

ABSTRACT

Capnography is a respiratory monitoring system that assists with detecting respiratory events sooner than SpO₂. Respiratory events are often seen in the PACU setting due to medications individuals receive for surgical procedures and other risk factors. Evidence shows the need for nurse education regarding the use and benefits of capnography to better monitor the patients' ventilatory status. Nurse capnography education is essential to catch respiratory events as soon as possible and intervene to create better patient outcomes such as quickly detecting respiratory depression, hypoxemia, and hypercarbia. The purpose of this project was to improve nurses' capnography knowledge and confidence through education. This can lead to better patient outcomes. This project addresses who benefits from capnography use, what adverse effects capnography can detect and how capnography affects nurses' confidence in treating patients' current condition. Evidence supports the need for capnography education for nurses to increase its proper use, which supports the implementation of this project.

PICO QUESTION

How does an evidence-based educational program and written protocol affect nurse knowledge and practice regarding capnography and EGD procedures at one month, six months and 12 months?

LITERATURE REVIEW

The literature review for this project supported the need for nursing education regarding capnography and it's benefit to use in same day surgery. Three themes emerged from the literature:

- Capnography is More Effective at Detecting Adverse Sedation Events Early
- Nurse Education and Evidence-based Practice
- Topics that Need to be Addressed in Nurse Capnography Education
 - Obstructive sleep apnea (OSA)
 - False alarms and capnography

Capnography Use in PACU: Nurse Education Indications

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PROJECT METHODOLOGY

The goal of this MSN project is to educate McKay-Dee Hospital PACU nurses regarding capnography. Nurse education regarding capnography has been shown to be lacking, manifesting a need for implementation of an education initiative (1, 4). This project will use didactic, hands-on, and pre-meeting education.

- Pre-meeting Education: nurses will complete assigned learning modules in their learning space
- Didactic portion: a PowerPoint was developed that provides an overview of Capnography
 - Quick reference guide presented
 - Q card will be presented
- Hands-on: after didactic portion, nurses will practice using equipment in a simulation lab

Plan and Development

Approval was needed from the Same Day Surgery (SDS) manager to implement the MSN project. Once that is obtained, implementation can begin. The implemented education will be directed toward SDS PACU nurses at McKay-Dee Hospital.

- The interdisciplinary team assembled will participate in creating and finalizing the education deliverables.
- PACU nurses will have five weeks to plan for attending the staff meeting and finish the pre-meeting material.
- The staff meeting will take two hours to complete.



Figure 2

Evaluation

Three total surveys will be given to the PACU nurses. The surveys will measure nurses capnography and charting knowledge and their feelings towards its use and effectiveness.

- First survey will measure baseline knowledge. Done before any education is finished.
- Second survey will be done after in-person education. This will measure the effectiveness of in-person education.
- The third survey will be done three months post education. This survey will show what education has been retained.

In addition, chart checks will be conducted at one month, 6 months, and 12 months post-education.

