Educating the 2018 Cohort of Student Registered Nurse Anesthetists on the Diagnosis and Management of Perioperative Bronchospasm using a Simulation Scenario

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- Research by Green, Tariq and Green (2016) compared anesthesia to the aviation industry.
- In both industries, the patient entrusts their lives to both the pilot and the anesthesia provider and there is minimal risk for error.
- Improvement in the safety of the aviation industry is linked to the routine use of aviation simulators during pilot training (Green, Tariq & Green, 2016).
- Inherently, simulation training has now become an adjunct to classroom instruction and clinical experience in the anesthesia curriculum.

Problem

- A perioperative bronchospasm is an uncommon event and potential anesthetic emergency that can lead to catastrophic patient outcomes from hypoxia if not corrected in a timely manner.
- Differential diagnosis from other respiratory complications, treatment, as well as the infrequent occurrence of a perioperative bronchospasm may pose a challenge for the novice provider.

Project Description

This capstone will assess the current knowledge and educate the class of 2018 cohort of student registered nurse anesthetists (SRNA) at Adventist University of Heath Sciences on the physiology, diagnosis, and management of perioperative bronchospasm through the use of a power point presentation and simulation scenario to augment the didactic course work.

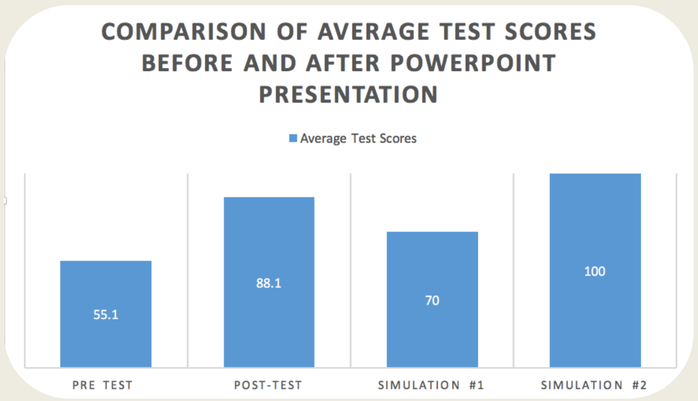
Learning Objectives

At the end of this session, the 2018 cohort of student registered nurse anesthetists (SRNA) will have an increased knowledge and clinical application on the perioperative management of a bronchospasm.

Literature Review

- Authors concluded that fatal consequences of bronchospasm can be caused by substandard care, inadequate practice, and system failures
- They also reasoned that the use of simulators can help compensate for the low frequency of perioperative bronchospasms that will occur with the average practitioner
- Incidence of bronchospasm during anesthesia- 1.7 per 1000 patients
- 2008 American Society of Anesthesiologist (ASA) Closed Claims database:
  - Adverse respiratory events 23% of the closed claims.
  - Of these adverse events, bronchospasm was only 1%.

Outcomes



Conclusions

- The mean test scores significantly increased from the pre-test (55.1) to post-test (88.1).
- Therefore, it can be concluded that there was a significant increase between the pre-test and post-test average scores.
- Mean scores on the simulation scenario rubric scores similarly improved from pre-presentation (70) to post-presentation (100).
- The statistical analysis demonstrated that there was a significant increase from the pre and post-test evaluations as well as pre and post-simulation performance.
- Moreover, it can be implied that the method of teaching, which was a PowerPoint presentation was an effective tool in educating the 2018 cohort of SRNA's at Adventist University of Health Sciences on the diagnosis and management of a perioperative bronchospasm.

References

*see back of poster