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Factors Contributing To Surgery Cancellations: Analyzing Causes, Impact, And Strategies For Reducing Inefficiencies In Hospital Operations

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Abstract

Healthcare spending has risen significantly, with a substantial portion allocated to hospital services, making the efficient management of hospital operations crucial. One major contributor to hospital inefficiency and resource wastage is the cancellation of surgeries. This study aimed to investigate the reasons behind surgery cancellations in a hospital setting. Out of 8,256 surgeries, 166 (4%) were canceled. Data was collected by reviewing patient files, and a checklist was developed to categorize the reasons for cancellation. Key factors identified included high-risk underlying diseases (24.7%), patient non-attendance (12.8%), changes in clinical status (9.1%), unavailability of operation theater time (9%), patient dissatisfaction (7.1%), and incomplete Nil Per Os (NPO) time (7.7%). Additionally, the study analyzed the distribution of cancellations by age and sex, revealing that a higher percentage of males experienced surgery cancellations across all age groups. The findings underscore the complex nature of surgery cancellations, which involve both patient-related and process-related factors. To reduce cancellations, it is recommended that healthcare providers conduct thorough pre-surgical assessments, ensure optimal scheduling, and improve patient communication regarding the risks and consequences of cancellations. Furthermore, better patient preparation, efficient resource management, and minimizing technical failures can significantly decrease cancellation rates. Ultimately, a multi-faceted approach involving comprehensive planning, patient education, and operational coordination can reduce the adverse effects of surgery cancellations, enhancing healthcare delivery efficiency.

Keywords: Healthcare spending, hospital services, surgery cancellations, operational efficiency, resource management

INTRODUCTION

The amount of money being spent on healthcare has increased tremendously with almost 50 percent of the government, spending being subjected to hospital services [1]. This increase in expenses highlights why hospitals need to maximise the efficiency of their operations particularly in their operation rooms to enhance the sustainability of its financing and to enhance service delivery. The efficiency of operation is one of the key factors of deciding hospital costs, and major hospitals spend significant funds on the management of operation rooms, to retain necessary surgeons, skilled and support staff.

One of the major cause of inefficiency and wastage in the hospital system is the last time cancelation of surgeries. Through research studies made in nations such as Hong Kong, Spain, Pakistan, India, and Australia, it has been found out that, cancellation rates of surgery range between 4 percent and 16.6percent. The most common reasons

of such cancellations are: prolonged previous surgeries, inaccessibility of operating rooms, patient not coming, inadequate preparation, inadequate availability of ICU beds, and variation in the clinical status of a patient. Of the survey conducted in Iran by hospitals on Uremia and Tehran, it has a reported cancellation rate of 10.9 couples to 18.6 couples, and one of the greatest factors that assist in cancellation is high-risk underlying health conditions, changes in surgical plans, and patient-related problems. Moreover, surgeries were not always conducted at the best times of day, like the morning slots and this is what led to delay and cancellation.

These are complex consequences of delay in surgery. Such cancellations cost the patients, healthcare systems and the insurance companies more as well as waste valuable hospital bed capacities that can be used in providing emergency care. Moreover, postponed treatments usually entail emotional distress and mental health challenges to patients. The long periods of fasting especially on the vulnerable populations such as infants and old patients are also suspected to compromise their health. The upheavals brought about by surgery cancellation lead to unnumerated operating room timetables, wastage of time, escalated cost of operations, and hospital-acquired infections [5].

MATERIALS AND METHODS

Of the 8,256 surgeries, 166 (4%) were dropped. Data was collected by patient files review about all the canceled operations. We have evaluated available literature all over the world and undergone preliminary classification, and then formulated the checklists. Then we looked at the profiles of 25 patients to develop the initial checklist [6]. The checklist at the beginning of the process contained 15 possible reasons of cancellation. Six reasons were left (Table 1) after the finalization. In order to determine the validity of the questionnaire five experts with the relevant degree and at least one publication on the subject matter were contacted, out of which a total of three professors in the field of hospital administration, four members of the clinical governance committee and two people belonging to the office of the vice-rector of heath in the state universities. The two researchers were asked to enter data of 30 operations in the checklist but each one of them entered their data separately to test the reliability. The results were retrieved and interpreted on SPSS version 11.5 (frequency, percentage). All tests were carried out using a level of significance of 0.05 [7].

RESULTS

The percentages at which cancellations occurred and their causes are given in table 1. The first reason was the presence of high-risk underlying diseases that had a prevalence of 24.7 per cent of cancellations. Various other reasons that were deemed as major include patient non-attendance (12.8%), change of clinical status (9.1%), un-availability of operation theater (9%), patient dissatisfaction (7.1%), and inadequate NPO (Nil Per Os) time (7.7%). These findings not only emphasize the multidimensional causes of surgery eliminations, but also elucidate, not only patient-related, yet process-related issues; i.e. the causes of surgery cancellations are both complex and mixed.

The distribution of surgery cancellation by age and sex can be found in table 2. It shows the percentage of cancellation of male and females as well as the percentage of patients who have canceled at different age groups. There were 339 total cancellations out of which 199 males (58.7 percent) and 142 mothers (41.9 percent) were affected. According to the data, a larger percentage of males cancel their surgery (in all age groups) than the personnel of the opposite gender..

