



Evaluating the Effectiveness of International Patient Safety Goal 4: Ensuring Safe Surgery at Artemis Hospital

DISSERTATION FOR MBA IN HOSPITAL AND HEALTH
MANAGEMENT

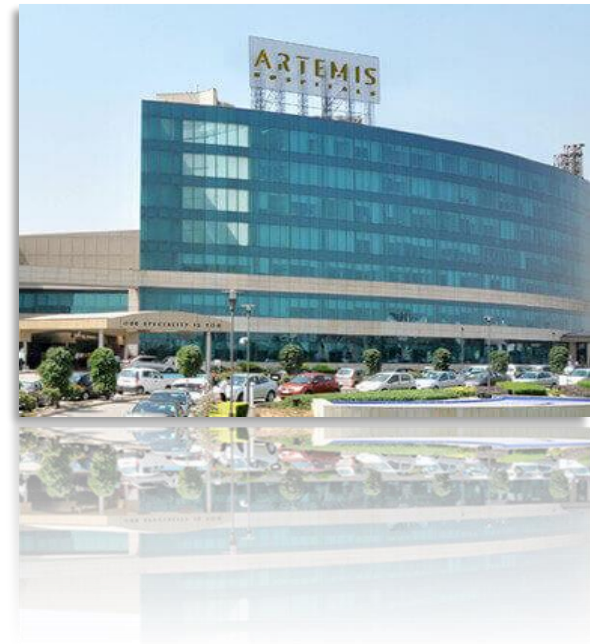
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INTRODUCTION

ABOUT ARTEMIS HOSPITAL GURGAON.

- ▶ Established in 2007 with 550+beds, Artemis Health Institute stands as a hallmark of pioneering healthcare excellence, initiated by the visionaries behind the Apollo Tyres Group.
- ▶ Artemis Health Institute scripted history by becoming the first hospital in the region to receive accreditation from the prestigious Joint Commission International (JCI) in 2013
- ▶ Moreover, Artemis Health Institute emerged as the first hospital in Haryana to achieve accreditation from the National Accreditation Board for Hospitals & Healthcare Providers (NABH) within a mere three years of its inception.

