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## Prearrival Phone Call Initiative to Decrease Procedural Cancellations and Delays

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# Walden University

College of Nursing

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Executive Summary: Quality Improvement  
Prearrival Phone Call Initiative to Decrease Procedural Cancellations and Delays

by  
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MS, Walden University, 2025

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## Summary

This doctor of nursing practice project evaluation of an organizational quality improvement initiative focused on evaluating the effectiveness of implementing a prearrival phone call process for interventional radiology patients scheduled for procedures requiring moderate sedation or anesthesia. Adherence to NPO guidelines is crucial for patient safety before moderate sedation and anesthesia. The practice problem identified was the number of procedures that were canceled or delayed because of patient nonadherence with NPO guidelines. The practice-focused question that guided this project was, Can the implementation of prearrival phone calls in the preprocedural radiology surgical services help improve patient adherence with NPO protocol instructions, thus positively decreasing cancellations or delays of procedures? A retrospective chart review was performed to analyze the effectiveness of the prearrival phone call intervention. Results demonstrated a significant improvement. The average cancellation or delayed procedure with moderate sedation or anesthesia rate for the six months before the intervention was 2.16% and decreased to 1.05% for the six months following the implementation of the intervention, demonstrating a percentage change of -51.39%. This decrease in the rate shows that implementing the prearrival phone call intervention positively impacted the procedure cancellation or delayed rate. It is recommended that prearrival phone calls be made within seven days before the appointment using a standardized script and confirming the patient's understanding of the NPO guidelines. This quality improvement initiative has implications for positive social change by improving patient, provider, and organizational outcomes.

## **Background**

The impact of cancellations and delays in surgery results in both economic and emotional consequences, impacting the overall health care costs and decreased efficiency for staff, patients, and their families (Billings et al., 2020). This is seen in financial hardships for patients, unutilized resources valued as high as \$1 per second (approximately \$100,000 per week), a leading source of peri-operative wastage, and unused staff and facilities form a substantial contribution to the cost of surgical care (Liu et al., 2019). Mitigating these ongoing violations allows for cost saving, emotional and economic impact, improved operational efficiency, and developing a trusting healthcare system is essential (Billings et al., 2020). Implementing a prearrival phone call process for patients scheduled with moderate sedation or anesthesia procedures is beneficial to inform the patient on NPO guidelines (American Society of Anesthesiologists, 2025), obtain a full admission history, medication reconciliation, answer questions, a reminder for necessary check in information, provide primary patient education, elaborate on what to expect upon arrival, and inspect the patient's electronic health record for updated information (deLeón, 2021).

The problem identified was the increase in procedures cancelled or delayed for sedation/anesthesia cases, due to patients not adhering to NPO fasting guidelines. The practice-focused question that guided this project was, Can the implementation of prearrival phone calls in the preprocedural radiology surgical services help improve patient adherence with NPO protocol instructions, thus positively decreasing cancellations or delays of procedures? The purpose of the project was to evaluate the

effectiveness of a practice change in implementing a prearrival phone call process to decrease cancellations and delays in surgical practice.

The literature supports using prearrival phone calls to decrease cancelled or delayed appointments due to patient nonadherence with NPO guidelines. One study of a 12-bed Labor and Delivery unit implemented a pre-admission phone call pilot for elective surgery patients. The pilot resulted in more than 80% of first cases starting on time, estimated costs of delayed cases dropped consistently, with a savings of approximately \$219,000 by the end of the year-long pilot (deLeón, 2021). Another study showed how machine learning techniques, using primarily EHR-derived data, predict all-cause surgery cancellation at both campuses with an AUC up to 0.78 (Liu et al., 2019). In a third study by Pena et al. (2024), the authors found that patient telephone calls can improve workflow and patient engagement, allowing the team to validate knowledge and answer questions before the patient's admission for cardiac surgery. A thorough review of the literature identified eight relevant articles to address this practice change. The search yielded two level II articles, four level III articles, and three level V articles. The strength of the evidence was of good quality.

### **Project Development**

With the ongoing concern of nonadherence to the NPO guidelines, it was important to implement and evaluate a solution to the problem of ongoing cancellations and delays of sedation or anesthesia procedures. The organizational change process began with evaluating the preprocedural check-in process, tracking the number of cases cancelled or delayed, and reviewing the patient responses relating to reasons for not adhering to NPO fasting guidelines. The responses disclosed a common theme of patients

not being adequately informed about the NPO fasting guidelines. This drove the project to implement a standardized communication method of relaying NPO instructions to patients receiving sedation or anesthesia for an elective procedure. The quality improvement intervention to perform prearrival calls was identified, and a plan was developed. The organization approved the creation of a position for a nurse to perform prearrival calls. There were months of preparation that included discussions with other units using this initiative, researching supportive data, outlining the shift hours, discussions with the staff (providers, nurses, anesthesia, information technology, and EPIC personnel), team building, protocol outlining, approving documents, and establishing an official launch date. In the beginning, weekly meetings and then monthly meetings were held to discuss areas of concern, new findings, and strategize on ways to move forward. It allowed the team to outline documents for consistency involving the greeting, NPO guidelines script, and documents to refer to when patients have questions.

The outcome variables being assessed were the cancellation or delay rate for sedation or anesthesia procedures rate on an interventional radiology unit for inpatients and outpatients. Nurses recorded the identified data in a log for any procedures that were scheduled for sedation or anesthesia and ended up being cancelled or delayed due to nonadherence with the NPO guidelines and the reasoning. The data collection periods were six months pre-implementation and six months post-implementation of the prearrival call process. The rate was calculated by adding the number of delayed or canceled appointments for a procedure with sedation or anesthesia per month, divided by the number of appointments for a procedure with sedation or anesthesia per month, multiplied by 100.

