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UNIVERSITY HOSPITAL WATERFORD (UHW) ANAESTHESIA DEPARTMENT'S PREPAREDNESS FOR MANAGING ANAESTHETIC CRISES: A QUALITY IMPROVEMENT PROJECT

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University Hospital Waterford (UHW) Anaesthesia Department's Preparedness for Managing Anaesthetic Crises: A Quality Improvement Project

Introduction

The project was conducted in the Operating Theatre Complex, University Hospital Waterford, Ireland, to evaluate the department's current preparedness for three anaesthetic crises: anaphylaxis (1), local anaesthetic toxicity (2), and malignant hyperthermia (3). These crises were selected because they are classified as high equity low occurrence (HALO) events (4,5). The audit team assessed the availability of drugs (6) and treatment guidelines, and also the staff's previous experience (with real or simulated patients) and their previous training according to national standards. The results will guide future staff training and the preparation of relevant emergency medication kits.

Methods

Multiple data collection tools (three questionnaires including a direct observation checklist) were employed. The audit covered all operating theatres and the anaesthetic clinical staff who were available during the study period (consultants, non-hospital consultant doctors (NCHDs), and nurses). Nine consultants, 16 non-consultant hospital doctors (NCHDs) or trainee and 30 nurses were included in the study. The google forms below shows the questionnaires and the direct observation checklist

Table 1. Questionnaires and Direct Observation Checklist

1. Consultant questionnaire

<https://forms.gle/SUbuY8UVUbaPx4VC7>

2. Non-consultant hospital doctor (NCHD) Or Trainee questionnaire

<https://forms.gle/L3veCZm5vynuCnzK7>

3. Nurses' questionnaire

<https://forms.gle/k1npNy4eERJGweVh8>

Results

1. Drug availability (adrenaline, hydrocortisone)
2. Exposure to anaphylaxis management
3. Exposure to malignant hyperthermia
4. Exposure to local anaesthetic toxicity
5. Ability to locate Dantrolene, Intralipid and the Department Guidelines*

(Anaesthetic Nursing prepare and sign the emergency drugs trolley on daily basis. They were not included in the assessment)

Discussion and recommendations

As anticipated, the consultants had greater exposure to the anaesthetic department's crises than the NCHDs and nurses. Most of the consultants' and the nurses' exposure was largely based on real cases, whereas the NCHD group had mainly been exposed to simulations. Across the board, the nurses had minimal exposure to simulations. The patterns of exposure to malignant hyperthermia and local anaesthetic toxicity were similar, with 55.6% for the consultants, followed by 12.5% for the NCHDs and 6.7% for the nurses. Most of the consultants' experience was based on simulations (7). Less than 50% of the NCHDs were able to locate the Dantrolene and Intralipid if they were needed. Of the nurses, only 23% could locate the Department Guidelines. Ensuring that every member of staff is aware of the location of emergency drugs and of the department's guidelines is vital and should not be assumed. The currently available guidelines need to be replaced with an updated version. Presenting regular interprofessional simulations will improve the staff's knowledge, experience and teamwork skills (8).

Appendix

- The pictures indicate the location of the emergency drugs (Dantrolene, Intralipid & the Department Guidelines).
- The Quick Reference Handbook (QRH)

References

1. Association of Anaesthetists. Quick reference handbook (QRH). Anaphylaxis, v5 2022. p. 3-1.
2. Association of Anaesthetists. Quick reference handbook (QRH). Local anaesthetic toxicity, v12019. p. 3010.
3. Association of Anaesthetists. Quick reference handbook (QRH). Malignant hyperthermia crisis, v22022. p. 3-8.
4. Association of Anaesthetists. Quick reference handbook (QRH). April 2022.