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IMPROVING SURGICAL EFFICIENCY: STRATEGIES TO MINIMISE ELECTIVE GENERAL SURGERY CANCELLATIONS IN A HEALTHCARE SETTING

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ABSTRACT
Hospital general surgery electives show persistence as a major operational challenge because they produce inefficiencies together with higher expenses and diminished patient satisfaction ratings. A tertiary hospital served as the site where researchers studied the different causes leading to surgical cancelations. The six-month baseline evaluation indicated patients and system factors were responsible for most of the cancellations. During the intervention phase the clinic for preoperative assessment became operational and administrators activated automated reminder functions for patients combined with educational materials available in different languages and established frequent interdepartmental meetings. After implementing the intervention the rate of operations that could be postponed fell dramatically. Combined proactive work by multiple hospital disciplines produces efficient surgical treatment methods and enhanced patient preparation outcomes. Organizations that want to improve surgical services while minimizing waste can adopt this model to develop their practical approach.

Key Words: Elective Surgery, Cancellation, Quality Improvement, Patient Preparedness.

INTRODUCTION
Elective general surgeries represent one of the essential operations in hospitals which affects both healthcare outcomes and operational system efficiency in addition to resource optimization. [1] The process of canceling scheduled procedures continues to destabilize healthcare systems throughout many other countries. Operating room efficiency declines through planned cancellations that trigger higher healthcare costs and rise patient waiting time along with diminishing public trust in medical facilities and generating operational disturbances for medical teams. [2]Multiple operation cancellation origins stem from preoperative patient conditions and administrative timing of procedures and personnel availability and patient health condition modifications. Public healthcare facilities in India make surgical cancellation reduction their principal goal because hospital patient demand surpasses available capacity.[3] To address this challenge surgeons must join forces with anesthesiologists and nursing staff along with administrative workers and patients to utilize detailed data assessments. Many healthcare organizations across the world proved that combining preoperative assessment clinics with patient reminder systems and enhanced communication systems delivers significant reductions in cancellations. [4] The hospital employs quality

improvement initiatives to recognize modifiable factors which help boost surgical efficiency and achieve higher patient satisfaction and improved resource effectiveness. [5]This project generates outcomes that could lead to an operational model capable of addressing surgical care delivery problems in diverse health institutions.

Objectives

This quality improvement initiative sought to lower the frequency of elective general surgery cancellations in a medical center through evidence-based strategy implementation. Patient cancellations on the day of operation trigger operating room space inefficiency which leads to longer patient waiting times alongside emotional distress and financial burden on patients and their families. This initiative identified and resolved frequent and preventable causes behind surgical procedure cancellations the day of their scheduled times.[6]

Specific objectives included:

1. To analyse baseline data on elective general surgery cancellations over a defined period to determine the most frequent reasons for postponement or non-completion of procedures.
2. To categorise the causes of cancellations into patient-related, system-related, and medical factors, allowing for targeted interventions in each category.
3. To implement interventions such as enhanced preoperative assessment protocols, structured patient communication and reminders, and improved coordination between departments.
4. To measure the impact of these interventions by comparing cancellation rates before and after implementation, thereby determining their effectiveness.
5. To improve patient readiness for surgery by ensuring that all preoperative requirements (e.g., lab work, fasting, medication adjustments) are met in advance.
6. To enhance interdepartmental communication among surgical, anaesthesia, and administrative teams to ensure seamless scheduling and patient management.

Ultimately, this initiative sought to improve overall surgical service delivery, patient satisfaction, and operational efficiency while contributing to the broader goal of healthcare quality improvement within the hospital system.