ABOUT IPSG

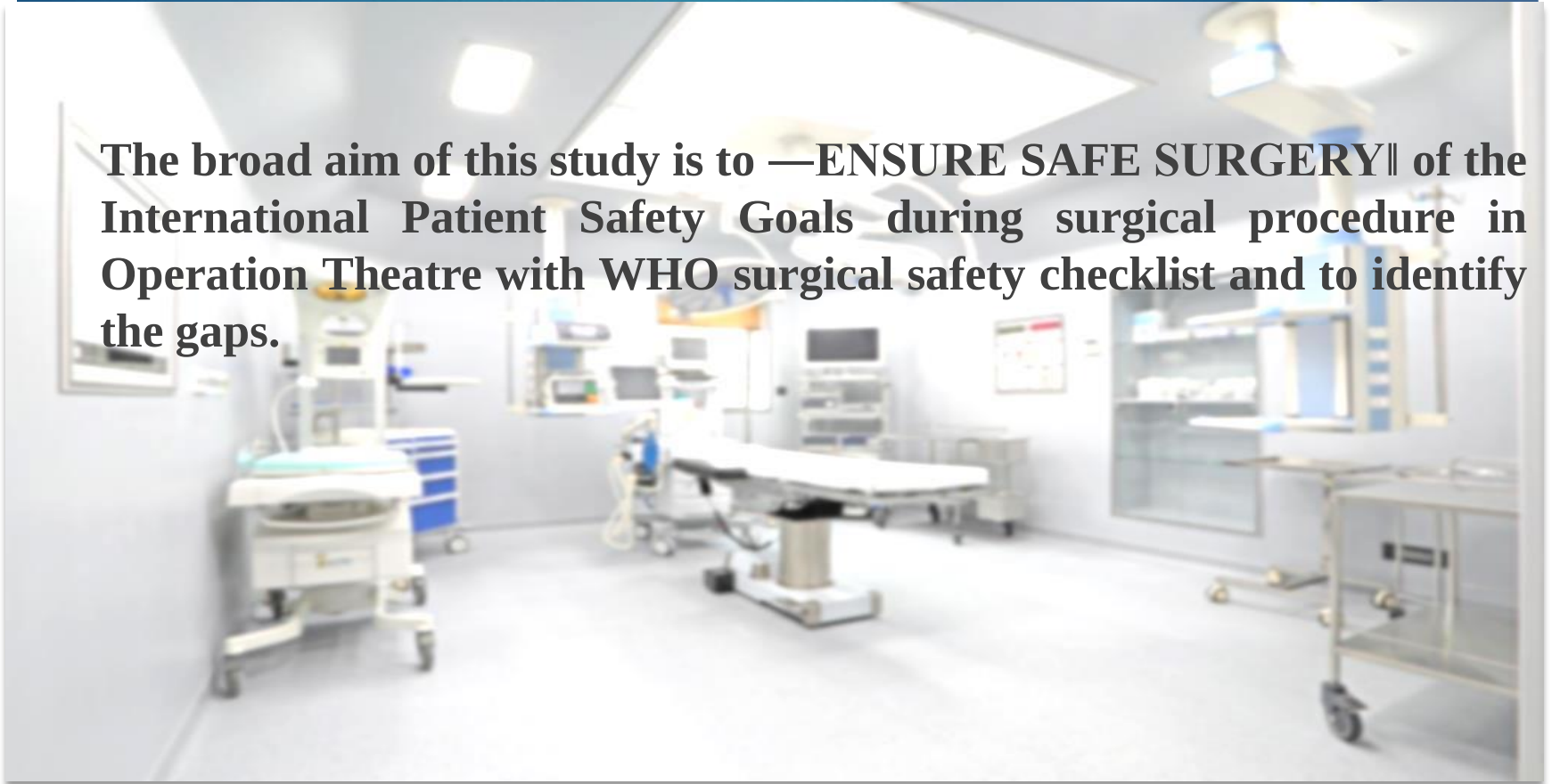
- ▶ **Importance of IPSG 4**
- ▶ IPSG 4 aims to eliminate wrong-site, wrong-procedure, and wrong-patient surgeries through systematic verification processes. These errors can have catastrophic consequences for patients, causing unnecessary suffering, prolonged recovery, and additional surgical interventions. Preventing these errors is paramount to ensuring patient safety.

International Patient Safety Goals (IPSG)

1. Identify Patients Correctly
2. Improve Effective Communication
3. Improve the Safety of High-Alert Medications
4. Ensure Correct-Site, Correct-Procedure, Correct-Patient Surgery
5. Reduce the Risk of Health Care-Associated Infections
6. Reduce the Risk of Patient Harm Resulting from Falls

Background

The broad aim of this study is to —ENSURE SAFE SURGERY|| of the International Patient Safety Goals during surgical procedure in Operation Theatre with WHO surgical safety checklist and to identify the gaps.



Research Question:

1. What is compliance percentage for the sign in, time out and sign out process?
2. What are the Gaps of compliance related to surgical procedures?
3. What strategies can be employed to enhance compliance with surgical safety protocols among surgical team members, including Surgeons, Nurses, and Anesthesiologist's?



Objectives

- ▶ To study the existing compliance of IPSG 4 (Ensure Safe Surgery) in Artemis hospitals.
- ▶ To identify the gaps in IPSG-4 compliance with the help of audits.



Literature Review

1.) Perspectives on Surgical Patient Safety at Operation Theatre,

by *Dr. Vijayarajakumar, Vice Principal, Chithirai College of Nursing, Madurai;*
Abraham Sumi P., OT Nurse, Apollo Hospitals, Madurai

Study Location: The research involved collaboration between academic and healthcare professionals from Chithirai College of Nursing and Apollo Hospitals in Madurai, Tamil Nadu

Literature Review

Salient Feature:

The research article "Perspectives on Surgical Patient Safety at Operation Theatre" by Dr. Vijayarajakumar and Abraham Sumi P. focuses on the critical aspects of enhancing patient safety in surgical environments within Madurai's medical facilities. The study underscores the necessity of stringent safety protocols to mitigate risks and improve outcomes in surgical procedures, providing insights from professionals in the field.

