

Summer Internship Report

at

Sitaram Bhartia Institute of Science and Research

(April 22nd to June 21st, 2024)

A Report

By

Abaan Siddiqui

PGDM (Hospital and Health Management)

2023-2025



International Institute of Health Management

Research, New Delhi

Acknowledgement

The completion of this work would be incomplete without mentioning the people that aided me through every step of the way. The invaluable guidance and the encouragement received throughout the entire duration of this project made it all possible.

I would like to thank Dr. Sumant Swain, who played an incomparable hand in the completion of this project. The part his guidance and her willingness to accommodate and solve any query of mine have played in the successful completion of this project cannot be put into words. He has truly been an inspiration.

This vote of thanks would be incomplete without mentioning Ms. Sandhya Sachdev and Ms. Rakhi Wadhwani, whose expertise played a huge role in this project. Without them this project would have never seen the light of day.

I would also like to thank Dr. Reeta Chawla and the Operation Theatre Staff, who guided me every step of the way while I learned the ropes.

I would also like to thank my parents and guardians for their continuous support.

Certificate of Approval

The Summer Internship Project of titled “**To assess the process of scheduling, rescheduling and cancellation of surgeries in Operation Theatre**” at “**Sitaram Bhartia Institute of Science and Research**” is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the report only for the purpose it is submitted.



Dr. Sumant Swain

Assistant Professor

IIHMR, Delhi

FEEDBACK FORM

(IIHMR MENTOR)

Name of the Student: ABAAN SIDDIQUI

Summer Internship Institution: Sitaram Bhardia Institute of Science And Research

Area of Summer Internship: Quality and Operation Theatre

Attendance: 96%.

Objectives met: I identified bottlenecks
Proposed effective strategies

Deliverables: Assessed Scheduling, re-scheduling and cancellations
in OT and came up a conclusion on the rate of
the above mentioned

Strengths: Data collection
Data tabulation
Analysis

Suggestions for Improvement: Analysis at a larger scale

Signature of the Officer-in-Charge (Internship)

Date:

Place:

FEEDBACK FORM

(Organization Supervisor)

Name of the Student: ABAAN SIDDIQUI

Summer Internship Institution: SITARAM BHARTIA INSTITUTE
OF SCIENCE & RESEARCH

Area of Summer Internship: QUALITY (OPERATION THEATRE)

Attendance: 96%

Objectives met:

Deliverables:

Quality improvement initiative project focussing on assessing scheduling, rescheduling and cancellation of elective surgeries in a private hospital setting. Data collection from daily cases and came to a conclusion on the rate of rescheduling and cancellation.

Strengths:

Data collection
Data tabulation
Analysis.

Suggestions for Improvement:

Analysis at a larger scale


Dimple Chawla.

Signature of the Officer-in-Charge (Internship)

Date: 20/6/24
Place: 2.30PM.



B-16 Qutab Institutional Area
New Delhi 110 016 India
TEL (011) 4211 1111
enquiries@sitarambhartia.org
www.sitarambhartia.org



SB/HR/INTERN/2024/4850

June 21, 2024

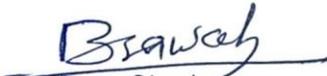
TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Abaan Siddiqui has done his voluntary internship with this Institute in the department of Quality and Training from April 22, 2024 to June 21, 2024.

During the tenure of his internship with the Institute, he is found to have a good moral character/conduct and work ethics.

We wish him all success in his future endeavors.

For **Sitaram Bhartia Institute of Science & Research**


Beer Singh
Manager-Human Resources



Abaan S ST

ORIGINALITY REPORT

2%

SIMILARITY INDEX

2%

INTERNET SOURCES

2%

PUBLICATIONS

1%

STUDENT PAPERS

PRIMARY SOURCES

1

estatedocbox.com

Internet Source

1%

2

core.ac.uk

Internet Source

1%

3

journals.plos.org

Internet Source

<1%

4

www.aiims.edu

Internet Source

<1%

Exclude quotes On

Exclude matches Off

Exclude bibliography On

Table of Contents

<u>Serial Number</u>	<u>Title</u>	<u>Page Number</u>
<i>1</i>	<i>Acronyms and Abbreviations</i>	<i>10</i>
<i>2</i>	<i>Observational Learning</i>	<i>11</i>
<i>2.1</i>	<i>Introduction</i>	<i>12</i>
<i>2.2</i>	<i>Key Learnings</i>	<i>17</i>
<i>3</i>	<i>Project Report</i>	<i>18</i>
<i>3.1</i>	<i>Introduction</i>	<i>19</i>
<i>3.2</i>	<i>Mode of Data Collection</i>	<i>20</i>
<i>3.3</i>	<i>Results</i>	<i>21</i>
<i>3.4</i>	<i>Discussion</i>	<i>27</i>
<i>3.5</i>	<i>Conclusion</i>	<i>28</i>
<i>3.6</i>	<i>References</i>	<i>29</i>

Acronyms and Abbreviations

<u>Serial Number</u>	<u>Abbreviation</u>	<u>Full Description</u>
<i>1</i>	<i>SBISR</i>	<i>Sitaram Bhartia Institute of Science and Research</i>
<i>2</i>	<i>OT</i>	<i>Operation Theatre</i>
<i>3</i>	<i>OR</i>	<i>Operating Room</i>
<i>4</i>	<i>TPA</i>	<i>Third Party Assurance</i>

Observational Learnings

Introduction

Sitaram Bhartia Institute is a premier healthcare institute located in Delhi. Founded in 1979, as a research institute with the goal of bettering society through innovative medical solutions, it eventually evolved into a 70-bedded, non-profit multi-specialty hospital focused on providing excellent, high-quality patient care while continuing their medical research. Their work focuses on the collection of health-related data, the application of evidence-based recommendations to clinical practice, the creation of affordable treatments to enhance care, the investigation of the variables influencing the onset of illness, and the analysis of medical literature to produce clinical guidelines. They also strive towards delivering care on par with international standards.