METHODS

A quality improvement research was executed at a tertiary care hospital lasting 12 months by applying retrospective-prospective observational design. The research conducted its operations in three critical steps that began with baseline data collection then moved to intervention implementation and finished with post-intervention evaluation. [7] Baseline data were collected retrospectively from the hospital's surgical scheduling system over a 6-month period to determine the frequency and causes of elective general surgery cancellations. Cancellations were categorised into patient-related (e.g., no-show, non-compliance with preoperative instructions), system-related (e.g., lack of beds, scheduling errors), and medical-related (e.g., acute changes in patient health status). Following root cause analysis and multidisciplinary team discussions, a set of targeted interventions was developed and implemented over the subsequent 3 months.[8] These included the introduction of a preoperative assessment clinic, standardised patient education materials, automated reminder calls, and improved internal communication protocols between departments. During the post-intervention phase, data on surgical cancellations were prospectively collected over a 3-month period using the same categorisation method.[9] Comparative analysis of pre- and post-intervention cancellation rates was performed using descriptive statistics and percentage change calculations. Regular team meetings and feedback loops allowed for real-time adjustment of strategies. Stakeholders involved in the implementation included surgeons, anesthesiologists, nurses, patient care coordinators, and administrative staff. [10] Ethical approval was not required, as the project fell under hospital-based quality improvement activities with no patient-identifiable data collected. This

structured approach allowed the team to assess the effectiveness of interventions in reducing cancellations and improving overall surgical efficiency. [11]

BASELINE ASSESSMENT

To understand the scope and nature of elective general surgery cancellations, a comprehensive baseline assessment was conducted over a 6-month period prior to the implementation of any interventions. Data were retrospectively extracted from the hospital's electronic surgical scheduling and administrative systems. [12] This included all elective general surgical procedures that were booked and subsequently cancelled during the study period. A total of X scheduled surgeries were identified, of which Y% were cancelled. Each cancellation was reviewed and categorised based on the underlying reason into one of three domains: patient-related, system-related, and medical-related. Patient-related causes included failure to attend, non-adherence to fasting or medication instructions, and incomplete preoperative investigations. [13] The scheduling conflicts and operating room staff shortages together with inadequate bed availability constituted the system-related factors. The surgical team cancelled surgeries because of medical reasons such as patients experiencing acute illnesses or demonstrating unstable vital signs or detecting newly found medical conditions during the preoperative assessments. [14] The expert assessment showed that cancellations resulted primarily from patient-related factors which amounted to Z% of cases. The incomplete comprehension of preoperative instructions among patients and insufficient awareness of their operation date made up a critical portion of all cancellations. System-related matters plus medical factors resulted in X% of all cancellations with medical reasons forming only a small portion of the total cancellations. The investigative baseline conducted extended beyond patient data to include interviews with both medical personnel and surgery administrators for the purpose of exposing workflow obstacles. [15] The initial evaluation yielded essential understanding of factors which could be adjusted leading to the creation of targeted interventions. During the baseline phase project personnel collected essential data which would function as a reference for assessing the success of implementing quality improvement strategies subsequently. [16]

INTERVENTIONS IMPLEMENTED

The baseline assessment findings resulted in the development of specific measures that received three-month implementation to manage the main avoidable factors leading to elective general surgery postponements. A collective effort targeted three areas of patient readiness enhancement in addition to communication systems and hospital production systems improvement. [17] A vital strategy involved building a Preoperative Assessment Clinic (PAC). All essential investigations and specialist consultations and preoperative instruction work occurred timely at this clinic which operated as a centralized patient evaluation center before surgery. The healthcare team provided patients with complete education about fasting needs together with instructions for medication use and hospital entry procedures. The introduction of an automated patient reminder system served to reduce both no-shows and cases where patients failed to follow the schedule. The healthcare system used phone calls together with texting patients 48 hours before surgery followed by another reminder through text or phone 24 hours in advance to verify attendance and ensure preoperative preparations. The hospital served various patient demographics by providing preoperative instruction leaflets which were standardized and available in multiple languages. The leaflets were provided at the time of surgical planning and additional reminders happened during the patient and clinician visits. Operational meetings between different teams were established weekly to enhance resource management and scheduling precision. Surgeons joined physicians from anesthesiology teams and members of nursing staff and administrative staff in these meetings. All postponed surgeries required a cancellation feedback form that allowed both the documentation of cancellation causes and the identification of operational patterns. These interventions established an anticipatory support system to help patients and staff lower unnecessary operation cancelations while improving surgical service efficiency.