The **conclusion** 25 emphasizes the importance of continuous improvement and adherence to safety standards to ensure the welfare of patients during surgeries.

Literature Review

2.) Getting Surgery Right,

by *larke, John R. MD; Johnston, Janet MSN, JD Finley, Edward D. BS.*

Study Location: Hospitals and ambulatory surgical centers.

Salient Feature: Wrong-site surgery continues to occur regularly, especially wrong-side surgery, even with formal site verification. A large number of errors happen prior to the time-out; others continue even after the verification process. Surgeons' strongest allies are patients and nurses. Verification must take place several times before to the incision, beginning with the consent.

Literature Review

Patient placement (20) and anesthetic interventions (29) before to any scheduled time-out process, failing to confirm consents (22) or site markings (16), and improper time-out procedure (17) were common mistakes that led to the start of wrongsite surgery. Surgical surgeons' actions were a factor in 92. In order to avoid wrong-site surgery, 26 patients (57), circulating nurses (30), and confirming consents (43), were common sources of good recovery.

Remarkably, 31 official time-out procedures failed to stop "wrong" operation.

Literature Review

3.) Innovative Approaches to Safe Surgery: A Narrative Synthesis of Best Practices,

by Amer Kamal Hussain, Muhammad Maaz Kakakhel, Muhammad Farhan Ashraf, Muhammad Shahab, Fahad Ahmad, corresponding author Faizan Luqman, Mahmood Ahmad, Ayman Mohammed Nour, Giustino Varrassi, and Satish Kinger

Salient Feature: The article describe a comprehensive review of best practices for safe surgery in the modern, ever changing environment. It examines a wide range of new approaches, including technology, patient centered care, and global perspectives. The review analyzes how these methods work together to create a culture of safety, improve surgical accuracy, and reduce complications

METHODOLOGY

Purpose: To outline the method for proper identification and verification of the correct patient, operation, site and side.

Scope of study: The study seeks to review current surgical safety protocols, procedures, and practices to determine their alignment with IPSPG-4 standards by ensuring correct-site, correct procedure, and correct-patient, applies to the areas in which surgical and invasive procedures occur. For Preventing Wrong Site, Wrong Procedure, and Wrong Person Surgery at Artemis Hospital.

Methodology

STUDY DESIGN: This study will utilize quantitative approaches to identify the gaps in compliance of IPSG 4 at Artemis Hospital.

**SAMPLING
TECHNIQUE:**
SAMPLING TECHNIQUE
USED IS SIMPLE
RANDOM SAMPLING
TECHNIQUES.

Methodology

STUDY TYPE

The study type was observational study.

The Primary Data was collected through-

- Review of patient medical records (Pre-Operative check list, Surgical Safety checklist and Intra-Operative Nursing record)
- Observation of Sign In, Time Out, Sign out and protocols in surgical procedure inside Operation Theatre.
- Staff interview to assess awareness on surgical safety protocols.

Methodology

SETTING OF THE STUDY : The study was conducted at Artemis Hospital, Gurugram which is Established in 2007 with 550+beds, tertiary care multispecialty hospital, Artemis Health Institute stands as a hallmark of pioneering healthcare excellence, initiated by the visionaries behind the Apollo Tyres Group.

The study was conducted under the guidance of the Head of the quality department of the hospital spanned from March 01 to April 31.

Study population: The study population will consist of healthcare professionals, including 30 surgeons, 30 nurses, 30 anesthesiologists, 5 physicians, and 5 hospital administrators, who are involved in surgical and invasive procedures

Methodology

► **Study tool:** The —WHO Surgical Safety Checklist was invented by the World Alliance for Patient Safety and for providing surgical care to 75% of the world population. The Surgical Safety checklist has three parts: (1) Sign In, (2) Time Out, and (3) Sign Out

► **Sample size:** About 100 sample size is of healthcare professionals, including 30 Surgeons, 30 Nurses, and 30 Anesthesiologist's, 5 physicians, and 5 administrators for conducting the assessment of staff knowledge were collected and 50 sample size is collected on IPSG-4 effectiveness during surgical procedure in by using surgical checklist at ARTEMIS Hospitals.

