

# Welcome to Journal Club

Journal club / Evidence based practice

## ***Standard precautions for infection control:***

From guidelines to ground reality



February  
**17<sup>th</sup>**

Tuesday 8 AM  
**2026**

**Venue:**

Barrister Rafiqul Huq  
Auditorium, 6th floor

**Speaker:**

**Dr. Tohura Sharmin Mercy**

Assistant professor

Department of Community Medicine & Public Health.

**Organized by: Medical Education Unit, AWMCH**

Doctors & teachers of all phases are requested to attend the session  
after managing the OPD, IPD and classes



# **Compliance of Physicians with Standard Precautions of Handling Patients with Infectious Respiratory Disease**

**Dr. Tohura Sharmin  
Assistant Professor**

**Dept of Community Medicine and Public Health  
Ad-din Women's Medical College, Dhaka**

# Compliance of Physicians with Standard Precautions of Handling Patients with Infectious Respiratory Disease

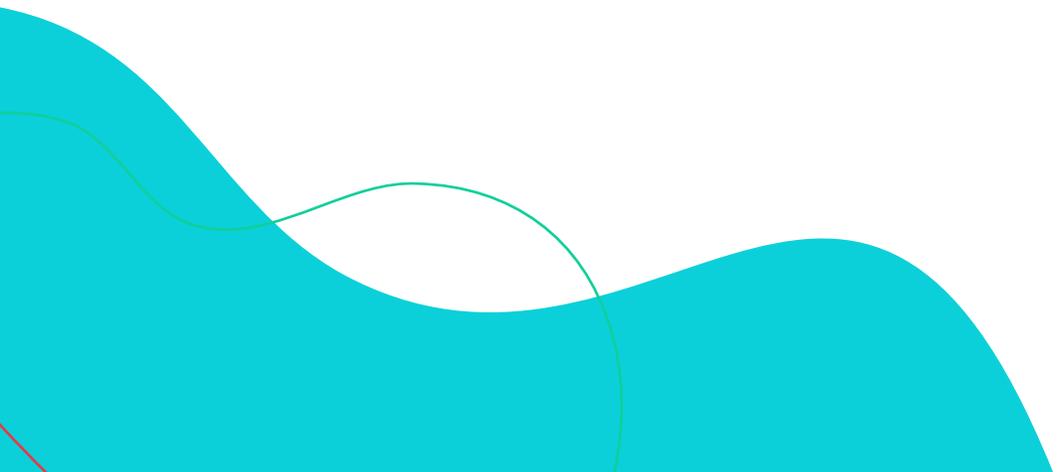
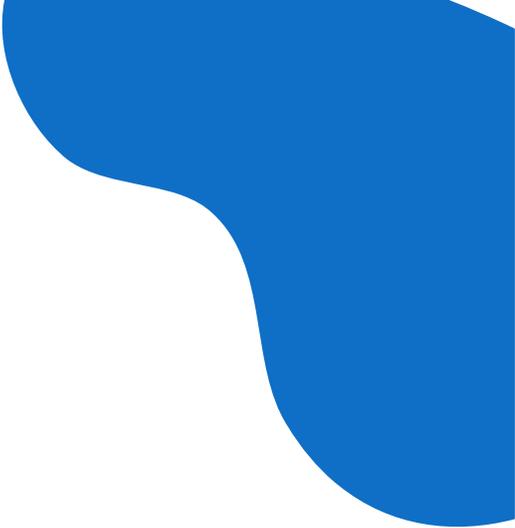
**Tohura Sharmin<sup>1\*</sup>, Md. Shafiur Rahman<sup>2</sup>, Abir Bin Sajj<sup>3</sup>**

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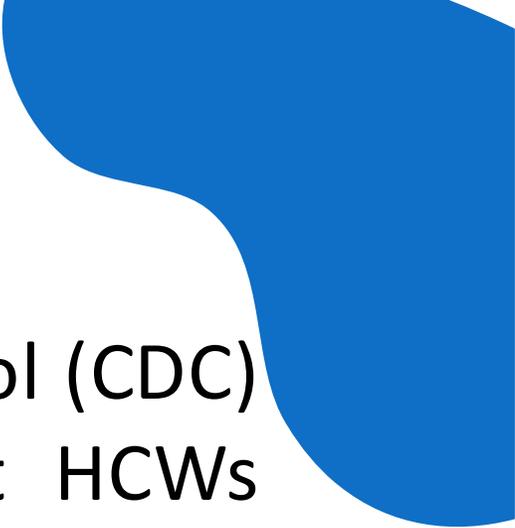
# **INTRODUCTION & BACKGROUND**



Medical practitioners, especially physicians, are among high-risk Health Care Workers (HCWs) for exposure to infections during direct patient contact.

