Dissertation Training

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Sitaram Bhartia Institute of Science and Research

A report on

"TO REVIEW COMPLIANCE OF THE INTRAOPERATIVE SURGICAL SITE INFECTION CARE BUNDLE AT A MULTI SPECIALITY HOSPITAL IN DELHI"

By

Nitya Kapoor

PG/22/065

Under the guidance of

Dr. Nidhi Yadav

PGDM (Hospital and Health Management)

2022-24

IIHMR DELHI

International Institute of Health Management Research

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This certificate is awarded to

Nitya Kapoor

In recognition of having successfully completed
her internship in the department of

Quality and training

And has successfully completed her project on

Review compliance of intraoperative surgical site infection care bundle at a multi-speciality hospital in Delhi

From
01-04-2024 to 19-06-2024
At

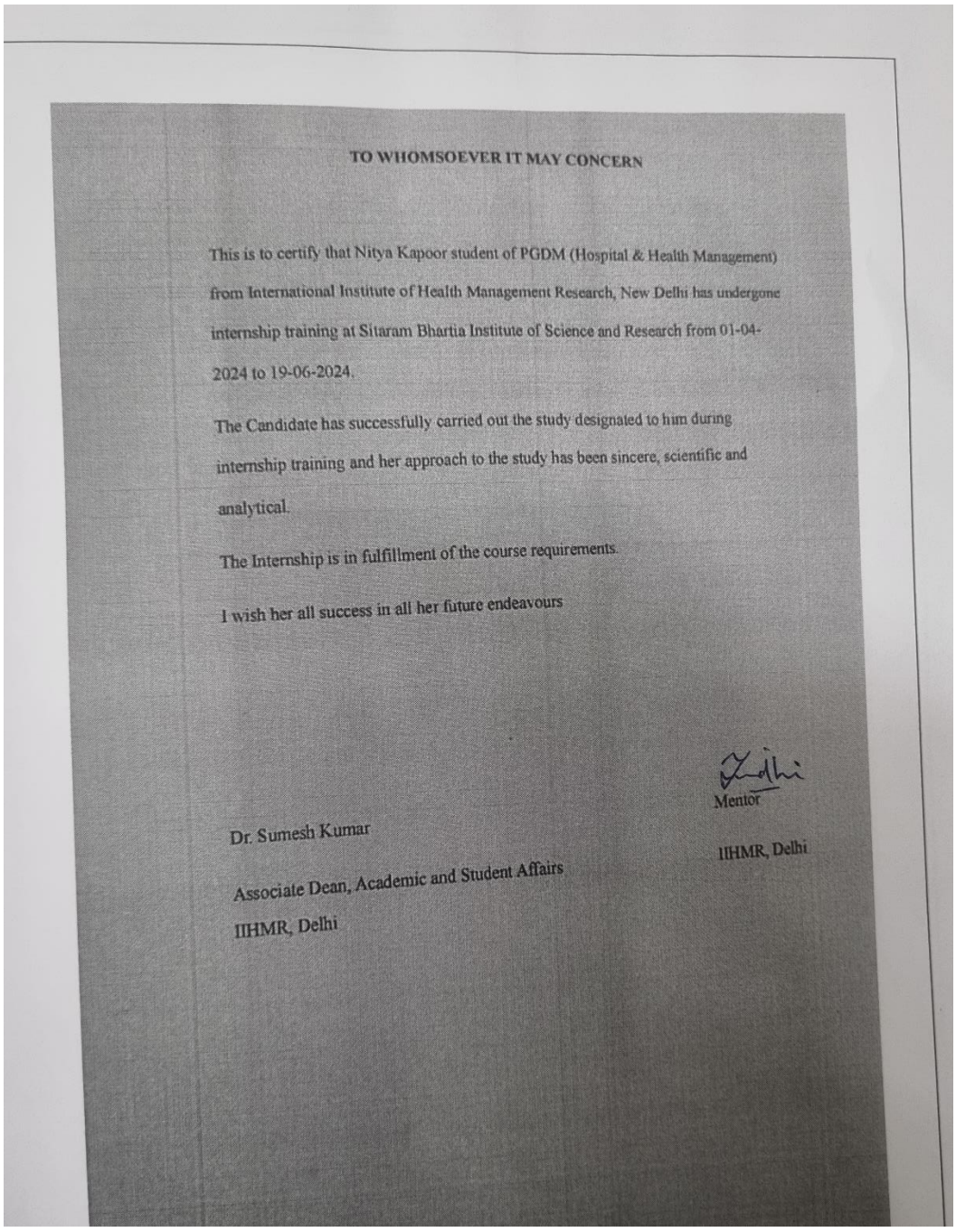
Sitaram Bhartia Institute of Science and Research

She comes across as a committed, sincere and diligent person who has
A strong drive and zeal for learning
We wish her all the best for future endeavors

Sandhya
Training and Development

Zonal Head-Human Resources
Anitha Manoharan
Head – Human Resources

SITARAM BHARTIA INSTITUTE OF SCIENCE & RESEARCH
HR Deptt.
NEW DELHI



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The Candidate has successfully carried out the study designated to him during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavours

Mentor

Dr. Sumesh Kumar

Associate Dean, Academic and Student Affairs

IIHMR, Delhi

IIHMR, Delhi

Certificate of Approval

The following dissertation titled "**REVIEW COMPLIANCE OF INTRA OPERATIVE SURGICAL SITE INFECTION CARE BUNDLE AT A MULTI-SPECIALITY HOSPITAL IN DELHI"** 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 PGDM (Hospital & Health 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 dissertation only for the purpose it is submitted.

