

**TO ASSESS KNOWLEDGE, ATTITUDES, AND PRACTICES
AMONG NURSING STAFF ABOUT PREVENTION OF HOSPITAL
ACQUIRED INFECTIONS (HAIS) AT MEDANTA HOSPITAL
GURGAON, HARYANA**

Presented by - Shraddha Rai

MEDANTA-THE MEDICITY



Our mission is to deliver world class, patient centric, integrated and affordable healthcare through a dynamic institution that focuses on the development of people and knowledge.

Core values:

Patient centric care: Foster a culture where every one of us is committed to care for patients and their caregiver.

Leadership and quality: Commit to delivering excellence in everything we do through exemplary action and behaviour.

Integrity and courage: Maintain the highest ethical standards by putting the patient first and demonstrating the courage to do what is right.

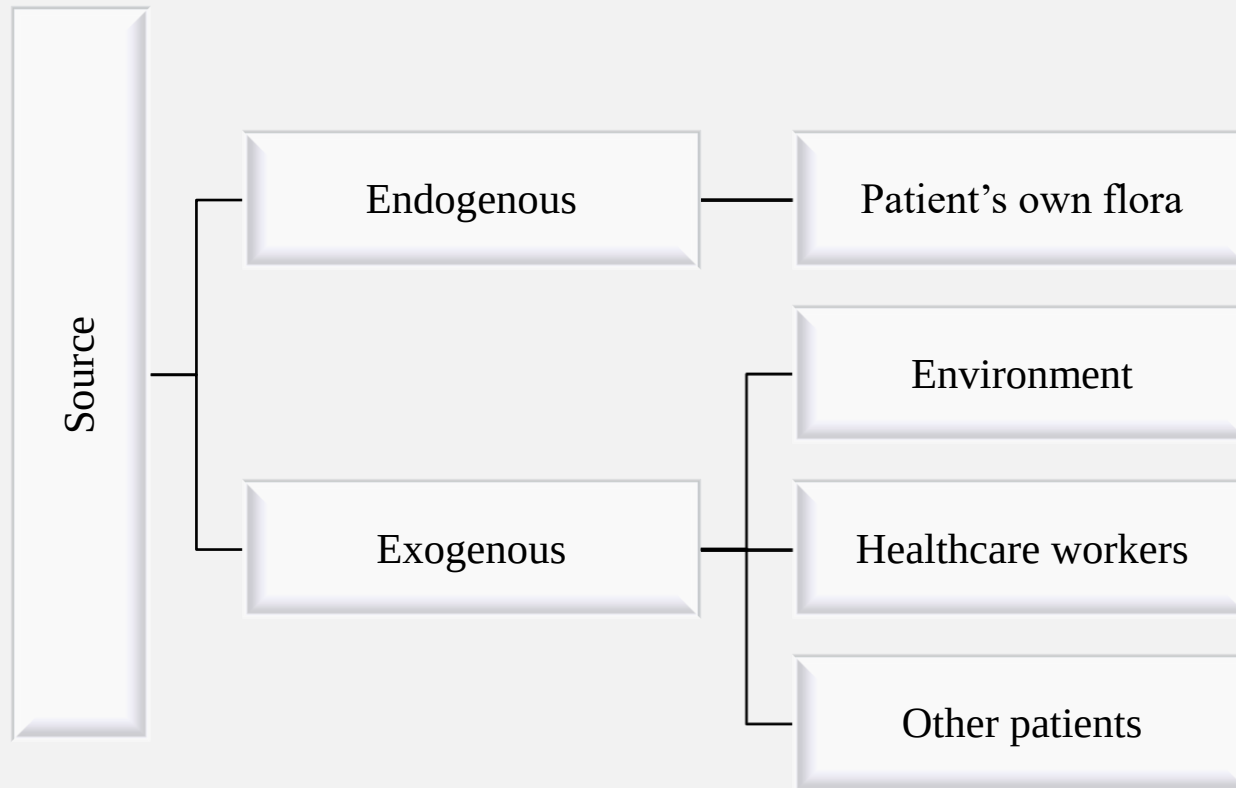
Collaboration, learning and innovation: Promote teamwork and collaboration, welcome change and creativity, encourage innovation.

SPECIALITIES			
Musculoskeletal Disorders and Orthopaedics	Clinical and Preventive Cardiology	Emergency and Trauma Care	Chest Surgery-Chest Onco Surgery and Lung Transplantation
Cancer Institute	Cardiac Surgery	Endocrinology and Diabetology	Heart Hospital
Breast Cancer	Urology and Andrology	Gynaecology and Gynae Oncology	Obstetrics and Gynaecology
Head and Neck: Oncology	Neurosciences	Internal Medicine	Electrophysiology and Pacing
Medical and Haematoma Oncology	Liver Transplantation and Regenerative Medicine	ENT, Head & Neck Surgery Hospital	Dental Sciences
Radiation Oncology	Ayurvedic Medicine	Paediatrics	Dermatology
Critical Care and Anaesthesiology	Kidney and Urology Institute	Ophthalmology	Laboratory Medicine. Pathology and Blood Bank
Digestive and Hepatobiliary Sciences	Nephrology	Radiology and Imaging	Peripheral Vascular and Endovascular Sciences
Gastroenterology	Clinical Immunology and Rheumatology	Respiratory and Sleep Medicine	
GI Surgery, GI Oncology and Bariatric Surgery	Interventional Cardiology	Plastic, Aesthetic and Reconstructive Surgery	

INTRODUCTION

- CDC defines hospital-acquired infection as a localized or systemic disease that occurs due to a negative response to the presence of an infectious agent or its toxin, without any evidence of the agent being present or developing at the time of admission.
- An infection is attributed as HAI if date of event occurs on or after 3rd calendar day of admission.
- Commonly implicated pathogens are Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa, Enterobacter species and Escherichia coli.
- CDC- Staphylococcus aureus, Pseudomonas aeruginosa, Escherichia coli.

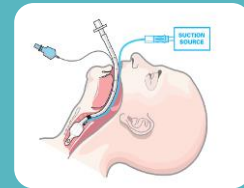
MAJOR TYPES OF HOSPITAL ACQUIRED INFECTION



Central line associated blood stream infection



Catheter associated urinary tract infection



Ventilator associated pneumonia



Surgical site infection

RESEARCH OBJECTIVES

- To assess the knowledge of infection prevention measures among nursing staff
- To measure the attitude of nurses towards infection control protocols
- To assess the practices of Medanta towards reducing hospital acquired infection.



KNOWLEDGE



ATTITUDE



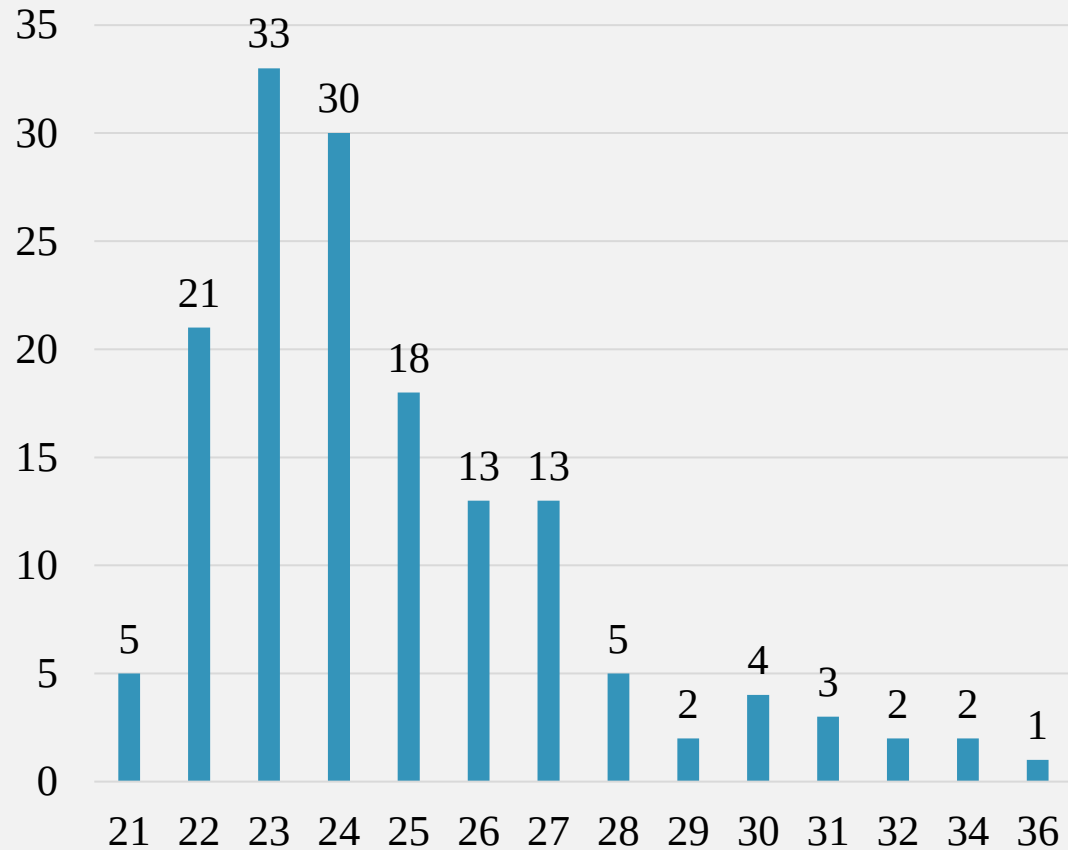
Practice

METHODOLOGY

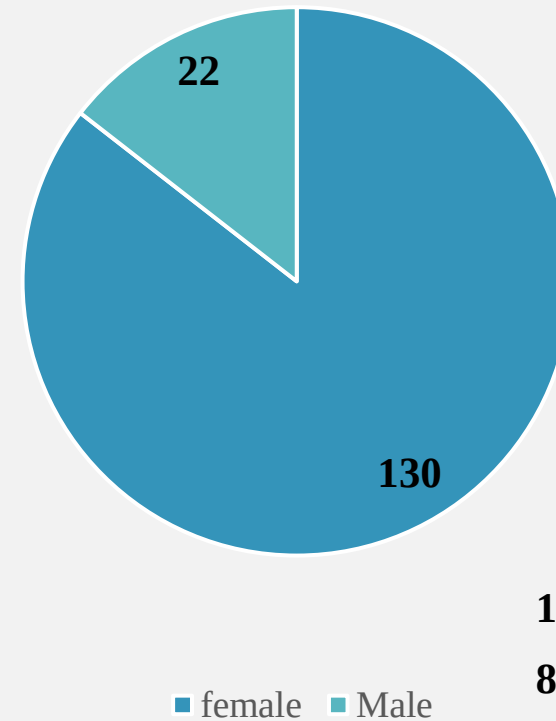
- Study design: Descriptive cross- sectional study
- Study setting: Medanta- The Medicity
- Study duration: 1 March – 31 May 2023
- Sample size: 152
- Data collection: Self-administered questionnaire
- Data analysis: Microsoft excel.
- Scoring:
 - < 50 % is considered as “Poor”
 - >50%<70% is considered as “Fair”
 - >70% is considered as “Good”