The Institute offers a variety of facilities such as an Intensive Care Unit, Neonatal Intensive Care Unit, Pediatric Intensive Care Unit, an Emergency Ward, and Birthing Unit on top of the vast range of specialities, diagnostic and inpatient facilities. By employing top of the line professionals, holding themselves to a higher standard, and perpetually working towards improving the quality of care, Sitaram Bhartia Institute of Science and Research ensures that their patients receive unparalleled healthcare services.

Core purpose

To serve society as a well-spring of excellence in healthcare delivery, research and education

Core Ideology

- Putting the interest of the patient first
- Treating others as you would want to be treated yourself
- Continuous learning and improvement
- Institution building

Visions for the Future

To be a thriving medical facility renowned for their dedication to using evidence-based medicine and

offering top-notch treatment. Their well-established research programs will be centered on improving their knowledge of the health care needs in their communities and creating workable solutions to meet those needs.

To be remembered as trailblazers for having effectively tackled health care issues that could have gone unnoticed otherwise.

To be at the forefront of teaching health professionals and have collaboration agreements with top schools worldwide.

Specialities Offered

Anesthesiology

Safe pain management before, during and after your surgery.

We have 24-hour onsite coverage by anesthesiologists. Besides their role in facilitating safe surgeries, anesthesiologists provide post-operative pain relief, supervise care in the intensive care unit and recovery room, and provide epidural analgesia in the labour room.

Dental

Sitaram Bhartia provides high quality and safe oral care through a wide range of dental services.

The department is led by Dr. Bindiya Bansal, a dental surgeon with 25 years of experience.

Dermatology

With a combined experience of over 60 years, the dermatologists at Sitaram Bhartia are well recognized experts in their fields. The department handles care and treatment of commonly seen skin diseases and conditions like psoriasis and eczema along with providing specialized care for lesser known disorders.

Diabetes & Endocrinology

The Diabetes Centre at Sitaram Bhartia Institute of Science and Research is one of the earliest centers in the city to offer comprehensive care and emphasizes self-management by patients. We help each person identify their treatment goals, pick a treatment regime, and obtain knowledge and skills necessary for their day to day management.

ENT

The ENT department offers a wide range of outpatient and inpatient services related to disorders of the ear, nose and throat. These are offered by a team of experienced and skilled doctors.

Gastroenterology

The gastroenterology department is equipped to carry out diagnostic and therapeutic procedures of the upper and lower gastrointestinal tract (sigmoidoscopy and colonoscopy).

Nephrology

We have a dedicated Nephrology OPD and do a comprehensive evaluation of patients with kidney related problems such as diabetic kidney disease, infections, acute and chronic renal failure and renal hypertension. Besides clinical examination, this includes laboratory tests and radiology work up.

We have 24 hour Emergency as well as planned dialysis facilities. This includes hemodialysis and peritoneal dialysis.

All forms of modern endo-urological operations including the use of lasers are routinely undertaken.

Obstetrics & Gynaecology

The Obstetrics and Gynaecology department provides care for women between the ages of adolescence to post-menopause and has emerged as the largest specialty at Sitaram Bhartia.

Patients and parents receiving care from Obstetrics and Gynaecology consistently give high ratings and express great satisfaction with their care. A major focus of the department is to de-medicalise childbirth and reduce the caesarean section rate to medically justifiable levels.

Ophthalmology

The department of ophthalmology at Sitaram Bhartia is staffed by a team of experienced specialists who have been trained in premier medical colleges of India. They are a dedicated and competent set of doctors, capable of handling various medical and surgical conditions in the specialty.

Psychiatry & Psychology

The department of psychiatry and psychology is led by Dr. Alok Sarin, one of the preeminent psychiatrists in the country.

Psychiatry services are provided for adults and the elderly, while psychology services include children and adults.

(A) Department of Psychiatry– The psychiatry department provides outpatient consultation services for adults and the elderly.

(B) Department of Psychology– The psychology department provides the following services:

1. Psychological assessments for children, adults and corporate employees
2. Psychological support services
3. Special education and therapeutic programs for children
4. Therapy sessions for children with special needs

Radiology

Radiology and Cardio-Pulmonary Diagnostics

The department of imaging services was established to provide quality imaging services, facilitating our vision to provide comprehensive care with state-of-the-art imaging facilities.

The department is equipped with conventional X-ray units, a Computerized Radiographic system, a dedicated Mammography unit, a Dexa scan unit, and 2 ultrasound scanners with Color Doppler facility for vascular, cardiac, transvaginal, transrectal and small parts studies.

There is a 24x7 emergency radiology service 365 days in the year and a regular 8am-5pm service daily.

The department is planned and approved by the regulatory authority AERB for radiation safety and radiation surveillance. The staff is covered by a radiation monitoring facility to ensure radiation safety. An annual health check-up is provided to the staff for occupational safety. The department is registered with the PC and PNDT authorities and is compliant with laid down procedures.

Urology

The department of urology at Sitaram Bhartia Institute of Science and Research offers treatment options for prostate enlargement, stone disease, male infertility, andrology, reconstructive urology and all forms of urologic cancer. The Department of Urology also provides Gender Re-assignment Surgery (GRS), also known as a sex-change operation, for which we have an integrated team under Dr. (Col.) S.V. Kotwal. All forms of modern endo-urological operations including the use of lasers are routinely undertaken.

The Quality Department

The Quality Department at Sitaram Bhartia Institute of Science and Research plays a crucial role in ensuring that patient care and services meet high standards of safety, effectiveness, and efficiency. It does so by improving upon the workflow of the staff, making sure that regulatory compliances are met, measuring the performance of each department, monitoring patient safety protocols, identifying potential risks to the institution and drawing up contingencies for them, working on improving the patient satisfaction, training staff, among many other responsibilities.