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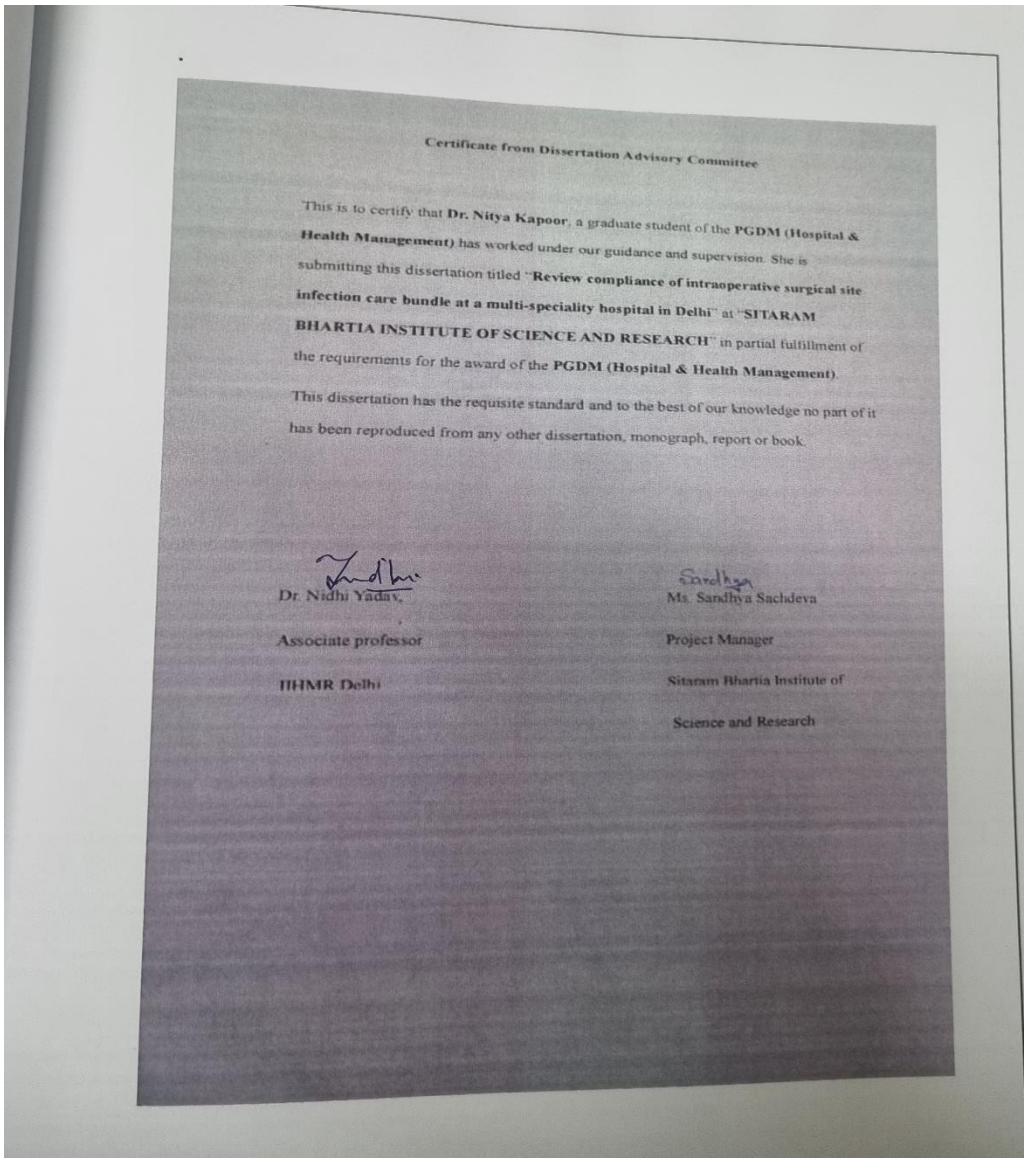

Certificate from Dissertation Advisory Committee

This is to certify that **Dr. Nitya Kapoor**, a graduate student of the **PGDM (Hospital & Health Management)** has worked under our guidance and supervision. She is submitting this dissertation titled "**Review compliance of intraoperative surgical site infection care bundle at a multi-speciality hospital in Delhi**" at "**SITARAM BHARTIA INSTITUTE OF SCIENCE AND RESEARCH**" in partial fulfillment of the requirements for the award of the **PGDM (Hospital & Health Management)**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

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Associate professor
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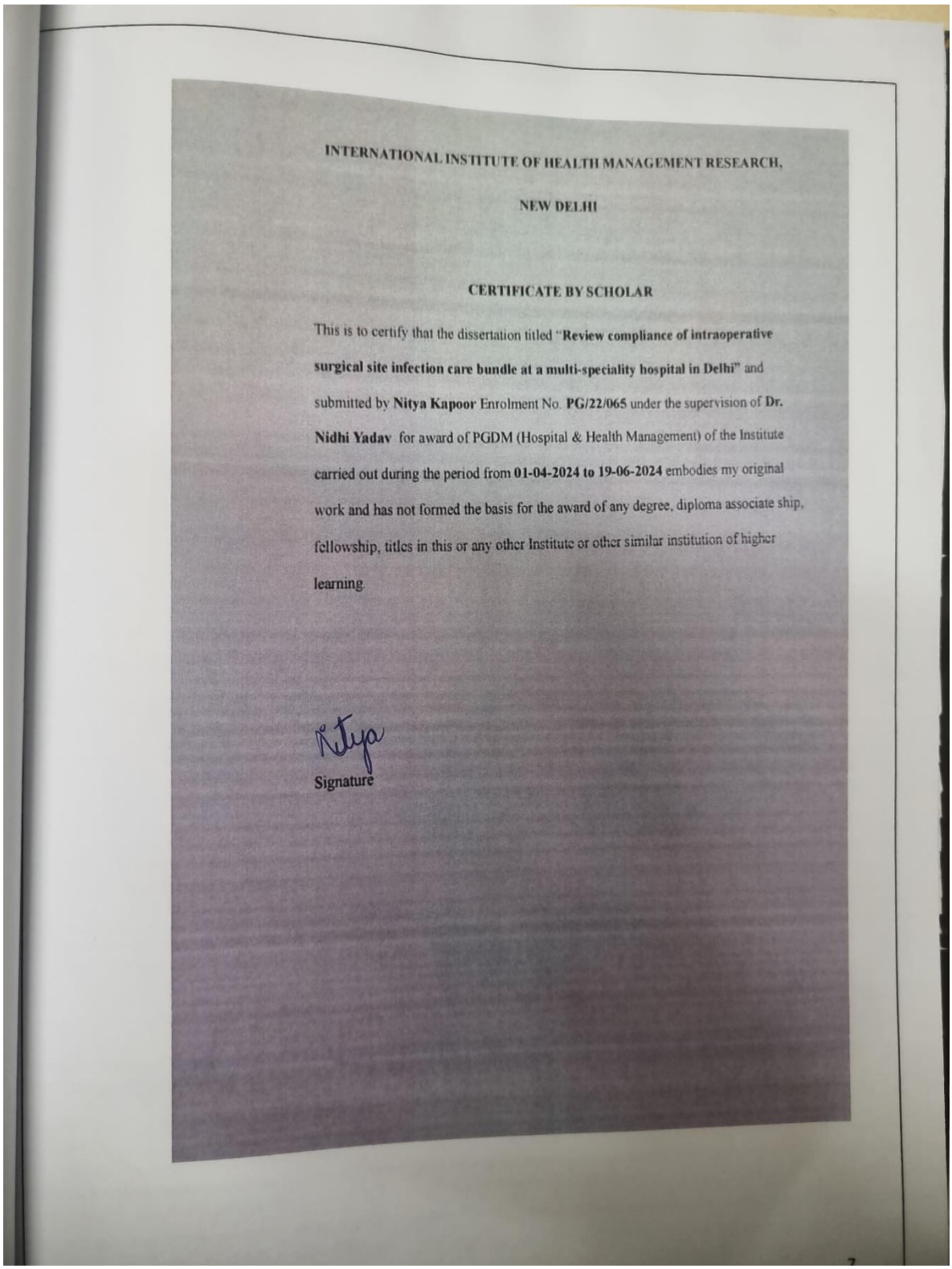
Ms. Sandhya Sachdeva
Project Manager
Sitaram Bhartia Institute of Science and Research



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NEW DELHI

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled "**Review compliance of intraoperative surgical site infection care bundle at a multi-speciality hospital in Delhi**" and submitted by **Nitya Kapoor** Enrolment No. **PG/22/065** under the supervision of **Dr. Nidhi Yadav** for award of PGDM (Hospital & Health Management) of the Institute carried out during the period from **01-04-2024 to 19-06-2024** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Nitya

Signature

FEEDBACK FORM

Name of the Student: Nitya Kapoor

Name of the Organisation in Which Dissertation Has Been Completed: Sitaram Bhartia Institute of Science and Research

Area of Dissertation: Operation Theatre

Attendance: 100%.

