

**A CORRELATION BETWEEN PRE-ADMISSION PREPARATION AND SAME-DAY
SURGERY CANCELLATIONS**

by

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A DNP Project Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Nursing Practice

Capella University

September 18, 2017

Abstract

Patients undergoing surgical procedures must have adequate surgical preparation for anesthesia, procedures, and post-operative care to avoid cancellation. The primary focus of this quality improvement project was to determine if a correlation between pre-admission assessment preparedness and same-day surgery cancellation rates existed. The Ottawa Model of Research was used as a reference to help guide the project. The two-month internal audit provided documentation of incomplete pre-admission preparations, which placed a potential risk of surgical cancellations. A pre-admission policy was revised to enforce the pre-admission regulation. The change required the submission of patient documentation forty-eight hours prior to admission. This allowed ample time to adequately assess a patients' readiness for surgery. The department experienced a 58% reduction in documentation retrieval attempts. The revised policy was implemented to decrease the reports of preventable cancellations. Post policy enforcement, the pre-admission testing unit experienced an 18% decrease in documentation retrieval attempts. Swiss International Systems (SISCom) reported a 2% decrease in same-day surgery cancellations rate. A breakdown analysis determined the cancellation causes.

Key Words: *pre-admission testing, same-day surgery cancellations, elective surgery cancellation*

A Correlation Between Pre-Admission Preparation and Same-Day Surgery Cancellations

An effective preoperative assessment can have several organizational benefits including: fewer cancelled surgical procedures due to patients' unpreparedness for surgery and reduced lengths of hospital stay (Dinger, 2007). Surgical cancellations can create a financial burden on healthcare organizations and patients due to lost revenue during inefficient use of operating rooms, wasted materials, and extra staffing. Researchers found a loss of revenue cost due to a cancellation varies per institution; an operative specialty such as neurosurgery or urology, produce the highest loss per case ranging from \$4,758 to \$5,962 per cancellation (Advisory Board, 2012).

An updated history and physical can alert surgical team members of patient co-morbidities and develop the plan of care. A patient can experience lost income and prepared recovery burden due to unexpected surgical cancellation (Kaddoum, Fadlallah, Hitti, Jardali, & Ghada, 2016). Diagnostic testing can solidify an accurate diagnosis. Studies have found 90% of diagnoses are formed by a patient's history, 9% by physical assessment, and 1% by diagnostic testing (Scheppke, & Bryer, 2016). Thirty eight percent of reported surgical cancellations resulted from medical reasons. The most common medical reasons were hypertension, cardiac arrhythmias, and upper respiratory infections (Mesmar, Shatnawi, Faori, & Khader, 2010). The implementation of a policy to promote quality practice in the pre- admission department can create benefits in areas of patient outcomes, financial revenue, and decrease the risk of same-day surgery cancellations.

Problem Description

A community hospital reported an increase in same-day surgical cancellations of 3% from the targeted benchmark. The targeted benchmark was to maintain <1% cancellations. A root cause

identified the gap in practice was generated from the unpreparedness of surgical patients. The same-day surgical patients were inconsistently managed in three focused areas:

- Patients with high co-morbidities such as cardiovascular diseases had inadequate laboratory testing and diagnostic testing.
- Medical /cardiac/pulmonary clearances ordered by surgeons were not completed prior to admission.
- Surgeons lacked compliance in completion of history and physicals within thirty days of hospital admission. The outdated patient history and physicals, overlooked medical clearances / laboratory testing, and improper pre-screening interviewing placement increased surgical cancellations rates. The identifiable problem received a practice change to improve the quality assessment during the pre-admission (Holly, 2014). This developed a PICOT: can a quality assessment during the pre-admission decrease the risk of same-day surgery cancellation?

