRUMCAPS is a course designed and run by the Scottish Rugby Union (SRU) to develop the pre-hospital pitch-side care[2] of healthcare professionals who attend amateur rugby matches in Scotland.

SCRUMCAPS has run regularly over 9 years and incorporates simulation-based education methods[3]. However, despite its popularity, formal in-depth evaluation of the course had not yet taken place. We performed a qualitative study that evaluated the course and described the learning of participants, by identifying if SCRUMCAPS had influenced their practice. This was framed in a novel way using the NTS framework[4] as a lens through which to view the data and address the study question:

Is there educational value in the SCRUMCAPS course that translates to changes in pitch-side practice?

METHODS

With the agreement of the SRU, course participants (November 2016) were offered to take part in the study. Two months after completing the course, willing participants underwent semi-structured interviews, either by phone or in person to discuss their practical experiences since completing the course. These were recorded and transcribed anonymously for thematic analysis[5] using NVivo software.

The coding approach was initially an open, inductive process to identify over-arching themes arising from the data. This was done as part of an iterative study design which allowed for consideration and rigorous exploration of all potential themes. Upon reviewing the initial themes after reaching thematic saturation, a NTS conceptual framework was applied to consider the data deductively.

Ethical approval was given by the University of Aberdeen College Ethics Research Board.

OUTCOMES

Of the 28 consented participants, 10 interviews were completed over the study period (5:5 male:female; 3:7 doctor:physiotherapist). No participant withdrew consent.

Analytical Category	Themes
Technical Skills	Performing in Practice
	Player Welfare
Non-Technical Skills	Communication
	Decision Making
	Leadership
	Situation Awareness
	Dealing with Stress
	Team Working

Table 1. Themes Arising Regarding the Course

- Participants described their technical skills being influenced by their course attendance, but also demonstrated the development of enhanced NTS.
- Participants reported that they provided their players with better and safer care, as well as building relationships and educating them.
- Their ability to deal with injuries was improved, using guidance and learning to work with more confidence and trust in their colleagues' ability and their own.
- Decision making was felt to be better informed and was enabled by a structured approach.
- Working and interacting with other trained individuals was facilitated by shared knowledge and understanding, whilst leading and following within teams was more natural.
- Awareness of their role, interactions with others and the surrounding environment was felt to be enhanced, allowing for better planning and preparation.
- Attitudes towards the role of first responder included a sense of duty, anxiety and enjoyment, with overall confidence being built and stress being reduced.

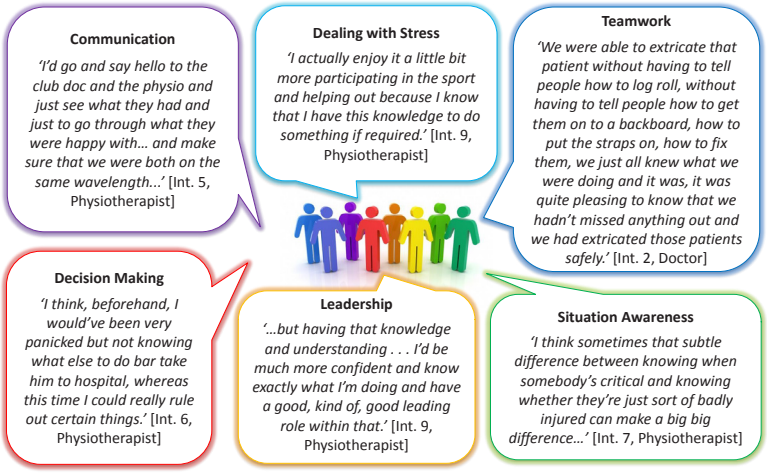

Figure 1. Participant Comments from Qualitative Interviews Regarding NTS

CONCLUSIONS

Participants perceived that their practice had changed because of SCRUMCAPS, and they subsequently delivered better care to players. With reference to Kirkpatrick's Four-Level Training Evaluation Model[6], this suggests training at level 3 (behaviour change) and level 4 (outcomes), manifesting as enhanced pitch-side care.

Using the NTS framework to consider participants' perceptions illustrated the range of ways in which SCRUMCAPS influenced more integral parts of their behaviour and attitude towards managing pitch-side injury.

A study comparing care from doctors who are SCRUMCAPS trained versus those who are not is unfeasible and unethical. However, the perceived benefits of SCRUMCAPS indicate that the focus should now be on widening the accessibility of the course, in order to provide as much of the Scottish rugby playing community as possible with care provided by confident and informed course participants.