Objectives achieved: Yes

Deliverables: Surgical Safety (Surgical Side Infections), Audits, Patient's Feedback & NPS)

Strengths: Team oriented, flexible, Self-motivated, Adaptable Emotional

Suggestions for Improvement: Need to work on patience level

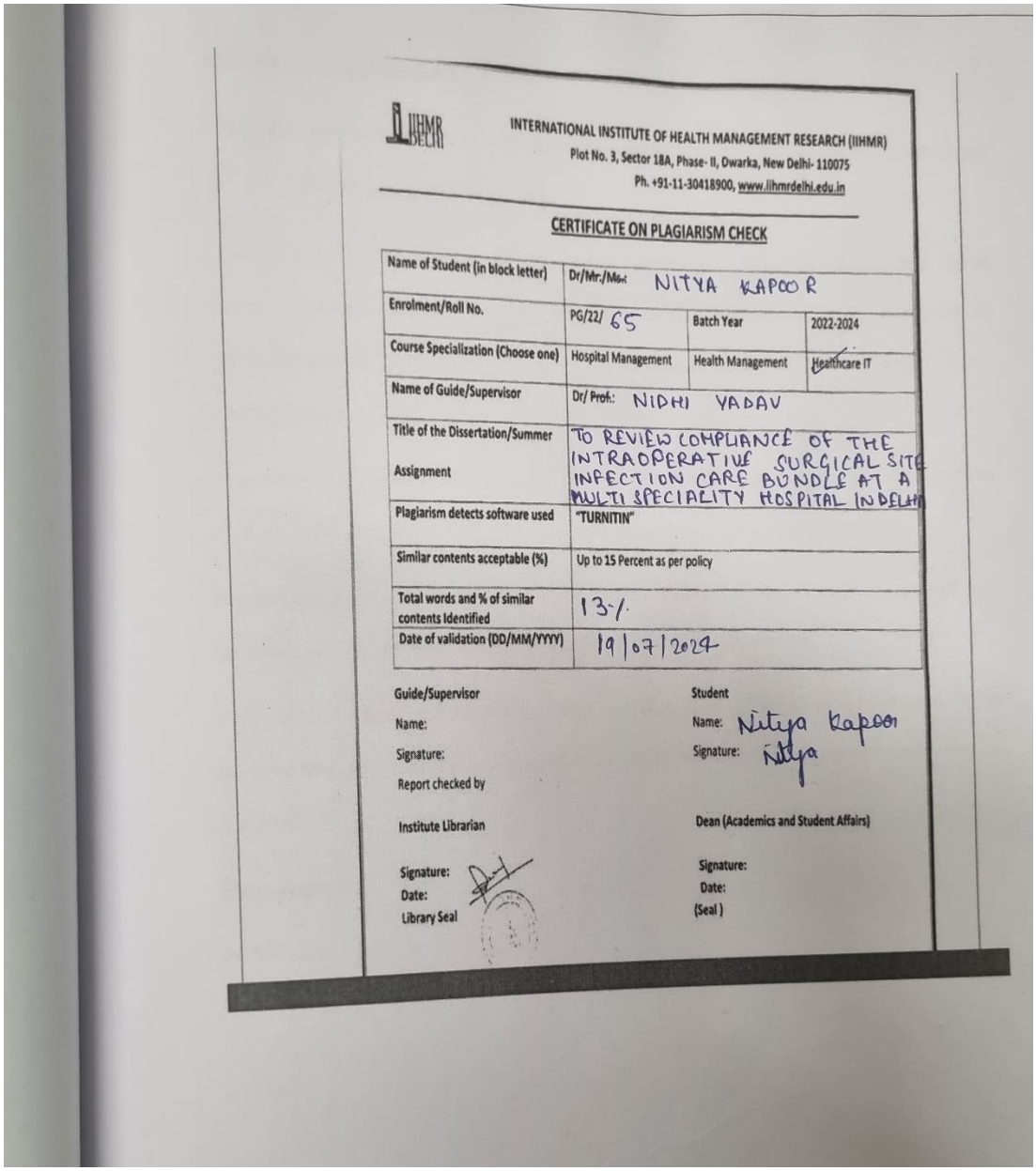
Suggestions for Institute (course curriculum, industry interaction, placement, alumni): NA

Sandhya

Signature of the Officer-in-Charge/ Organisation Mentor (Dissertation)

Date: 17/6/2024

Place Delhi



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CERTIFICATE ON PLAGIARISM CHECK

Name of Student (in block letter)	Dr/Mr./Ms.: NITYA KAPOOR		
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Course Specialization (Choose one)	Hospital Management	Health Management	Healthcare IT ✓
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Title of the Dissertation/Summer Assignment	TO REVIEW COMPLIANCE OF THE INTRAOPERATIVE SURGICAL SITE INFECTION CARE BUNDLE AT A MULTI SPECIALITY HOSPITAL IN DELHI		
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ACKNOWLEDGEMENT

I consider myself very lucky and honoured for having wonderful people helping me through the completion of this project.

I would like to express my immense gratitude to Ms. Saru Bhartia (Deputy Director) at Sitaram Bhartia Institute of Science and Research, Delhi for her guidance and constant encouragement and giving me the opportunity to complete my dissertation from Sitaram Bhartia Institute of Science and Research, Delhi.

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Nitya Kapoor

PG/22/065

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LIST OF SYMBOLS AND ABBREVIATIONS

S.No.	Abbreviations	Full forms
1.	SSI	Surgical Site Infection
2.	ENT	Ear, Nose and Tongue
3.	RCT	Root Canal Treatment
4.	OPD	Out Patient Department
5.	CDC	Centre for Disease Control
6.	ECDC	European Centre for Disease Control and Prevention
7.	HAI	Hospital Acquired Infection
8.	SIR	standardized infection ratio
9.	SCIP	Surgical Care Improvement Project
10.	SBISR	Sitaram Bhartia Institute of Science and Research
11.	WHO	World Health Organization
12.	QI	Quality Improvement
13.	IHI	Institute for Healthcare Improvement
14.	PDSA	Plan Do Study Act

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ORGANIZATIONAL PROFILE

Sitaram Bhartia Institute of Science and Research was founded with a spirit of serving society through research. It is a 70 bedded, multi-specialty hospital that combines medical research with patient care excellence. Their research focuses on collecting health related information, translating evidence-based guidelines in clinical practice, developing cost effective interventions for improving care, investigating factors influencing disease development and analyzing medical literature for developing clinical guidelines. Their medical care services strive to deliver care as per internationally accepted evidence-based guidelines. They follow a structured approach in which teams of healthcare professionals work together to comprehensively address the needs of patients and their families. Outcomes are also measured to ensure continuous improvement in quality care.

Location

Qutab institutional area

Core purpose

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

Core ideology

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

Envisioned future

"We will be a prolific medical center that will be known for its commitment to practicing evidence-based medicine and providing world class care. We will have well established research programs that will focus on gaining a better understanding of the health care needs in our communities and developing practical solutions for

addressing those needs. We will be seen as pioneers who will have successfully taken up those healthcare challenges that may otherwise have remained poorly addressed. We will have collaborative arrangements with leading institutions from around the world and be in the forefront of providing training to health professionals. Donor agencies and individual philanthropists will recognize our work by generously supporting our initiatives. We will be widely acknowledged as an institution that serves as a symbol of excellence in our society".

