THE UNIVERSITY OF ARIZONA College of Nursing

IMPROVING PERIOPERATIVE STAFF CONFIDENCE AS EMERGENCY MANUAL READERS DURING OPERATING ROOM EMERGENCIES

Sarah E. Boisen, MSN, RN

Abstract

Objectives

- Improve multidisciplinary perioperative staff confidence in assuming the role of emergency manual (EM) reader during operating room (OR) emergencies
- Determine whether training on the role of reader would increase multidisciplinary perioperative staff intent to trigger EM use during emergencies

Purpose

- ***Question***—for perioperative staff, will an educational session on emergency manual cognitive aids improve confidence in assuming the role of reader during an operating room emergency?

Background/Significance

- Operating room (OR) emergencies are rare, but stressful, high risk events.
- Stress results in a significant cognitive burden, negatively impacting memory, resulting in the omission of key steps, failure to adhere to best practices, delayed treatment and adverse patient outcomes.
- Emergency manual cognitive aids (EM) are evidence-based, context-specific adjuncts that don't replace clinical judgement, but supplement decision making.
- EMs relieve the cognitive burden, outline an intervention plan, prevent missed critical steps and promote team synergism
- Adherence to lifesaving steps is 4-6x greater with EM use than without (Simmons & Huang, 2019 and exhibit a decrease in omission errors by 75% (Goldhaber, Fiebert et a., 2020). Additionally, technical and non-technical team performance is improved (Groombridge et al., 2019).
- The EM reader is an adjunctive role to the team leader that facilitates triggering manual use and ensures adherence. This significantly increases the completion of critical action steps, overcoming 90-100% of harmful oversights (Simmons, 2019).
- If a reader doesn't emerge, EMs fail to be triggered into use
- Currently, little consensus exists on the ideal individual for this role.

Author Contact

Sarah Boisen,
boisens@arizona.edu

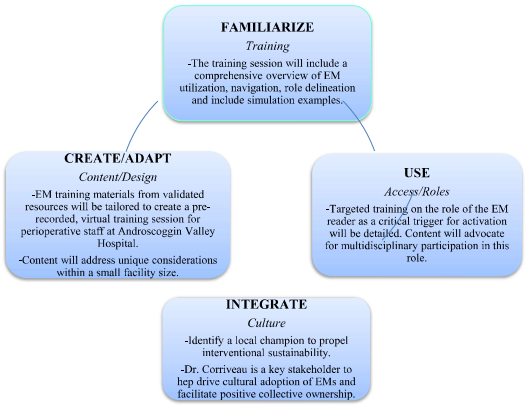
References

Methods

QI Project Design & Intervention: A pre-post-test was administered to assess for changes in confidence and intent to use following an educational intervention

Assessment Tool: Qualtrics survey software was utilized to collect data that included a combination of dichotomous and Likert-style ranking questions

Participant Involvement: Seventeen participants from a variety of perioperative disciplines participated in this project, including medical assistants, registered nurses, student nurse anesthetists, certified registered nurse anesthesiologists and surgeons. The majority had >10 years of experience.



Results

Baseline Characteristics

- All but one had experienced an OR emergency in the past.
- Around 50% of participants had received formal EM training in the past.
- Around 60% of participants had observed EM use in the past for an intraoperative emergency.
- Pre-intervention, only 50% of participants were aware that any staff could assume the role of EM reader and trigger EM use.

Pre-survey Results

Question	Question 6	Question 7	Question 10	Question 11	Question 12
Mean	3.706	4.294	3.647	2.706	3.294
Standard Deviation	1.448	0.849	1.169	1.047	1.105

Post-survey Results

Question	Question 6	Question 7	Question 10	Question 11	Question 12
Mean	4.588	4.647	4.588	3.941	4.176
Standard Deviation	0.712	0.493	0.712	1.029	1.015

Discussion

Significance: Pre-test and post-test scores revealed a statistically significant improvement in positive responses for questions assessing participant:

- Q6: Likelihood to use an EM if available ($p<0.026$)
- Q10: Likelihood to trigger emergency manual (EM) use during an operating room emergency ($p<0.01$)
- Q11: Confidence in EM navigation ($p<0.01$)
- Q12: Confidence in assuming the role of EM reader ($p<0.01$)
- Likelihood to use EM if available ($p<0.026$)

Effect Size: A Cohen's d test found a large effect size ($d>/=0.8$) for all questions that showed an improvement in positive responses

Summary: These findings suggest that a multidisciplinary educational training session improves clinician knowledge base, reinforces the importance of EMs, improves the likelihood of their use and increases confidence in assuming the reader role.

Conclusion

- While printing and placing emergency manuals (EMs) in operating rooms (ORs) is a necessary first step towards improving accessibility and awareness, the absence of focused training fails to create a culture of confidence that results in an intent to use when emergencies do arise.
- This project demonstrates value of multi-step, multidisciplinary implementation processes to support staff in confidently triggering and utilizing EMs as a tool during OR emergencies.
- Implications of this project highlight the value of educational initiatives via-multi-step processes. Sustainability efforts recommend including future opportunities for hands-on simulation training that permits the translation of knowledge into practice across disciplines.