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## STUDY ON CANCELLATION OF SCHEDULED SURGERIES AT A TERTIARY CARE TEACHING HOSPITAL

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### ABSTRACT:

**Background:** Cancellations of scheduled surgeries lead to resource wastage and impact patient well-being. Last-minute cancellations exacerbate these challenges, affecting patient experience and healthcare cost.

**Methodology and Objective:** The present study was an audit of scheduled surgeries at a tertiary care teaching hospital. All the patients scheduled to undergo elective surgeries at a tertiary care teaching hospital from July to December 2023 were included. The present study involved 400 cases affected by surgical cancellations collected via structured observations.

**Result:** For the given study period, a total of 2,614 patients were scheduled for elective surgical operations included. Among these, 400 (15.3%), of the operations were cancelled, while 2214 (85%) patients underwent surgery on their planned date. The most common reasons for cancellation were administrative (150 cases, 5.73%), patient-related factors (120 cases, 4.5%), medical reasons (80 cases, 3%), and anaesthesia-related concerns (50 cases, 1.9%).

**Conclusion:** Our study reveals a 15.3% cancellation rate of scheduled surgeries over 6 months. Administrative or structural reasons were the main cause followed by patient related and medical reasons for cancellation of schedule surgeries. Collaboration among healthcare stakeholders is essential for implementing effective solutions, to reduce cancellations of operations.

**Keywords:** Operating room, surgery cancellation, avoidable and unavoidable causes.

## 1. INTRODUCTION

In any tertiary care hospital, the operation theatre (OT) complex is very important area which requires considerable workforce and expenditure from the budget of hospital. <sup>(1)</sup> To ensure optimum cost benefit, this area of hospital activity requires maximum utilization. An important standard of care of quality and management assessment is determination of the cancellation rate of scheduled surgeries. The incidence of cancellation of elective surgery varies from 10% to 40% in different hospitals. <sup>(2) (3) (4)</sup>

The reasons of cancellation of elective surgical cases can be divided into avoidable cancellation E.g. Scheduling errors, equipment shortages and cancellation due to inadequate preoperative evaluation, and unavoidable cancellations (emergency case superseding the elective schedule, unexpected changes in the patient's medical status and patient nonappearance). The lack of operating room (OR) time is the most common factor which leads to cancellation of scheduled surgeries. <sup>(5)</sup>

The aim of this retrospective study was to analyse the reasons of cancellations of elective surgeries and to suggest appropriate measures for optimal OR time utilization.

## 2. MATERIAL AND METHODS

*Study Design:* The present study adopted an observational, descriptive, and cross-sectional approach involving a retrospective examination of theatre records From July 2023 to December 2023. In this study a cancellation was defined as a scenario where a surgical case was scheduled in the operating theatre booking register the day before its intended date but was not completed on the scheduled day for any specified reasons.

*Study setting:* The study was conducted, within the operation, theatre complex of SUHRC Pune, comprising six operating rooms. Various specialities including general surgery, gynaecology, orthopaedics, ophthalmology, ear nose and throat surgery, paediatric surgery and urology utilize these theatres for elective procedures, following a predefined weekly allocation schedule.

### **Patient Selection:**

#### *Inclusion criteria:*

1. Patients, who have planned elective surgery
2. Cases that underwent cancellations for various causes.

#### *Exclusion criteria:*

1. Emergency surgical procedures
2. Daycare surgery.

### **Sampling Method, and Data Source:**

We performed a retrospective, consecutive evaluation of all scheduled elective surgeries that were recorded as cancelled elective surgeries that in the operation theatre cancellation register. Patients meeting the study criteria within the designated time frame were enrolled.

To ensure fair representation from each Surgical department, a proportional sampling method was utilized. The compiled records included diverse information such as dates, surgical department, patient demographics (comprising name, tile number, diagnosis, age, and gender) and explanations for the cancellations.