Table 1: Reason and percentage of cancellations of operations

Reasons of operations cancellation	Percent
High-risk underlying disease	24.7%
Patient's non-attendance	12.8%
Change in clinical status	9.11%
Lack of Operation Theater time	9%
Patient's dissatisfaction	7.1%
Patients' incomplete NPO time	7.7%

Table 2: Distribution of age and sex

Sex Age	Male		Female		Total
	Frequency	Percent	Frequency	Percent	
Under 20	34	63.55	22	40.48	56
21-50	60	58.33	47	45.70	105
51-80	63	59	48	45	111
Above 80	42	65.51	25	38.52	67
Total	199		142		339

DISCUSSION

The percentage of surgery cancellation caused by high-risk underlying conditions was 24.7. The complications linked to anesthesia were found in 68.9 percent of such cases that included high-risk diseases [8]. Along with these high-risk conditions, there are several other things that cause the surgery to be canceled. As an example, there may be a violation of the process when a doctor sets the appointment of an operation and does not take into account the health status of a person, or there is the absence of an opportunity to perform surgical intervention due to the current health status of a patient [9]. To address this problem and to decrease the cancellation rate, it is advisable that all the patients should be critically assessed when it comes to risk factors before booking them on any surgery. The other common reason of cancellations is patient non attendance; this is 10.6 percent of all the cancellations. The most reported cause of cancellations is the underlying diseases that are considered to be of high risk and recorded to be causing 24.7% of the cancellation and in 68% of patients, the cancellation was because of anesthesia problems [12]. Cancellations can also occur due to various other reasons as could be scheduling of operations without factoring in the medical condition of the patient [10]. These errors can be the reason behind this disparity. Nurses have to make it clear to patients about the possible complications that can happen after canceling the operation. Other minor causes of cancellations have been identified by research made in Spain, Australia, and other areas [1, 4, 10] which have found a change in clinical status as a leading cause of cancellations. This was the third strongest cause of cancellation in our study with the 7.9% contribution. The next important reason includes unavailability of operation theater time, and it is the fourth most common reason of cancellation, and the proportion of it comprises 7 percent of all the cancellations [11]. Similar results are observed in the studies of Yazd, Tehran, China, Spain, Australia, and India [1, 4, 7, 10-12], and, at that, this question is repeatedly mentioned as the primary cause of canceling surgery. The reason delay in surgery may occur due to the ability of the surgeon, the nature and intricacy of the surgery, the difficulty of the number of surgeries scheduled and the time that it is going to take to carry out the scheduled surgeries. Long operations may also be observed in teaching hospitals which do both surgery and training. [12] However, it may be challenging

to determine how long an operation will be taking since surgical teams usually face unforeseen problems. Determining the average time of processes, hospitals will be able to organize the work of operating rooms much better and prevent insufficient time to conduct other surgeries [13]. In this study 5.8 percent of the cancellations were given under the category of patient dissatisfaction which has not been a very known aspect in other studies perhaps because it is a subset of other causes such as patient non-attendance. Another solution of the problem may be decreasing the number of cancellations because of giving detailed information to the patient about the procedure, its risk, and the right to refuse or accept the surgery [14]. Also, lack of preparation by patients and missing Nil Per Os (NPO) periods accounted to 5.5 percent of cancellations. The latter factor has not been comprehensively brought out in previous studies which could be attributed to the fact that the study was conducted on one hospital specialty. Nevertheless, an adequate solution to the problem might be patient preparation and reminders that would lead to the dramatic decrease of cancellations [15]. Lastly, 4.6 percent of cancellation was due to technical failure and equipment breakdown. In order to avoid them, it is important to coordinate activities of hospital departments, paraclinical units, and surgical team, and it is imperative to make sure that required patients documents are submitted and verified before their arrival.

CONCLUSIONS

Cancellation of surgeries is a major concern in the running of hospitals, causing more expenditure, wastage of resources, and also threatening to postpone the ability of the patient to receive help. The study points out that high-risk underlying conditions are the main cause of surgery cancellations causing 24.7 percent of all cases of surgery cancellations whereas only 68.9 percent are caused by methods relating to anesthesia. This problem is also caused by other forces such as a non-attendant patient, altering clinical conditions, and unavailability of the operating rooms. The results highlight the fact that surgery cancellations are complicated, as they are attributable to factors associated with the patient, as well as processes. In an attempt to minimize cancelations, healthcare providers must engage in comprehensive pre-surgical investigations, adequate scheduling, and effective communication with regard to marginalization of the potential risks and/or outcomes of cancellations. The rate of surgery cancellations can be cut down tremendously by ensuring that the preparation of patients is better, that operations are carried out in an efficient manner and by coordinating operations of various hospital resources. Also, preventive measures on the prevention of technical breakdowns and equipment availability are necessary. Altogether, the multi-faceted strategy of improved planning, educating the patients, and managing the resources can reduce the adverse consequences of surgery cancellations and increase the healthcare delivery efficiency.

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