The Operation Theatre

The Operating Theatre (OT) at Sitaram Bhartia Institute of Science and Research (SBISR) consists of three wards, those being the Pre-Operative Ward, where the patient is brought in from one of the multiple nursing wards. Here any final tests that remain can be performed and the anesthetist can brief the patient before they undergo the surgery. The patient is then transferred to one of three Operating Rooms (OR) where they go through the procedure, after which they are transferred to the recovery ward where they await the clearance from their doctor. The Central Sterile Supply Department (CSSD) attached to the OT is where the instruments and materials used during the surgery are sent to be either disposed of or sterilized.

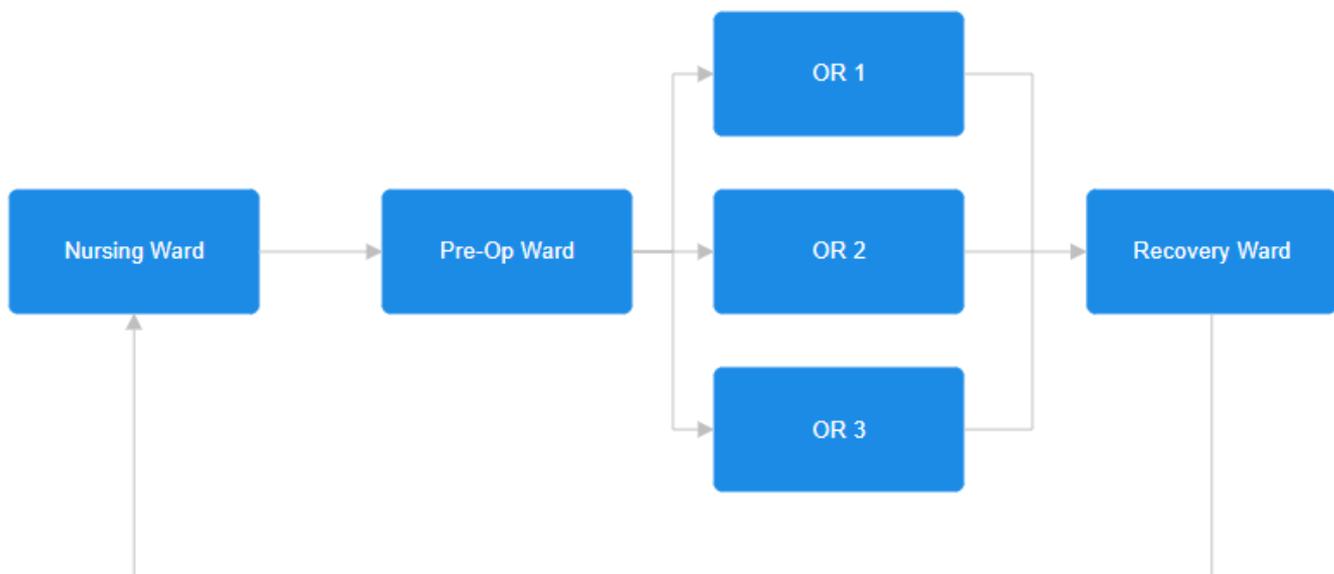


Figure 1: Process flow of the Operation Theatre

Key Learnings

During my time in the Quality Department, I was made aware of the multitude of responsibilities that the department has to bear. Some of these include:

- Telephone Exchange Audit, where calls between sales representatives and patients are monitored to ensure compliance with the set guidelines.
- Net Promoter Score visits, where soon to be discharged patients are surveyed regarding their experience with the service they received.
- Pharmacy Turnaround time audit, which monitors the response time of the pharmacy for drug orders.
- In Patient Department Billing and accounts Billing Audit, enacted in order to reduce the errors produced at the time of billing.
- Medical Audit, focused on finding out whether the Initial Assessment is being filled in correctly by the physicians and nursing staff.
- Value Stream Mapping of Discharge Patients, which sought to point out delays in the discharge process and ascertain the reasons as to why.
- The PDSA Cycle, which stands for Plan, Do, Study, Act Cycle which works in conjunction with the Model for Improvement, a process for continuous improvement employed by the Quality Department for their projects.

Project Report

TO ASSESS THE PROCESS OF SCHEDULING, RESCHEDULING AND CANCELLATION OF SURGERIES IN THE OPERATION THEATRE

Introduction

The OT is a specialized suite within the hospital where patients who require surgical intervention can be operated upon by surgeons in a sterilized environment. Being one of the more capital intensive resources of the Hospital, the OT incurs around 40% of the Hospital's costs. It is also responsible for the highest amount of revenue generated, with studies stating that the OT generates approximately 70% of the Hospital's revenue. The Operating Cost of the OR comprises nearly 67% of the total cost.

With all these factors coming into play, it becomes of imperative, for Hospital Administrators, that such a resource is utilized and managed efficiently to ensure a higher standard of quality care, while at the same time maintaining the financial proficiency of the hospital. The limited resources such as infrastructure, human capital, consumables and more need to be effectively employed to reduce wastage and, in consequence, prevent incurring any unnecessary costs.

One of the several ways this is done is through a well-structured OT schedule. Scheduling in the OT is a crucial aspect of healthcare management aimed at optimizing the utilization of resources while ensuring patient safety and efficient workflow. It involves the appropriate allocation of the ORs to the medical surgeons, following a systematic approach that allows the smoothest functioning of the OT.