Services provided by the hospital

- In-patient services
- Out-patient services
- Day care services
- Endoscopy
- Diagnostic services
- Laboratory services
- Emergency services
- Radiology

Departments in the hospital

- Anesthesiology
- Child care
- Dental
- Dermatology
- Diabetes and endocrinology
- ENT
- Fertility services
- General surgery
- Gastroenterology

- Internal medicine
- Laboratory
- Nephrology
- Obstetrics and gynecology
- Ophthalmology
- Orthopedics
- Pediatrics
- Psychiatry and psychology
- Radiology
- Urology

OBSERVATIONAL LEARNINGS

ANESTHESIOLOGY

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

DENTAL

They provide high quality and safe oral care through a wide range of dental services. The common areas of treatment include dental implants, bone grafting surgeries, gum surgeries, smile make over procedures, cosmetic filling, diastema closure, teeth bleaching, sialo lithotomy, painless RCTs, dental fillings, dental tattoos and studs, teeth extraction by surgical or non-surgical method, etc.

DIABETES AND ENDOCRINOLOGY

It is one of the earliest centers in the city to offer comprehensive care and emphasizes self-management by patients. They help each person to identify their treatment goals, pick a treatment regime and obtain knowledge and skills necessary for their day to day management. They provide clinical care by a diabetes specialist and a diabetes educator,

computerized 72-hour blood sugar monitoring, diabetes education, nutrition counselling, foot care and ancillary services.

ENT

The ENT department offers a wide range of outpatient and inpatient services related to disorders of the ear, nose and throat. They have nasal endoscopy services, audiometry and tympanometry services, foreign body removal from ear, nose and throat and endoscopic laryngoscopy services. The wide range of surgical procedures offered encompasses adenoidectomy, tonsillectomy, tympanoplasty, mastoid surgery, surgery for sinus and polyps, septoplasty and cochlear implant surgery.

NEPHROLOGY

The hospital has a dedicated nephrology OPD and they do a comprehensive evaluation of patients with kidney related problems such as diabetic kidney disease, infections, acute and chronic renal failure and renal hypertension. Their treatment includes dietary and lifestyle advice, medication if necessary and sometimes, dialysis. The hospital also provides 24 hour emergency as well as planned dialysis facilities, including hemodialysis and peritoneal dialysis.

OBSTETRICS AND GYNAECOLOGY

The obs and gynae department is the largest specialty at Sitaram Bhartia. They provide care for women between the ages of adolescence to post-menopause. A major focus of the department is to de-medicalize childbirth and reduce the C-section rate to medically justifiable methods. Gynecological services include treatment for fibroids, endometriosis, ovarian cysts, infertility and uterine/ovarian cancer. The department is equipped to carry out laparoscopic surgeries, hysterectomies and hysteroscopy and colposcopy procedures.

PSYCHIATRY AND PSYCHOLOGY

The department of psychiatry provides outpatient consultation services for adults and the elderly. On the other side, the department of psychology provides psychological

assessments for children, adults and corporate employees, psychological support services, special education and therapeutic programs for children and therapy sessions for children with special needs.

RADIOLOGY

The department of imaging services is equipped with state-of-the-art imaging facilities to provide comprehensive care. There is 24x7 emergency radiology services and a regular 8AM-5PM service daily. It is planned and approved by the regulatory authority AERB for radiation safety and radiation surveillance. An annual health checkup 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. It 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, trans rectal, and small parts studies.

UROLOGY

The department of urology offers treatment options for prostate enlargement, stone diseases, male infertility, andrology, reconstructive urology and all forms of urologic cancer. It also provides Gender Re-assignment Surgery (GRS), also called sex-change operation.

OUT-PATIENT SERVICES

The OPD starts at 9AM and ends at 6PM. The OPD follows two systems- appointment system and billing system. The appointments are booked by the patients through telephone exchange. But the patient queue follows a first-come-first-basis system. The billing receipts have the time of billing mentioned in them. The patients receive two billing receipts- one for them and the other one is handed over to the front office executives. The front office executives, then, handover the receipts to the doctors in their cabin. The patients go in one by one after the previous patient comes out and all this happens under

the supervision of front office executives. The process flow of a patient who visits OPD is as follows: -

z

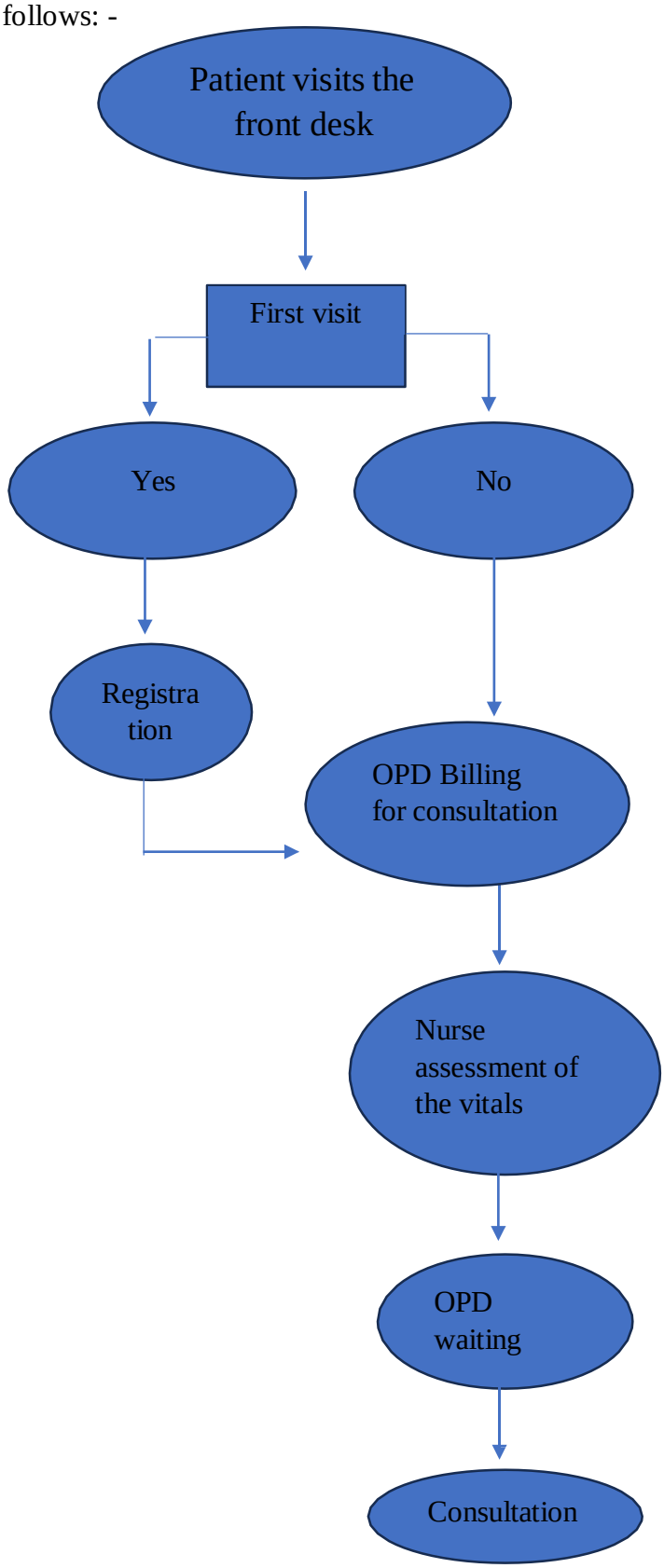


Figure 1.0- The process flow of a patient who visits OPD

IN-PATIENT SERVICES

The hospital is 70-bedded hospital, with 5 categories of rooms. The first room category is economy room, with 4-6 beds in a single room. The second room category is semi-private or twin-sharing room, where one room has 2 beds. The next 3 categories are single room, deluxe room and super deluxe room, where, with each category the size of the room increases. The process of IPD admission is as follow: -