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Widening Access to Simulation Training on a Shoestring

Dr Angus Cooper, Dr Jerry Morse, Louise McKessock
Suttie Centre for Teaching & Learning
University of Aberdeen, NHS Grampian

UNIVERSITY OF ABERDEEN
NHS Grampian
NHS Education for Scotland

Introduction

Demand from Undergraduate and Postgraduate curricula necessitated an increase in our capacity for simulation based training delivered in realistic (high fidelity) clinical areas.

Methods

A collaboration between NHS Grampian, the University of Aberdeen and NHS Education Scotland has allowed for the utilisation of real ward areas, not currently in clinical use, to enhance the learning experience and simulation training. As we knew that these areas would not be permanent, any solutions (and equipment) needed to be as mobile and cost effective as possible, whilst ensuring that the training delivered remained of the highest quality. Two ward areas have so far been used. The original ward was required, at short notice, for clinical care and was vacated and handed back within a few hours.

"Putting education, training, as well as research, development, innovation and quality improvement at the heart of our work."
Chief Executive, NHS Grampian

Results

One 'winter' ward + One modest investment = Lots of fantastic training

2 – Televisions	950.00
2 – Mobile Stands	375.00
4 – Wansview cameras	240.00
2 – Archer 1900 routers	230.00
2 – Rolls of one-way film	18.00
1 – Coffee machine	40.00
	£1,853.00

User	Total Sessions	Teaching Hours	% Use
UoA	110	514	31
NHS	153	979	59
Mixed	23	163	10
Total	286	1,656	100

"purpose built, realistic environment but with the privacy and secure safe environment to practice"
Training Participant

Conclusions:

It is possible to expand simulation training 'on a shoestring'. There are wider benefits of establishing a simulation base within clinical areas. With many NHS establishments potentially having temporary access to clinical areas which could be used for training, we believe that this model is transferrable.

Acknowledgments:
Ian Morrison, Pamela Williamson, Elaine Lyall, Marie Anderson and our volunteer Patient Partners

COME HERE. GO ANYWHERE

Sources of funding: University of Edinburgh Principal's eLearning fund, Higher Education Academy and University of Edinburgh Principal's Teaching Award Scheme

Progression towards open access environments in the teaching of statistics to undergraduate medical students

Margaret MacDougall, University of Edinburgh Medical School
(Margaret.MacDougall@ed.ac.uk)

Introduction

The need for development of statistical competence within evolving medical curricula is a challenging one to address when faced with more traditional views of what is relevant to preparing undergraduate medical students for safe clinical practice. However, if recommendations expressed by medical governance bodies to develop critical thinking skills are to be properly understood, this need must be recognized as universal across medical schools.

Methods and Results

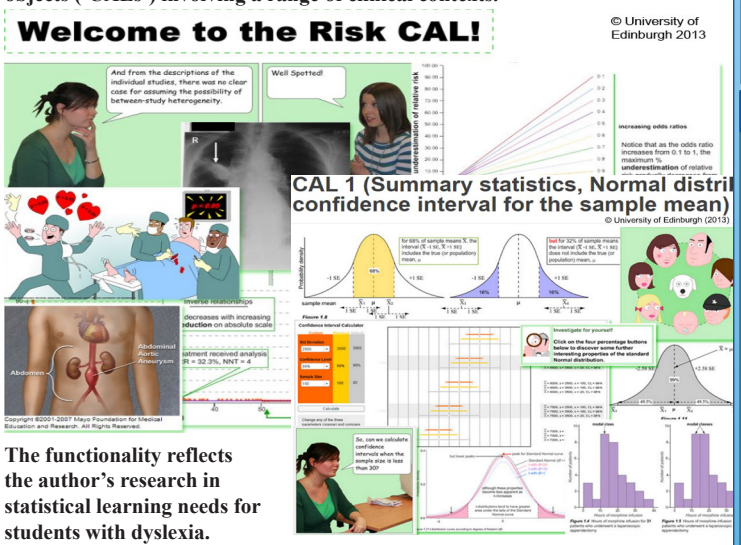
Supporting undergraduate medical students engaged in short-term curricular research projects:

The author has recently created the open access site **StatsforMedics** for presenting and further developing her longstanding statistics knowledgebase resources.

Home page for StatsforMedics
http://medstats.mvm.ed.ac.uk

Self-paced learning resources for enhancing conceptual understanding of statistics and promoting sound interpretation of risk estimates for clinical decision making:

The author has also led development of online Computer Assisted Learning objects ('CALs') involving a range of clinical contexts.



