

Original Article

A Prospective Study of Case Cancellation at a Tertiary Care Centre

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ABSTRACT

Objectives: Case cancellation is a new and upcoming quantitative measurement of the standard of surgeries being done in the hospital.

Material and Methods: Prospective data analysis from January 2018 to December 2023 of the cases being cancelled in our department.

Results: A total of 913 cancelled cases out of 7021 cases amounted to a case cancellation rate of 13%. Case cancellation was more common among men. Patients aged 61–70 years were most susceptible to cancelling cases.

Conclusion: The case cancellation rate reflects the quality of surgeries at the health centre. High rates suggest poor management, staff shortages, and overburdened doctors.

Keywords: General Surgery, Economics, In-patient, Elective Cases

INTRODUCTION

Case cancellation or cancelled case is defined as one that was not performed after the schedule was finalised the day before surgery.^[1,2] Unanticipated cancellation of the operations leads to decreased theatre efficiency, waste of valuable time and resources, and increased hospital expenses, causing potential revenue loss to the institution.^[3,4] Furthermore, it negatively impacts the patient's mental status and causes dissatisfaction.^[3,5] High cancellation of elective surgeries also affects medical education, training and skills for the students enrolled for their degrees.^[6] Our study aims to analyse the reason behind case cancellations in our hospital in the Hyderabad-Karnataka region.

Aims and Objectives

1. To know the most common age group and sex of the cancelled cases.
2. To know the case cancellation percentage.
3. To know the reason for case cancellation.

MATERIAL AND METHODS

Type of study: Prospective observational analytical study.

Source of data: Case cancellation register of patients scheduled for an elective operative procedure at our Department of General Surgery in our hospital.

Study period: January 2018 to December 2023, excluding years – 2020 and 2021.

Inclusion criteria:

1. Elective general surgery cases submitted to the operating theatre.
2. Patients with complete data in the case cancellation register.

Exclusion criteria:

1. Elective general surgery cases in the year 2020 and 2021

Methodology

A case cancellation register was maintained in the operating theatre to note the details of the cases being cancelled. The following data was collected from the register:

1. Age of the patient.
2. Gender of the patient.
3. Type of surgery.
4. Reason for cancellation.

The collected data was tabulated and analysed in an Excel spreadsheet. No data was collected that could uniquely identify the patient.

RESULTS

Data collected revealed a total of 913 cancelled cases and 7021 operated cases, with a cancellation rate of 13%. The maximum cancellation of cases was in the year 2018 with 340 cases. A decreasing trend was seen in the upcoming years [Figure 1 and Table 1].

The data from the cancellation registry was not obtained for the years 2020 and 2021 when our nation had experienced lockdowns from multiple COVID-19 waves.

Out of 913 cases, 630 of them were males, which amounted to 69%, a significant difference of 13%.

The age group of 61 to 70 years had the most cancellations of cases with a massive 183 compared to other groups [Figure 2]. Cancelled cases due to the patient being unfit show an increasing trend. The two major reasons for the cancellation of cases are patient factors and the patient being unfit for induction of anaesthesia [Table 2].

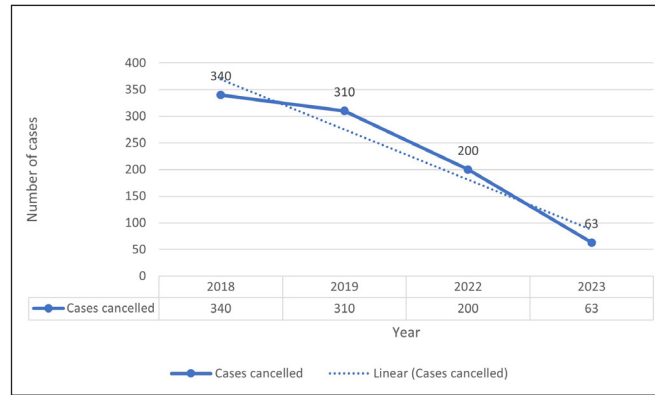


Figure 1: Cases cancelled.

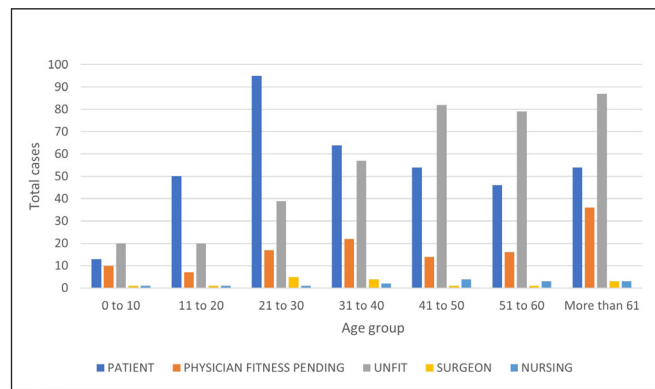


Figure 2: Age group and reason for cancellation.