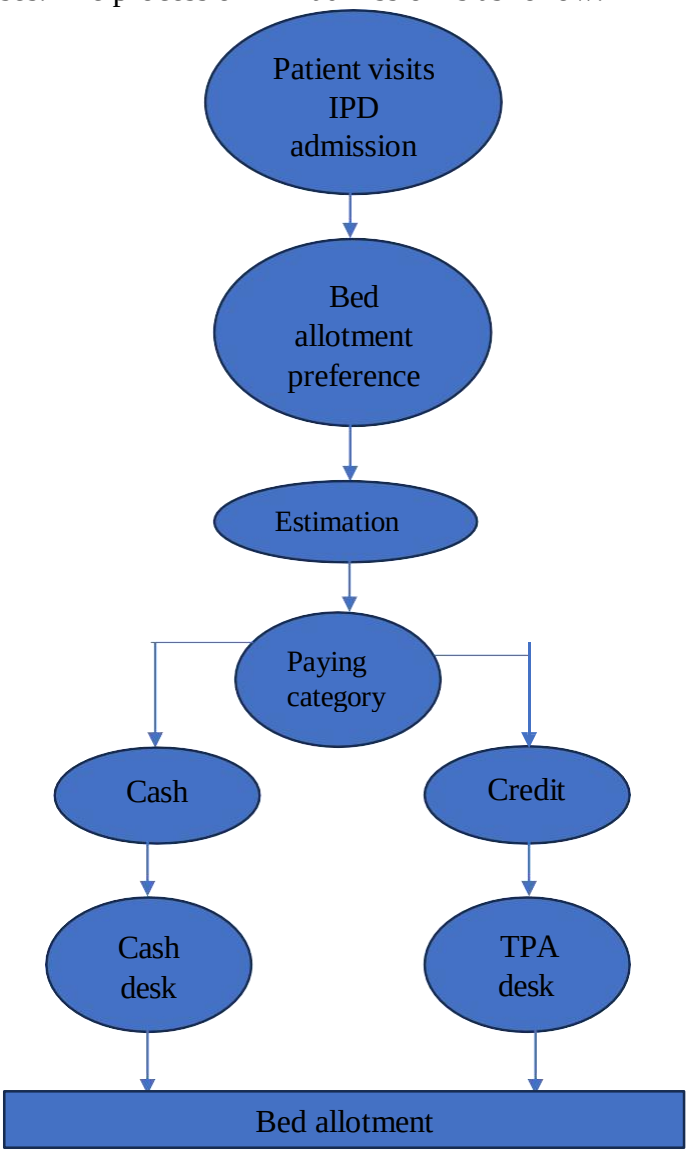


Figure 2.0 -Process of IPD admission

SECTION-B

TO REVIEW COMPLIANCE OF THE INTRAOPERATIVE SURGICAL SITE INFECTION CARE BUNDLE AT A MULTI SPECIALITY HOSPITAL IN DELHI

BACKGROUND

Surgical site infections, or SSIs, are infections that arise during surgery and affect the incision, organ, or space. Antimicrobial-resistant organisms and surgical patients with more complex comorbidities at first have made treating surgical site infections (SSIs) more expensive and challenging. It is estimated that using evidence-based practices can prevent nearly half of SSIs.[1]

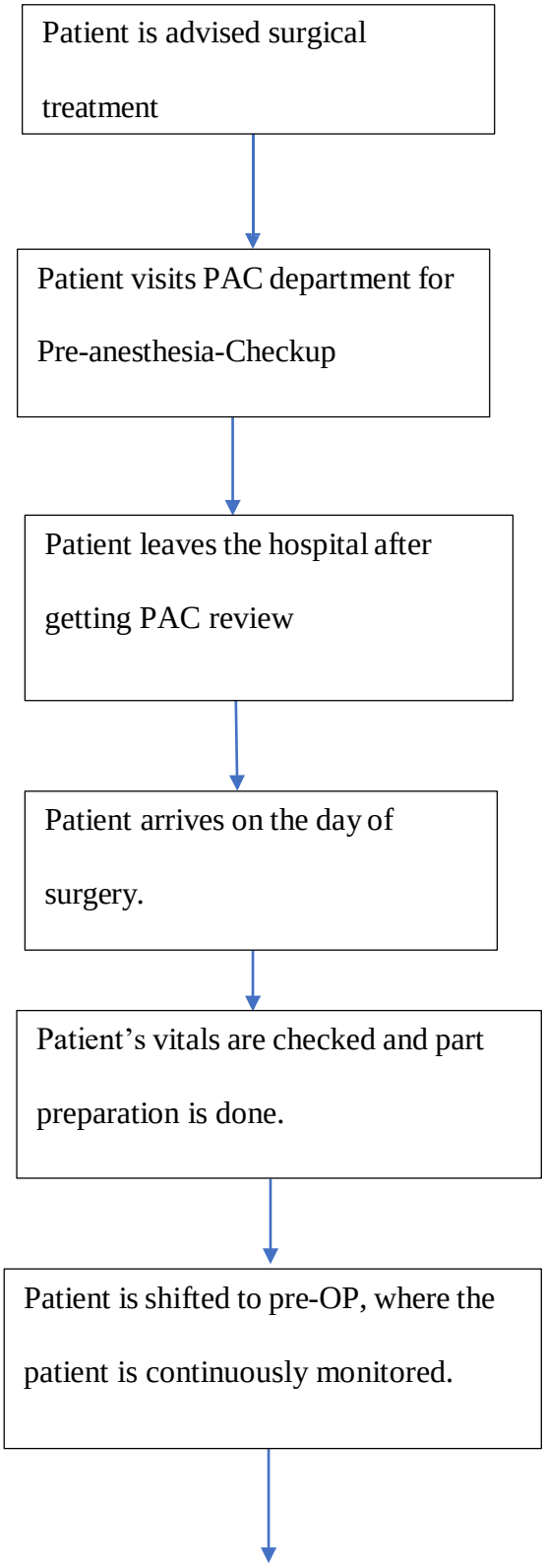
A surgical site infection (SSI) is defined as a postoperative infection that develops within 30 days following surgery (or within a year for permanent implants) by the Centers for Disease Control and Prevention (CDC) and the European Centre for Disease Control and Prevention (ECDC).