The functionality reflects the author's research in statistical learning needs for students with dyslexia.

Examples:
- Icons for **signposting** different types of content
- Learning design options for **gaining the bigger picture** versus focusing on a topic of interest through a spotlight study guide

The CAL content has been designed to:

- help steer medical students through the conceptual maze of statistical concepts for evaluating risk
  and
- improve their basic understanding of summary statistics and confidence intervals.

Access to CALs: link to sister site on homepage of StatsforMedics

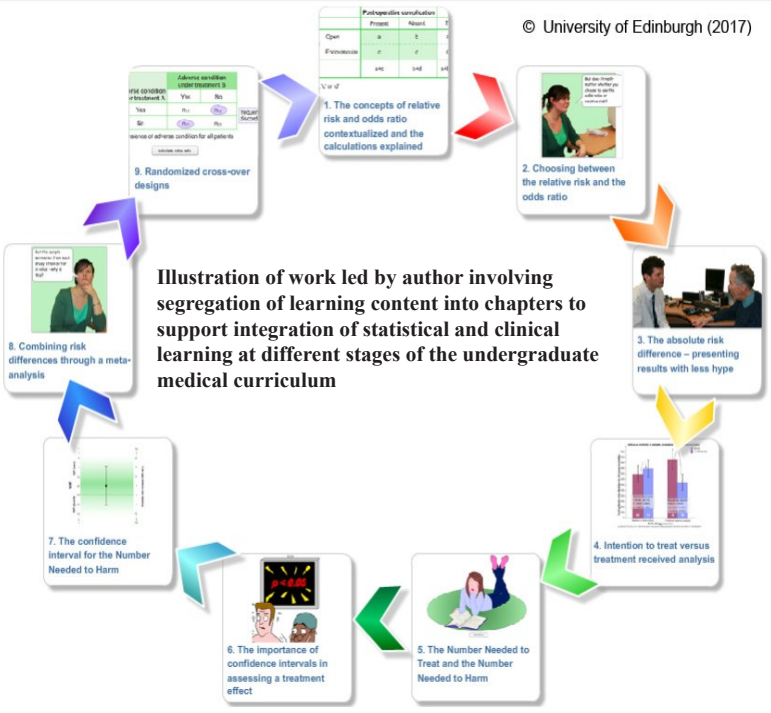


Illustration of work led by author involving segregation of learning content into chapters to support integration of statistical and clinical learning at different stages of the undergraduate medical curriculum

Conclusions

Want to collaborate?

Medical educationalists are invited to explore the new open access resources available. The author would welcome suggestions as to how she could enhance student learning experiences through further development of these resources to suit specific clinical contexts.

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Acknowledgements: University of Edinburgh (UoE) Information Services for hosting and maintaining StatsforMedics and for providing learning technology input for both CAL development work and provision of an accessible learning interface for the CAL content. Kyle H Bennett, UoE undergraduate medical student, for providing a comprehensive review of StatsforMedics as part of his Year 5 Student Selected Component (SSC5b) peer-assisted learning project, which inspired the author to create a more student-friendly learning environment.

‘Ah, so *this* is what transfusion is like in the real world....’

Enhancing safety via the evolution of simulation education for medical students

Authors: Jane Oldham, Transfusion Practitioner (NHS Lothian & NHS National Services Scotland), Catherine Innes, Transfusion Practitioner (NHS Lothian & NHS National Services Scotland), Nathan Oliver, Clinical Simulation Manager (NHS Lothian), Dr Victoria Campbell, ST7 Haematology (NHS Lothian), John Dickson, Simulation Technical Assistant (NHS Lothian), Joe Roberts, Simulation Technical Assistant (NHS Lothian), Dr Susan Baird, Consultant Haematologist & Module Organiser (NHS Lothian)

Aim

In 2016 we altered our approach to transfusion education for 5th year medical students from classroom presentation style to simulation teaching.

The stimuli for this change were:
- To improve understanding of safe transfusion sampling technique
- To help students to prepare for pre-transfusion discussions with patients
- To improve use of class time by moving from passive to active learning

The new learning programme commenced in August 2016 and is a more practical approach to prepare students for a real clinical environment. Preparatory e-learning, small group seminar and simulations are included. This poster describes the simulation element of the programme.

Student feedback has been used to evolve the scenarios. Evaluation is positive.

Methods

The new programme was designed through collaboration between the transfusion and clinical simulation teams.