Available Knowledge

Healthcare institutions providing quality practice during pre-admission can assure a patient is physically and medically prepared for a scheduled procedure. This practice can avoid the risk of harm and same-day cancellations. A pre-admission policy can regulate quality practice during pre-operative assessments. Policies can decrease potential safety risks and improve outcomes. Proper pre-admission testing can produce safe patient outcomes and satisfaction. A pre-admission unit provides a pre-operative assessment service to patients scheduled for outpatient procedures (Dinger, 2007). Elective surgery cancellations result in increased costs, insufficient utilization of operating room, and inconvenience to patients and family members (Kaddoum et al, 2016). A surgical cancellation is defined as a surgical

procedure not completed on a scheduled date (Mesmar et al., 2010). Many factors contribute to cancellations of elective surgery including pre-admission work-up, patient compliance, hospital census, and staffing / surgeon availability. Inadequate pre-admission work-up has reported a risk in higher percentage rate of cancellations (Kaddoum et al., 2016). It has been reported 28% of surgical cancellations were preventable (Emanuel, & MacPherson, 2012). The preventable causes are identified as organizational error and patient compliance / condition. Preventable causes are referred to as incorrect use of patient medication (ceasing of anticoagulants), lack of laboratory follow-up, and fasting time's non-compliance. Proper pre-admission assessment can decrease elective surgical cancellations (Emanuel, & MacPherson, 2012).

A pre-operative screening department of a local hospital applied detailed patient assessments and "in person" interviewing to their daily practice. This practice change resulted in a decrease of cancellation rates by 1.1% (Basil, & Pagnotta, 2013). Evidence based literature and research studies can prove that recognizable problems can be changed with effective practices. This will ensure quality improvement practices and outcomes (Sampaio et al., 2016).

An important document necessary to provide a quality pre-admission assessment is a patient's history and physical. History and physicals are time regulated prior to hospital admissions. In the state of New Jersey, a history and physical must be completed within thirty days prior to hospital admittance. The New Jersey Administrative Code § 8:43G-32.5 (2012), requires physicians or practitioners to perform a history and physical examination within 30 days, including all updates and assessments prior to the procedure (p. 673). This regulation can identify new medical findings.

Other aims for a pre-admission assessment include potential health ailments that may produce unsafe outcomes (obesity, diabetes), discovering and treating newly diagnosed

conditions (urinary tract infection, cardiac arrhythmias) and educational information for perioperative phases (Pritchard, 2012). Implementing pre-operative assessment tools for elective surgical cases can produce a 12.7% increase in elective surgical cases (Knox, Myers, Wilson, & Hurley, 2009). This demonstrates the value on a pre-admission assessment in preventing same-day surgical cancellations.

A surgical cancellation can produce a negative response expressed by patients and family members. Surgical cancellations of an elective procedure can place a financial and mental toll on a patient. Patients prepare for surgical procedure by planning employment, travel, and childcare arrangements. They embrace the emotional distresses associated with the unknown outcome following the surgical procedure and fast for long periods (Emanuel, & MacPherson, 2013).

Research has found 61% of patients were dissatisfied and reacted negatively to a surgical cancellation. Healthcare organizations depend on patient satisfaction scores such as Press Ganey, and a low percentage score can reflect a patient's experience from a surgical cancellation (Ivarsson, Kimblad Sjberg, & Larsson, 2002). The Center for Medicare and Medicaid Service (CMS) necessitate health care organizations to publicly display Press Ganey percentages. Through Medicare reforms, reimbursement incentives are given to Healthcare organizations that voluntarily participate in public reporting. The refusal of Press Ganey patient surveying will result in a 2% reduction in financial compensation to the organization (Tinkham, 2014). Public knowledge and display of low patient satisfaction scoring will deter communities in accessing resources within the organization.

Expense losses produced from elective cancellations can become a significant problem for healthcare organizations. Surgical procedures generate a coding and billing number for reimbursement. A surgical cancellations loss includes operating room utilization time, staffing

expenses, wasted surgical products, diagnostic testing, pre-admission assessment, and loss of procedural profit. To define a complete loss in monies, an audit per cancelled case can be conducted (Gupta, 2016). To decrease financial losses, health care organizations can improve processes. This requires a commitment to define a root cause and collaboratively problem solves to improve quality (Korki, & Fonseca, 2013).

Rationale

The Ottawa Model of Research guided this project during the pre-admission policy creation and implementation into clinical practice. The quality improvement project identified influential barriers to current practice change and gained executive acceptance. In this project, The Ottawa Model of Research provided insight to the Surgical Service Executive Committee (SSEC) of risk factors influencing outpatient cancellations.