The CDC's healthcare-associated infection (HAI) prevalence study estimates that 110,800 surgical site infections (SSIs) were related with inpatient surgeries in 2015. The results of the 2022 HAI statistics are reported in the NHSN's HAI Progress Report, which also shows that all NHSN operating procedure categories combined saw an increase in the SSI standardized infection ratio (SIR) of 4% over the previous year. In addition, the 2022 HAI data showed a 3% significant increase in SIR linked to the NHSN surgical operation categories under the Surgical Care Improvement Project (SCIP) as compared to the previous year. Improved operating room ventilation, sterilization methods, barriers, surgical technique, and the availability of antibiotic prophylaxis are examples of infection control procedures that have advanced, but surgical site infections (SSIs) remain a major cause of morbidity, prolonged hospital stays, and mortality. As per the reports, SSI accounts for 20% of all HAIs and is associated with a death risk increase of 2 to 11 times, with SSI being directly accountable for 75% of SSI-related deaths. In terms of cost, SSI

is the most expensive kind of HAI, with an estimated annual cost of $3.3 billion. It costs more than $20,000 per hospitalization and lengthens hospital stays by 9.7 days.[3]

The surgery journey of elective patients is-

The existing patient journey map followed by surgical patients at SBISR is as follows: -



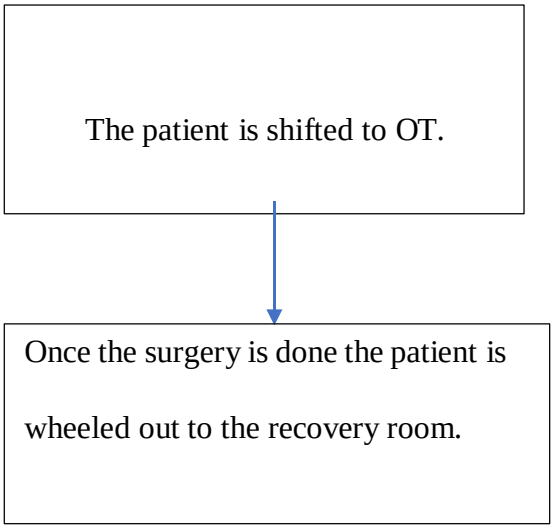


Figure **3.0 The existing patient journey map**

SSI Bundles

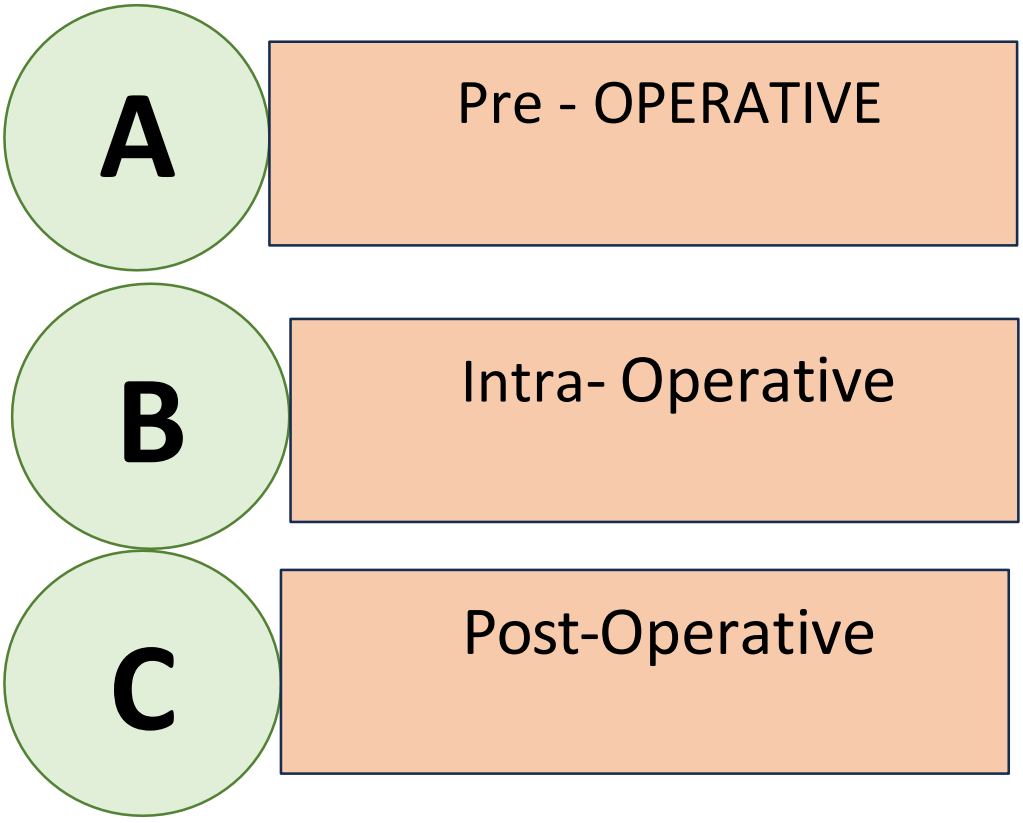


Figure - 4.0 Categories of SSI bundle

A. PRE – OPERATIVE-

1. INTRA - NASAL SCREENING FOR STAPH AUREUS-

For MRSA, 6 days pre op.

If positive for SA:- 2% Mupirocin intranasal application 5 days pre-surgery.

Everyone in OT should be masked at all the times.

Patient with known nasal carriage of SA should receive intranasal applications of 2% Mupirocin ± CHG body.

2. SURGICAL HAND PREPARATION-

Scrubbing with anti-microbial soap or alcohol-based hand rub before donning gloves.

3. OPTIMIZATION OF GLYCEMIC CONTROL

Pre – Operative blood glucose < 180 mg%.

Levels <110mg% does not prevent SSI's, may be harmful.

Fasting: ≤ 140mg, 2hrs PP : : ≤ 180mg

4. 2% CHLORHEXIDINE WASH

One day before surgery and

On the day of surgery.

5. HAIR REMOVAL

Clippers, not Razor: Just before surgery.

6. SCRUBBING & DRAPPING

Surgical Site Skin Preparation: (2% CHG +70% alcohol rub), Centre to Periphery movements.

7. RANDOM CHECKS BY INFECTION CONTROL NURSE

Handwashing

Masking/ Surgical Attire

B. INTRA - OPERATIVE BUNDLES

1. ANTIBIOTICS PROPHYLAXIS: -

Drug: 1st or 2nd generation cephalosporin (cefazolin 1gm IV) given within 60 mts. Of surgery.

In case surgery time >4hrs - REPEAT DOSING.

In case blood loss ≥ 1.5 L – REPEAT DOSING.

SAP should NOT be prolonged after completion of surgery.

2. **NO TRAFFIC THROUGHOUT OT AFTER INDUCTION**

3. OPTIMIZATION OF OXYGEN & TEMPERATURE STATES: -

Sa O2 : 95%, FiO2 : 80% , Preferably 2 -6 hours post – op.

Temperature- > 36° C: Between - 36° C - 37° C

C- POST - OPERATIVE BUNDLES

1. SWAB COUNT: -

Scrub nurse keeps clipping all swabs (small and large) on a hanger.