## Results

The reduction in the rate of cancellations or delays because of patient nonadherence with NPO guidelines following the implementation of the new prearrival calls process reflects the effectiveness of the intervention. Table 1 shows the average six-month rate of delayed or cancelled appointments for a procedure with sedation or anesthesia per month pre-implementation and post-implementation. The rate decreased from 2.16% to 1.05%, demonstrating a percentage change of -51.3889%.

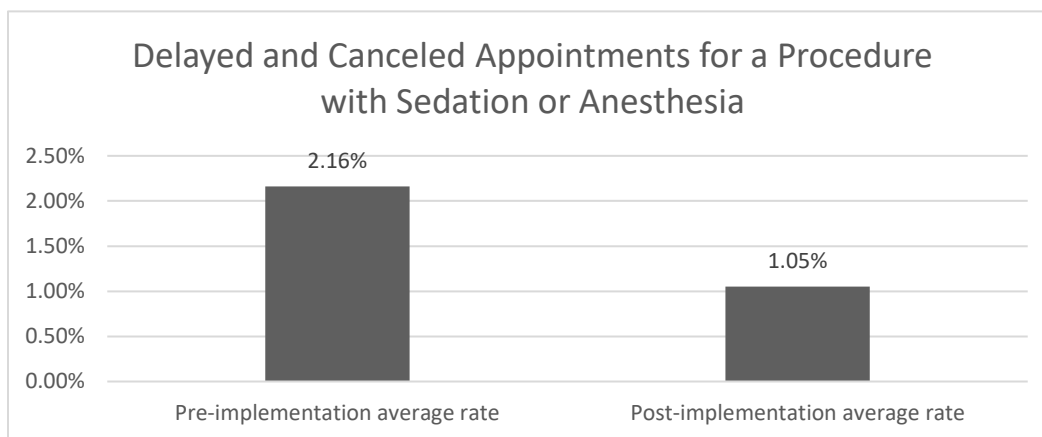
**Table 1:** *Pre-implementation and Post-implementation Rates of Delayed or Cancelled Procedures with Sedation or Anesthesia*

	Time Period	# Delayed or Canceled Appointments for a Procedure with Sedation or Anesthesia Per Month	# Appointments for a Procedure with Sedation or Anesthesia Per Month	Rate: Delayed or Canceled Appointments for a Procedure with Sedation or Anesthesia Per Month
Pre-implementation		Example: 90	1200	$90/1200 \times 100 = 7.5\%$
	March 2024	20	950	2.11%
	April 2024	23	965	2.38%
	May 2024	30	1100	2.73%
	June 2024	19	910	2.09%
	July 2024	24	1150	2.09%
	6-month pre-implementation rate			2.16%
Implementation	September 2024	19	1010	1.88%
	October 2024	15	960	1.56%
	November 2024	10	860	1.16%
	December 2024	8	902	0.89%
	January 2025	4	852	0.47%
	February 2025	3	880	0.34%
	6-month post-implementation rate			1.05%
	Percentage change from pre-implementation to post-implementation			-51.39%

Figure 1 shows a visual representation of the success of the quality improvement initiative in reducing the rate of delayed or cancelled appointments for procedures with sedation or anesthesia.

**Figure 1**

*Comparison of Pre-implementation and Post-implementation Rates of Delayed or Cancelled Procedures with Sedation or Anesthesia*



This change positively impacted the organization. The organization reports an increase in patient satisfaction, an improved ease of the pre-procedure check-in process, decreased negative reviews, an improvement in patients receiving care as scheduled, a decrease in the financial loss, improved patient safety with a lessened risk for complications, and an increased adherence to the NPO guidelines. This has allowed for better implementation measures that safeguard the patients' health by receiving safe and high-quality care. The organization has been able to implement the prearrival phone nurse position with no stop date due to the positive change it has brought to the unit. There has been a second prearrival phone nurse position created to meet the growing demands of checking in patients. It has also allowed for the review and updating of other sections of the electronic medical record involving sections on allergies, current medications, medical history, implanted devices, designated driver, and the stop time frame for certain medications (blood thinners, inhalers, blood pressure, weight loss, etc.).

Some limitations impacted the results. There was a need to review the data manually for completeness, as some cases were not recorded but rather simply rescheduled. The relatively short post-intervention monitoring period of six months may not have fully captured long-term trends, limiting the ability to assess sustained improvements over time. The project is important beyond the local site. This project can help other organizations improve efficiency, cost savings, provide timely care, meet the needs of the patients, and decrease surgical delays (deLeón, 2021).

### **Conclusions**

The prearrival phone nurse initiative has shown a positive impact on the organization. Within a year, the organization has seen an average of cancellations or delays with procedures involving sedation or anesthesia go from 2.16% to 1.05%. This has directly increased patient satisfaction, cost savings, clear communication, productivity, outlined NPO guidelines, and a mode of sharing important information with the patients. With this in mind, some recommendations brought forth are the different care modalities outlining patient information to share with the patient to help answer patient questions. Reminders should be shared at consultation appointments, printed out on the after-visit paperwork, attached to the patient's online portal, and a prearrival phone call before the procedure. This quality improvement initiative, implementing a prearrival nurse call, has helped to address patient concerns, bring clarity to pre-procedure guidelines, answer questions, address specific medications to hold or take, and involve providers earlier on. This quality improvement initiative has implications for positive social change by improving patient, provider, and organizational outcomes.

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