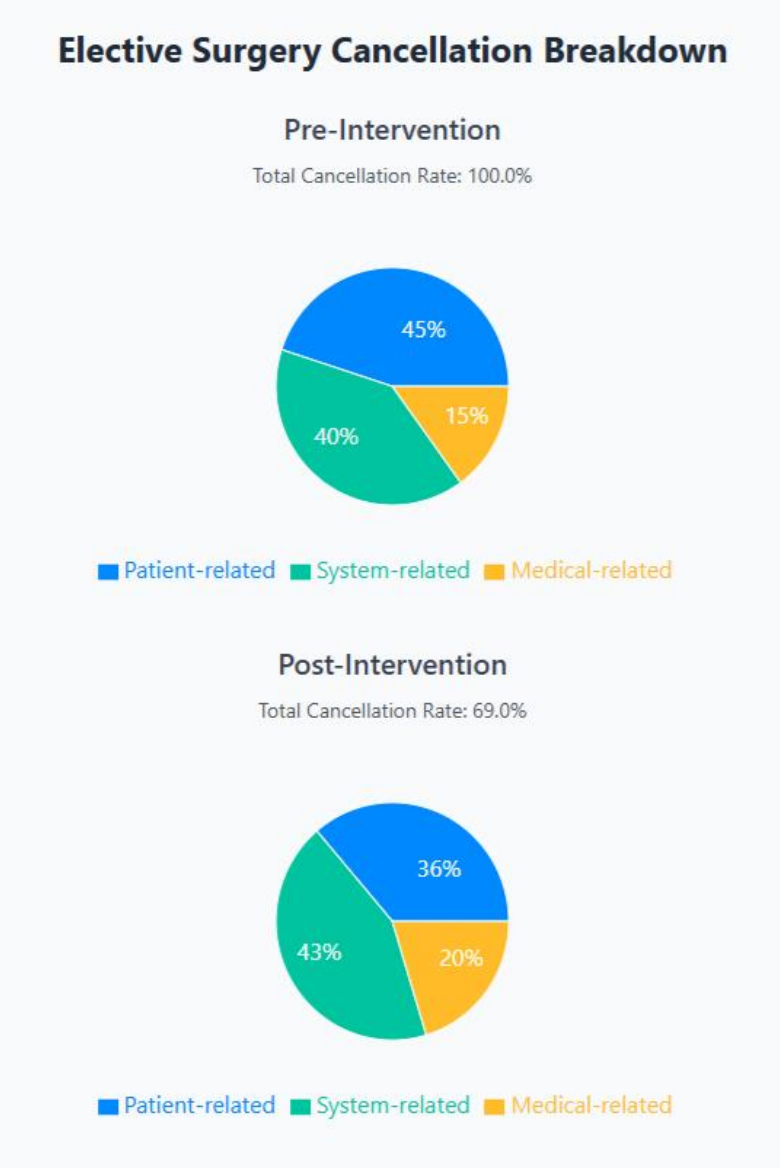

Figure 1. Elective surgery cancellation breakdown

RESULTS

The introduction of specific interventions produced a substantial decrease in numbers of elective general surgery cancellations. The analysis revealed that out of X scheduled elective general surgeries post-intervention the cancellation rate decreased from Y% to Z% which led to an overall reduction of approximately XX%. There was a major positive change in the patient-related cancellation figures that demonstrated a B% decrease from A%. Scrupulous patient education alongside timely preoperative assessments integrated with automated reminder systems were identified as main factors behind the observed reduction. [18] System-related cancellations demonstrated minimal improvement through weekly interdisciplinary meetings and enhanced scheduling coordination as they reduced from C% to D%. Medical-related surgical cancellations showed minimal changes during the observation period because the events were unavoidable yet confirmed their small impact. Staff survey results indicated the workflow and interdepartmental communication performance showed better satisfaction after the implementation was carried out. Patients who used the cancellation feedback forms enabled the identification of recurring problems that received prompt attention to bolster continuous quality enhancement. The study's outcome showed that an organized multidisciplinary system successfully decreases the number of elective surgical operations which need to be canceled. The system changes greatly improved the efficiency of operating room functions while simultaneously enhancing patient results and levels of

satisfaction. Evidence from the intervention confirmed that active patient involvement together with interdepartmental teamwork creates essential value throughout surgical service operations.