Cancellations and reschedules act as a barrier on the path to achieving this goal. Cancellations have been shown to not only affect the patient's satisfaction levels, often causing them distress and potentially running the risk of their condition worsening, but also negatively impact the staff as well, reducing their ability to perform to the best of their ability. The workflow of the OR is also disrupted, kits required for the surgery need to be sent back to the Central Sterile Supply Department (CSSD) and an OR that could have been scheduled for a different surgery will now go unused. It also leads to increased costs, causing losses for the institution that could be avoided. Macintosh B. et al state that the United Kingdom, hospitals face an estimated 88 million dollar loss to last minute cancellations annually. The same is applicable for rescheduled surgeries. These also have the additional caveat of

the availability of the staff and resources on the rescheduled day.

With the negative impacts of cancellations and reschedules contributing significantly to the inefficiency in the functioning of the OT, it becomes important to decrease their occurrence by resolving the issues contributing to them. The purpose of this study is to ascertain the number of cancellations and reschedules that occur at the SBISR, a Multi-Specialty Hospital located in South Delhi, and to pinpoint the common and recurring reasons for the same in order to provide potential solutions to the problem.

Mode of Data Collection

This study was carried out in the Operation Theatre of SBISR, New Delhi from the 9th of May to the 8th of June under the guidance of the concerned authorities. The study is an observational, cross-sectional study. The data was collected in complete enumeration, recording all cancellations and reschedules that occurred during the study period. The reasons were also recorded for the same from the surgeons themselves and by consulting the service leaders of the Out Patient Department (OPD).

The data was collected by visiting the OT on a daily basis for half the working day and consulting the OT Manager. As the scheduled surgeries were recorded on paper, in a register by the Manager himself, reschedules and cancellations could be recorded in real time along with their reasons, allowing for the most accurate method for data collection.

The data collected was maintained digitally in a MS Excel sheet, which was also used for analysis. Based upon the findings, recommendations would be provided.

Results

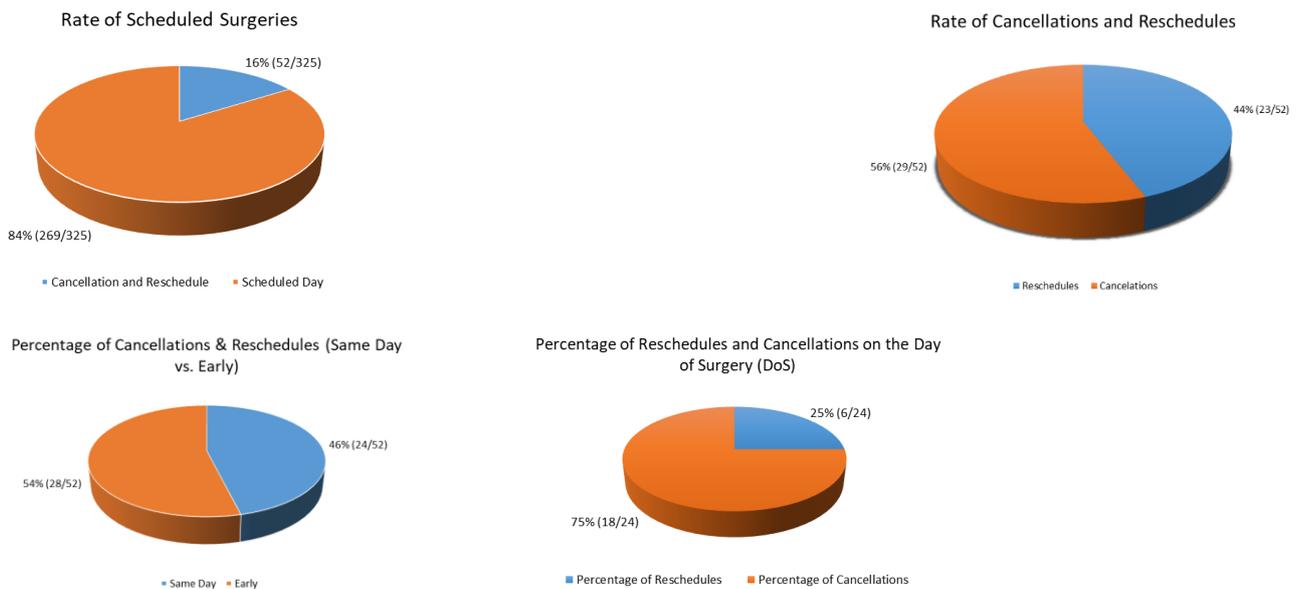


Figure 2

After analysing the data in MS Excel, the combined cancellation and reschedule rates was found to be 16% (52/325) out of all planned surgeries. The majority of surgeries, that being 84% (269/325), occurred on the day they were scheduled for.

The rate Cancellations constituted 56% (29/52) all changes to the OT list, whereas Reschedules made up around 44% (23/52).

Out of all the cancellations and reschedules that had taken place during the time of the study, 46% of them occurred on the same day that the surgery was initially scheduled.

The number of cancellations on the Day of Surgery greatly outnumbered the rescheduled that occurred on the Day of Surgery by an extremely wide margin. Cancellations constituted 75% (18/24) of all changes made on the Day of Surgery whereas Reschedules were limited to 25% (6/24).