### **Data Collection:**

A standardized data collection form, known as a proforma sheet, was employed to extract data from the operation theatre records completed by nurses stationed in the operation theatre's reception area.

The extracted information compassed age, gender, diagnosis, scheduled procedure, department, and status (indicating whether the procedure was performed or cancelled) along

with the reasons for cancellation, categorized into medical, patient-related, anaesthesia-related, administrative, or structural issues. Additionally, these reasons were further classified as avoidable or unavoidable.

### 3. RESULTS

Over the period of six months retrospective observational investigation undertaken at the chosen tertiary care hospital, a collective sum of 2614 patients were slated for elective surgical interventions. Among these, 400 operations (15.3%) were cancelled, while 2214 patients (85%) underwent surgery as planned.

The predominant reasons for cancellation were administrative affecting 150 patients (5.73%) followed by patient-related reasons affecting 120 patients (4.5%) (Table 1)

80 patients (3%) were cancelled due to medical reasons while 50 patients (1.91%) were cancelled due to anaesthesia related reasons. The discipline of orthopaedic experienced the highest rate of cancellations at 6.694 %, whereas the lowest rate of cancellation occurred in Ear Nose Throat surgery at 0.573% (Table 2)

**Table 1. Causes for cancellation of elective surgical cases**

Reasons	No. (%) of Surgeries n= 2614
• <b>Administrative or structural reasons</b>	<b>150 (5.73%)</b>
1.Previous case ran over booked time	80(3.06%)
2.Emergency case took place of scheduled surgery	60 (2.295%)
3.Equipment Unavailable	10 (0.382%)
• <b>Patient-related reasons</b>	<b>120 (4.59%)</b>
1.Patient unavailable	10 (0.38%)
2.Patient refused procedure	20(0.765%)
3 Patient did not adhere to surgical instructions (Patient not NPO)	30(1.147%)
5.Patient Relative not available	60(2.295%)
• <b>Medical reasons</b>	<b>80 (3%)</b>
1.Change in medical condition after PSS	10 (0.38%)
2.Acute illness or condition < 24 h	10 (0.38%)
3.Change In medical condition > 24 h	10 (0.38%)
4.Insufficient workup	50 (1.912%)
• <b>Anaesthesia related</b>	<b>50 (1.96%)</b>
1.Not fit for surgery	20 (0.765%)
2.Hypertension	30 (1.14%)

**Table 2: Speciality-wise distribution of cases (no of cancelled surgery and %)**

Specialty	No. of scheduled cases	No. of cancelled cases	No. of cancelled cases (%)
Orthopaedic	1046	175	6.694%
General surgery	784	150	5.738%
Obstetrics and Gynaecology	392	25	0.956%
Ear Nose Throat	131	15	0.573%
Ophthalmology	261	35	1.338%

**Table 3: Cases cancelled as a percentage of scheduled cases**

Specialty	No. of scheduled cases	No. of cancelled cases	No. of cancelled cases (%)
Orthopaedic	1046	175	16.73%
General surgery	784	150	19.13%
Obstetrics and Gynaecology	392	25	6.37%
Ear Nose Throat	131	15	11.45%
Ophthalmology	261	35	13.40%

Table 2 shows the speciality-wise distribution of cases and percentage of cancelled cases. Orthopaedic surgery had highest no of cancellation 175 (6.694%) patients where ENT had the least contribution to total cancellation with 15 patient (0.573%).

