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Background

Simulation based medical education (SBE) is a major component of high quality medical education, an integral part of UK medical training [1], with evidence for educational benefits and patient safety [2].

SBE is especially valuable in acute situations, which arise rarely but require rapid and skilled intervention to prevent patient deterioration.

In practice there are challenges delivering SBE, usually pre-arranged sessions requiring study leave, outwith the clinical environment and usual working team. **In Situ Simulation** occurs in the clinical setting whilst 'on duty' [3].

Aims

- ❖ Involve clinical teams during usual working hours
- ❖ Deliver scenarios in under 30 minutes
- ❖ Junior doctors, Advanced Nurse Practitioners (ANPs) & AAU nurses on the on-call team participate
- ❖ Scenarios responding to needs of AAU; technical & non-technical skills
- ❖ Tailor scenarios in response to clinical incidents in AAU
- ❖ Identify environmental limitations, protocol or equipment problems in AAU

Scenario Examples:

- Hypoglycaemia
- Anaphylaxis
- Acute asthma
- GI bleeding
- DC cardioversion
- Acute kidney injury

Methods

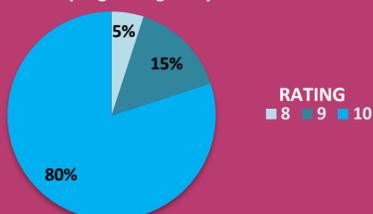
- ❖ Scenarios delivered by senior medics, using dedicated high-quality simulation technology and video equipment in AAU
- ❖ On-call team (foundation, medical, GP trainees, nurses & ANPs) take part, in their respective roles
- ❖ Acute scenario, lasting 10 minutes, followed by debrief



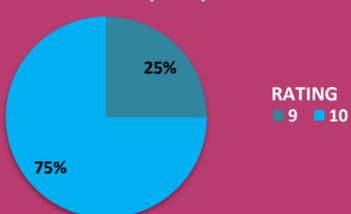
Outcomes

1. Participant reported outcomes are highly favourable (n= 24):

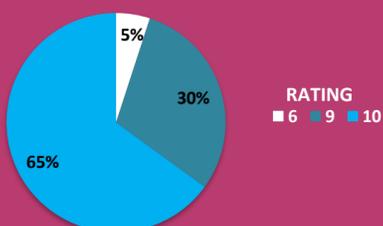
"I believe this course's content is important to progressing in my role"



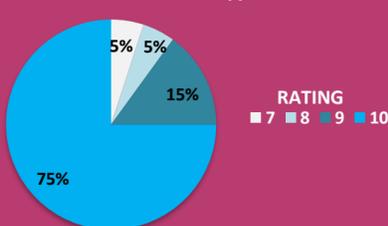
"I believe it will be meaningful to apply what I learned today to my role"



"The class environment helped me to learn"



"I feel confident that I will be able to apply today what I learned back into my job"



"Scenarios in our own clinical working environment. Able to appreciate limits and undertake what we can do to improve the set up in the department"



"We are working in roles that we take in real life emergencies"

"The realness of this situation enabled me to learn a lot about this type of emergency"

"Real situation which highlighted real escalation and protocols"

"Realistic scenario with staffing and environment. Helpful to be aware of burden on nursing staff"

"The scenarios were relevant. Definite situations we may come across"

2. Learning outcomes are explicitly linked to specific training curricula and participants are issued with an e-certificate to upload to their e-portfolio:



GP Trainee Competency / Learning Objectives
Care of acutely unwell people
Management of cardiac arrhythmias
Intervene urgently when patients present with a cardiovascular emergency
Perform a structured A-E assessment and re-assesses
Order interprets and acts on investigations; ECG, bloods including potassium
Initiate first line management e.g. oxygen, fluids, Cardiac monitoring
Recognises instability and need for shock and seeks senior support
Use a structured approach to call for help
Demonstrate effective teamwork, leadership, decision making and communication
Discuss indications for DC cardioversion in emergency and elective contexts
Discuss importance of anticoagulation duration pre and post-procedure

*Statements in bold link directly to the RCGP curriculum

3. As a direct consequence of our programme, we have implemented several changes in AAU. For example:

- ❖ Higher strength dextrose now available
- ❖ Hypo-box now stored in a consistent position
- ❖ Knowledge of how to activate the Major Haemorrhage Protocol



Conclusions

In-situ simulation in AAU is an efficient, pragmatic, locally delivered programme which focuses on quality improvement for education and patient safety.

Future priorities are to maximise participation, develop scenarios tailored to the needs of AAU and participants, and develop ways to demonstrate benefits for education and patient safety.

References

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- McGaghie W C, Issenberg S B, Barsuk J H et al. A critical review of simulation-based mastery learning with translational outcomes. Medical Education;48(4):375-85. (2014) <https://onlinelibrary.wiley.com/doi/epdf/10.1111/medu.12391> accessed on 3/1/19
- Patterson MD, Blike GT, Nadkarni VM. Advances in Patient Safety. In Situ Simulation: Challenges and Results. In: Henriksen K, Battles JB, Keyes MA, Grady ML, editors. Advances in Patient Safety: New Directions and Alternative Approaches (Vol 3: Performance and Tools). Rockville (MD): Agency for Healthcare Research and Quality (US); 2008.

Acknowledgements

Thank you to Dr Rachel Harvey, Simulation Lead and Mr Rod McIntosh, Resuscitation Officer.