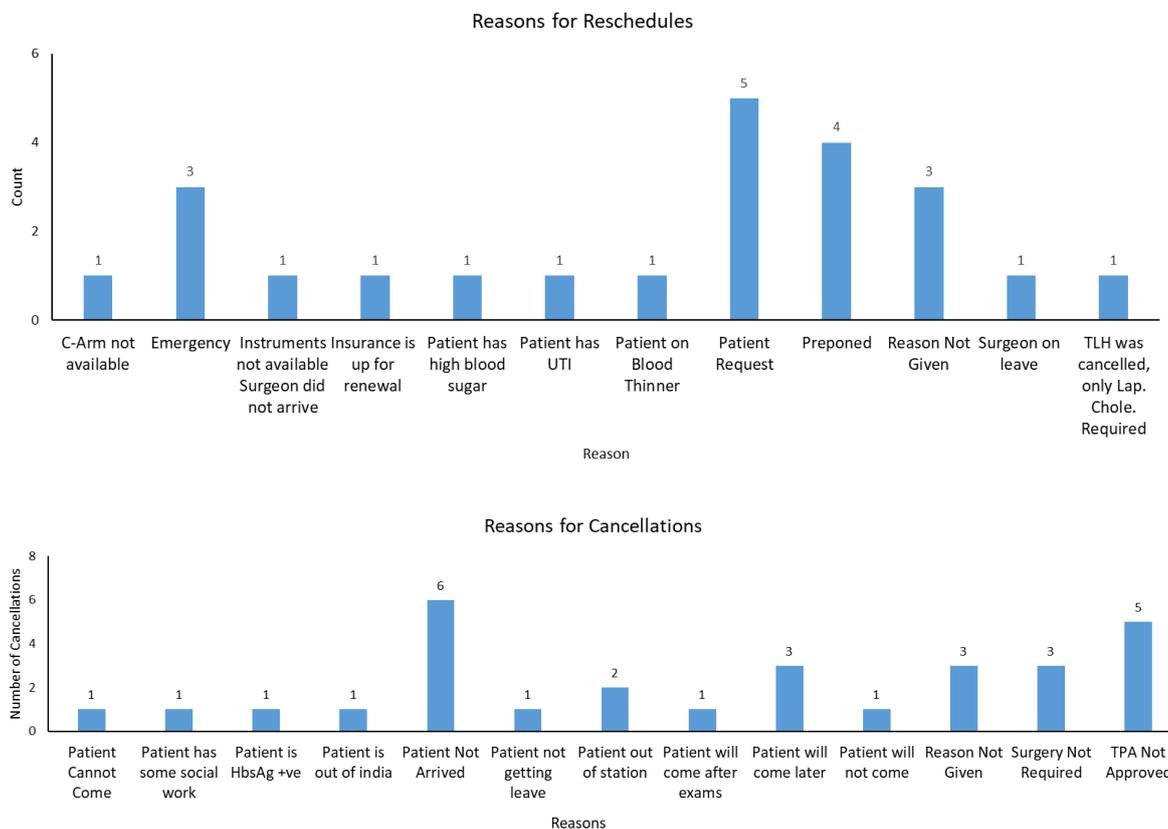


Figure 2

The reasons for cancellations revealed that the “Patient not Arrived” was the most common reason, followed by “TPA Not Approved” and “Patient will come later.”

The prevalent reason behind reschedules in the OT were by the Patients request, followed by them being preponed and Emergency cases.

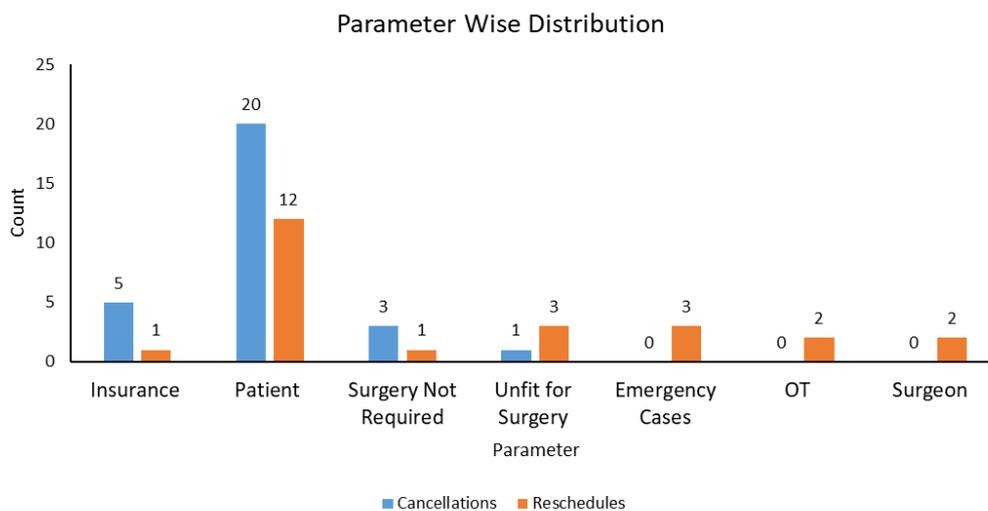


Figure 3

After grouping the reasons recorded by the parameter they represented, the Patient Parameter was

seen as the most overwhelmingly common reason behind cancellations, and reschedules.