Methodology

OPERATIONAL DEFINATIONS

Surgery: Those procedures that investigate and/or treat diseases and disorders of the human body through cutting, removing, altering or insertion of diagnostic/therapeutic scopes.

Sign in:

Before the patient undergoes anesthesia, the anesthetist along with the nurse must confirm identity, the site and side of operation, what procedure is to be carried out and that the patient has consented for the procedure

Time Out:

A pause, just prior to performing a surgical or other procedure, during which any unanswered questions or confusion about patient, procedure, or site are resolved by the entire surgical or procedural team.

Methodology

Time Out involves checking:

1. Correct Patient
2. Correct side and site (Marked)
3. Agreement to the procedure (Consent)
4. Correct patient position for procedure
5. Availability of implants and/or special equipment.

Sign Out

Before skin closure, there is a further check, conducted by the nursing staff, surgeon and the anaesthetist.

Methodology

DATA COLLECTION PROCEDURE: Data collection procedure involved three steps;

firstly it begins in the recovery area of OT where —SIGN IN‖ was performed on the patient which involves: **Correct Site**

Surgical Site Marking: site marking is essential for situations involving laterality, paired organs, numerous structures, various spine levels, and dental operations. The markers should be placed at or near the desired incision location.

Methodology

Step -1: **Surgical Site Marking Process**

- Surgical site is marked in recovery
- The patient participates in site marking process, using active communication techniques.
- The question is asked in a manner that requires the patient to state the site with the patient awake and aware.
- For patients less than 18 years old, parental or guardian assistance in the process is necessary unless the minor can give legal consent for the treatment or is mature enough to engage in the site marking.
- Marker should be sufficiently permanent to stay visible after the patient is prepped and draped (**Indelible marking pen is utilized**).

Methodology

Sign in

- Before the patient undergoes anesthesia, the anesthetist along with the nurse will confirm identity, the site and side of operation, what procedure is to be carried out and that the patient has consented for the procedure. This is documented in the Surgical safety.
- checklist and is called sign-in and is documented along with the time and signed by anesthetist.

Step -2: Time out

- Time out is held just prior to incision involving the entire operative team. The Surgical Safety Checklist is used for all procedures done in the OT Complex, based on WHO Surgical Safety Checklist. The time of time out is documented in the checklist and signed by the team.

Methodology

Step-3: Sign Out

Before skin closure, there is a further check, conducted by the nursing staff, surgeon and the anesthetist and the following points are verified: a) Name of the surgical/ invasive procedure that was recorded/ written. b) Completion of instrument, sponge and needle counts. c) Labeling of specimens.

- The procedure conducted is noted.
- The surgeon, anesthetist and nursing staff then discuss any key concerns for recovery management of the patient. (Refer Annexure 1 and 2).

Results

- ❑ - Compliance Rates:
- ❑ - Sign In: 90% and above
- ❑ - Time Out: 64%
- ❑ - Sign Out: 10%
- ❑ And for staff knowledge
- ❑ 78 % complaince
- ❑ 12% non compliance and
- ❑ 10 % partial compliance
- ❑ - Identified gaps and need for frequent audits