When the number of cases cancelled in each speciality were compared with the number of cases booked in the speciality, general surgery had the highest cancellation rate of 19.13% followed by orthopaedic 16.73% and ophthalmology 13.40% while ENT had least cancellation rate of 0.573% (Table 3)

#### 4. DISCUSSION:

In a hospital, the Operation Theatre (OT) is considered as one of the most important areas. OT requires considerable human resources and expenditure. The rate of case cancellation is a powerful reflector of OT facility utilization. Study done by Macario (2006) described that <5% case cancellation rate shows Optimal utilization of OT facilities. <sup>(6)</sup> The Department of Health in Australia, set a benchmark of <2% for rate of case cancellation due to any reason and cancellation due to medical conditions was set < 1% and patient failed to attend was <0-5%. <sup>(7)</sup> Financial, logistical, and psychological problems are caused by cancellations of elective surgeries to patients and their families. Cancellation led to disappointment, frustration and anxiety in patient and their relatives. Surgical cancellation cause underutilization of OT, long waiting list and increased Cost. <sup>(2)</sup>

Operating time shortage (5.73) % was one of the most important reasons of cancellation of elective operation in the present study. A lot of OT time is wasted due to late OT starting, time between cases, cleaning and preparation of OTs and transportation delay of patients to OT. <sup>(8)(9)</sup> By cooperation from anaesthesiologist and surgeon, OT can be started early. Garg et al found that 59.7% of cases were cancelled due to lack of availability of OT time. <sup>(10)</sup>

Lengthy OT Lists prepared by junior surgeons who were not familiar with the procedure and unplanned admissions were also a reason for cancellation of operations. Underestimation of time needed for the operation by the surgeon is one of the reasons for lack of OT time. Surgeons

usually prepare long OT List in anticipation of unexpected cancellations and to reduce waiting lists. <sup>(2)(10)</sup>

An analysis of 56,000 cases in USA was done retrospectively and it was found that 31% of the lists were overbooked. <sup>(11)</sup>

As suggested by study done Garg et al, we can save OT time by inserting epidural catheters, securing central and peripheral intravenous access in the side room, and overlapping induction of anaesthesia while previous patient was still in OT. <sup>(10)</sup>

It was found in a study done by Pandit et al that over running OT lists were the commonest cause of cancellation of cases as the day of surgery. 50% of the scheduled surgeries continue beyond their scheduled time and 50% OT lists were double-booked. <sup>(12)</sup> Planned list may be delayed due to unforeseen anaesthetic or surgical problems. The skill of the operating surgeon decides time required for a particular surgery.

Surgery cancellation due to medical problems is another important reason for cancellations and it is upsetting for patients. Another important reason for cancellation of cases in our study was inadequate preoperative medical optimization. The main reasons were hypertension, uncontrolled DM, recent onset respiratory tract infections and an acute onset cardiovascular abnormality. Some cancellations were due to failure to comply with preoperative orders. It can be minimized by preoperative visit by anaesthesiologist and surgeon a day prior to scheduled surgery. <sup>(13)</sup> Hussain et al reported, that 8% of cancellation of cases on the day of surgery was anaesthesia-related. <sup>(14)</sup>

Our hospital being in a remote location, relative of the patient was unavailable for giving consent, this was an important reason for surgical cancellations. Failure to be present on the day of surgery and last-minute cancellation by a patient is very difficult to resolve. It was 0.38% in our study. It may be due to patient's last-minute doubts and fears. It can be resolved by improved communication with patient to facilitate their compliance with scheduled surgery.

#### **Limitations of the study:**

- 1.The study has only considered elective inpatient surgery.
- 2.The study was limited to one hospital and may not be generalizable to other hospitals.
- 3.The data was collected manually, recorded by hospital staff which was observational and retrospective. So there may be bias in recording and coding of cases.

## **5. CONCLUSION**

This study underscores the importance of addressing surgical cancellations to optimize resource utilization and enhance patient care in tertiary care hospitals. Providing adequate information for the scheduled patient, proper scheduling, fulfilment of necessary operating room equipment and clear communication with operating room team helps to improve operation theatre efficiency and to reduce avoidable cancellation.