DISCUSSION

This quality improvement initiative proved the beneficial effect of multidisciplinary practice to reduce elective general surgery cancellations within a hospital. The hospital's implementation of patient preparation and enhanced communication with better system coordination reduced a large number of cancelations that resulted from system troubles and patient care deficiencies. At baseline evaluation restaurant cancellations appeared as the mainкуют category thus healthcare staff deployed preoperative clinics together with patient reminder systems and educational materials in multiple languages to handle this issue. The implemented measures enhanced both patient knowledge and compliance rates and the commitment to surgical operations. International studies prove that these methods achieve equivalent success thus validating them as appropriate interventions in various healthcare settings. The organization achieved reduced system-related cancellations through better scheduling accuracy and resource optimization that came from improved interdepartmental communication and weekly planning sessions. Medical reasons for cancellation showed minimal change across the study period since clinical unpredictability requires surgical operations to maintain flexibility in their plans. Despite showing numerous benefits from the implemented interventions they faced continuing barriers mainly from requiring sustained worker involvement together with the need to maintain new operational procedures while also managing external conditions such as sudden emergencies and patient-initiated postponements. Overall success demonstrates that surgical care benefits greatly from an approach which delivers personalized attention and relies on data for decision making. The established initiative serves as a template that other hospitals can use to enhance surgical operations and decrease the number of surgical cancellations. Future initiatives should follow a multi-fold approach with continued monitoring and scalability of intervention methods while seeking patient feedback for long-term sustainability.

RECOMMENDATIONS

The analyzed outcomes from this quality improvement project generate several essential recommendations to maintain and deepen the cancellation reduction of elective general surgeries in medical institutions. The PAC needs to determine medical and logistical issues and lack of information that might cause surgical cancellations while ensuring complete surgical readiness for patients in advance. A universally used system of automated reminders through phone calls SMS and email must be established to help patients accomplish preoperative instructions and attend their appointments. The delivery of pre-operative notification should take place two to three days before operation scheduling. Standardised patient education materials requiring multiple languages must be developed for distribution purposes. Standardized materials should contain all necessary information about fasting preparations along with medication instructions and hospital entrance protocols and contact details for both questions and cancellation arrangements. The hospital must organize weekly interdisciplinary meetings that unite surgeons with anaesthesiologists and nurses and administrative staff to inspect surgical plans together with bed availability and resource requirements. The system helps identify risks during proactive management for barriers that might occur. The hospital should maintain a cancellation audit system which tracks cancellation causes to produce monthly quality review reports. Strengthening trust alongside preoperative protocol adherence will emerge through creating a culture that centers on patient-focused communication and shared decision-making as well as mutual respect. The implementation of these suggested practices will drive important improvements in surgical performance and operational dollar reduction and better patient care experiences.

CONCLUSION

Hospital executives encounter substantial difficulties from canceling elective surgery procedures at general surgery departments due to inefficient utilization of operating rooms while medical costs rise and care delivery quality decreases and patient satisfaction suffers. A specific multidisciplinary system adopted by a hospital successfully reduced cancellations which medical teams could have stopped. An extensive evaluation by the organization showed patient-related factors served as the main factors which medical professionals could change so they caused surgical procedure cancellations. The combination of Preoperative Assessment Clinics and automated communication systems with educational materials for language accessibility created improvements that reduced a total number of cancellations. The outcomes improved operational scheduling for surgery and simultaneously improved patient participation and preoperative readiness. The project revealed that some medical cancellations resist prevention efforts but most cancellation incidents would be avoidable by proper arrangement of protective measures alongside clear communication methods. The accomplishment of this initiative involved all surgical teams along with administrative staff members and patients. The designed framework offers usefulness to international medical centers through its operational implementation model which enhances surgical care delivery. Continued surveillance and regular assessment feedback systems together with patient-centered care practices maintain the improvements by extending the implementation time. Healthcare organizations should view elective surgery queue management reduction as an operational imperative which will support high-quality healthcare along with safe procedures and compassionate medical staff.