SOCIO-DEMOGRAPHIC STATUS

Age demography



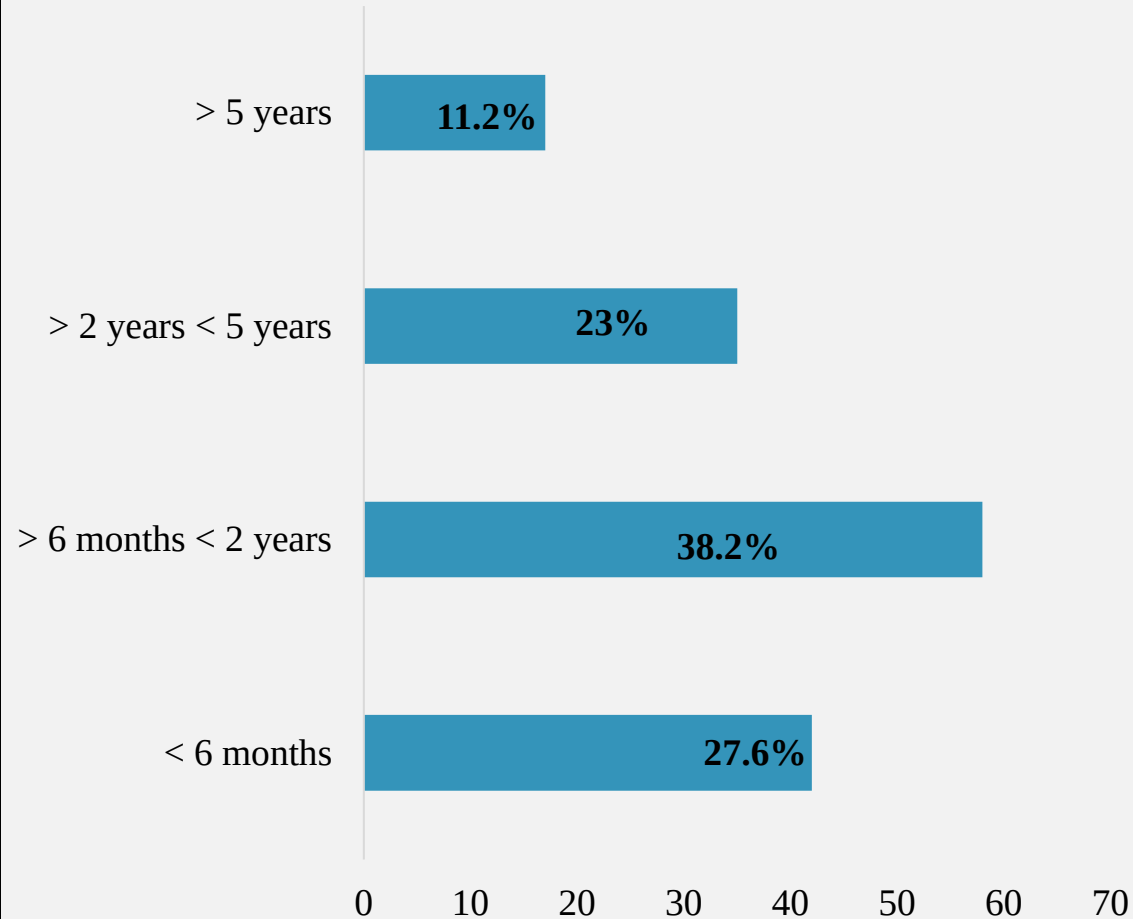
Gender demography



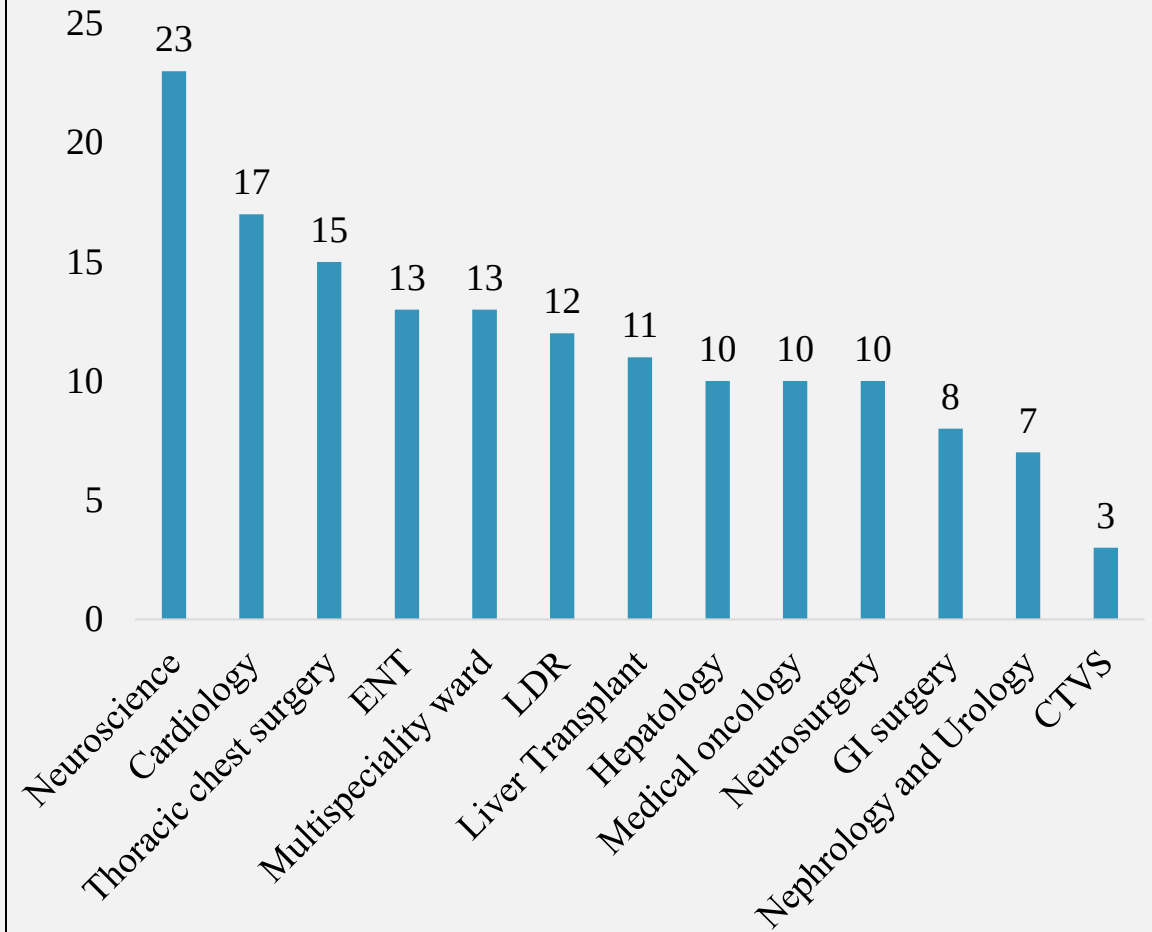
14.5% Males
85.5% Females

SOCIO-DEMOGRAPHIC STATUS

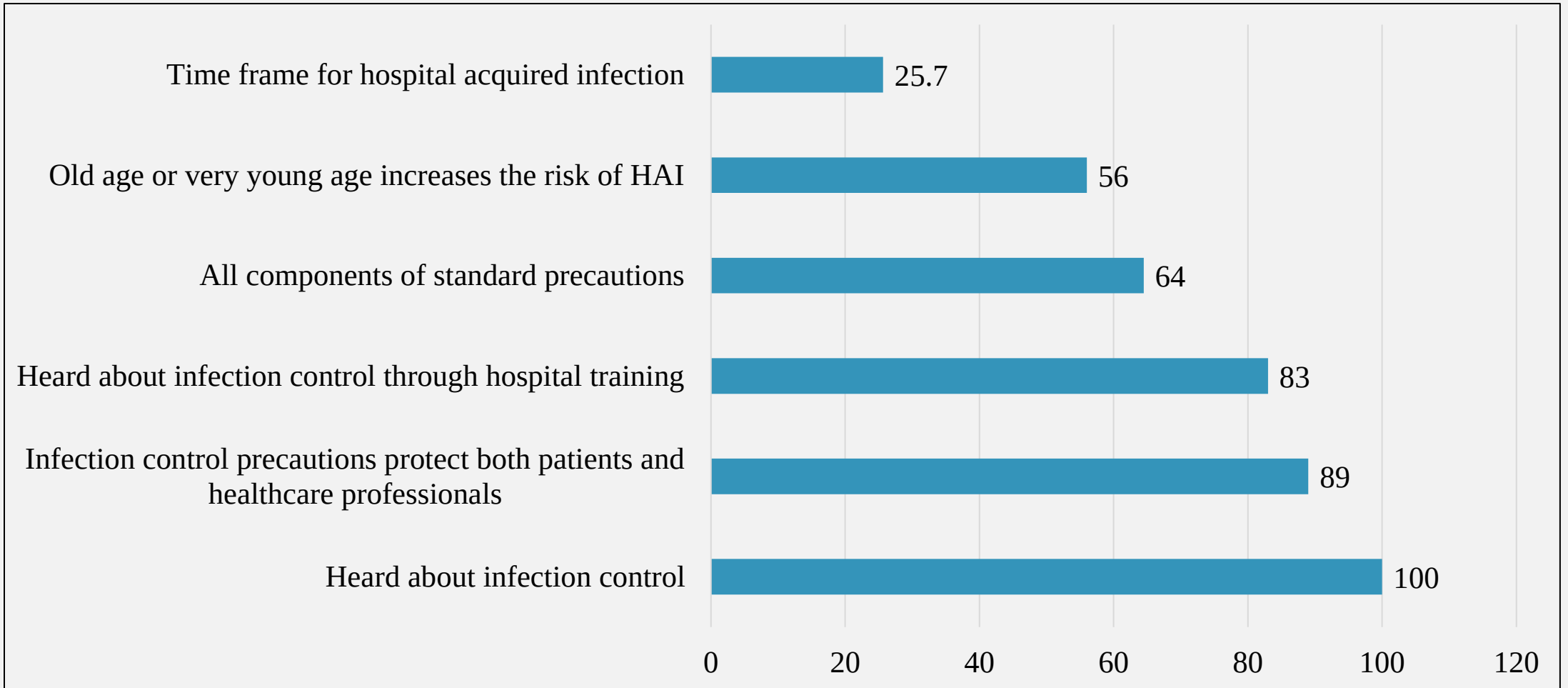
Work experience



Speciality wise distribution



KNOWLEDGE



WHY IS IT IMPORTANT ?



