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Evaluating Unexpected Outcomes with a Change in Practice

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Executive Summary

Introduction of the Problem

Quality improvement projects are intended to provide improved processes for delivering safe and effective care to patients. Most protocols can be implemented successfully, but what factors lead to an unexpected outcome? Are there modifications to make an unsuccessful change in protocol successful and yield positive results?

Evidence-based practice implementations occur in healthcare, but there is not a standardized approach to apply the change in practice or to measure success (Saldana, 2014). Saldana (2014) states that less is known about unsuccessful evidenced-based changes in practice than those that are successful. Saldana (2014) asserts that it is important to identify potential barriers to a change in practice prior to implementation to optimize the chance for success. Proctor et al. (2010) explain the relationship of implementation outcomes with service and client outcomes, and the impact that these criteria have on an intervention's success.

A small southern Illinois community hospital implemented a change in protocol to their anesthetic approach for elderly patients undergoing cataract surgery. Instead of placing an intravenous catheter in a patient with potentially difficult access, the facility used intranasal midazolam to provide sedation for the surgery. Based upon unfavorable results from both the provider and patient perspective, this change in practice was discontinued by the participating facility. This project examined why this change in practice received unfavorable results by seeking input from anesthesia providers and perioperative nurses using open-ended questions and analyzed the feedback by applying the conceptual framework for implementation by Proctor et al. (2010).

Literature Review

Nearly 2 million patients undergo cataract surgery in the United States each year (Nouvellon et al., 2010). In most of these procedures, the patients are elderly, with the median age being 75 years (Nouvellon et al., 2010). Traditionally, cataract surgery required approximately fifteen minutes, depending upon the surgeon's skill level (Nouvellon et al., 2010). Due to its relatively quick nature, there is much controversy regarding the safest and most appropriate anesthetic approach for elderly patients undergoing cataract surgery (Nouvellon et al., 2010). Cataract surgery can be performed under topical anesthesia, regional anesthesia, including needle blocks using a retrobulbar or peribulbar approach, general anesthesia, or moderate sedation (Nouvellon et al., 2010). Each of these anesthetic techniques include risks especially in the elderly patient (Nouvellon et al., 2010).

Ruzman et al. (2014) indicate that the best anxiolytic medication's onset is rapid without long-term effects allowing for a quick recovery. Midazolam, an imidazole benzodiazepine, is widely used as a sedative for various surgical procedures due to its central nervous system depression, quick onset, and limited adverse effects (Conway et al., 2016). Another advantage of midazolam is a high proportion of active drug irrespective to the route of administration (Ruzman et al., 2014). Kawanda et al. (2012) imply that intranasal midazolam administration is superior to the intravenous route due to its ease of access and avoidance of catheter placement. According to a study performed by Armenteros-Yeguas et al. (2017), the prevalence of difficult intravenous access in elderly patients exhibiting chronic illness is 59%. Despite the rapid onset of intravenous midazolam administration, Schrier et al. (2016) argue that a patient can be adequately sedated by using the intranasal route in the time that it takes to place an intravenous catheter.

With the creation of Nazolam, anesthesia providers can safely and efficiently provide adequate sedation in patients with difficult intravenous access (Schrier et al., 2016). Schrier et al. (2016) conducted a study of 16 healthy adults to compare the sedative effects of Nazolam with intravenous midazolam. Schrier et al.'s (2016) results indicate patients tolerate Nazolam administration well. Kawanda et al. (2012) studied 80 children undergoing a total of 140 surgeries with 52 children receiving intranasal midazolam for 85 surgeries and 28 children untreated for 55 procedures to analyze their levels of sedation and anxiety. Kawanda et al. (2012) found that the group receiving intranasal midazolam exhibited less struggling and crying, required less nursing assistance during the surgery, experienced less post-operative pain, and were discharged sooner than the untreated group. Although the literature indicates the effectiveness of intranasal Nazolam administration in healthy adults and children, information is sparse regarding its use in elderly patients.

After reviewing the research articles regarding the use of intranasal midazolam formulations as a sedative agent, its use is determined to be effective to perform specific surgical procedures. The review of this literature provides a basis for the efficacy of using intranasal midazolam for cataract surgery, but it does not ensure that this change in practice will be successful possibly related to the limited information regarding efficacy in older adults.

Project Methods

This project examined the reasons why this change in practice received unfavorable results. Some primary considerations during any surgery are patient safety, adequate sedation for the surgeon to perform the surgery, and patient satisfaction. By constructing a questionnaire of open-ended questions that target these topics, one can examine what made this change in practice unsuccessful by applying Proctor et al.'s (2010) conceptual framework for

implementation. Proctor et al. (2010) identify three types of interconnected outcomes in implementation research, including implementation, service, and client outcomes.

Implementation outcomes include eight concepts such as “acceptability, adoption, appropriateness, costs, feasibility, fidelity, penetration, and sustainability.” Proctor et al. (2010) used the six quality improvements identified by the Institute of Medicine to delineate service outcomes, while client outcomes include “satisfaction, function, and symptomatology.”

