

Introduction

- Over recent years, high profile cases and audits from the Royal College of Anaesthetists have analysed critical incidents in Anaesthesia¹⁻³.
- These highlight the importance of familiarity of equipment, guidelines and the key role of teamwork and communication amongst the multi-disciplinary team (MDT).
- We have introduced a multi-modal quality improvement approach to improving these factors in our hospital which includes *in situ* simulation training.

Methods

- Since 2015, we have developed a quality improvement model addressing equipment, knowledge, guidelines and teamwork (Figure 1) targeted at all members of the MDT, both in theatre and also out with the theatre setting.

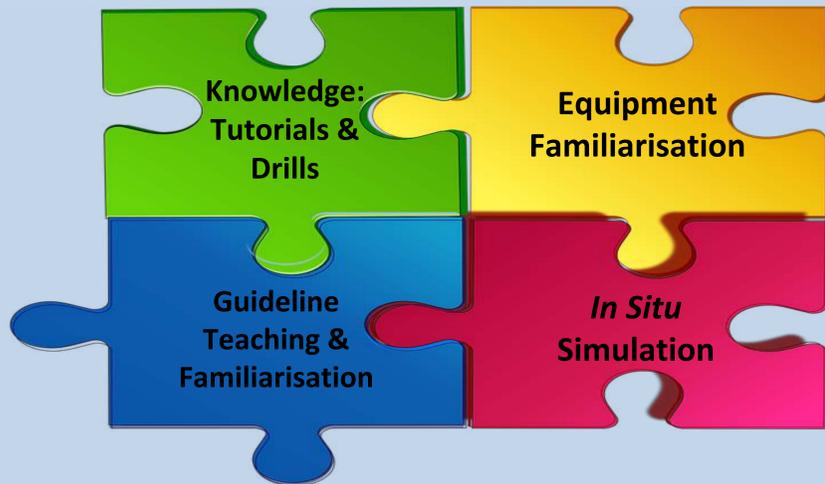


Figure 1: Quality Improvement Model

- Figure 2 summarises the actual sessions which have occurred:

	Number of Sessions	Number of Participants	Year Started
Malignant Hyperthermia Trolley Teaching	8	48	2015
Emergencies in the Electroconvulsive Therapy Suite	11	126	2016
Maxillofacial Trainee Simulation Teaching	3	13	2016
Deteriorating Patients in the Intensive Care Unit	4	15	2017
Airway Management in the Bronchoscopy Suite	5	18	2018
Critical Incidents in Theatre	4	19	2019

Figure 2: Simulation training sessions delivered since 2015

In Situ Simulation Sessions (Figure 3):

Stage 1:
Introductions; setting the scene; creating a safe learning environment



Stage 2:
Scenario is run with the multi-disciplinary team in the clinical area staff normally work



Stage 3:
Debriefing with all team members



Figure 3: Three stage approach for the delivery of simulation sessions.

Results

- Since 2015, we have delivered 35 training/simulation sessions with 239 staff participants.
- We ensure that participants reflect the make-up of our workforce (Figure 4):

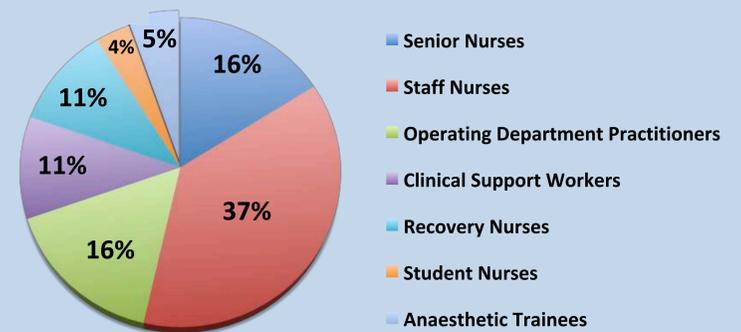


Figure 4: Percentage breakdown of participants from different staff groups.

- Participants report a number of beneficial effects from participating in these *'in situ'* simulation sessions:



- Running sessions in the clinical areas has allowed us to improve safety by:
 - Redesigning the emergency response systems in our hospital
 - Developing action cards and improved guidelines for emergencies
 - Developing dedicated boxes for the management of anaphylaxis
 - Improving communication of staff during emergencies
 - Improving awareness with **all** staff of how they can respond in theatre and other areas of the hospital during emergencies
- 80% of participants strongly agreed that participation strengthened their working relationship with colleagues.
- Participation has also improved confidence in recognising and managing emergency conditions, and locating key equipment and drugs (Figure 5):

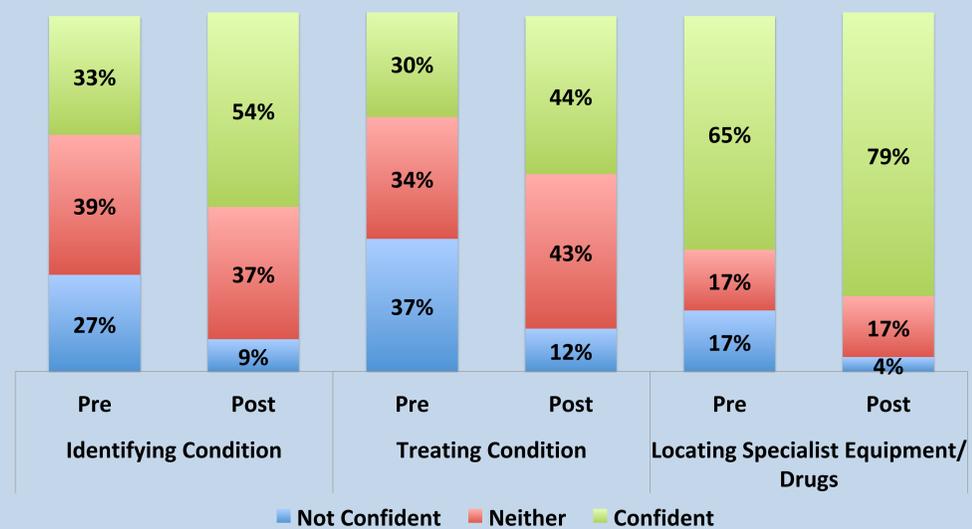


Figure 5: Confidence of staff before and after simulation sessions in identifying and managing clinical emergency scenarios, and locating specialist equipment and drugs in the clinical area.

Conclusions

- This multi-modal quality improvement approach that incorporates multi-disciplinary real-time *in situ* simulation has improved patient safety in our hospital.
- It has improved working relationships with colleagues, and familiarity with the equipment and guidelines in all our clinical areas.
- We plan to evolve our *in situ* simulation programmes to widen participation with our colleagues in Obstetrics, Surgery and Respiratory Medicine.
- We encourage other teams to develop this model where *in situ* simulation is incorporated with other strategies to improve quality.

References

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- Bromiley M. The husband's story: from tragedy to learning and action. *BMJ Qual Saf* 2015; 24(7): 425-7.

We thank all Faculty, Simulation Staff and Clinical Managers who have supported the delivery of simulation training in our hospital. We also thank all participants for engaging in these simulation sessions and highlighting areas for development in our hospital which has resulted in improved patient safety and quality.