The Ottawa Model of Research three-step approach guided the implementation project design. The steps are identified as assessing key elements, monitoring the implementation, and evaluating outcomes. The first step is the assessment of barriers and supporters of a new practice (Graham, & Logan, 2004). Pre- admission nurses and surgeons were identified as a barrier to practice change. Both professions can exhibit hesitation towards the adoption of the practice change so current practice will remain unchanged.

The second step is implementation of new a practice. Based on the situational assessment, appropriate strategies and interventions will increase awareness, and provide skills or training for adopters to be able to carry out the innovation (Sudsawad, 2007). The creation and implementation of a pre-admission policy initiated new standards of practice. The new pre-admission practice was provided to surgeons, physician offices, and surgical nursing. Individual signatures of understanding will solidify compliance of practice process.

The last stage of The Ottawa framework is monitoring and evaluating the process change. This stage determines the extent to which the innovation has spread throughout the organization and how practice has changed. It evaluates the impact of the innovation on clients/patients, practitioners and systems to determine the effectiveness of the practice change (Sudsawad, 2007). The final step will be addressed in the interpretation for quality improvement project.

Specific Aim

The aim of this project was to determine if standardized practice change in the pre-admission department would decrease the percentage of surgical cancellations. The quarterly report revealed the cancellation rate was four percent. The influence of a pre-admission policy required surgeon compliance with updated history and physicals, provide proper medical clearances, and order diagnostic testing during the request of service. By addressing the provider compliance, this project will decrease retrieval attempts by the pre-admission testing staff and decrease same-day surgical cancellations.

Method

Context

The pre-admission unit was designated as a setting in this project. The pre-admission unit consists of eight staff nurses, two secretaries, and two laboratory technicians. The unit secretaries and staff nurses were responsible for preparing patients needing outpatient surgical procedures. To achieve the implementation of the new guidelines, identifying individuals with authority was needed to make changes within organizations (Sudsawad, 2007). The Surgical Service Executive Committee (SSEC) was developed to improve quality and patient outcomes in the surgical service areas. The SSEC was identified as the “authoritative” team to entice approval. A

cohesive leadership team encouraged the practice changes to occur within the pre-admission department.

Intervention

Following a literature review, a team was formed initiate a pre-admission policy that ensured compliance for all surgical outpatients. The intervention consisted of three phases. The first phase was conducted by the pre-admission staff who documented missing items from a patient's records and date / time call attempts were made to a surgeon's office pre-practice change. Non-compliant surgeons were identified along with the number of attempts made to retrieve documents prior to patient admission. The data was presented to SSEC to advocate for leadership support to develop a pre-admission policy.

The second phase finalized approval of the pre-admission policy with the leadership and executive team. The revised policy mandated pre-admission patient record and assessments be updated forty-eight hours prior to patient admission. Staff members were given training by nursing leaders during a mandatory staff meeting. A hard copy example was given as a visual aid to highlight areas of practice change in the preadmission policy. Reinforced training of policy retrieval was visually displayed in the department for future inquires. The pre-admission staff was provided coaching on communication with physician offices to improve on documentation compliance.

A revised policy was generated and incorporated The New Jersey Administrative Code § 8:43G-32.5 along with JACHO standards. Surgical team members and staff awareness of the new policy standard initiated the adoption of the practice change. The surgical nursing leadership team and anesthesiologists reviewed patient charts 48 hours prior to admission. The completion of patient health records, diagnostic testing, pre-admission interviews, leadership rounding, and

pre-operative instructions were addressed prior to the scheduled elective procedure in order to avoid risk of cancellation.

Measures

The goal of this quality improvement project was to decrease the rate of same-day cancellations to <1 percent. There were two areas of measurement: SIScom and pre-admission internal audit. A measurement in the percentage of cancelled same-day surgery was monitored pre-and post-policy implementation. To itemize case reports an electronic medical record (EMR) called SIScom was accessed for measurement. This instrumental tool was utilized to collect cancellation data. The cause for cancellation was documented in SIScom. For purposes of the project, only preventable same-day surgery cancellations were collected as data. A monthly report was generated to calculate the cancellation rates. A measurement of same-day surgical cancellation rates was monitored for a two-month period. This data evaluated the validity and reliability of the pre-admission policy practice change reflected in its effect on same-day cancellations.