Goals and Objectives

1. Identify areas of concern that may make a change in practice unsuccessful
2. Provide future DNP students with information to consider prior to proposing a change in practice

Setting

The project’s setting was a small community hospital in southern Illinois. There are two anesthesia providers at this facility, and both participated in the change in protocol as well as completed the questionnaire. Two peri-operative nurses also completed the questionnaire. It is unclear how many peri-operative nurses were intimately involved in the care of the cataract surgery patients. It is also unknown how many cataract surgeries were performed using intranasal midazolam as the sedative.

Human Subjects’ Protection

According to the Human Subjects Project Questionnaire established by Southern Illinois University Edwardsville (SIUE), this proposed project was deemed a quality improvement type project and is not to be used for research purposes. Therefore, this project received exempt status from the SIUE Institutional Review Board (IRB).

Evaluation

This project examined when a change in practice is produces unfavorable results by submitting a questionnaire of open-ended questions to the clinical liaison by e-mail for anesthesia providers and perioperative nurses to complete. After the questionnaires were completed, the clinical liaison scanned and returned the documents by e-mail to the project investigator. Upon receipt of the documents, the project investigator reviewed and evaluated the responses. This process was used because the facility was not allowing non-employee visitors due to COVID restrictions. The responses were then analyzed using Proctor et al.'s (2010) conceptual framework to identify why the change in practice produced unfavorable results.

Strengths

Upon examination of the completed questionnaires, the project investigator identified areas of concern as to why the change in practice produced unfavorable results. For instance, all responses indicated that this anesthetic approach impacted the ability to control the level of sedation for the patient during the procedure. Also, the completed questionnaires identified consistent advantages and disadvantages as indicated by patients' responses to this anesthetic approach. For example, on three out of the four responses, the patients stated that an advantage of this anesthetic approach was the absence of requiring placement of an intravenous catheter. Also, on three out of the four responses, the patients stated that a disadvantage of this anesthetic approach was the dislike of the intranasal medication's taste. It was indicated on one of the responses that patients requested more anesthetic depth. These responses can be evaluated using Proctor et al.'s (2010) acceptability, appropriateness, and feasibility criteria.

Despite the limited number of completed questionnaires, both anesthesia providers who used this anesthetic approach submitted a response. Proctor et al. (2010) identify adoption, penetration, and fidelity as important concepts to consider when implementing a protocol.

Adoption applies to the “intention to try”, penetration refers to the level of participation of the protocol, while fidelity measures “adherence” to the protocol (Proctor et al., 2010). Since both anesthesia providers at this facility participated in the protocol change and completed the questionnaire, the criteria of adoption, penetration, and fidelity were met. In addition to these responses, two perioperative nurses returned a completed questionnaire. This result equates to most of the staff, both anesthesia and perioperative nursing, completing the questionnaire. Each of these participants was intimately involved with the change in practice. Therefore, their responses represent the major reasons why this change in practice produced unfavorable results.

Limitations

The setting, a small community hospital in southern Illinois, was not allowing non-employee visitors at the time of the project proposal or data collection due to COVID restrictions. Therefore, the project investigator could not conduct in-person interviews, hindering the ability to clarify any of the participants’ questions or obtain more thorough answers to some of the responses. Despite using open-ended questions, some questions only elicited one-word answers. The participants are more likely to provide more in-depth responses through verbal communication rather than a written response.

Another major limitation of this project was a small sample size. The project was conducted at a small hospital with only two anesthesia providers. Both anesthesia providers completed and submitted the questionnaire. Perioperative nurses were also encouraged to participate, but only two submitted a response to the questionnaire. It is unknown to the project investigator the exact number of perioperative nurses who cared for the patients who received this anesthetic approach. There is a possibility that more questionnaires could be collected if more perioperative nurses choose to participate in the project, but those participants most

actively involved with the change in practice have already completed and submitted a questionnaire.

Upon reflection, multiple factors may have contributed to the limited number of responses. Before implementation, it is crucial for the project investigator to identify and establish the best means of communication with the clinical liaison and project participants. For instance, scheduling an introductory project meeting and conducting individual interviews via telecommunication methods could potentially enhance data collection. During these exceptional times of pandemic response, the usual paper and pencil methods were limiting.

Impact on Practice

Identification of potential barriers, as the literature suggests, prior to implementing a change in practice is paramount in formulating a practice change. With the use of Proctor et al.'s (2010) quality improvement framework, project implementation may be more likely to produce favorable results. This project also identifies the constraints that a pandemic can have on project implementation. For instance, the project investigator may have to alter his original plan for data collection and perform alternate communication methods rather than meeting with project participants in person.

Conclusion

This project provides anesthesia staff with essential areas to consider when contemplating a future change in practice. Lessons learned from implementing a project during unconventional times can be invaluable to future DNP students and healthcare providers. It is important for the project investigator to consider all aspects that may hinder project implementation and adapt their approach accordingly.

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