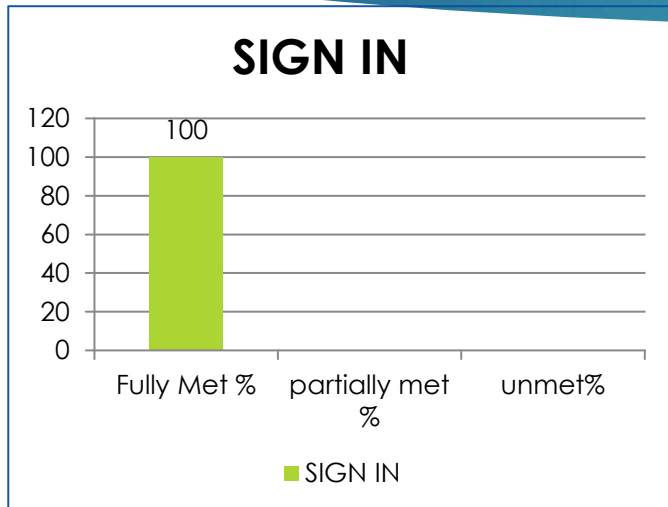
COMPLIANCE RATE IN PERCENTAGE

Table 2 Showing compliance gap in percentage

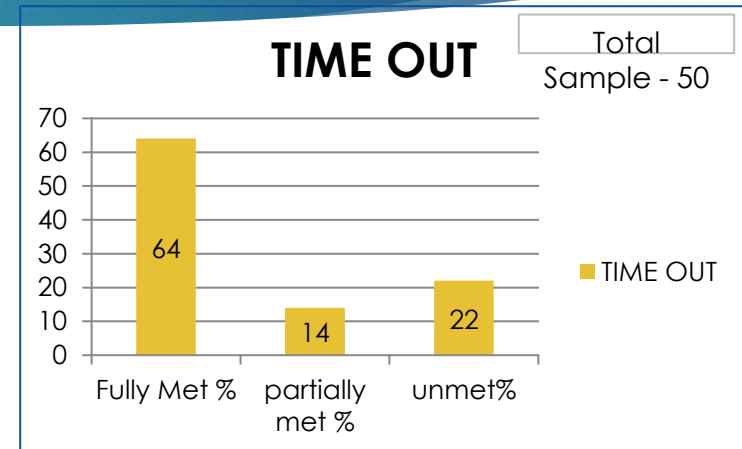
TYPE OF THE PATIENTS	Fully Met %	partially met %	unmet%
SIGN IN	100	0	0
TIME OUT	64	14	22
SIGN OUT	2	21	77

Interpretation: The above table shows analysis of compliance gap showing Sign In 100% compliance , Time Out showing 64% total compliance , 14% partially met and 22% unmet compliance rate and Sign Out showing total 2% compliance fully met , 21% partially met and 77% unmet compliance rate in IPSG 4 audit by using surgical safety checklist

ANALYSIS OF SIGN IN AND TIME OUT

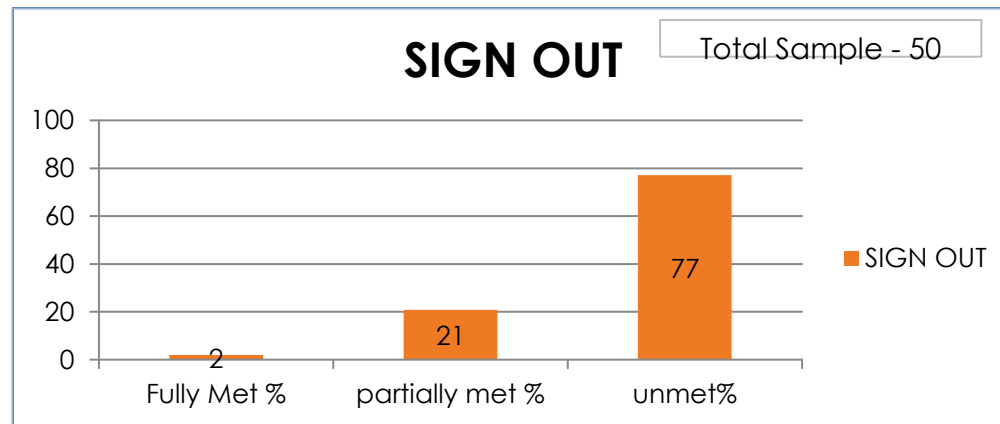


This figure is showing 100 % compliance rate for sign in parameter of IPSP 4 before approaching OT.



