

The Development of an Anaesthetic Crisis Manual for Acute Critical Events: A Pilot Study

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Abstract : Background: While emergency manuals and cognitive aids (CA) have been used in high-hazard industries for decades, this has been a nascent field in healthcare. CAs can potentially offset the large cognitive load involved in crisis resource management and possibly facilitate the efficient performance of key steps in treatment. A crisis manual was developed based on local guidelines and the latest evidence-based information and introduced to a tertiary hospital setting in Singapore. Hence, the objective of this study is to evaluate the effectiveness of the crisis manual in guiding response and management of critical events. Methods: 7 surgical teams were recruited to participate in a series of simulated emergencies in high-fidelity operating room simulator over the period of April to June 2018. All teams consisted of a surgical consultant and medical officer/registrar, anesthesia consultant and medical officer/registrar; as well as a circulating, scrub and anesthetic nurse. Each team performed a simulated operation in which 1 or more of the crisis events occurred. The teams were randomly assigned to a scenario of the crisis manual and all teams were deemed to be equal in experience and knowledge. Before the simulation, teams were instructed on proper checklist use but the use of the checklist was optional. Results: 7 simulation sessions were performed, consisting of the following scenarios: Airway fire, Massive Transfusion Protocol, Malignant Hyperthermia, Eclampsia, and Difficult Airway. Out of the 7 surgical teams, 2 teams made use of the crisis manual - of which both teams had encountered a 'Malignant Hyperthermia' scenario. These team members reflected that the crisis manual assisted allowed them to work in a team, especially being able to involve the surgical doctors who were unfamiliar with the condition and management. A run chart plotted showed a possible upward trend, suggesting that with increasing awareness and training, staff would become more likely to initiate the use of the crisis manual. Conclusion: Despite the high volume load in this tertiary hospital, certain crises remain rare and clinicians are often caught unprepared. A crisis manual is an effective tool and easy-to-use repository that can improve patient outcome and encourage teamwork. With training, familiarity would allow clinicians to be increasingly comfortable with reaching out for the crisis manual. More simulation training would need to be conducted to determine its effectiveness.

Keywords : crisis resource management, high fidelity simulation training, medical errors, visual aids

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