Central Venous Catheter Insertion Comfort Amongst Residents

CPT Fred Kobylarz MD[1], CPT Marcos Aranda MD[1], CPT Elisabeth Coffin MD[1], CPT Maeghan Ciampa DO[1], CPT Jacqueline Simmons DO[1], LTC Joel Brockmeyer MD[1]

Department of General Surgery

Dwight D. Eisenhower Army Medical Center[1]

Background

- Central venous catheter (CVC) insertion is a commonly indicated procedure which residents regularly perform.
- Residents who perform simulation are more comfortable with the conduct of this skill.
- We have an ongoing simulation curriculum for CVC insertion at our institution. Three simulated exercises compose the curriculum with each including consent, identification of anatomy, sterile preparation, conduct of the procedure, identification of complications, and documentation.

Objectives

- Determine if resident comfort with CVC insertion was improved through our current simulation curriculum.

Methods

- A validated, voluntary survey was administered to first-year residents before the curriculum. The survey was re-administered six months after the curriculum was completed. Pre- and post-surveys were compared for each resident.

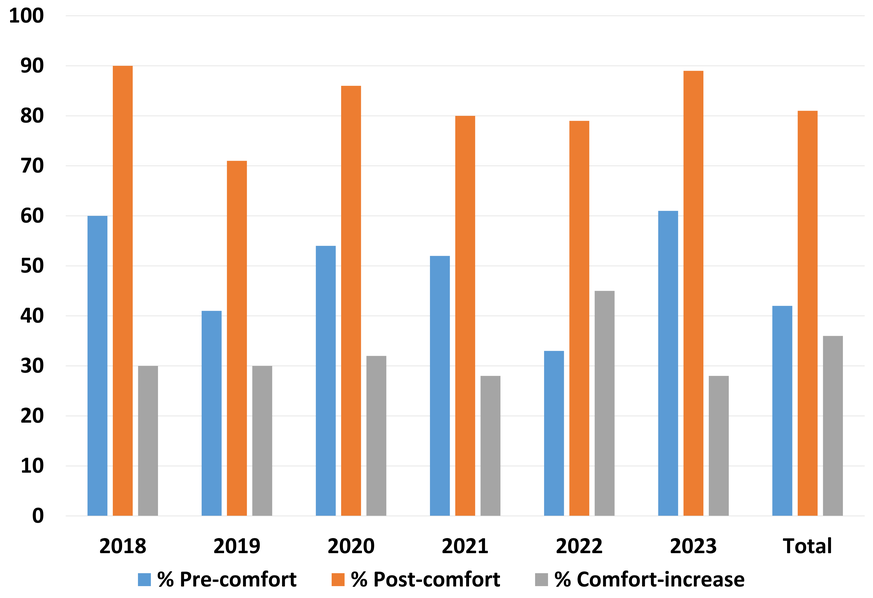
Survey

- Name:_____
- Program: _____
- PGY: _____
- Placed a central line before? Yes / NO

Comfortable with:

- Indications/contraindications for placing a line? Yes / NO
- Obtaining consent? Yes / NO
- Anatomy for central line? Yes / NO
- Equipment for central line placement? Yes / NO
- Sterile technique? Yes / NO
- Patient positioning for central line? Yes / NO
- Interpreting results? Yes / NO
- Being supervised? Yes / NO
- Being unsupervised? Yes / NO
- Managing complications? Yes / NO

Changes in Comfort Over Time



Results

- Data was collected from 2017 to 2023, a total of 57 surveys were returned.
- Confidence increased from 42.1% to 81.3% among residents.
- The largest increase in reported comfort was in indications for line placement (62.5%) and interpretation of results (59.6%).
- The least change in reported comfort was with sterile procedures (10.5%) and being supervised (12.3%).

Discussion

- Residents who completed the curriculum become more comfortable with CVC insertion.
- Comfort level increased in each training year.
- Results may have been significantly impacted by clinical duties during COVID.

Limitations

- Our study was limited by the inability to correlate results with procedural competency and patient outcomes.

Future Directions

- Future studies will examine the effect of our CVC insertion curriculum on procedural competency.

References

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