At the end of surgery: counts the sab aloud & record the count.

2. ACTIVE WOUND SURVILLANCE: -

Early detection-

Wound inspection by HIC Team: Dr Vrushali / HIC Member+ IC Nurse At 48 hrs post-surgery Pre-Discharge

Post discharge surveillance:

One pre-designated member of the surgical team will remain in periodic contact with the patient for early symptoms of SSI.

3. ESCALATION: -

Escalation of the information to the member secretary of HIC in case of any Red - Flag indicators.

INTRA OPERATIVE:

Intra operative is the period of time during which a surgical procedure takes place.

S No.	Intra OP bundle	Checklist	Remarks
1	Aseptic Technique- Surgical wash for duration 3-5 minutes should be done. OT Manager/ Scrub nurse can randomly audit and share the concerns for improvement. Appropriate PPE should be ensured.		
2	Patient's Skin Preparation- Chlorhexidine should be used for skin preparation instead of betadine. The method should be from inside to outside motion. Chlorhexidine body wash is to be done a) one before surgery and b) on day of surgery.		
3	Temperature Control- Maintain optimal body temperature in the patient to prevent hypothermia, which can increase the risk of surgical site infections.		
4	Antibiotics- In case the duration of surgery extends to more than 4 hours or blood loss is 1.5 liters then a repeat dose of antibiotics should be given.		

5	Oxygen Saturation- This monitoring and data recording plays crucial role.		
6	Surgical Safety Checklist should incorporate the above-mentioned points for checking the implementation of above-mentioned points and data monitoring. Timely filling of the SSI checklist is important.		
7	Swab Count: - Scrub nurse keeps a count of all scrubs (small and large) pre and post-operative. Keeps hanging all the used scrubs on a hanger with clips. At the end of surgery, speaks and record the count.		
8	No traffic through the OT after induction.		

Table 1.0 Intra operative checklist

RATIONALE

The purpose of this study is to review the compliance to intraoperative SSI care bundle in a multispecialty hospital in Delhi.

PROBLEM STATEMENT

In response to the rising concern of surgical site infections (SSIs) among elective surgery patients, SBISR (Sitaram Bhartia Institute of Science and Research) has recently introduced new care bundles aimed at preventing such infections. However, ensuring compliance with these care bundles presents a challenge. Therefore, there is a need to systematically assess adherence to the key components of the SBISR's SSI care bundles to determine their effectiveness in reducing SSI rates. This assessment will provide valuable insights into whether healthcare facilities are implementing the recommended practices and protocols effectively, thereby aiding in the evaluation of the impact of the care bundles on SSI prevention.

OBJECTIVES

This dissertation aims to review the compliance to intraoperative SSI care bundle in a multispecialty hospital in Delhi.

EXPECTED OUTCOMES

It is expected that this project will review compliance to intraoperative SSI care bundle and suggest areas of improvement which in turn will help prevent SSI.

REVIEW OF LITERATURE

According to a review of the medical literature, the following aspects of care can lower the risk of surgical site infection:

- Timely postoperative normothermia for patients undergoing colorectal surgery
- Appropriate hair removal
- Controlled postoperative serum glucose for patients undergoing cardiac surgery
- Appropriate use of prophylactic antibiotics

When these elements are consistently used, the likelihood of surgical site infections can be dramatically decreased and, in many situations, avoidable surgical site infections can be almost completely eradicated. [4]

WHO (World Health Organization) also recommends the following guidelines- [5]

- Mupirocin 2% ointment should be applied intranasally to patients who have been shown to harbor S. aureus in their noses, either in conjunction with or separately from chlorhexidine gluconate body wash.
- Surgical antibiotic prophylaxis (SAP) should be administered before surgical incision, when indicated.
- While taking the antibiotic's half-life into account, SAP should be given no later than 120 minutes prior to the incision.
- Preparing the hands for surgery should involve either cleaning them with water and an appropriate antibacterial soap or using an appropriate alcohol-based prior to putting on sterile gloves.

CDC (Centre for Disease Control and Prevention) recommended guidelines are- [6]

Pre-operative measures:

• Recognize and address infections prior to surgery. Wait to operate till the infection has clearedup.

• Avoid using a razor if shaving the surgery site hair won't obstruct the process. If necessary, cut or use a depilatory product to remove

• To Prepare the Skin Make sure you use the right antiseptic and technique while prepping your skin.

Intraoperative Measures:

- OT Traffic- During surgery, keep the OR doors closed unless necessary to allow patients, staff, and equipment to pass through.

Postoperative Measures:

- For 24 to 48 hours following surgery, cover the primary closure incisions with sterile dressing.

  CDC has also suggested a **Quality Improvement (QI)** project which has the following process measure-

Quality Indicator	**Numerator**	**Denominator**
Appropriate antibiotic choice	Number of patients who received the appropriate prophylactic	All patients for whom prophylactic antibiotics are indicated
Appropriate timing of prophylactic antibiotics	Number of patients who received the prophylactic antibiotic within 1hr prior to incision (2hr: Vancomycin or Fluoroquinolones)	Every patient for whom the use of preventative antibiotics is recommended

Appropriate discontinuation of antibiotics	Number of patients who received prophylactic antibiotics and had them discontinued in 24 h (48h cardiac)	All patients who received prophylactic antibiotics
Appropriate hair removal	The number of patients who either had their hair removed with clippers or not at all	All surgical patients
Normothermia	Number of patients with postoperative temperature ≥36.0oC	All surgical patients
Glucose control	The number of heart surgery patients (operation = POD0) who had glycemic control at 6 AM on POD1 and POD2.	Patients undergoing cardiac surgery

Outcome Measures- (Number of patients with SSI after selected operations)/ (Total number of selected operations performed) X100

IHI (Institute for Healthcare Improvement) suggests Four Components of Care for prevention of SSI- [7]

Appropriate Use of Prophylactic Antibiotics-

1- Use automated or preprinted standing orders that include the antibiotic, dosage, timing, and stopping points.

2- Provide guidelines that are driven by nurses and pharmacists and that include preoperative antibiotic dose and selection based on the kind of surgery and patient-specific parameters (such as age, weight, allergies, and renal clearance).

3- Modify the medications in the operating room supply to solely standard drugs and doses in accordance with national criteria.

4- To increase timeliness, give anaesthesia or a designated nurse (such as a circulator or pre-op holding) dosing responsibility.

5- Involve personnel from infectious disease, pharmacy, and infection control to guarantee proper timing, selection, and duration.

6- Check the administration time during the pre-procedural briefing or ―time-out‖ so that, in the event that it is not administered, measures can be taken.

Appropriate Hair Removal-

1- Maintain a sufficient supply of clippers and instruct employees on how to utilize them.

2- Use reminders (signs, posters).

3- Teach patients not to shave themselves right before surgery.

4- Take out all of the razors from the hospital.

Controlled Postoperative Serum Glucose in Cardiac Surgery-

1- Check all patients' preoperative blood glucose levels on a regular basis to detect hyperglycaemia; this is ideally done early enough to allow for the completion of the risk assessment and, if necessary, the start of therapy.

2- Assign duty and accountability for controlling and monitoring blood glucose.

