Education Module and Cognitive Aid for Amniotic Fluid Embolism Management at a Midwestern Community Hospital: An Evidence-Based Practice Project

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Background & Clinical Significance

Amniotic fluid embolism (AFE) is a rare and life-threatening obstetric emergency that requires prompt recognition and aggressive management. The lack of exposure to such a rare condition can create significant knowledge gaps among providers.

- Low incidence and high mortality
  - Estimated to occur in every two to eight out of 100,000 live births
  - Associated mortality rate of 20-60%
- Accounts for 7.5-10% of all maternal related deaths in the United States
- Leading cause of peripartum cardiac arrests

Research Question

Does the implementation of an educational module coupled with a cognitive aid designed for the recognition and management of amniotic fluid embolism (AFE) among parturient patients enhance obstetric healthcare providers' knowledge and self-efficacy in identifying and managing AFE compared to before receiving the education and cognitive aid?

Project Aims

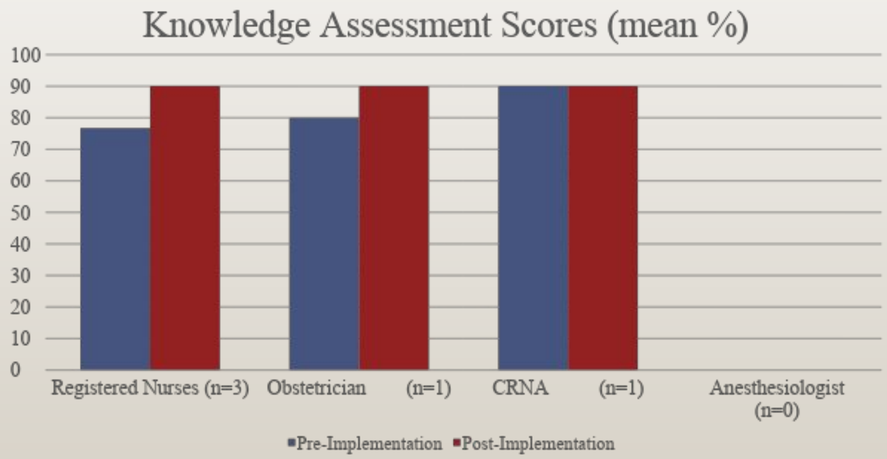
- Determine baseline knowledge and confidence of obstetric healthcare providers at NMHH regarding AFE
- Provide an evidence-based electronic education module and cognitive aid on AFE pathophysiology, presentation, recognition and management
- Determine if the module improved provider knowledge and confidence levels

Methods

- An Evidence-Based Practice (EBP) project was developed using The Iowa Model as a framework
- **Current evidence** was used to develop a self-guided online learning module using Teachable platform
- A **context-specific cognitive aid** was created for the obstetric unit
- Pre- and post- knowledge assessments evaluated using Qualtrics

Results

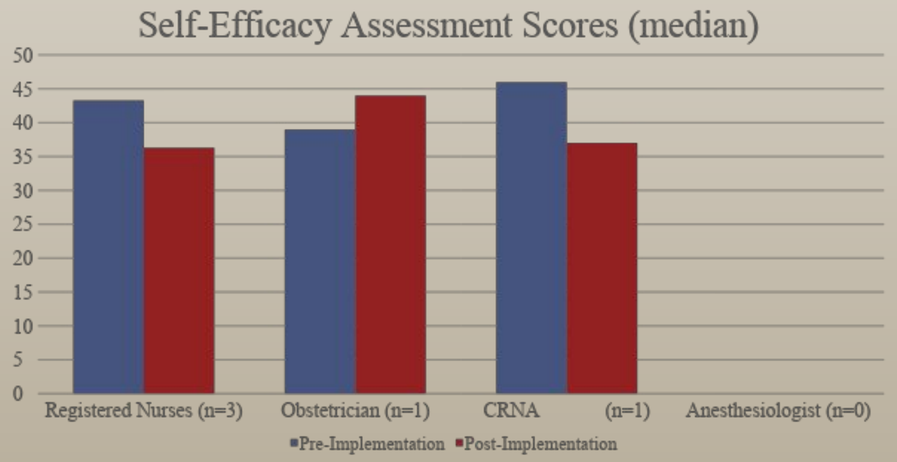
- The education module was sent to all 42 staff members responsible for caring for the obstetric patients.
- 20 providers enrolled in the module
- Only 5 providers completed the module along with both pre- and post-assessments.



Nurses (n=3)
- Pre-test: 76.7%
- Post-test: 90%

Obstetrician (n=1)
- Pre-test: 80%
- Post-test: 90%

CRNA (n=1)
- Pre-test: 90%
- Post-test: 90%



Note: a lower score indicates higher self-efficacy

Nurses (n=3)
- Pre-test: 43.3
- Post-test: 36.3

Obstetrician (n=1)
- Pre-test: 39
- Post-test: 44

CRNA (n=1)
- Pre-test: 46
- Post-test: 37

Discussion

- The small sample size and lack of provider engagement led to the inability to form conclusions and perform statistical analysis based on the data collected
- Despite the lack of statistical significance, clinical significance was observed in the improvement of the pre- and post-knowledge scores and can fuel future research initiatives toward this specific project implementation and topic
- Online implementation of the project made the module easily accessible to the staff participants

Recommendations for Sustainability

Implementation of this project should be continued at multiple institutions to increase the likelihood of provider participation. Leadership commitment to partnership will also increase participation. Training should be repeated yearly and with all new hires. A longer time frame dedicated to data collection and in-person staff training is needed.

Conclusion

This QI project succeeded in creating accessible resources and generating some interest among staff, the small sample size of five participants limited the opportunity for statistical analysis and concrete conclusions regarding the intervention's overall efficacy.

References & Link to Module

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