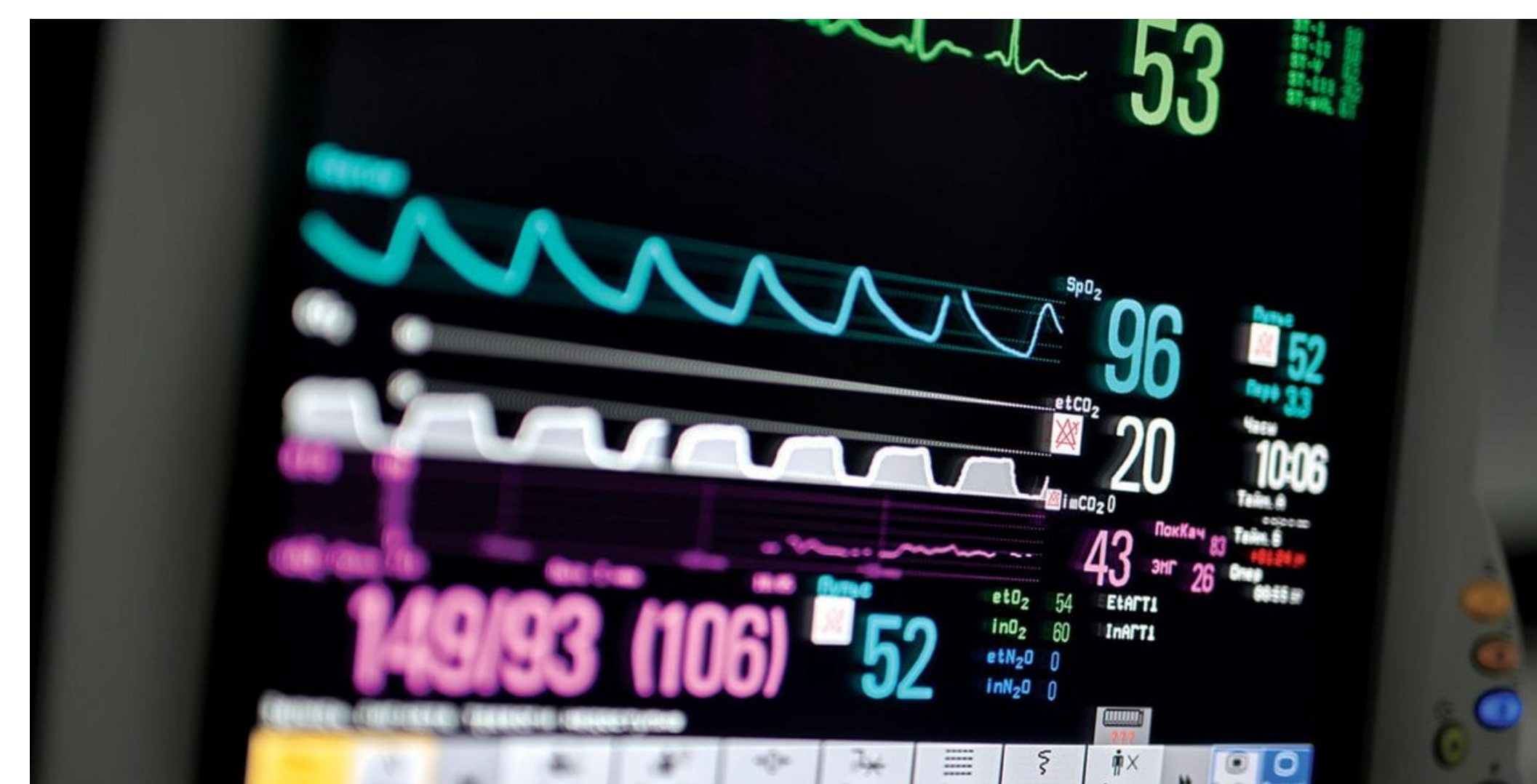


Figure 1



THEORETICAL FRAMEWORK

The ACE Star model is easy to interpret and understand (5). The five points of the model are discovery research, evidence summary, translation into guidelines, practice integration, and process, outcome evaluation (5). The ACE Star model is a guide that can help to incorporate evidence into practice. This model helps convert one form of knowledge to another while incorporating best research evidence, clinical expertise, and patient preference which are the components of evidence-based practice (5). This model focuses on knowledge transformation (3), which can be described as the application of knowledge (2). Other features of this model are that it assists with the adoption of innovation and as well as with finding nursing evidence for bedside nursing practice (3). These three strengths work well with implementing the new bedside nursing practice of capnography and educating the nursing staff to utilize its benefits.

CONCLUSIONS

The literature indicates that although capnography use is valuable, nurses lack education on how to use this new system of monitoring. Without proper education, capnography may be undervalued by nurses, which would mean that patients might not benefit from its use. Formal education provided for PACU nurses is the answer to this problem. This project will provide PACU nurses with the education and tools they need to properly and adequately run and interpret capnography monitoring machines. Capnography has been shown to be a valuable monitoring tool that has the potential to assist in better patient outcomes.

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Figures

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