Immediate Postoperative Normothermia in Colorectal Surgery-

1- Avoid hypothermia during the entire surgical procedure.

2- Warm forced-air blankets should be used in the PACU, during surgery, and before surgery.

3- Use heated fluids for intravenous (IV) lines and flushes in surgical incisions.

4- Use a conventional thermometer to take the temperature.

Institute for Healthcare Improvement (IHI) also implemented the **model of Improvement**, which is a straightforward but effective method for speeding up improvement, to enhance a wide range of healthcare procedures and results. There are two components to the model-

1- Improvement teams are guided by three key questions to:

• define clear goals;

• create metrics to determine whether changes are producing improvements; and

• Determine which adjustments are most likely to result in improvement.

2- To carry out small-scale testing of change in actual work environments, use the Plan-Do-Study-Act (PDSA) cycle. This involves organizing a test, executing it, assessing the outcomes, and acting on the knowledge gained. This is how action-oriented learning is done using the scientific method.

To implement the changes- The team can execute a change on a larger scale after testing it first on a smaller scale, gaining insight from each test, and improving it over multiple PDSA cycles.

The Objective of the PDSA Cycle was to test administration of antibiotic by anaesthesiologists and to check if prophylactic Antibiotic within One Hour before Incision.

METHODOLOGY

Study area- Sitaram Bhartia Institute of Science and Research, Delhi

Study design- Descriptive Study

Study Period- 3 months

Study population- All ortho elective surgery patients

Data collection mode- Secondary

Data analysis- Microsoft excel and checklist

The study conducted at Sitaram Bhartia Institute of Science and Research, Delhi, focused on describing the characteristics and outcomes of orthopaedic elective surgery patients over a period of 3 months. Utilizing a descriptive study design, data were collected from secondary sources such as medical records and electronic health records. Microsoft Excel was employed for data analysis, using descriptive statistical methods to summarize findings. Ethical considerations were addressed through institutional approval, ensuring patient confidentiality. Limitations included potential biases in secondary data and the study's applicability limited to the specific study population and setting.

RESULTS AND ANALYSIS

Parameters	Compliance	%Compliance
Hair removal	32	69.57%
Scrubbing and draping with CHG rub	42	91.30%
Hand washing	46	100.00%
No traffic	4	8.70%

Swab Count	44	95.65%
Temperature control	46	100.00%
Antibiotics repeat	NA	NA
Surgical Safety Checklist	46	100.00%

Table 2.0 Checklist for intra Operative list result

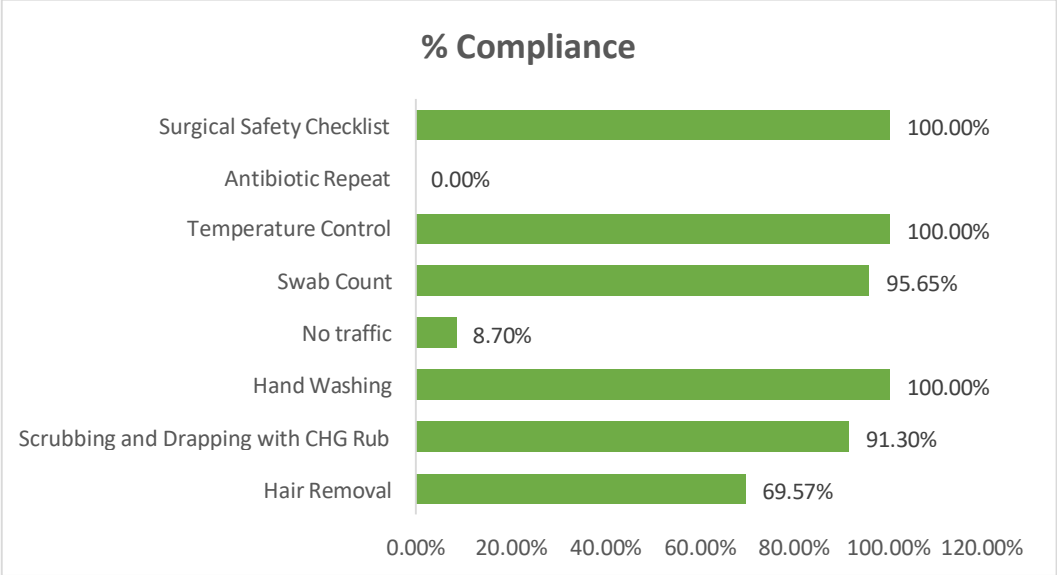


Figure 5.0 Graph representing compliance for intra operative results

From the results generated we can see that compliance % are-

1. Hair Removal- 69.57%
2. Scrubbing and Draping with CHG Rub- 91.30%
3. Hand Washing- 100.00%
4. No Traffic (NVA)- 8.70%
5. Swab Count- 95.65%
6. Temperature Control- 100.00%
7. Surgical Safety Checklist- 100%

1) Hair Removal recommendations- 69.57%

- Hair removal should not be done at home
- In hospitals only clippers should be used
- Hair removal to be done on the OT table.

2) Scrubbing and Draping with CHG Rub recommendations- 91.30%

- Regular audits to ensure consistent adherence to the protocol.
- Training of the nursing staff.

3) No Traffic (non value added) recommendations- 8.70%

- Ots should be prepared beforehand for any surgery so as to stop movement.

- Staff should be trained on OT traffic.
- OT traffic concern should be discussed during huddles to avoid it.

4) Swab Count recommendations- 95.65%

- Assistant surgeon should keep a check on swab count.
- Conduct regular training and competency assessments for staff involved in swab counting.
- From the above results we can see that parameter like Hand washing, Swab count are 100% compliant.
- But parameters like Hair Removal, Scrubbing and Draping with CHG Rub, No Traffic in OT during surgery (NVA), Swab Count are not compliant.
- So recommendations have been given and regular audits are being conducted.

Discussion-

Hair Removal - The compliance rate of 69.57% suggests that there is significant room for improvement. Non-compliance could lead to increased risk of surgical site infections (SSIs). Recommendations focus on standardizing the process and location of hair removal to mitigate this risk.

Scrubbing and Draping with CHG Rub- Even though 91.30% compliance is a respectable level, it is essential to guarantee persistent adherence through audits and continuous training. Scrubbing and draping with CHG (chlorhexidine gluconate) properly lessens the risk of SSIs and the microbiological burden.

Hand Washing- Since hand washing is a key component in preventing illnesses, it is admirable to reach 100% compliance. This outcome suggests a robust hygiene culture and commitment to fundamental infection control procedures.

No Traffic (NVA)- The low compliance rate of 8.70% indicates that there may be substantial difficulties in keeping the operating room clean throughout procedures. To lower the risk of contamination and enhance surgical outcomes, this issue must be addressed with proactive steps and staff education.

Swab Count- A crucial component of patient safety during surgeries is swab counting, which is demonstrated by the high compliance rate of 95.65%. Sustained supervision and training are advised in order to uphold excellent standards.

Temperature Control- Achieving perfect temperature control compliance is essential for both patient safety and the best possible surgical results. This outcome shows that the protocols for patient safety and comfort were effectively followed.

Surgical Safety Checklist- Achieving full compliance with the surgical safety checklist demonstrates a robust dedication to uniform procedures and ensuring patient safety protocols are upheld.

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