Patient Safety

- HAIs can lead to increased morbidity, mortality, and prolonged hospital stays.



Enhanced vigilance

- Nurses will be more vigilant when caring for older adults or young children, as they understand the increased susceptibility to infections in these populations.



Identify HAI trends

- To identify trends, implement targeted interventions, and evaluate the effectiveness of infection control measures



Documentation

Accurate documentation and reporting of HAIs for legal and ethical reasons.



Strict Adherence to IC Practices

- Nurses will prioritize a clean and safe healthcare environment, when caring for vulnerable individuals. This includes implementing isolation precautions, following disinfection protocols

STANDARD PRECAUTIONS



Hand Hygiene



Personal Protective equipment



Biomedical waste management



Disinfection



Spillage cleaning



COVER WITH
TISSUE

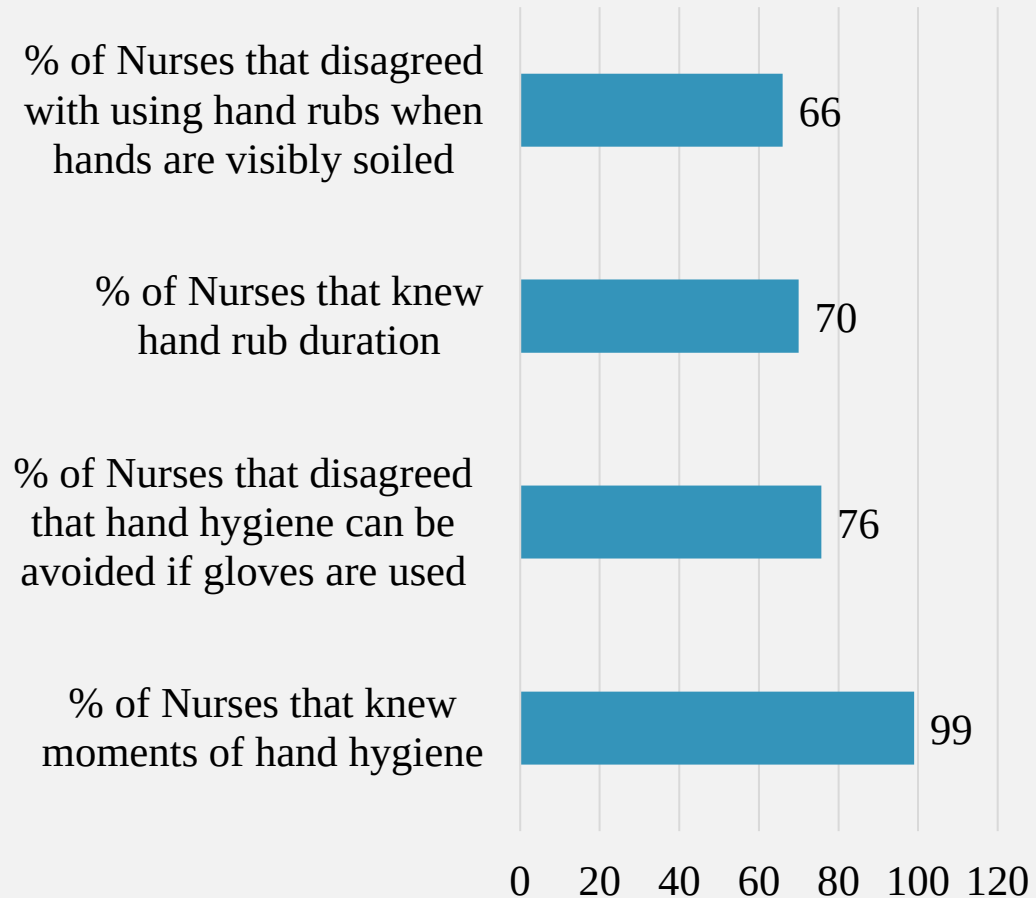
WEARING
A MASK

COVER WITH
YOUR ELBOW

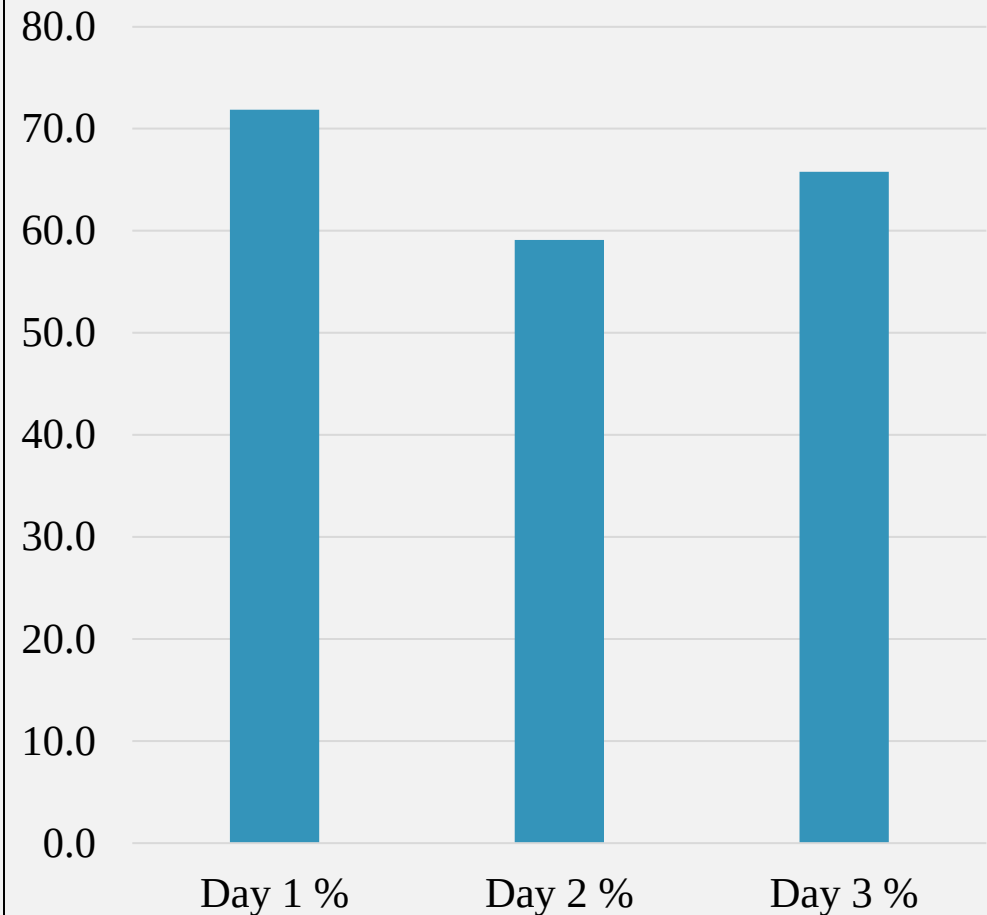
Respiratory hygiene & cough
etiquette

HAND HYGIENE

Hand Hygiene

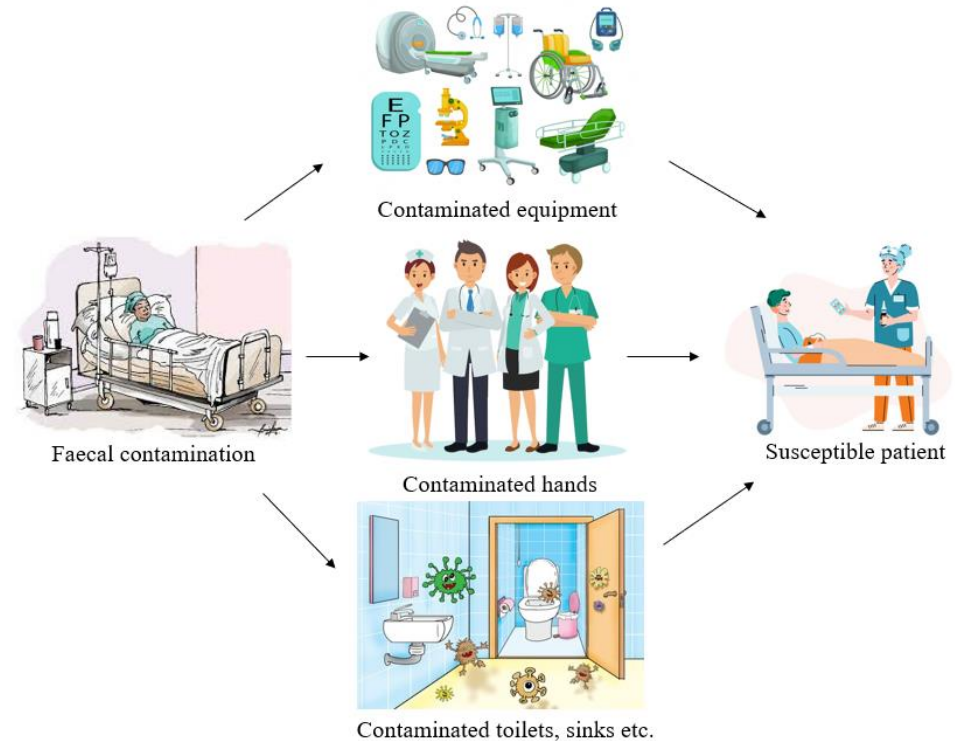


HAND HYGIENE AUDIT 66.3%



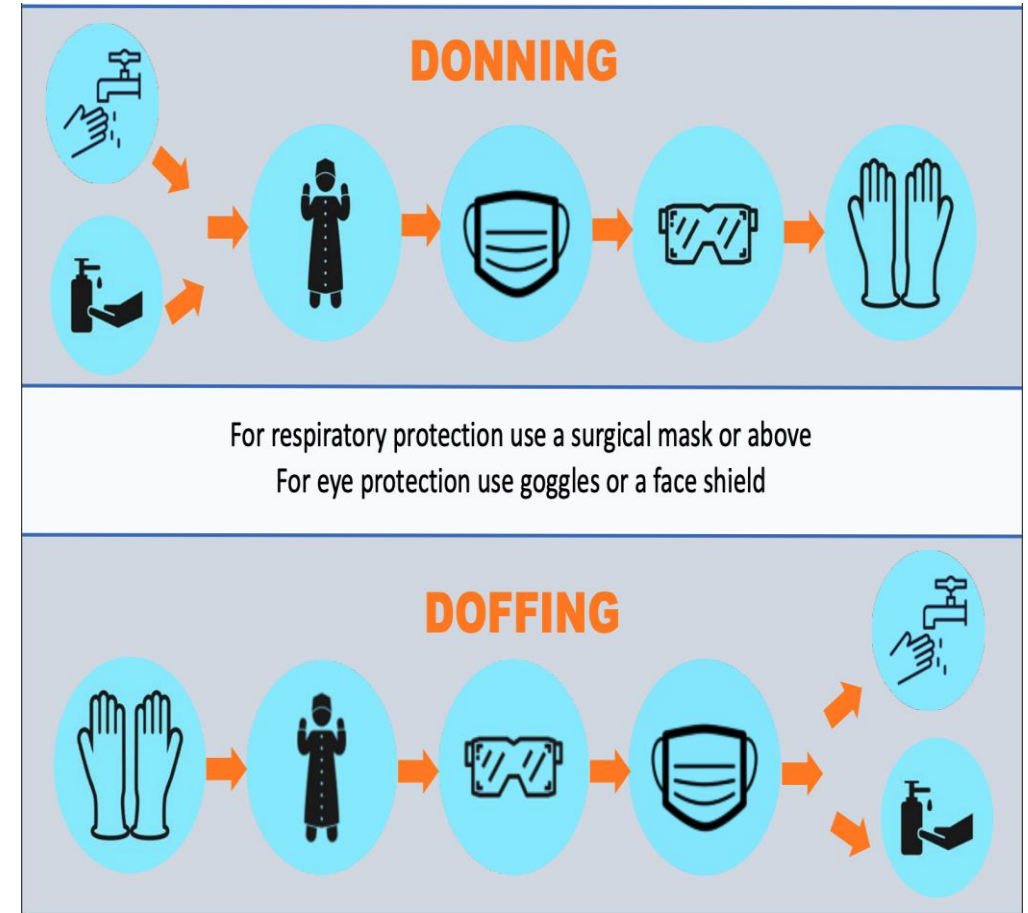
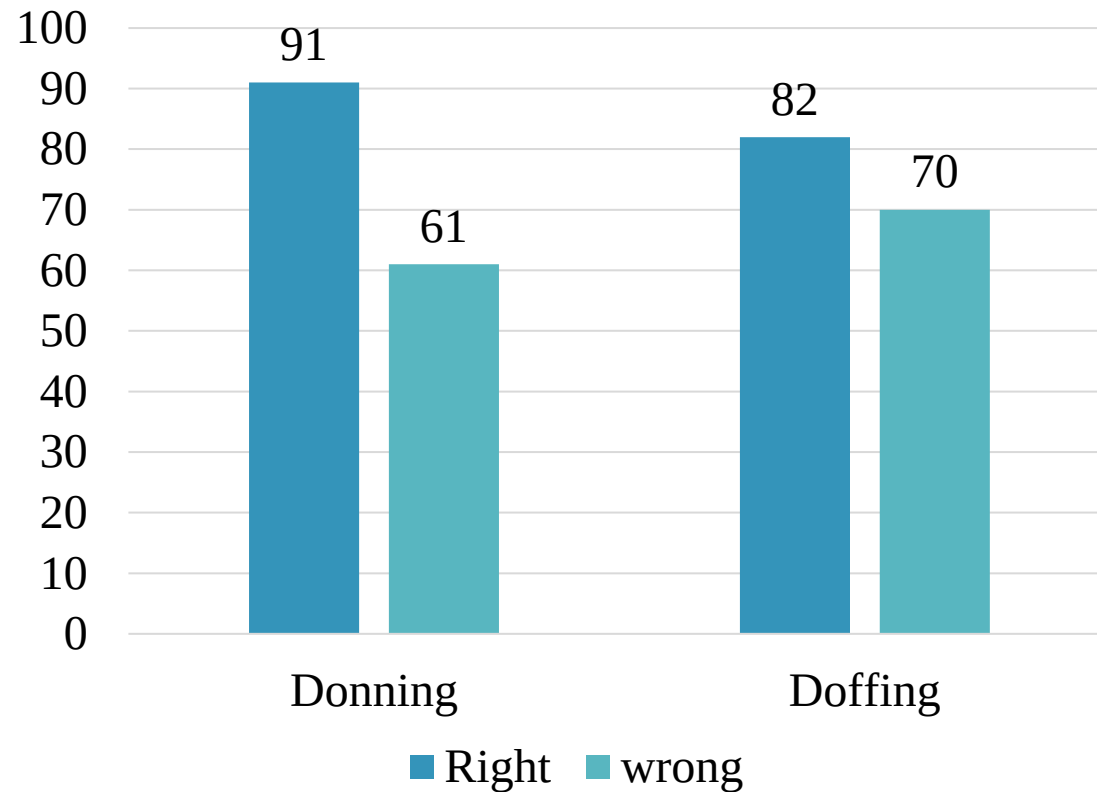
A CLEAN HAND IS A CARING HAND

- In acute-care hospitals:
- Around 7 out of 100 patients in high-income countries
- 15 out of 100 patients in low- and middle-income countries will get a healthcare-associated infection during their stay.
- Hand hygiene programs in healthcare facilities, driven by funding and country income level, can prevent up to 50% of these infections and save 16 times the cost of implementation.