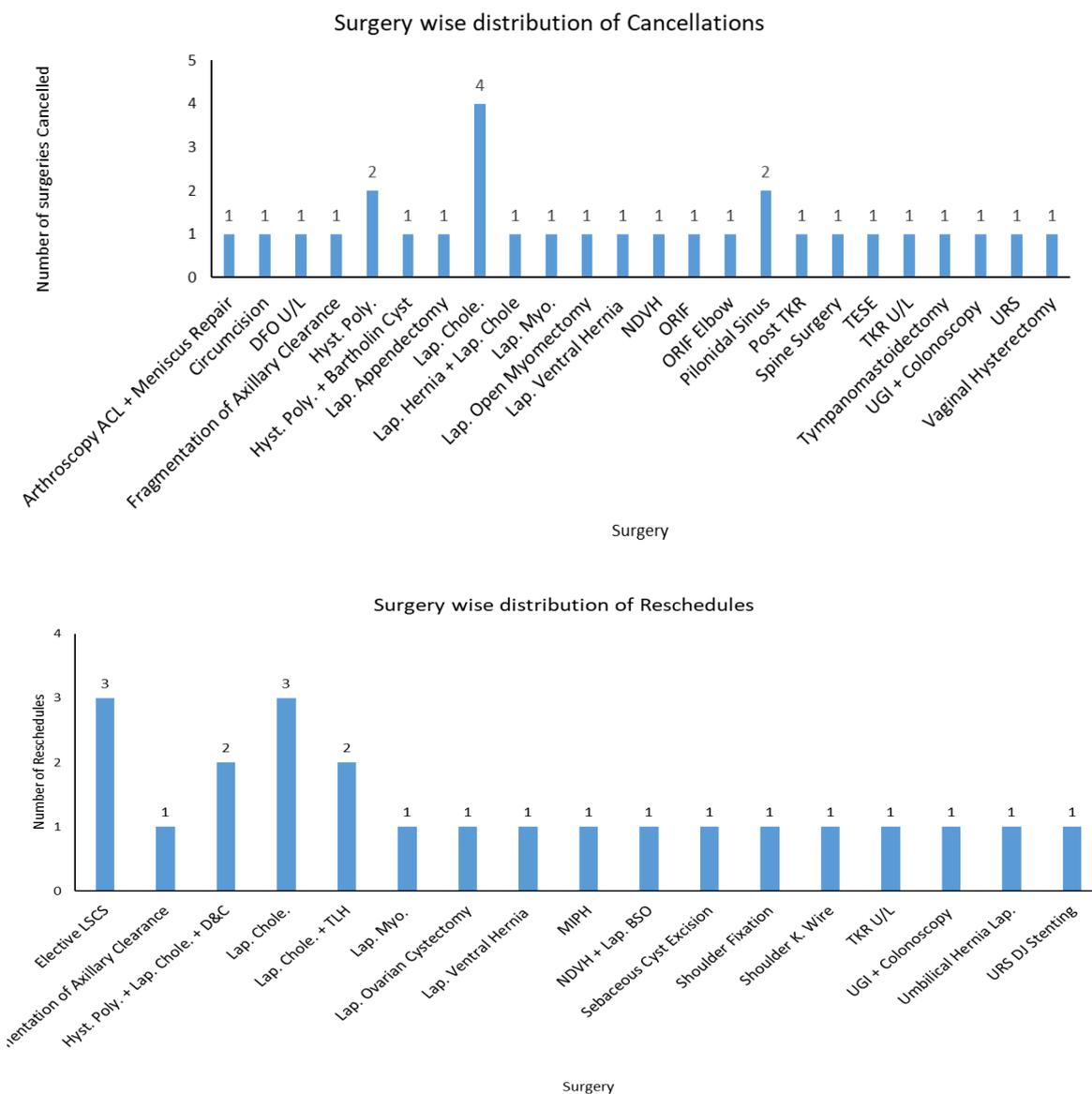


Figure 4

The procedure Laparoscopic Cholecystectomy, shortened here as Lap. Chole, was primarily the reason behind both, cancellations and reschedules.

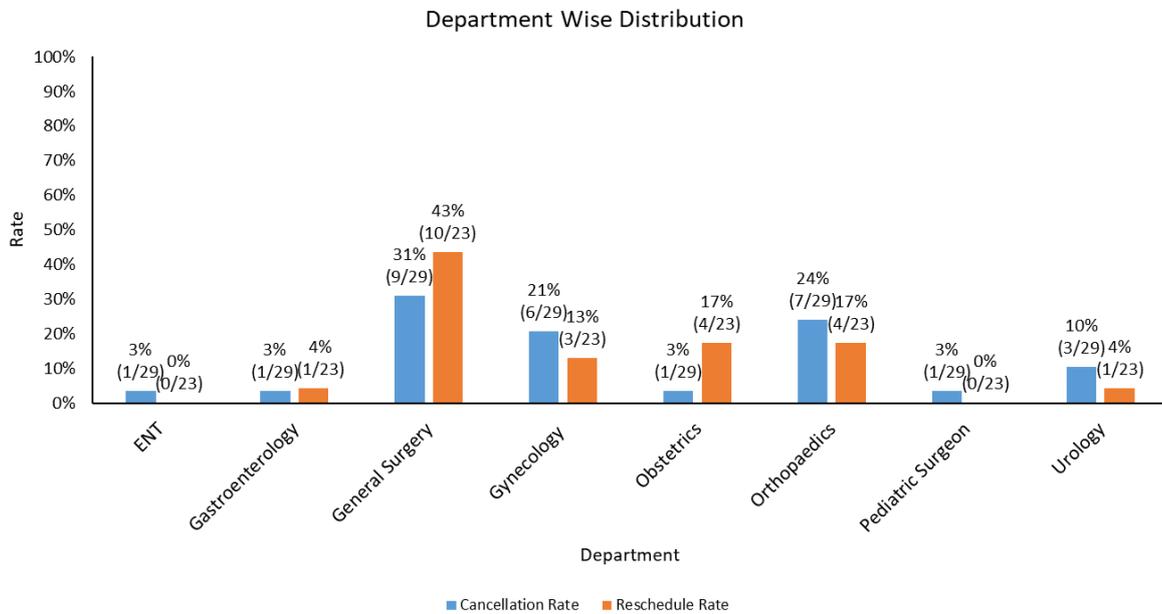


Figure 5

After segregating the rate of cancellations per department, General Surgery and Orthopaedics had the highest rates of cancellations, with 31% (9/29) and 24% (7/29), respectively. Amongst all the departments, the Patient Parameter contributed the most to the Rate of Cancellations.

It can be interpreted from the analysis that the General Surgery department had the highest rate of Reschedules, 43% (10/23), amongst all other departments.

