

# Using Simulation Teaching To Improve The Management Of Critical Events In Electroconvulsive Therapy (ECT)

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## Introduction

Simulation-based education can provide essential training opportunities to practice the management of critical events in anaesthesia in a controlled environment. In our unit we have identified a gap in training for critical incidents which might occur during ECT, including anaphylaxis, malignant hyperpyrexia (MH), prolonged seizures and airway emergencies.

## Methods

A teaching programme was created for the ECT multidisciplinary team consisting tutorials and practical teaching sessions, followed by simulated emergencies within the ECT suite. The programme covers the recognition and management of emergencies, equipment and drugs and essential non-technical skills such as team work, communication and situational awareness. Implementation of this initiative has provided an opportunity to test our systems and our ability as a unit to respond to emergencies in ECT.

## Outcomes

Our simulations have identified the need to:

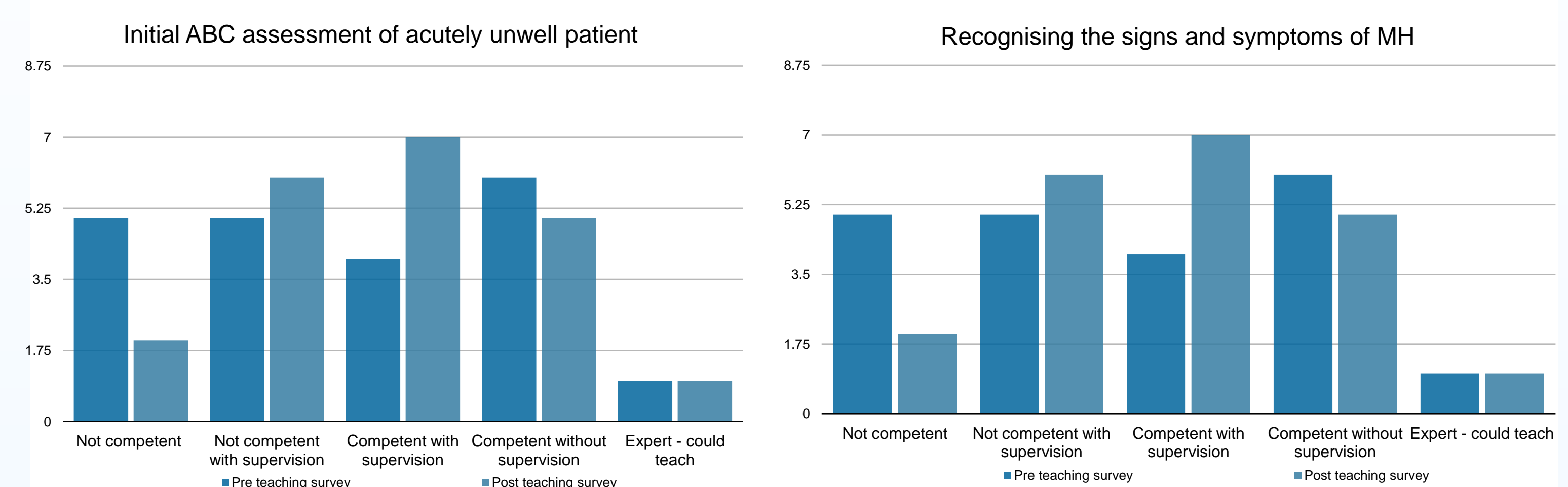
- provide clear signage directing emergency responders to the ECT suite
- update the emergency bleep list with switchboard
- develop an MH trolley to facilitate easy access to necessary drugs and equipment - helping to improve adherence to Scottish ECT Audit Network guidelines for speed of response to emergencies such as MH. In our last simulation the MH trolley arrived in the ECT suite within 4 minutes
- role out further training in the preparation of dantrolene.

**Figure 1:** Simulation in progress



## Feedback

The highlight of our programme has been simulated emergency scenarios in the ECT suite. Effectiveness of these sessions has been assessed through pre and post session candidate feedback. Comparing data from our surveys showed an improvement in self-reported competence across five key areas of emergency management but in particular that involving MH.



The greatest improvement is seen in those participants who, prior to teaching, felt themselves to be not competent or to have no experience. Interestingly we have also shown that candidates expressing high levels of competence have gained insight into the complexity of MH management in a remote setting and have scored themselves lower in our post teaching surveys.

All candidates agreed that regular teaching on MH would be beneficial. Other positive feedback emphasised:

- the use of real time simulation
- working through the administration of dantrolene
- improved team working across specialities
- involvement of all members of the team
- and experience of remote site anaesthesia.

**Figure 2:** The MH trolley



## Conclusion

Our programme has received a very good response from all participants and we will continue to audit this. Participants have reported our sessions are well run, of good quality and relevant to their individual clinical roles and responsibilities. Staff have also stated that the sessions have improved their confidence in dealing with emergency situations. They feel these sessions should be a regular and mandatory part of their job. With the success of this initiative we are planning to expand this programme to other remote anaesthesia sites within our hospital. We also plan to roll out in situ simulation for critical incident management within our main theatre complex.

## References

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