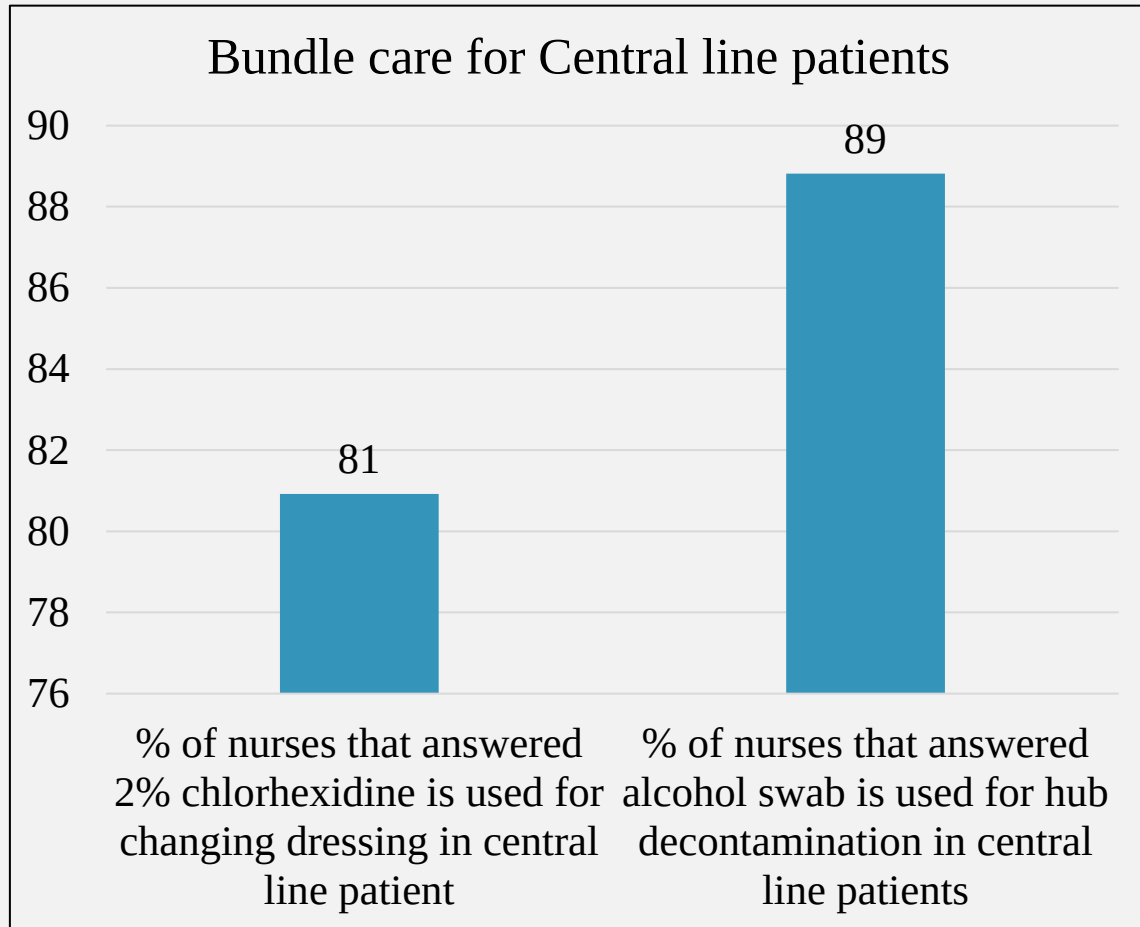


PERSONAL PROTECTIVE EQUIPMENT

Correct sequence of donning and doffing



BUNDLE CARE FOR CENTRAL LINE PATIENTS

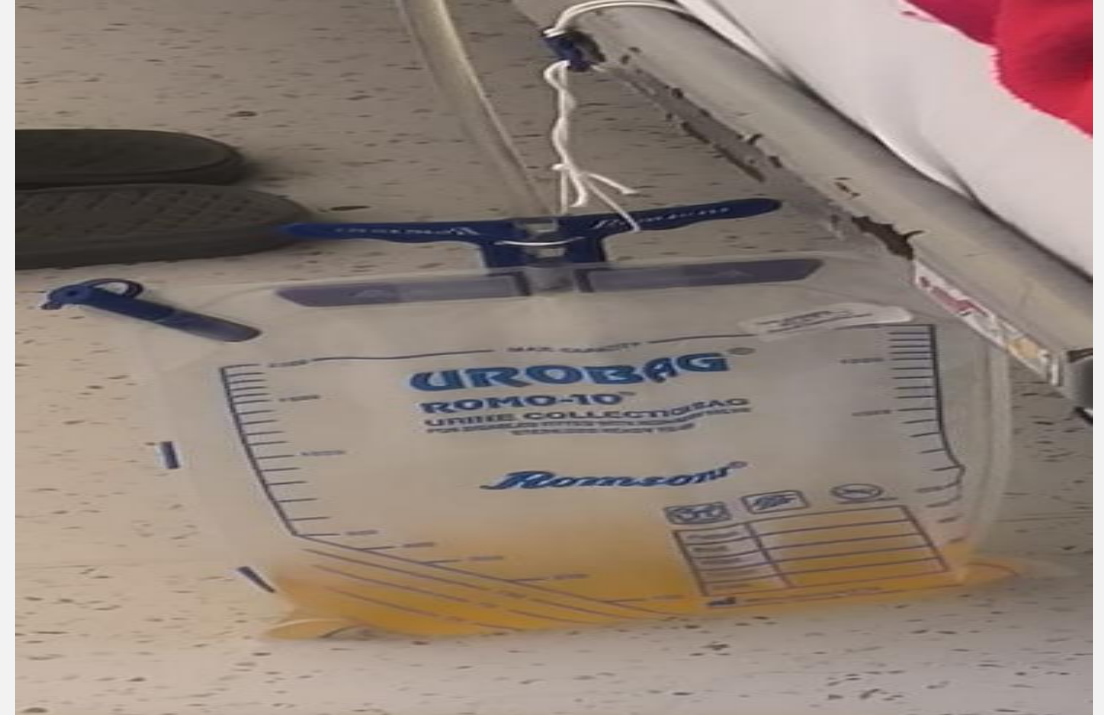
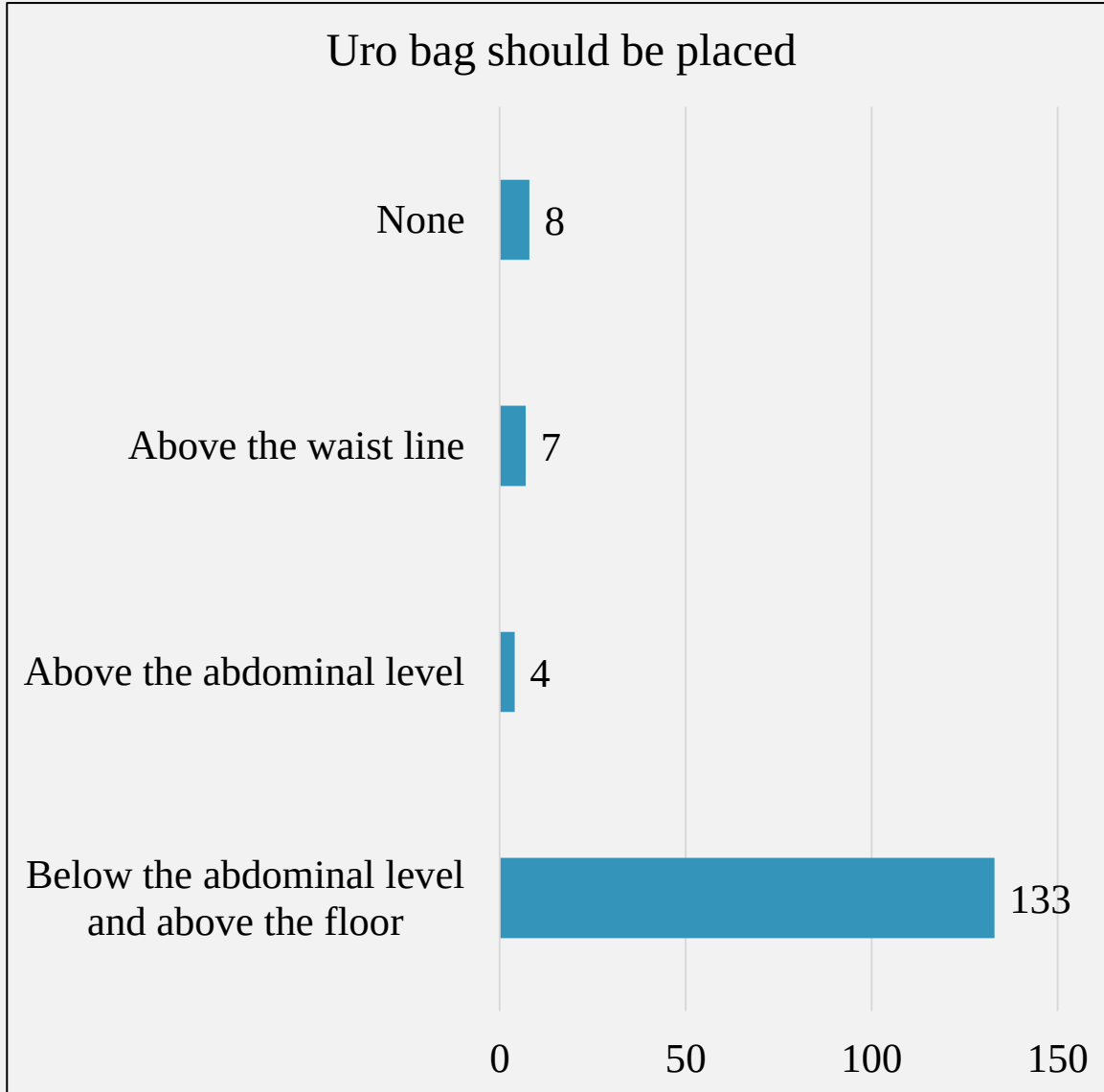


It is caused by skin microbes entering the catheter

- Longer hospital stays
- Higher costs
- Increased mortality rates

Using alcohol with chlorhexidine gluconate can reduce central line associated blood stream infection

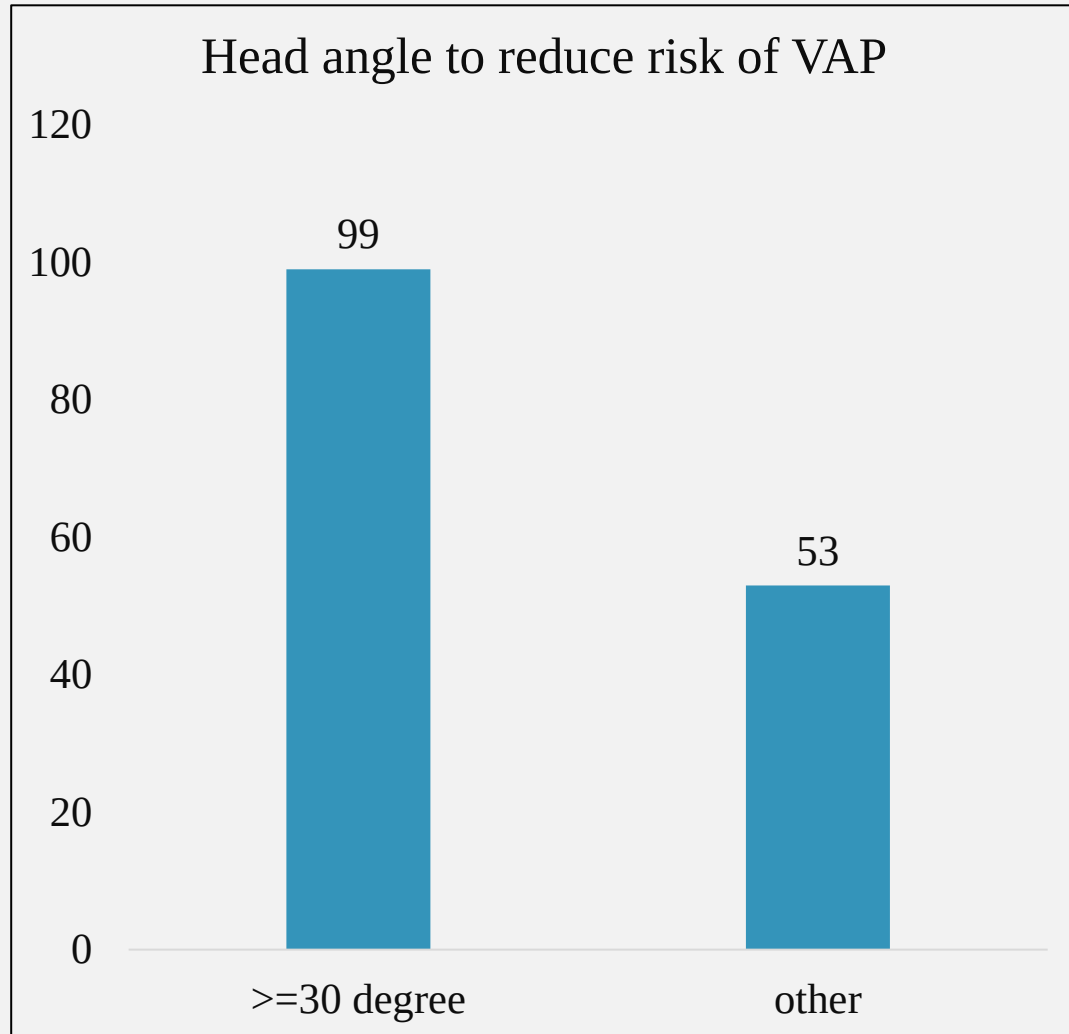
URO BAG POSITION



Healthcare provider should:

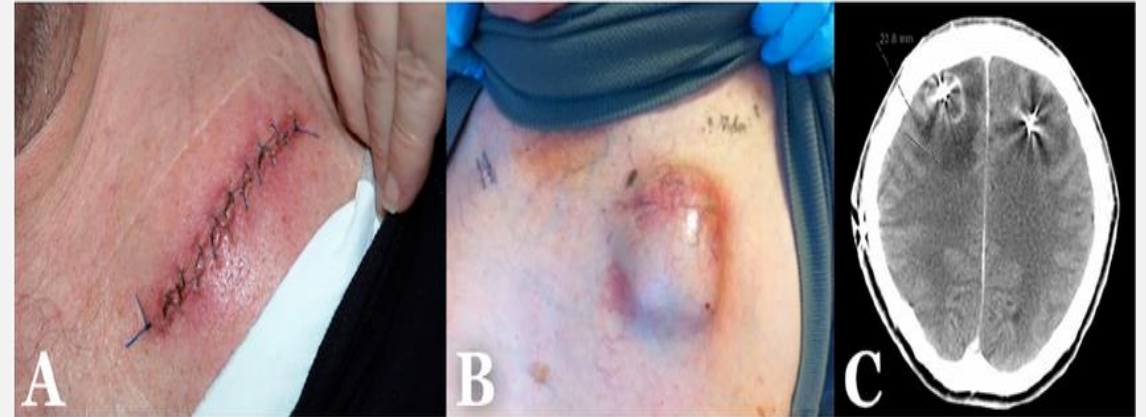
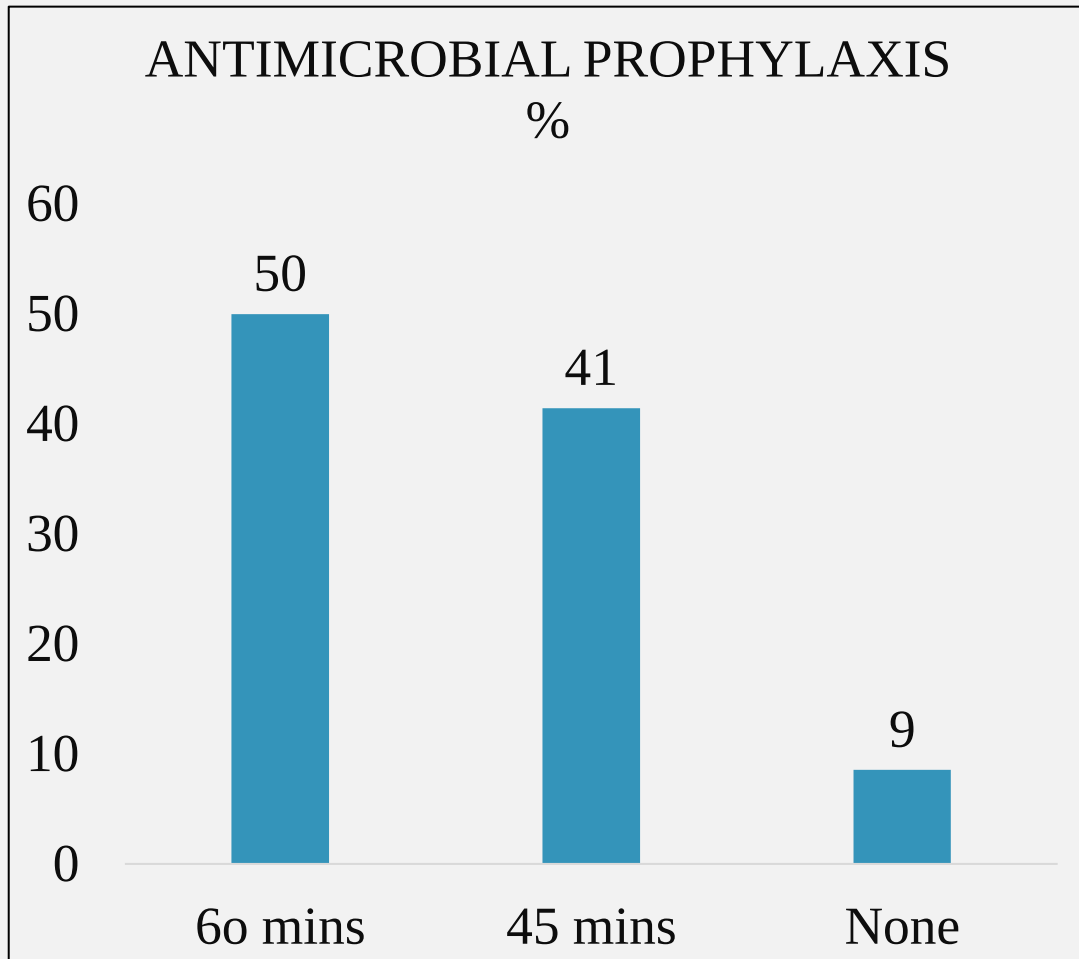
- ✓ Hand rub before and after touching your catheter
- ✓ Avoid disconnecting the catheter and drain tube
- ✓ Catheter to be secured to the leg
- ✓ Keep the bag lower than the bladder to prevent urine backflow
- ✓ Empty the bag regularly

VENTILATOR-ASSOCIATED PNEUMONIA



Gastric reflux and aspiration can also lead to VAP in mechanically ventilated patients. Keeping the head of the bed elevated between 30–45 degrees (semi-recumbent position) is recommended to reduce reflux and subsequent risk for VAP

SURGICAL SITE INFECTION



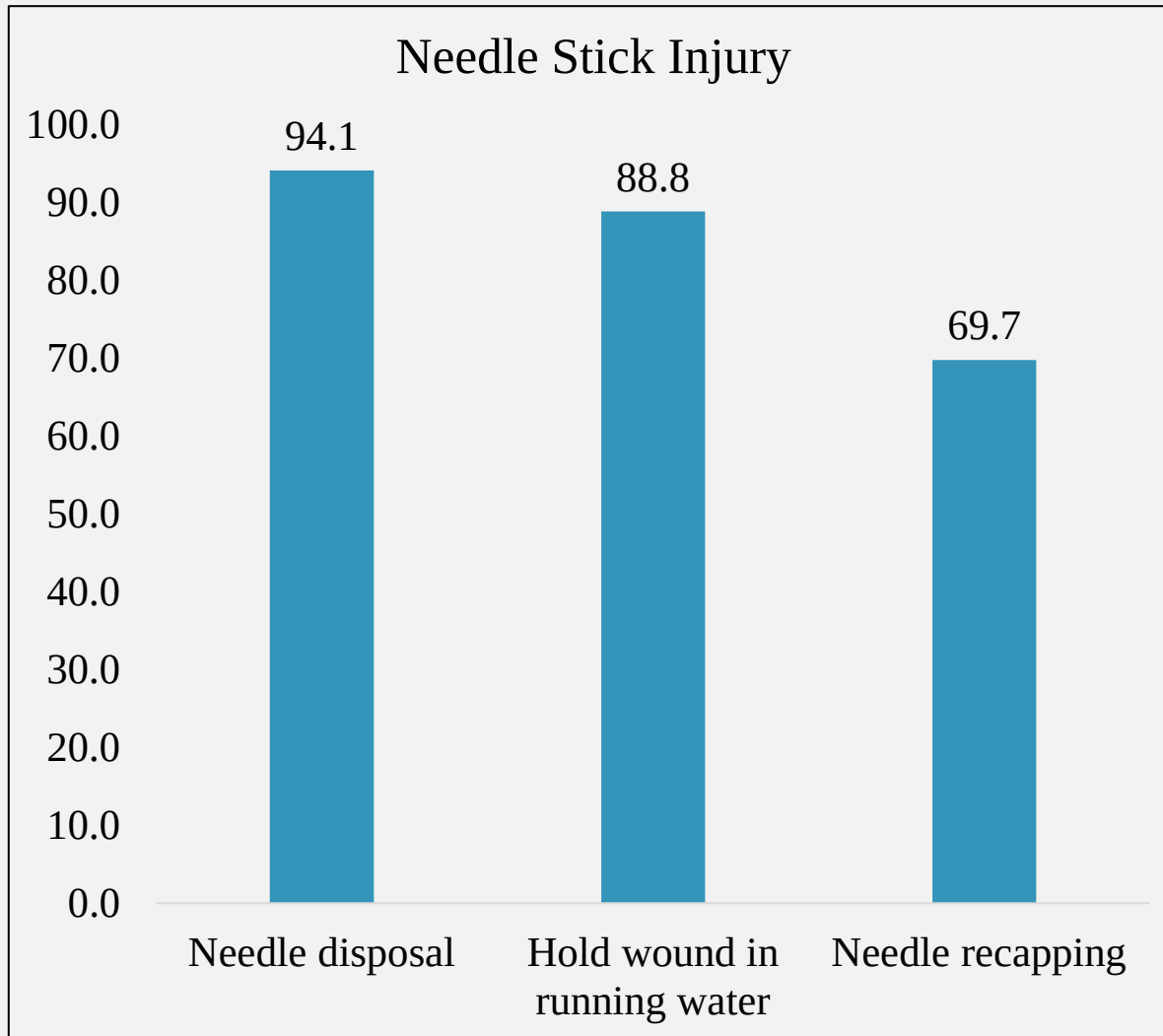
A) Superficial incisional SSI B) Deep incisional SSI C) Organ/space SSI

Within 30 days of surgery (90 days - Prosthetic material, CABG, Craniotomy, Spinal fusion, Pacemaker etc.

Symptoms include:

