

## **A Study Protocol for Analysis of the Optimum Utilization of Operation Theater in a Tertiary Care Hospital in Central India**

### **Abstract:**

**Background:** A well-structured and fully functional operation theatre is essential for any tertiary care hospital. It's quite challenging to meet the needs of healthcare services in constantly changing environment and administration issues. The 11<sup>th</sup> hour cancellation of planned operations is quite traumatic and depressing for the patient. Cancellation of elective surgical operations often induces considerable mental distress to patient populations, their families, and the population in general. It has a significant effect on healthcare services due to excessive hospital stays and increased health services entrainment. Elective procedure cancellations often result from inadequate use of staff and medical services. This study aims to determine the frequency, reasons, and history of cancellation of elective surgery in AVBR Hospital, Wardha.

**Methodology:** This will be an observational study to assess the utilization of Operation Theatre in AVBR hospital, Wardha. The secondary data will be obtained from the Operation Theatre Records. Statistics of number of surgeries and Surgery time taken will be recorded. Data on reasons for cancellations will be obtained and necessary information will be obtained from the OT Staff through structured questionnaires and interviews. Data will be analyzed with appropriate statistical tests.

**Expected Result-** Data on reasons for the cancellation of planned surgeries.

**Conclusion-** Appropriate planning and availability of required material and manpower resources is essential for appropriate management of Operation Theatres and avoid wastage of man-hours.

**Keywords-** Cancellations, Surgeries, Operation theatre, Utilization, Rescheduling, Manpower

### **Introduction-**

**Background-** In every hospital, there is a well-organized operating theatre, an essential and essential part of the hospital. In order to secure a proper environment in every hospital, operating theatre requires a significant amount of money. It is important to meet the requirements of patient's need, specialist including operating theatre personnel an excellent management is needed to prove a well-functioning operating theatre. It is essential for the operating theatre to work effectively through constant management to improve surgical performance in every health facility<sup>1</sup>. The operating theatre complex is an expensive part of revenue on hospital budget. To achieve optimal revenue, this part of hospital operation demands full usage. It is noticed out just how effective time duration was being used in health - care facility and if any to find places from which change is feasible<sup>2</sup>. For the proper implementation of the operating room, Baker concluded that regularly review of reported data, detailed reports, the development of operation theatre laws and rules and strong obedience or implementation of authorized policies and practices were necessary ingredients<sup>3</sup>. In previous study about 50 to 60 % of profit in the any

hospital is generated from operation theatre. That is why the unexpected postponement of planned procedures in the very last minute would also be of concern on the morning of surgery. Delayed postponement in planned procedures is a significant cause of increased usage of operation theatre time and a waste of money<sup>4</sup>. In terms of unscheduled workday and absence of everyday life, it is potentially traumatic with negative consequences and expensive to a patient<sup>5</sup>. In the OT Planning of the various tasks must be performed immediately to ensure that the distribution of personnel is carried out effectively, Due to these there will be strong collaboration between surgeons and anesthetists. It will also minimize the postponement of operations by appropriate arrangement of activities. Potentially lengthy operations can be defined and organized in such a manner that they can be performed only within allotted time. Cancellations disrupt patient flow and reduce the efficiency of the theatres, leading to loss of money. Cancellation also adds to psychological distress for patients when they have to undergo psychiatric and clinical pre-operative planning again. For patients and family members financial and emotional consequences can be important<sup>6</sup>. Despite the comprehensive scientific articles on both the planning of hospitalized patients and also the success of surgeries, the emphasis on the cancellation of scheduled surgical procedures has remained silent in the world. For the workflow of the hospital elective procedure is an essential part. This entails the involvement of a variety of individuals almost in the same manner, a settlement of a case impacts several groups, when an event is placed on the registry. In international literature there are various meanings of cancellation, some scholars describe 'cancellation' only as those activities which is cancelled on the day that the operation was planned, while some also consider those that have been cancelled mostly on previous morning<sup>7</sup>. Previous studies looks towards how delays and cancellations can be minimized by affective and early clinical pre-evaluation and increased surgical scheduling. Strategies has been analyzed from a management and medical viewpoint, concentrating on expense, place of residence, increased quality and decreased complication rates to minimize. Cancellation As far as we know, the implications of measures to minimize postponements will not be discussed from the viewpoint of all those affected-patients<sup>8</sup>. Those with low wages suffer the most who solely rely on public health care regarding their health issues. In comparative study, the cancellation of a procedure results in wastage of inquiries and blood cross-matching. In certain cases, especially in patients with cancer, local and distant metastases will advance slowdown in procedure effects like unfavorable patient outcomes.