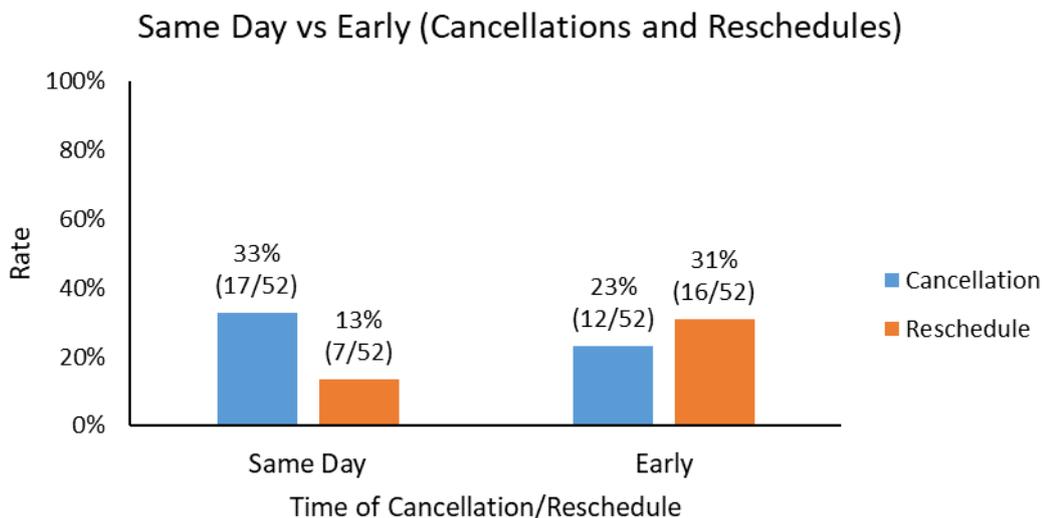
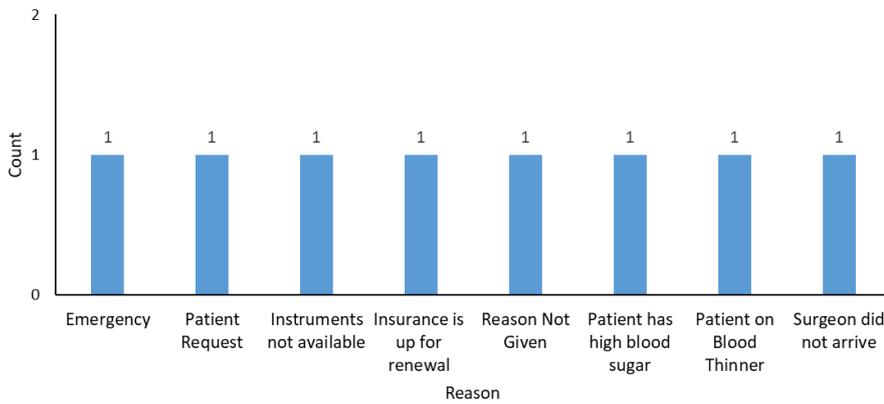


Figure 6

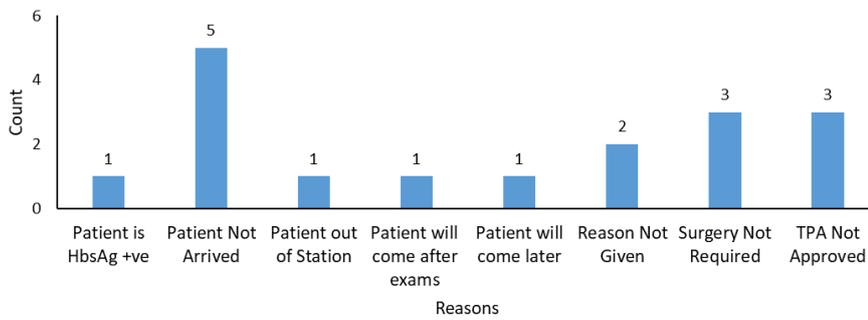
From the data gathered, it was gleaned that cancellations on the same day, 33% (17/52) were marginally higher than cancellations that occurred before the date the surgery was originally

scheduled, 23% (12/52). Conversely, the rate of reschedules on the same day, 13% (7/52), was significantly lower than the ones rescheduled before the date of surgery, 31% (16/52).

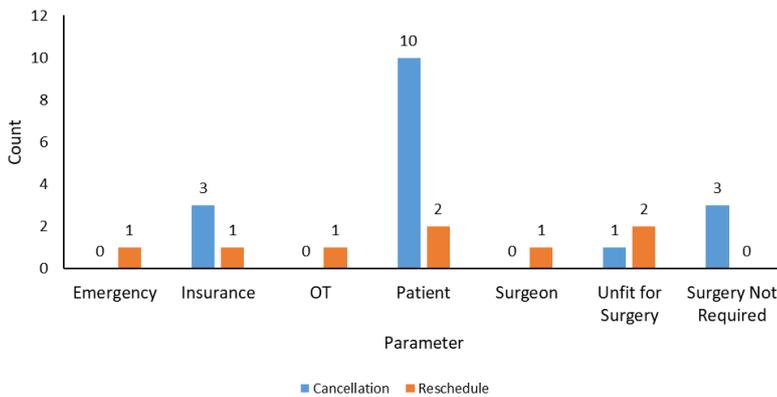
Reasons for Same Day Reschedules



Reasons for Same Day Cancellations



Same Day Parameter Wise Distribution



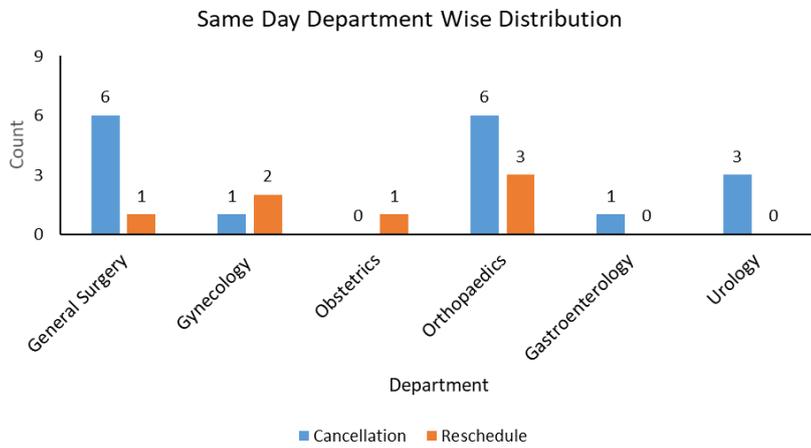


Figure 7

No one particular reason could be derived for being responsible for Same Day Reschedules.