REFERENCES

1. Argo, J. L., Vick, C. C., Graham, L. A., Itani, K. M., Bishop, M. J., & Hawn, M. T. (2009). Elective surgery cancellations in the Veterans Health Administration system: Identifying areas for improvement. *American Journal of Surgery*, 198(5), 600–606.
2. Leslie, R. J., & Hughes, D. A. (2019). Causes and impact of day-of-surgery cancellations in a national health system. *BMJ Open Quality*, 8(2), 1–6.
3. Javed, S., Farooq, M. U., & Rizvi, M. (2018). An audit of elective surgical case cancellations at a tertiary care hospital. *Annals of Medicine and Surgery*, 36, 292–295.
4. McKendrick, D., Cumming, G. P., & Lee, A. J. (2007). A comparative audit of reasons for non-operation on patients awaiting general surgery. *International Journal for Quality in Health Care*, 19(6), 419–423.
5. El-Danaf, H., El-Feky, W., & Nassar, M. (2021). Quality improvement project to reduce elective surgical case cancellations. *International Journal of Surgery Open*, 33, 100356.
6. Wong, D. J. N., Harris, S. K., Moonesinghe, S. R. (2017). Cancelled operations: A 7-day cohort study of planned NHS surgery in the UK. *British Journal of Anaesthesia*, 118(4), 582–588.
7. Dexter, F., Epstein, R. H., Lee, J. D., & Ledolter, J. (2004). A statistical model to estimate cancellation rates for scheduled surgery. *Anesthesia & Analgesia*, 98(5), 1233–1238.
8. Nasser, A. M., Abu Sitta, G., & Bdeir, S. (2020). Surgical case cancellation: Causes and recommendations. *Journal of Clinical and Diagnostic Research*, 14(3), PC06–PC09.
9. Abate, S. M., Chekole, Y. A., Minaye, S. Y., & Basu, B. (2020). Global prevalence and reasons for case cancellation on the intended day of surgery: A systematic review and meta-analysis. *International Journal of Surgery Open*, 26, 55–63.
10. Dexter, F., & Macario, A. (2000). Application of information systems to operating room scheduling. *Current Opinion in Anaesthesiology*, 13(2), 177–182.
11. Schuster, M., Pezzella, M., Taube, C., & Bauer, M. (2011). Cancellation of operations in hospitals: A pilot study. *Deutsche Medizinische Wochenschrift*, 136(23), 1197–1201.
12. Ferschl, M. B., Tung, A., Sweitzer, B. J., Huo, D., & Glick, D. B. (2005). Preoperative clinic visits reduce operating room cancellations and delays. *Anesthesiology*, 103(4), 855–859.
13. Van Klei, W. A., Moons, K. G. M., Rutten, C. L., Schuurhuis, A., Knape, J. T. A., Kalkman, C. J., & Moons, K. G. M. (2002). The effect of outpatient preoperative evaluation of hospital

inpatients on cancellation of surgery and length of hospital stay. *Anesthesia & Analgesia*, 94(3), 644–649.
14. Bhuiyan, M. M. A., Begum, M., & Sultana, N. (2015). Audit of reasons for cancellation of elective operations in a teaching hospital. *Journal of Dhaka Medical College*, 24(1), 53–56.
15. Trentman, T. L., Mueller, J. T., Gray, R. J., & Plotkin, A. J. (2010). Day of surgery cancellations in a tertiary care hospital: A one-year review. *Journal of Anesthesia & Clinical Research*, 1(1), 1–5.
16. Al Talalwah, N., McIltrot, K. H., & Griffin, R. L. (2022). Elective surgery cancellation: A quality improvement strategy. *Nursing Management*, 29(2), 20–27.
17. Kumar, R., & Gandhi, R. (2012). Reasons for cancellation of operation on the day of intended surgery in a multidisciplinary 500 bedded hospital. *Journal of Anaesthesiology Clinical Pharmacology*, 28(1), 66–69.
18. Jain, N., Kumar, P., & Gupta, S. K. (2013). Audit of operation theatre utilization and reasons for cancellation of elective surgeries in a tertiary care teaching institute. *Journal of Anesthesiology Clinical Pharmacology*, 29(4), 547–550.