Table 1: Details of cancellation of cases.

Year	Cases cancelled
2018	340
2019	310
2022	200
2023	63
Total	913

Table 2. Reason for cancellation.

Reason for cancellation	Number	Percentage
Patient	376	41.2
Physician fitness pending	122	13.4
Unfit	384	42.1
Surgeon	16	1.8
Nursing	15	1.6
Total	913	100

DISCUSSION

Cancelling cases underutilizes the operation theatre and causes problems in healthcare systems. Preparing patients for surgery involves resources from both the health facility and the patient. The optimal matching of workload to staffing is crucial to reducing costs.^[1,2] The reasons for cancellation include:

1. Patient factors: cancellations or rescheduling by the patient, refusal for operation for surgery, family members not consenting to procedure
2. Nursing factors include inadequate parts preparation and lack of compliance to preop orders (bowel not prepared, nil by mouth not advised).
3. Surgeon factors include the main operating surgeon not being present and the lack of clinical examination before the procedure.
4. Physician clearance for surgery not achieved the day before the OT.
5. Anaesthetists consider the case to be unfit for the surgical procedure.

Though there is no consensus on the most acceptable rate for case cancellation, a rate less than 5% is generally recommended.^[2] Our analysis of cancelled cases showed a decreasing trend from 340 in 2018 to merely 63 in 2023. Improvements in facilities and increased staff in our hospital contributed to this trend.^[7]

A large proportion of the scheduled cases were male among which around 69% were cancelled. The prevalence of diseases such as diabetes and hypertension is more common in males, which substantially leads to a higher probability of cases being cancelled.^[8,9] An opinion with the general physician was taken for all hypertensive patients and blood pressure was monitored, abnormal readings on the day of surgery are a contributing factor for case cancellation. Additionally, recreational drug use such as smoking and alcoholism is primarily higher in men.^[10-12] This contributes to their abnormal values in liver function tests and chronic obstructive changes in chest rays, which are compulsory baseline investigations required for achieving fitness before surgery.

Upon analysing the different factors with age groups, case cancellations due to patient factors were maximum in the age group of 21–30 years. This trend could be attributed to patients not being confident about surgery, even after the risks are explained and understood. The indecisiveness of younger age-group patients substantially contributes to the observed trend.

With an increase in age, the number of unfit cases shows an upward trend. Additionally, patients in the higher age groups have their elective operative procedures cancelled

due to multiple factors. Multiple parameters including non-communicable diseases like hypertension and diabetes contribute to the above trend.^[13,14] A correction of blood pressure using antihypertensive and blood sugar levels using regular insulin was attempted. The case stood cancelled if the said parameters were not within the normal range. This included a raised blood pressure above 140/90 mm Hg and fasting blood sugars above 140 mg/dL.^[15-17] Though a few alteration in blood pressure values was allowed after 65 years, a strict policy of elective procedures was attempted in younger age groups. Abnormal changes in ECG were observed more in older age group^[18] prompting an elective 2-dimensional echocardiogram of the heart, unavailable after 3 pm at our hospital.

There are a few drawbacks to the study. A physician's fitness was sought for all minor and major cases before the elective surgery. Whether fitness was needed before an anaesthesiologist evaluation is up for debate. The drawbacks of this study include.

CONCLUSION

The case cancellation rate is an important indicator of the current status of the surgeries being conducted in the health centre. The higher rates are associated with poor hospital management, inadequate staff and over-burdening doctors. The reduction in the cancellation rate indicates a positive outcome and sets the stage for a brighter future.

Author Contributions

Dr. Ramprashanth M P was involved in the analysis and interpretation of data, and also contributed to manuscript preparation. Dr. Sangamesh B T was the core author where he contributed by conceptualization the original idea, Methodology, and was tasked with the final review. Dr. Shivakumar C R contributed by administering the project. Dr. Pranesh Katti helped with collection of the data and overall guidance.

Declarations

This paper won an award at the national conference in India.

Acknowledgement

Our sincere thanks to the Department of General Surgery in our hospital, the staff working in our operation theatre and the management of the hospital.

Ethical approval

Ethical approval is not required as there was non-disclosure of identity of the data of the patients, no harm was done to

the human subjects and the data was collected from public domain of case cancellation register.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Nil

Conflicts of interest

There are no conflicts of interest.

Use of Artificial Intelligence (AI)-Assisted Technology for manuscript preparation

The author(s) confirms that there was no use of artificial intelligence (AI)-Assisted Technology for assisting in the writing or editing of the manuscript and no images were manipulated using the AI.

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