Simulation design commenced with the identification of desired learning objectives:

- Discuss the risks and benefits of transfusion with a patient for whom red cell transfusion is indicated
- Understand how to order blood and provide a pre-transfusion testing sample
- Demonstrate positive patient identification when taking a blood sample for pre-transfusion testing
- Demonstrate correct labelling of a pre-transfusion testing sample

Two simulations were developed to enable the students to achieve these objectives.

Simulation Scenario One:
Exploring pre transfusion discussion and consent with an ‘actor’ patient

Debrief
=
When learning is derived from the experience

“Always check patient ID”

“How to avoid misidentification”

“What to do if ID band not on patient”

“Staying calm and communicating properly with patients”

“Knowing how to explain risks vs benefits of transfusion”

Scenario One:
Patient has agreed to a transfusion following intra-operative blood loss. Has read patient information leaflet but now has further questions about associated risks and benefits before proceeding. Two or three medical students are invited into a simulated ward setting to discuss this with the patient. The remaining students observe via video-link.

Simulation Scenario Two:
Taking a pre-transfusion sample

“Patient safety issues in taking blood”

“Making sure to label tube from patient’s wristband”

“Good communication is key”

“Allow patients to ask questions and listen”

“How to answer all the patient’s questions on transfusion”

“Focussing in a busy environment”

“Be able to focus on tasks despite outside distractions”

Scenario Two:
Busy Day of Surgery Area. Three students are briefed to act as patients who are imminently going to theatre. Remaining students are asked to take routine pre-operative transfusion samples (using simulation arms).
‘Realities’ of a clinical setting are incorporated:
- **distraction:** a ‘patient’ is ‘primed’ to be talkative and ask the student about unrelated issues during the procedure; the nurse interrupts the student to ask a question
- **time pressure:** attending nurse informs students that porter is on way to collect patient for theatre
- **background noise**: incoming telephone calls, others in room talking and moving around the clinical area

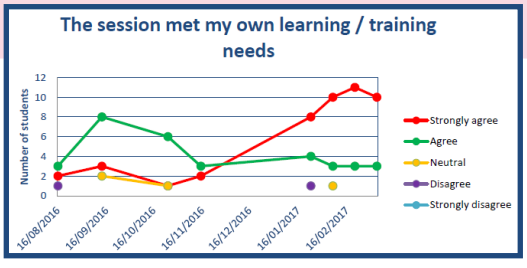
Scenario evolution and outcomes

Student evaluation has been monitored closely. Resultant changes have been made. Scenario One has remained largely unchanged whilst Scenario Two has been significantly revised.

Scenario Two (pre-transfusion sampling) is focused on safe patient identification and sample labelling. We initially designed this to exclude the requirement for the student to perform the venepuncture as we thought this would distract from the learning objectives. However, this led to uncertainty amongst the students as to what was expected of them.

Following a number of revisions, Scenario Two is now evaluating well and meeting the required objectives. The critical improvements to achieve this have been:
- adding in the act of venepuncture to allow students to experience the ‘continuous process’ of patient ID, sample drawing and immediate labelling
- redesigning the situation to be more ‘clinically’ authentic

This improvement is demonstrated in the graph below which shows response of students over the year as to how well the session met their own learning / training needs:



Conclusions

- Feedback from students and those delivering the teaching indicates that this method appears to offer a more authentic learning opportunity. It is anticipated that this will be more practically useful for students in a real clinical environment
- This new educational style is appreciated by both students and educators
- The transfusion team benefit by developing skills in clinical simulation teaching
- The impact of the change has not been formally evaluated

“A bit more time for debriefing”

“Longer / more sessions”

“Brilliant”

“Really well structured and I really liked the format of the session and then feedback”

“Maybe a bit more briefing pre 2nd scenario regarding forms to fill in; great session, thanks!”

Key

Students’ responses to question “what key points from today’s session will you use in your future clinical practice?” from collated feedback 2016/17

Students’ responses to question “do you have any suggestions for improving either the structure or the content of the sessions?” from collated feedback 2016/17

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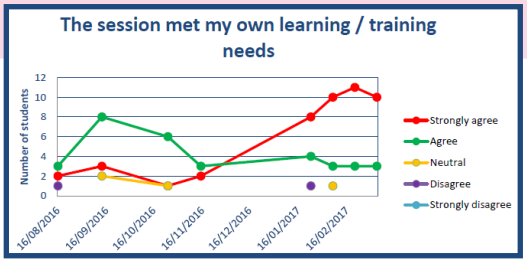

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