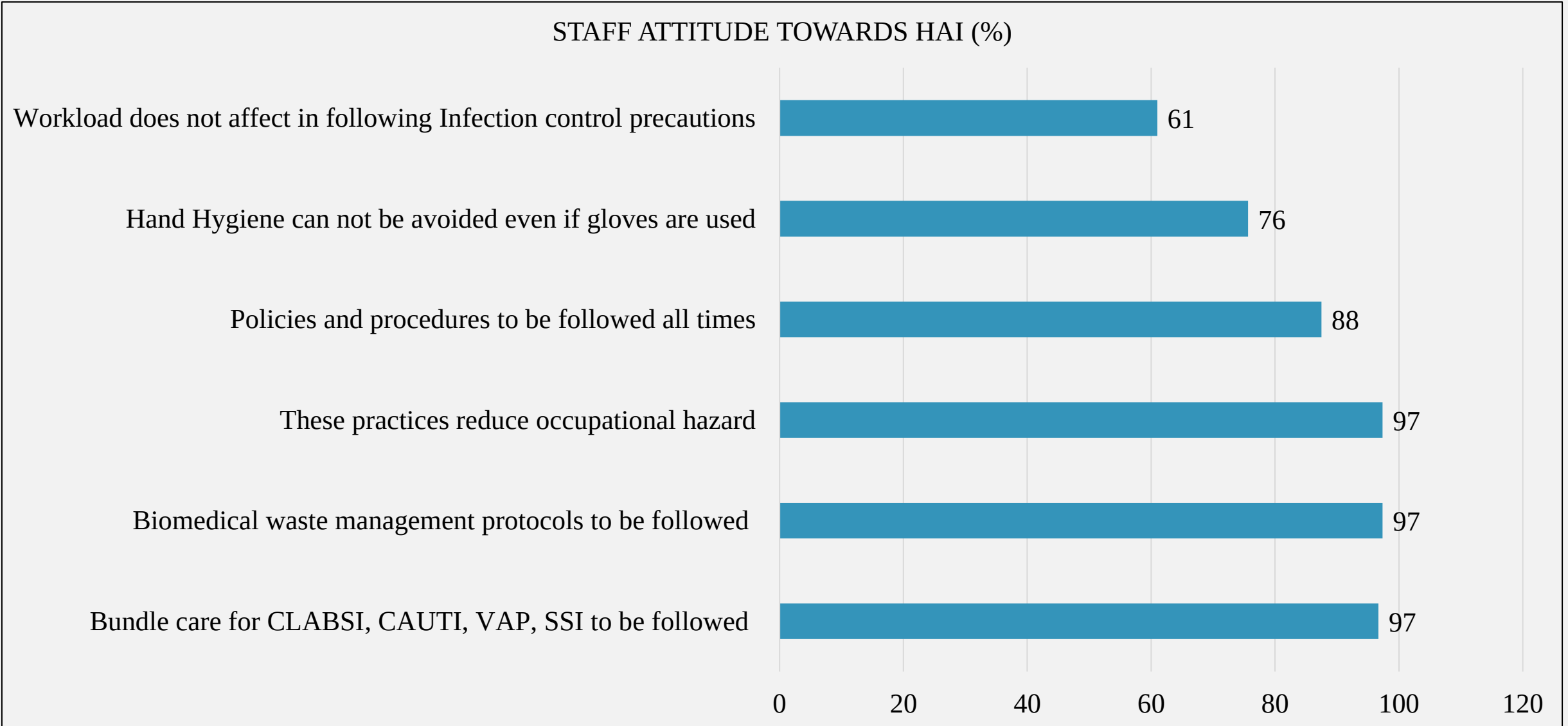
- Redness and pain around the area where you had surgery
- Drainage of cloudy fluid from your surgical wound
- Fever

NEEDLE STICK INJURY

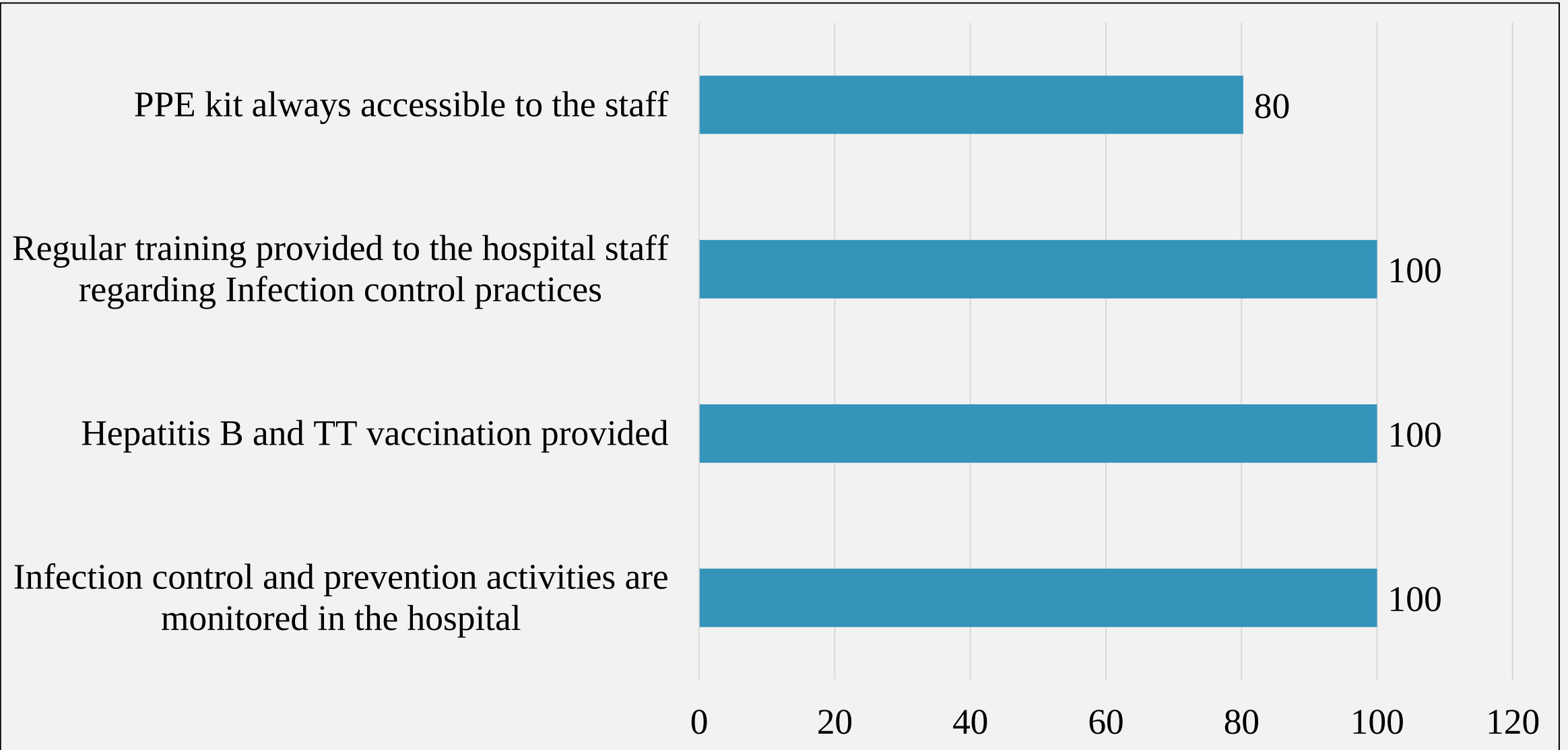


Needlestick injuries (NSIs) are one of the most important occupational hazards among healthcare workers (HCWs) globally. According to WHO, more than two million occupational exposures to sharp injuries occur among 35 million HCWs annually

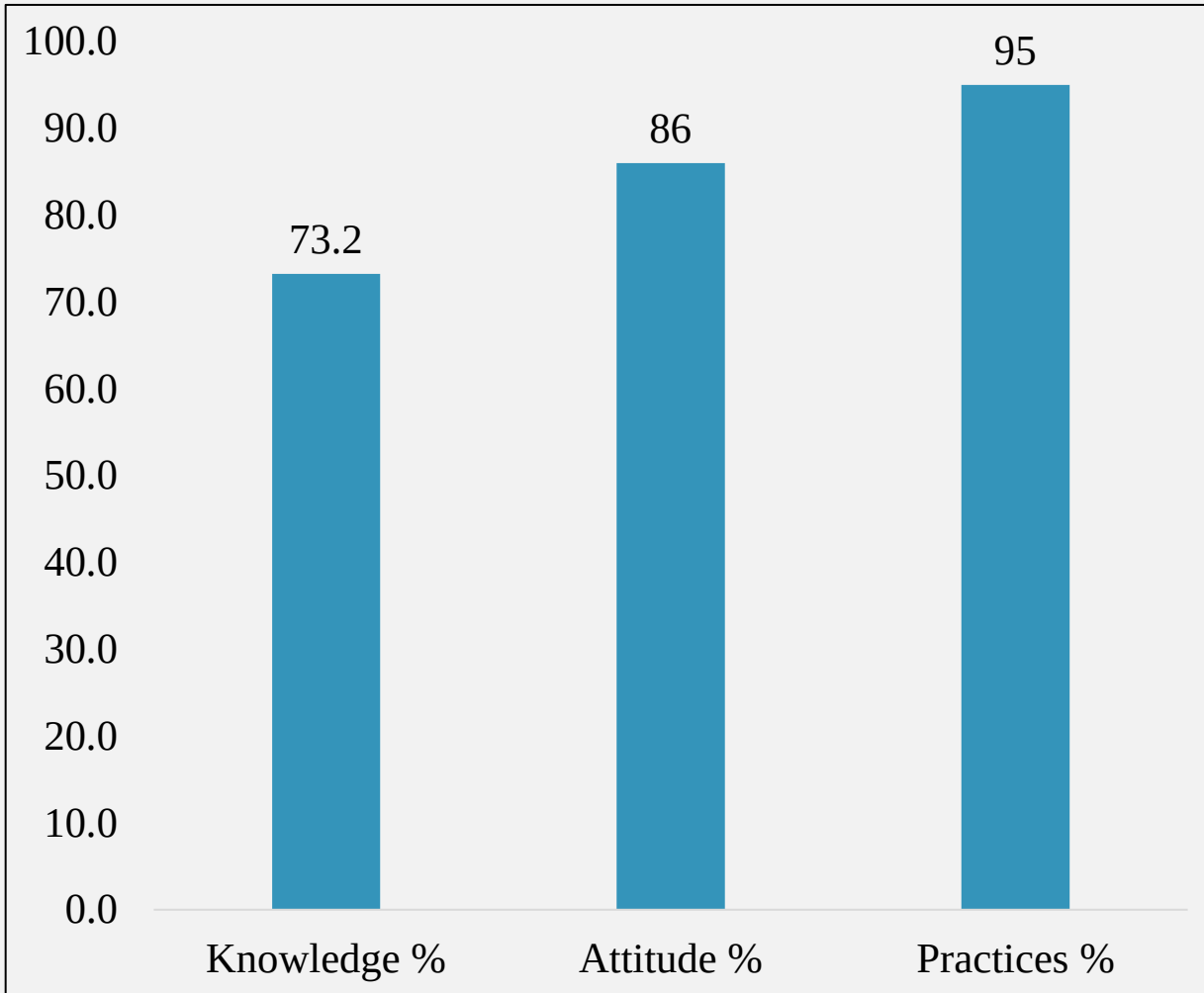
NURSING STAFF ATTITUDE TOWARDS HAI



PRACTICES TOWARDS PREVENTION OF HAI



KNOWLEDGE, ATTITUDE, PRACTICES



Below 70% :

Further Improvement can be done on:

- Time frame for hospital acquired infection (After 48 hrs)
- Old and young age increases the risk of HAI
- All components of standard precautions
- Hand hygiene using soap and water when hands are visibly soiled
- Correct sequence of donning and doffing
- Bed angle in ventilator patients
- Antimicrobial prophylaxis initiation time
- Needle recapping
- Workload makes it difficult to follow Infection control precautions

RECOMMENDATIONS

Time Frame for Declaring Hospital-Acquired Infection:

- This timeframe helps differentiate between infections present upon admission and those acquired during the hospital stay.