The second measure was an internal audit conducted in the pre-admission department. The pre-admission staff continued to document missing items from a patient's record and date / time call attempts made to a surgeon's office over the two-month period. The data provided concrete documentation of ailments that may have caused a surgical cancellation. Each surgeon was listed along with the number of attempts made to retrieve documents prior to patient admission. The data was entered on an Excel spreadsheet and a bar graph chart was generated. The collected data provided identifiers of a surgeon's compliance and the effectiveness of a policy placement.

Analysis

The t-test was used to determine whether there was a statistically significant difference in elective surgery cancellations post pre-admission preparation process change. The dependent variable (cancellation rate) was monitored for a decrease in percentage rate based on the pre-admission process) measured pre-intervention and post intervention

Ethical Analysis

Approval for this project was obtained from the Capella University's Institutional Review Board (IRB) committee.

Results

During the two-month project period there were 1,541 scheduled surgical procedures. The collected data was itemized into a comprehensive chart. As shown in Table 1, the cancellation rates are listed. Table 2, provides results for cancellation causes.

Table 1

Cancellation Rates

	Total Surgical Cases	Same-Day surgical Cases	Total Same-Day Cancellations	Total Inpatient Surgical Cases	Total Inpatient Surgical Cancellations
Month 1	837	680	28 (4%)	157	46 (29%)
Month 2	703	571	12 (2%)	132	5 (3%)

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Table 2

Same-Day Cancellation Causes

	Month 1	Month 2
Medical / Cardiac Clearance	13 (46%)	0%
Patient Ailments:	15 (53%)	5 (42%)
Blood Pressure Crisis	6 (40%)	1(8%)
High glucose	4 (26%)	0
Sickness (Fever, URI,UT)	3 (20%)	1 (8%)
Pregnancy	1 (6%)	0
Food ingestion	1(6%)	3 (25%)
Patient Absences (no show)	4 (14%)	7 (58%)

The first month pre-practice change 837 cases were scheduled. The pre-admission unit prepared 687 patients for surgery. The most common causes for same day surgical cancellation were uncontrolled medical ailments, lack of medical / cardiac clearances, and patient absences. A total of 74 (8%) surgical cancellations were reported. Of the seventy-four, 28 (3%) cancelled cases were same day surgical cases. SISCom captured the vast majority of cancellations were due to medical ailments (53%). Further detailed examinations reported lack of medical / cardiac clearances (46%), and patient absences (14%). An internal audit was conducted in the pre-admission department. The audit revealed 419 attempts were made by staff to retrieve patient documents from physician offices.

During the second month, the pre-admission policy was implemented and patients were medically prepared forty-eight hours prior to admission. The surgical patient volume of 704 cases was captured via SISCom. 571 cases were scheduled for same day surgery and received pre-admission screening. SISCom captured a result of 2% in same day surgery cancellations which is seen on the Cancellation Rates Table. Patient absence (58%) was the leading cause reported in same-day cancellations. The second leading cause was due to patient medical ailments (42%). No reports of missing medical / cardiac clearances were reported.

As shown on Table 3, the internal audit reported 241 attempts made in retrieving the appropriate documents needed for pre-admission screening.

Table 3

Internal Audit Table

	Month 1	Month 2
Documentation retrieval attempts pre-admission phase (H&Ps, Clearances etc)	419	241 (<58%)

The implementation of a pre-admission policy produced a 58% decrease in effort needed by staff to adequately prepare a surgical patient. The data collected over a two-month span revealed the effectiveness of a policy to improve quality in practice.