The patient not appearing for surgery contributed significantly to the Same Day Cancellations, followed by the surgery not being required and, the TPA not being approved, preventing the patient from going through with the surgery.

For Same Day Reschedules, the Patient and Unfit for Surgery factors did have more sway, but only marginally so, therefore, no one reason can be picked out.

Although there were fewer contributing factors behind Same Day Cancellations, the Patient factor can be seen as having the biggest hand behind the cancellations, coming up more times than the other factors combined.

General Surgery and Orthopaedics were equally responsible for the number of Same Day Cancellations.

Orthopaedics, followed by Gynecology departments were responsible for the majority of Same Day Reschedules.

Discussion

From the above data it becomes apparent that although rate of Cancellations and Reschedules were not significantly high, as they were well within the benchmark of 20% set by the institute, a lot of them occurred due to reasons for which certain control measures can be taken.

Across the board, the most significant factor contributing factor behind, both, Cancellations and Reschedules was the Patient Factor. These factors are not usually under the control of the Hospital, therefore reducing them from the very root cause is not feasible. But it is possible to mitigate its impact by taking certain precautionary measures.

Within the Patient Factor, the most common reason was the patient not coming in for the surgery, also contributing to the number of same day changes to the OT schedule, without any prior notification. This can negatively affect the process flow of the OT as an OR that was booked will now go unused when it instead could have been used for a different surgery, demoralizing the staff, and costing the Hospital a significant amount of money. To counteract this, a proposed course of action could be that the Service Leaders, who act as a line of communication between the Hospital and the patients, could initiate a protocol for a courtesy call, made prior to the day of the scheduled surgery confirming the patients' attendance. This could significantly reduce the number of Same Day Cancellations.

Approval from TPAs was another reason as to why surgeries were cancelled, especially on the day of the surgery. The TPA approval process could be initiated significantly in advance, to receive the approval, or be notified about the declination before the date of surgery, thus allowing for the OR to be booked for a different surgery.

In terms of individual departments, The General Surgery and Orthopaedics departments have the highest number of Cancellations and Reschedules. As mentioned before, the primary reason behind these is the Patient Factor.

Singhal R. et al conducted a study at a Hospital in the UK that faced the same issue. After implementing a simple questionnaire for the patients before the final booking of the OT, the number of cancellations on the DoS were significantly reduced. If a similar system is implemented here, it could have the potential to bring about a favorable outcome.

Conclusions

Determining the various reasons behind the Cancellations and Reschedules, should be of paramount importance for any institution as they remarkably impact the functioning of the OT, often times preventing them from being used to their optimal potential, leading to wastage of resources.

The best counter measures for these would be to tackle problems as far upstream as possible. The Patient based factors had the largest hand in contributing to changes in the OT list. They are also usually the most difficult to handle. By taking the initiative to communicate with the patient, the institution could benefit as well as contribute to more comprehensive patient care.

Though this could be a little challenging as the communication would need to be meticulous. With these in mind, it is possible to achieve near optimal efficiency of the Operation Theatre allowing for the best possible usage of resources while simultaneously reducing costs without negatively affecting revenue generated.

References

- SERRAVALLE C. Performance improvement of the operating theater by resequencing surgeries.
- Gupta B, Agrawal P, D'souza N, Soni KD. Start time delays in operating room: Different perspectives. *Saudi journal of anaesthesia*. 2011 Jul 1;5(3):286-8.
- Siddharth V, Kumar S, Vij A, Gupta SK. Cost analysis of operation theatre services at an apex tertiary care trauma centre of India. *Indian Journal of Surgery*. 2015 Dec;77:530-5.
- Sarang B, Bhandoria G, Patil P, Gadgil A, Bains L, Khajanchi M, Kizhakke Veetil D, Dutta R, Shah P, Bhandarkar P, Kaman L. Assessing the rates and reasons of Elective Surgical Cancellations on the day of surgery: a Multicentre Study from Urban Indian Hospitals. *World Journal of Surgery*. 2022 Feb;46(2):382-90.
- Macario A, Vitez TS, Dunn B, McDonald T. Where are the costs in perioperative care?: Analysis of hospital costs and charges for inpatient surgical care. *The Journal of the American Society of Anesthesiologists*. 1995 Dec 1;83(6):1138-44.
- Al Talalwah N, McIltrout KH. Cancellation of surgeries: integrative review. *Journal of PeriAnesthesia Nursing*. 2019 Feb 1;34(1):86-96.
- Macario A. Are your hospital operating rooms "efficient"? A scoring system with eight performance indicators. *The Journal of the American Society of Anesthesiologists*. 2006 Aug 1;105(2):237-40.
- Guerriero F, Guido R. Operational research in the management of the operating theatre: a survey. *Health care management science*. 2011 Mar;14:89-114.
- McIntosh B, Cookson G, Jones S. Cancelled surgeries and payment by results in the English national health service. *J Health Serv Res Policy [Internet]*. 2012;17(2):79–86.
- Singhal R, Warburton T, Charalambous CP. Reducing same day cancellations due to patient related factors in elective orthopaedic surgery: experience of a centre in the UK. *Journal of perioperative practice*. 2014 Apr;24(4):70-4.