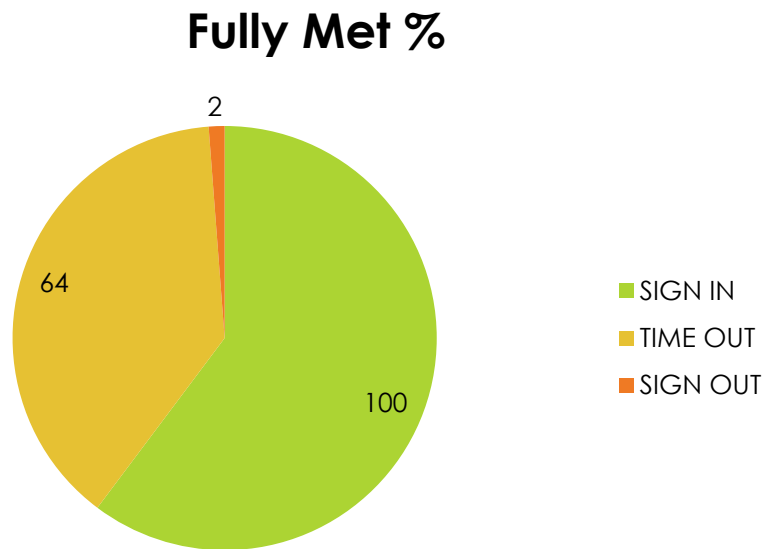
And In this figure 8 and 9, analysis of time out showing 64% fully met compliance, 14% partially met compliance and 22% unmet compliance performed before Incision in OT while starting surgical procedure for IPSP 4 audit by using surgical safety checklist.

Figure 9 ANALYSIS OF SIGN OUT PARAMETERS IN PERCENTAGE



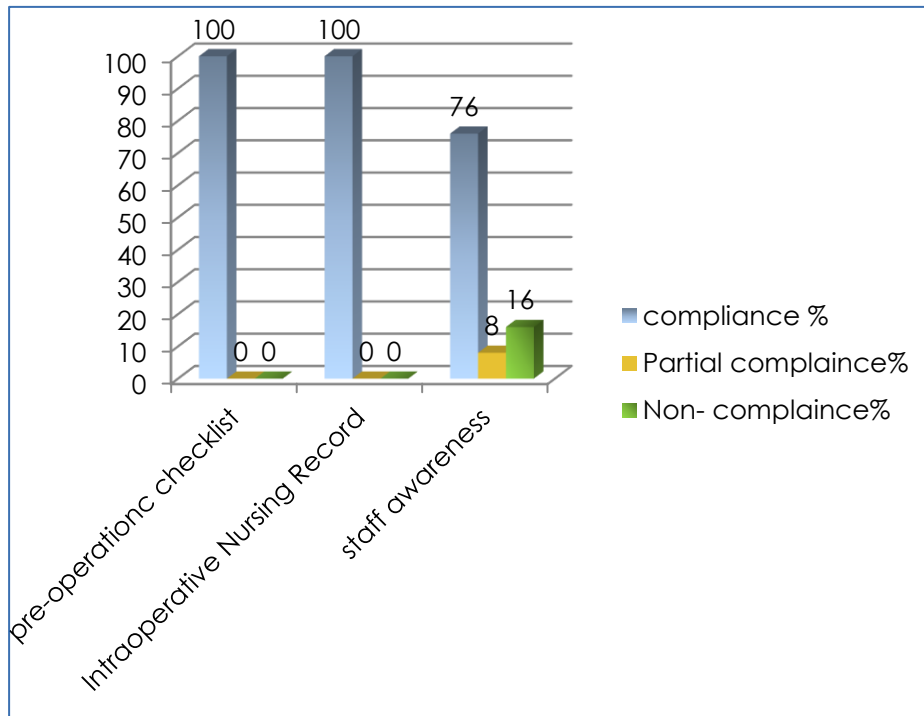
Interpretation: In this static chart , analysis of SIGN OUT showing 2% fully met compliance , 21% partially met compliance and 77% unmet compliance performed after surgery before suture/closure for IPSG 4 audit by using surgical safety checklist.