Focus on Vulnerable Patients:

- Recognize that both old and young age increase the risk of Hospital-Acquired Infections (HAI)

Comprehensive Implementation of Standard Precautions:

- Emphasize the implementation of all components of standard precautions, not limited to hand hygiene alone.

Hand Hygiene Using Soap and Water:

- Highlight the importance of hand hygiene using soap and water when hands are visibly soiled or contaminated with bodily fluids.

Correct Sequence of Donning and Doffing:

- Ensure healthcare workers are trained on the proper order of donning and doffing to minimize the risk of contamination and transmission.

Eliminate Needle Recapping:

- Discourage the practice of needle recapping when disposing of needles in sharp containers.

"SHIELDING HEALTH: MEDANTA'S COMMITMENT TO
PREVENTING HOSPITAL-ACQUIRED INFECTIONS"

INFORMATION, EDUCATION & COMMUNICATION MATERIAL



INFORMATION, EDUCATION & COMMUNICATION MATERIAL



HAND HYGIENE FACILITY





SHARP CONTAINER

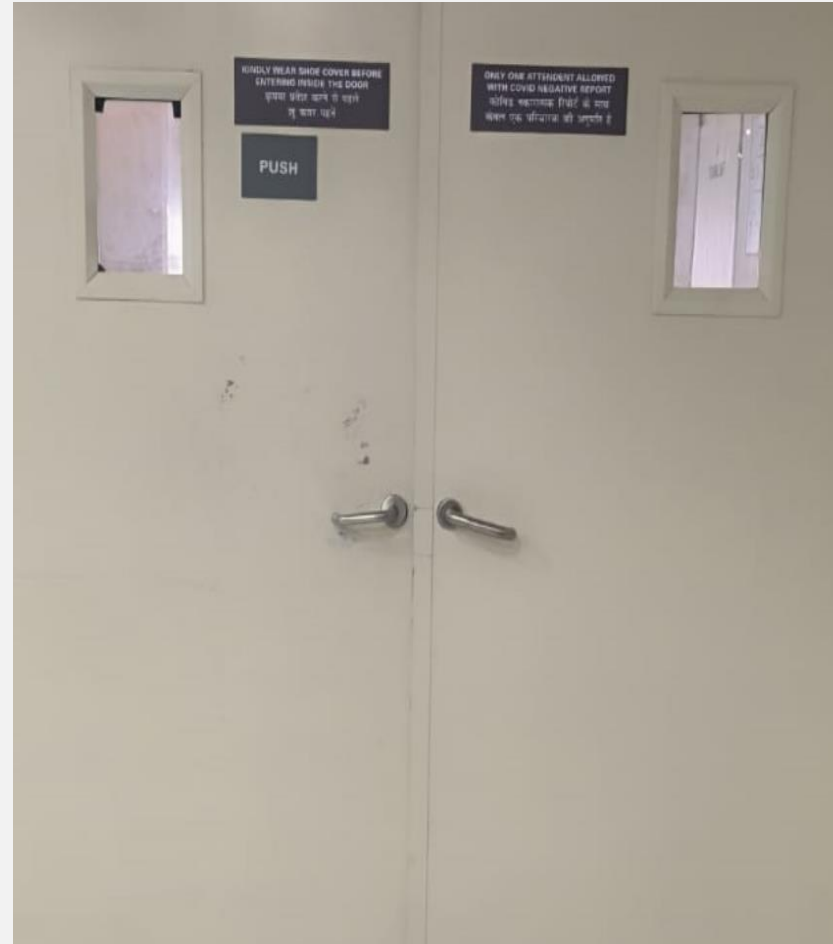


CLEANING



HAZMAT KIT

SPECIAL PRECAUTIONS



ETHICAL CONSIDERATIONS

CONSENT

Study Objective:

The objective of this study is to assess nursing knowledge, attitudes, and practices related to hospital-acquired infections (HAIs).

Study Procedures:

If you decide to participate, you will be asked to complete a self-administered questionnaire.

Confidentiality and Anonymity:

All information collected during this study will remain strictly confidential and will be used for research purposes only.

By completing and returning the questionnaire, you are providing your informed consent to participate in this study. Please note that you are free to skip any questions that you do not wish to answer.

If you agree to participate, please sign the attached copy of this [letter](#) and return it to me. Your signature will confirm that you have read and understood the information provided, and that you willingly consent to participate in the study.

Thank you for considering participation in this study. Your contribution is highly valued and will significantly contribute to advancing knowledge in the field of infection prevention and control.

I have read and understood the information provided above, and I willingly consent to participate in the study.

Participant's Signature: _____

Participant's Name: _____

Date: _____

ANNEXURES

Demographic details

Name:

Age:

Gender:

Years of experience:

Department:

Knowledge

Ever heard about infection control precautions?

☐ Yes ☐ No

Main Source of Information from where you have heard about Infection control practices?

☐ Hospital training ☐ Educational books ☐ Colleagues ☐ Others

Advantages of Infection control precautions?

☐ Protects Healthcare workers ☐ Protects Patients ☐ Both ☐ None

Advanced age or very young age increases the risk of Nosocomial infection?

☐ True ☐ False

Standard precautions include?

☐ Hand Hygiene ☐ Personal Protective Equipment ☐ Biomedical waste handling

☐ Hand Hygiene, Personal Protective Equipment, Biomedical waste handling, Disinfection, Spillage cleaning, Respiratory Hygiene and cough etiquette

An infection is attributed as HAI if date of event occurs on or after which calendar day of admission where day of admission is counted as 1?

☐ 1 ☐ 2 ☐ 3 ☐ 4

Moments of Hand Hygiene?

☐ Before and after touching the patient ☐ After touching the patients surrounding

☐ Before performing any aseptic procedures and after Body fluid exposure risk

☐ All

Hand rubs (alcohol based and chlorhexidine) are to be done for?

☐ 20-30 seconds ☐ 60 seconds ☐ 10 seconds ☐ 120 seconds

Using alcohol-based hand rub when hands are visibly soiled?

☐ Correct ☐ Incorrect

Donning (wearing) correct sequence:

- ☐ Hand Hygiene, shoe cover, first pair of gloves, gown, N95 mask, hood, face shield, second pair of gloves
☐ Shoe cover, first pair of gloves, gown, N95 mask, hood, face shield, second pair of gloves, Hand Hygiene
☐ Hood, face shield, first pair of gloves, second pair of gloves, hand hygiene, shoe cover, mask
☐ None

Doffing (removing) correct sequence:

- ☐ Gloves, goggles, gown, mask ☐ goggles, gloves, gown, mask
☐ Mask, gown, gloves, goggles ☐ none

Patient has an infection that is spread through droplets. Which of the following is essential for the nurse to use when taking patients temperature?

☐ Mask ☐ Gown ☐ Goggles ☐ All

Change of dressing for central line is done using?

☐ 1% chlorhexidine ☐ 2% chlorhexidine ☐ 0.5% chlorhexidine ☐ 1.5% chlorhexidine

Hub decontamination in CLABSI maintenance bundle care is done before each hub access using?

☐ Clean water ☐ Alcohol ☐ Cotton ☐ None

For prevention of Surgical Site Infection Surgical antimicrobial prophylaxis must be administered within?

☐ 60-120 minutes ☐ 120-240 minutes ☐ 360 minutes ☐ 45 minutes

Uro bag should be placed?

☐ Below the abdominal level and above the floor ☐ above the abdominal level
☐ Above the waistline ☐ None

In case of Needle Stick Injury:

☐ Hold the wound in running water ☐ use hand rub ☐ use band aid ☐ None

Do you recap needle before disposal?

☐ Yes ☐ No

To reduce the risk of VAP (Ventilator Associated Pneumonia) the head of the bed should be?

☐ less than 30 degree ☐ More than equal to 30 degree ☐ 20 degree ☐ None

Yellow is the color coding of the bag used in hospitals to dispose of human anatomical wastes such as body parts

☐ True ☐ False

Where would you put a syringe?

☐ Yellow bag ☐ Sharp container ☐ Black bag ☐ None

Attitude

Hand Hygiene can be avoided if gloves are used?

☐ Agree ☐ Disagree

It is difficult to practice infection control precautions due to heavy workload?

☐ Agree ☐ Disagree

Infection control policies and procedures should be adhered at all times?

☐ Agree ☐ Disagree

Do you follow insertion and maintenance bundle for CLABSI, CAUTI, VAP, SSI?

☐ Agree ☐ Disagree

Do you follow Biomedical waste management protocol of categorizing hospital waste before disposal?

☐ Yes ☐ No

Do you feel these precautions help in reducing occupational hazard in healthcare workers ?

☐ Yes ☐ No

Practices

Infection control and prevention activities are monitored in the hospital?

☐ Yes ☐ No

Hepatitis B and TT vaccination is provided to the staff ?

☐ Yes ☐ No

PPE kit is always accessible to the staff?

☐ Yes ☐ No

Is Regular training provided to the hospital staff regarding Infection control practices?

☐ Yes ☐ No

Is Key performance indicator related to HAI being captured in your department?

☐ Yes ☐ No

REFERENCES

[1]“Health topics - HAI - Polaris,” Centers for Disease Control and Prevention, 21-Jun-2021. [Online]. Available: <https://www.cdc.gov/policy/polaris/healthtopics/hai/index.html#:~:text=HAIs%20are%20infections%20resulting%20from,occ%20ur%20in%20other%20healthcare%20settings>. [Accessed: 29-May-2023]

[1]“Who launches first ever global report on infection prevention and control,” World Health Organization. [Online]. Available: <https://www.who.int/news/item/06-05-2022-who-launches-first-ever-global-report-on-infection-prevention-and-control>. [Accessed: 29-May-2023]

[2]“Who launches first ever global report on infection prevention and control,” World Health Organization. [Online]. Available: <https://www.who.int/news/item/06-05-2022-who-launches-first-ever-global-report-on-infection-prevention-and-control>. [Accessed: 29-May-2023]

[1]Google image result for https://www.packagingconnections.com/sites/default/files/15112_1526008973.jpg. [Online]. Available: <https://images.app.goo.gl/8nVcnh59tvTyxEee9>. [Accessed: 29-May-2023]