Discussion

Interpretation

The purpose of this project was to decrease the rate of outpatient surgical cancellations by improving pre-admission practice. Previous pre-admission practice exhibited physician noncompliance to provide patient documentation prior to admission. This level of care produced low quality outcomes and increased risk to patients, and increased the probability of same-day cancellations. The implemented pre-admission policy reflected its effectiveness with a decrease in the percentage of same-day surgery cancellations by 2%. The revised pre-admission policy enforced up to date medical documentation, diagnostic testing and clearance evaluations completion, and interview assessments were prepared 24 hours prior to scheduled surgery time. This practice enabled an elective surgery patient to be medically prepared on the day of admission.

However, this newly adopted practice did not result in an elimination of unexpected cancellations or achieve benchmark expectations. The targeted benchmark is to maintain <1% cancellations. SISCom reported a 2% decrease of cancellation rate during the policy implementation phase. Patient medical / cardiac clearance and appropriated pre-admission assessments were completed and were not documented as the cause of cancellation during the second month. The cancellation rate remained 2% above benchmark due to an increased report in patient “no shows”.

Limitation

The first potential limitation was the internal audit completed by the pre-admission staff. The accuracy of documentation could be influenced by outside influences such as resistance to added work, favoritism towards a physician, or failure to document missed items. These factors could influence the precise data of non-compliant behavior in practicing the pre-admission policy.

A second experienced limitation was time. This quality improvement project provided a minimum time to accurately evaluate the effects of a policy implementation. The project results suggest the pre-admission policy minimized non-compliant behavior in patient surgical preparation. This was monitored over a one-month period. Evaluating a policy placement over several months /years will solidify its effectiveness and outcomes.

Conclusion

This quality improvement project demonstrated knowledge needed to develop, implement, collect data, evaluate and monitor a practice improvement project. It exhibited leadership skills needed to implement an evidence based practice change in the pre-admission testing department. The collaboration of stakeholders developed teamwork through numerous hospital departments such as surgical offices, surgical scheduling office, pre-admission testing department, anesthesia, staff, nurse leaders, and surgery executive committee. The implementation of the pre-admission policy along with a quality practice change decreased the rate of noncompliance and same day surgical cancellations. Future studies can use this project as reference to further evaluate causes in outpatient and inpatient surgery cancellations. The project can be used as an example for future quality improvement practices in a healthcare system.

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APPENDIX A. STATEMENT OF ORIGINAL WORK**Academic Honesty Policy**

Capella University's Academic Honesty Policy (3.01.01) holds learners accountable for the integrity of work they submit, which includes but is not limited to discussion postings, assignments, comprehensive exams, and the dissertation or capstone project.

Established in the Policy are the expectations for original work, rationale for the policy, definition of terms that pertain to academic honesty and original work, and disciplinary consequences of academic dishonesty. Also stated in the Policy is the expectation that learners will follow APA rules for citing another person's ideas or works.

The following standards for original work and definition of *plagiarism* are discussed in the Policy:

Learners are expected to be the sole authors of their work and to acknowledge the authorship of others' work through proper citation and reference. Use of another person's ideas, including another learner's, without proper reference or citation constitutes plagiarism and academic dishonesty and is prohibited conduct. (p. 1)

Plagiarism is one example of academic dishonesty. Plagiarism is presenting someone else's ideas or work as your own. Plagiarism also includes copying verbatim or rephrasing ideas without properly acknowledging the source by author, date, and publication medium. (p. 2)

Capella University's Research Misconduct Policy (3.03.06) holds learners accountable for research integrity. What constitutes research misconduct is discussed in the Policy:

Research misconduct includes but is not limited to falsification, fabrication, plagiarism, misappropriation, or other practices that seriously deviate from those that are commonly accepted within the academic community for proposing, conducting, or reviewing research, or in reporting research results. (p. 1)

Learners failing to abide by these policies are subject to consequences, including but not limited to dismissal or revocation of the degree.

Statement of Original Work and Signature

I have read, understood, and abided by Capella University's Academic Honesty Policy (3.01.01) and Research Misconduct Policy (3.03.06), including the Policy Statements, Rationale, and Definitions.

I attest that this dissertation or capstone project is my own work. Where I have used the ideas or words of others, I have paraphrased, summarized, or used direct quotes following the guidelines set forth in the *APA Publication Manual*.

Learner name
and date

Kimberly A Shidner 8/16/17

Mentor name
and school

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