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**Conflict of Interest:** None

## **6. REFERENCES**

1. Lankoande, M., Bonkougou, P., Traore, S., Kabore, R., Ouangre, E., and Pendeville, P. (2016). Cancellation of elective surgical procedures in the university teaching hospital center Yalgado Ouedraogo in Burkina Faso: incidence, reasons and proposals for improvement. *Southern African Journal of Anaesthesia and Analgesia*, 22(5), 140–144. <https://doi.org/10.1080/22201181.2016.1226539>

2. Zafar A, Mufti TS, Griffin S, Ahmed S and Ansari JA. 2007 Jul-Sep; Cancelled elective general surgical operations in Ayub Teaching Hospital. *J Ayub Med Coll Abbottabad.* 19(3):64-6. PMID: 18444594.
3. Robb WB, O'Sullivan MJ, Brannigan AE and Bouchier-Hayes DJ. 2004 Jul-Sep; Are elective surgical operations cancelled due to increasing medical admissions? *Ir J Med Sci.* 173(3):129-32. doi: 10.1007/BF03167925. PMID: 15693380.
4. An Audit of Day Case Cancellations In A Nigerian Tertiary Hospital Based Day Case Unit E.O. Ojo, C.H. Ihezue Departments of Surgery; Jos University Teaching Hospital, Jos, Nigeria Correspondence to: Dr. Ojo E. O. Email: darekh2005@yahoo.co.uk
5. Kumar R and Gandhi R. 2012; Jan Reasons for cancellation of operation on the day of intended surgery in a multidisciplinary 500 bedded hospital. *J Anaesthesiol Clin Pharmacol.* 28(1):66-9. doi: 10.4103/0970-9185.92442. PMID: 22345949; PMCID: PMC3275976.
6. Macario A. 2006; Aug Are your hospital operating rooms "efficient"? A scoring system with eight performance indicators. *Anesthesiology.* 105(2):237-40. doi: 10.1097/00000542-200608000-00004. PMID: 16871055.
7. Pre - Procedure Preparation Toolkit Sydney: NSW Department of Health, revised Nov 2012 websites [http://www.health.nsw.gov.au/policies / 91/2007 GL2007-018, html.](http://www.health.nsw.gov.au/policies/91/2007_GL2007-018.html) Accessed on 16 February 2014,
8. Lebowitz P. 2003 Mar; Why can't my procedures start on time? *AORN J.* 77(3):594-7. doi: 10.1016/s0001-2092(06)61253-2. PMID: 12691249.
9. Truong A, Tessler MJ, Kleiman SJ and Bensimon M. 1996 Dec; Late operating room starts experience with an education trial. *Can J Anaesth.* 43(12):1233-6. doi: 10.1007/BF03013431. PMID: 8955973.
10. Garg R, Bhalotra AR, Bhadoria P, Gupta N and Anand R. 2009 Feb Reasons for cancellation of cases on the day of surgery-a prospective study. *Indian J Anaesth.*;53(1):35-9. PMID: 20640075; PMCID: PMC2900031.
11. Schofield WN, Rubin GL, Piza M, Lai YY, Sindhusake D, Fearnside MR and Klineberg PL. 2005 Jun 20; Cancellation of operations on the day of intended surgery at a major Australian referral hospital. *Med J Aust.* 182(12):612-5. doi: 10.5694/j.1326-5377.2005.tb06846.x. PMID: 15963016.
12. Pandit JJ and Carey A. 2006 Aug; Estimating the duration of common elective operations: implications for operating list management. *Anaesthesia.* 61(8):768-76. doi: 10.1111/j.1365-2044.2006.04719.x. PMID: 16867090.
13. Fischer SP. 1996; Jul Development and effectiveness of an anesthesia preoperative evaluation clinic in a teaching hospital. *Anesthesiology.* 85(1):196-206. doi: 10.1097/00000542-199607000-00025. PMID: 8694365.
14. Hussain AM and Khan FA. 2005 Sep; Anaesthetic reasons for cancellation of elective surgical inpatients on the day of surgery in a teaching hospital. *J Pak Med Assoc.* 55(9):374-8. PMID: 16302470.