Implementation and Evaluation of Student-Led Instruction on Airway Management in the LVHN Surgery Clerkship.

Meera Ramsooksingh MS  
USF MCOM- LVHN Campus, Meera.Ramsooksingh@lvhn.org

Joseph J. Stirparo MD  
Lehigh Valley Health Network, Joseph_J.Stirparo@lvhn.org

Follow this and additional works at: https://scholarlyworks.lvhn.org/select-program

Part of the Medical Education Commons

Published In/Presented At  

This Poster is brought to you for free and open access by LVHN Scholarly Works. It has been accepted for inclusion in LVHN Scholarly Works by an authorized administrator. For more information, please contact LibraryServices@lvhn.org.
Implementation and Evaluation of Student-Led Instruction on Airway Management in the LVHN Surgery Clerkship

Meera D. Ramsooksingh, MS and Dr. Joseph J. Stirparo, MD
Department of Surgery
Lehigh Valley Health Network, Allentown, PA

Introduction

- Airway management is an educational topic that the American College of Surgery and Association for Surgical Education considers a universal skill for all physicians and medical students regardless of level in medical education.
- USF SELECT students have minimal exposure to airway management prior to the start of fourth year. Current education consists of:
  - BLS certification at the start of first and third year.
  - Half-day rotation with anesthesia during the surgery clerkship.
  - Logbook requirements of 5 intubations during the surgery clerkship.
- Limitations to gaining additional clinical experiences during the clerkship include:
  - Feasibility in teaching more than one student per anesthesia team at a time (Figure 1).
  - Gaining trust of the anesthesia team with limited knowledge and/or experience in airway management prior to medical school.
  - Other ongoing academic requirements, e.g., SELECT education and the Family Medicine clerkship.

Project Goals and Objectives

- Introduce a student-designed workshop to teach fundamental principles of airway management during the Surgery clerkship.
- Incorporate simulation to practice skills on airway management trainers.

Methods

1. Formed an implementation team and obtained equipment at no cost from the LVHN Simulation Center and Surgery Education Center.
2. Participated in clinical rotations in anesthesiology at the University of Pittsburgh, University of Miami, and LVHN. Training included simulation education as a learner at the WISER Simulation Center in Pittsburgh, PA.
3. Facilitated workshops on expert-recommended topics during the clerkship lecture period on Friday afternoons.
   - Airway anatomy and assessment
   - Physiology of oxygenation and ventilation
   - Optimal bag-valve-mask (BVM) ventilation
   - Placement of airway adjuncts
   - Chin-lift/jaw thrust
   - Intubation with direct laryngoscopy (DL)
   - Insertion of a laryngeal mask airway
4. Applied the Delphi Method to revise the workshop based on student feedback for each subsequent block (Figure 2).
5. For quality assurance, experts in airway management during the clerkship.

- Dr. Thomas McLoughlin, LVHN Dept. Chair of Anesthesiology
- Dr. Charles Worrell, LVHN Emerg. Med. Clerkship Director

Evaluation student’s comfort to perform skills and technical errors before and after instruction (Figures 3 and 4).

- Gaining trust of the anesthesia team with limited knowledge
- Logbook requirements of 5 intubations during the surgery clerkship.
- BLS certification at the start of first and third year.

Results

- The Delphi Method is a useful strategy to identify and quickly respond to educational needs based on student feedback.
- Student-reported difficulties when rotating with the anesthesia team are likely due to having minimal prior knowledge and experience.
  - Not having enough knowledge prior to performing airway management skills on patients.
  - Not able to easily follow sequence of events during airway management.
  - Not knowing how to get involved or how to ask to get involved.
  - Earning trust of the anesthesia team to get more clinical experience.
- Limitations to gaining additional clinical experiences during the clerkship include:
  - Increased comfort in performing BVM ventilation (Figure 4).
  - Made fewer errors in BVM ventilation and DL on an airway management trainer following instruction (Figure 4).
  - Students reported taking more initiative to get involved with airway management in the OR due to increased knowledge.
  - Students reported having increased understanding of the sequence of events during induction of anesthesia.

Conclusions

- Introducing a workshop that incorporated simulation and was based on student feedback was a feasible and effective strategy to give medical students more opportunities to practice airway management without:
  - Jeopardizing patient safety.
  - Interrupting routine workflow of the anesthesia team.
- There was an empirical improvement in student knowledge resulting in increased understanding and involvement in airway management when providing patient care.
- Future Improvements:
  - Scheduling the workshop earlier in the clerkship: students felt that they would have benefited from the workshop prior to their anesthesia rotation.
  - Incorporating validated simulation education on airway management to enhance medical education.
  - Due to participants’ biases and group dynamics, caution should be exercised when interpreting and responding to generalizations, e.g., student feedback about a problem using the Delphi method.

References:


© 2017 Lehigh Valley Health Network