As patients often seek more pre - operative diagnostic examinations as they come for rescheduled surgery, Cancellation of planned surgical procedures is a significant burden on health services. Patients often have an individual economic effect when they tend to take days off work, contributing to the economic strain of the limited community<sup>9</sup>. A collaboration including physicians, anesthesiologists and paramedics, Surgery is one of the major modalities of care with many conditions taking a number of training and practice. Before surgery, both patients preparing for surgery receive a pre-esthetic review. Last minute delays and cancellations of planned procedures are possibly a matter of healthcare interventions and even a significant cause of misuse of hospital lead time. The subsequent extended hospital admission induces fear, irritation, rage, psychological attachment and distress to patients and family member's. The consistency of the approach to the situation of earlier departure aims to identify the explanations with these postponements and then offer an alternative by each reason separately or jointly for all the causes found. The frequency and conditions of cancellations is complex and vary through hospital to hospital. About 10% and 40% of reserved routine surgeries may be cancelled prior to surgery. Another frequent source of cancellations must have been a shortage of theatre time i.e.

(over running working lists). Other causes including cancellation regarding the patient circumstances, cancellation related to improperly structured health issues, or cancellation due to administrative factors. The procedure schedule can be overwhelmed due to the late setup, poor expansion, and unexpected surgical/anesthetic complications or understaffing. This research was intended to establish the frequency and true reason over last cancellation of emergency treatment and provide improved treatment by optimal use of theatre's services<sup>10</sup>. Even though in developed countries where services are scarce, the cancellation of elective procedures for different avoidable purposes is a frequent occurrence in many other hospitals. It is very well understood that the elimination of patients by elective hospital operations raises expenses, lowers performance, duplicate entries workflow and end up wasting hospital time. Cancellation of elective surgical operations often induces considerable mental distress to patient populations, their families and the population in general, and has a significant effect on healthcare services due to excessive hospital stays and increased price of health services entrainment. Elective procedures cancellations often result from inadequate use of staff and medical services and it can lead to a rise in patients' care costs due to extended stay in the hospital and in certain cases, recurrence of before the planning and management. Repeat delays and cancellations have consequences for patient care, employee productivity, health facility partnership and preparation. The occurrence of cancellation of elective procedure had been estimated in several publications to vary from 20% to 40%. The reasons of cancellation of elective medical interventions are many and appear to differ from one hospital to the next. Hence in order to reduce the level of cancellations to our system, it's indeed necessary to have information of the severity and sources of stress. The cancellation of appointive medical procedures is a big issue at the Buganda Medical Center (BMC). However, considering the severity of the situation, limited research has been devoted to determine the nature and causes of the problem in our environment. This research aimed to determine the frequency, reasons, and history of cancellation of elective surgery in our university hospital. It will allow us to make effective decisions to increase productivity and minimize the misuse from already scarce patient services and human capital<sup>11</sup>.

### **Objectives-**

- 1) To assess the number and range of various surgeries conducted at the operation theatre.
- 2) To analyze the time utilization of surgeries.
- 3) To find out the optimum level of utilization of OT in AVBRH.
- 4) To identify the Causes of delays of surgical cases.
- 5) To assess the most common causes of cancellation of scheduled cases in Operation Theater.
- 6) To assess the financial impact of reduced loss on patients.

### **Methods-**

An observational study will be conducted in the tertiary hospital of Maharashtra to assess the proper utilization of the operation theatre. It will be analyzed by the data collection, which will be recorded through OT registers maintained by OT staff. In study we will also observe the

reasons behind the cancellations of surgery and its impact on patient. It will be done by asking the questions to the staff and workers of the OT.

**Study design-** Observational study.

**Sample collection-** Randomized data collection.

**Place of study-** Acharya Vinoba Bhave Rural Hospital (AVBRH)

**Expected outcome/Result-** This study will help in proper utilization of operation theatre, to analyze causes or reasons behind the cancellations of surgery. By this study, we should avoid the last movement cancellation of surgery and impact of these on the patient.

**Inclusion criteria-** The main operation theatre of the AVBRH.

**Exclusion criteria-** Gynecology surgeries, ENT and minor surgeries.

### **Discussion-**

This study was designed in order to make proper utilization of the operation theatre. The study protocol will help to evaluate the causes and reasons behind the cancellations of surgeries and to make improvement in scheduled surgeries so that the minimal chances of cancellation of surgeries were made, due to these there will be less psychological and financial stress on the patient. Last minute cancellation of the elective surgery was very stressful for the patients and their family members. By proper time utilization in each surgery we can consume time for preparation of the next procedure. Utilizing the time and maintaining the list of procedure we can avoid last minute cancellation of the surgeries. Needs are evident from GBD study data<sup>12-16</sup>. Some of the related articles to various studies in tertiary care hospital were reported<sup>17-20</sup>.

### **Conclusion:**

As there are many reasons for the cancellations of surgeries. We will identify these factors by analyzing the conditions behind it and by proper scheduling the time and maintaining sufficient staff, we will overcome these factors. By observing the data recorded from the operation theatre we will come to know the list of scheduled elective procedures and timing of the particular surgery performed.

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