

Operating Room Fire Management Simulation and Instructional Video

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Introduction

- High-fidelity simulation (HFS) is beneficial in the development of competent nurses by allowing students to experience high-impact low-frequency (HILF) clinical events in a zero-risk environment.
- Operating room fires are infrequent, but life-threatening events for the patient and staff members.
- About 650 surgical fires are reported annually
 - The American Association of Nurse Anesthesiologists (AANA) and the American Society of Anesthesiologists (ASA) have identified surgical fire prevention recommendations as well as algorithms to guide providers in responding to an airway fire
- Although education for Certified Registered Nurse Anesthesiologists (CRNA) is comprehensive, the likelihood of students experiencing an operating room fire is low.
- Using HFS to educate students about HILF events has been shown to improve clinical performance and enhance confidence in high stress situations.

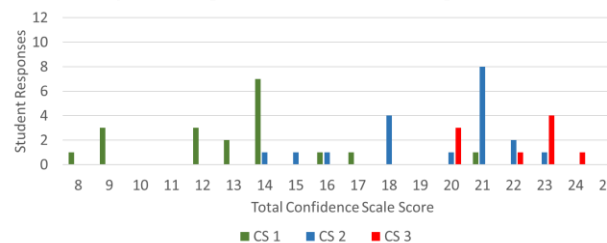
Purpose

- The aim of this project is to enhance student response to HILF events such as an operating room fire by integrating an evidence-based instructional video to go along with didactic work and HFS
- Clinical question: Does integrating evidence-based instructional videos and HFS improve student knowledge of operating room fires as well as psychomotor and critical thinking skills necessary to manage this HILF event?

Literature Summary

- The function of pre-briefing is to prepare the student for the simulation experience. It orientates the student to the simulation environment, what roles they will assume during the simulation, and how they will be evaluated. The debriefing occurs immediately after the simulation and has been found to reinforce knowledge gained during the simulation.
- Experiential learning from simulation needs to be evaluated and supported at the end of the scenario (debriefing) to ensure that participants have learned the intended objectives.
- Before implementing a newly developed scenario with learners, it is recommended to practice the scenario with other facilitators.
- Facilitators should stick to a script and avoid improvising scenarios unless all facilitators have the experience and clinical knowledge to make unrehearsed changes.
- A major benefit of practicing HILF events in the simulation setting is there is not risk associated with it. High-fidelity simulation improves team dynamics, performance, and confidence when handling real life scenarios.

Confidence Scale for
Operating Room Fire Management



Implementation

- Prior to a formal topic lecture, 5-questions confidence scale questionnaire was administered to students to determine baseline knowledge about OR fire.
- After the lecture, students viewed a best-practices video and completed a second 5-question confidence scale questionnaire to test knowledge acquisition
- Learning objectives and simulation expectations were shared with students prior to the simulation experience, and a pre-briefing was used to orient students to the high-fidelity simulation experience
- Faculty evaluated clinical reasoning and psychometric skills during the airway fire simulation event
- Students completed a post-simulation 5-question confidence scale questionnaire to test knowledge acquisition again.

Recommendations

- Based on this project, it is recommended that students have the opportunity to practice HILF events in the simulation lab
- High fidelity simulation can be combined with didactic work as well as best practice videos to improve student confidence in handling HILF events
- HILF events should be practiced by providers throughout their career to maintain skills

Conclusion

- A steady increase in confidence scales was witnessed with each activity completed by students
- Limitations to this project include:
 - Willingness of students to participate
 - Inability to test knowledge acquisition on a venerable population
 - Accuracy of recreating a fire in the simulation lab
 - Time constraint for students being able to rotate through CRNA role during simulation