Analysis of Compliance Rates for Sign In, Time Out, and Sign Out (Percentage)



Interpretation: This pie chart showing complete analysis of compliance rate of all parameters of IPSG 4 - Sign In , Time Out, and Sign Out analysis shown in single chart .

Analysis of staff awareness



INTERPRETATION: This figure showing the analysis of pre-operative checklist, intra-operative nursing records and staff awareness the parameters of IPSG which shows data analysis for pre-operative checklist 100% compliance, intra operative nursing record 100 % compliance and overall staff awareness show 76 % compliance rate for IPSG 4 during research study

Analysis of Distribution of staff knowledge study

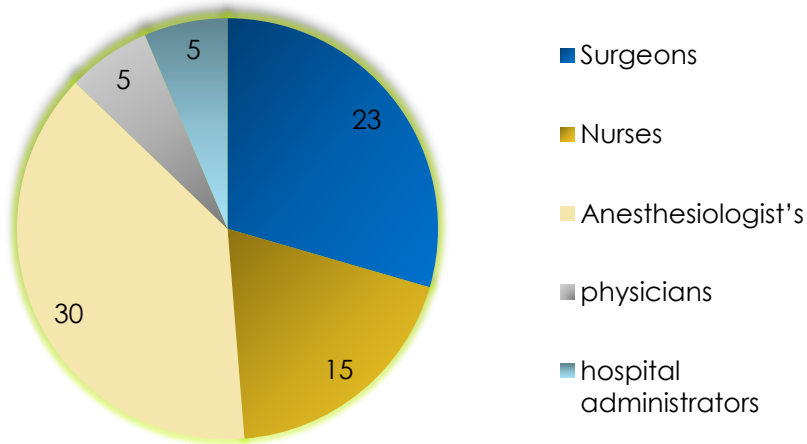
Table 4 Distribution of staff knowledge study

STAFF KNOWLEDGE	COMPLIANCE %	NON COMPLIANCE %	PARTIALL COMPLIANCE %	TOTAL
Surgeons	23	2	5	30
Nurses	15	10	5	30
Anesthesiologist's	30	0	0	30
physicians	5	0	0	5
hospital administrators	5	0	0	5
Total staff knowledge	78	12	10	100

Interpretation: The Table shows distribution of staff awareness study which comprises of 23 compliance surgeons knowledge, 15 nurses, 30 anesthesiologist's out of 30 sample size, and 5 physician, and 5 hospital administration compliance rate out of 5 sample size during IPSG 4 staff awareness research audit.

Compliance rate of staff awareness

COMPLIANCE



Interpretation: This chart shows distribution of staff awareness study which comprises of 23 compliance surgeons knowledge, 15 nurses, 30 anesthesiologist's out of 30 sample size, and 5 physician, and 5 hospital administration compliance rate out of 5 sample size during IPSG 4 staff awareness research audit.

Conclusion

Compliance with IPSG 4 at Artemis Hospital is crucial for ensuring surgical safety and maintaining high standards of patient care. This study identifies gaps in adherence to the protocol and offers recommendations for improvement, aiming to enhance overall healthcare quality, reduce costs, and guide policy creation. Establishing and maintaining strict compliance with IPSG 4 is essential for delivering safe and effective surgical treatments.



RECOMMENDSTIONS

- ▶ By conducting and Implement regular training sessions for all surgical team members, including surgeons, nurses, and anesthesiologists, focusing on the importance and protocols of IPSG 4.
- ▶ Before suturing the surgical part, performing the sign out.
- ▶ Staff should participate more actively for reducing surgical errors.
- ▶ Use simulation-based training to practice following to surgical safety measures, including sign-in, time-out, and sign-out processes.
- ▶ **Enhance Compliance Monitoring:**
- ▶ Conduct frequent audits using the IPSG audit checklist to monitor compliance with IPSG 4 protocols.
- ▶ Establish a strong feedback system where surgical teams receive immediate feedback on compliance, recognizing areas for improvement.
- ▶ Foster a culture of transparent communication and teamwork, encouraging all team members to speak out if they observe any gaps or potential problems.

Refernce

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