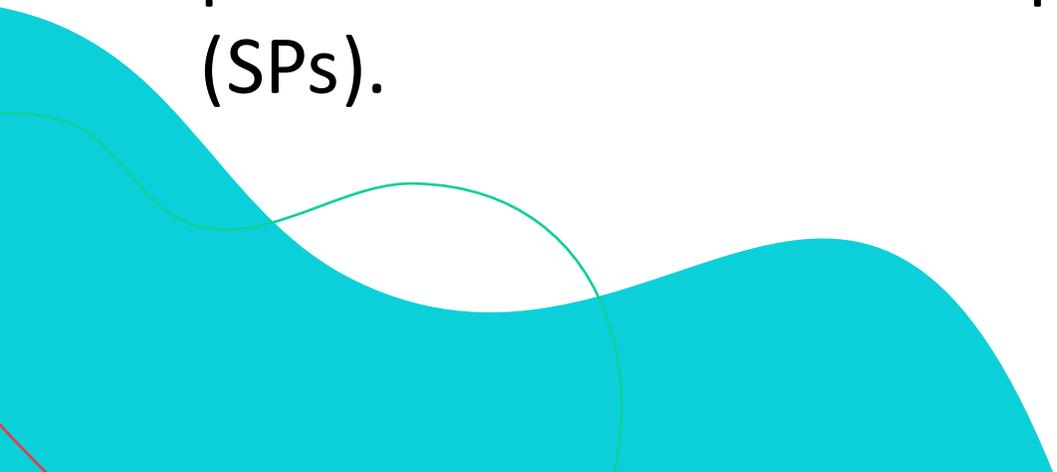
Among these Physicians those who take care of the patients with infectious respiratory disease are at increased risk of being exposed to infectious material.





In 1985, the United States' centers for disease control (CDC) introduced universal precautions (UPs) to protect HCWs from the spread of nosocomial infections.

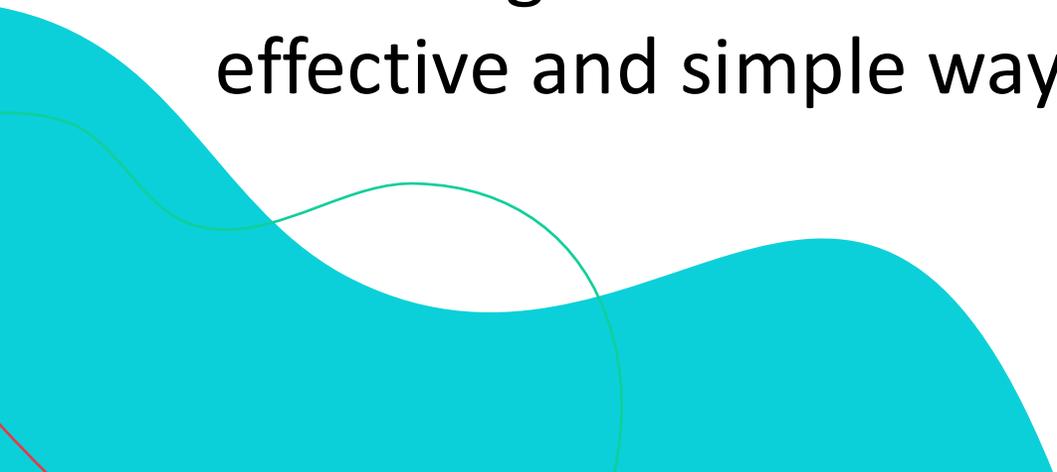
As a result, in 1996, CDC revised the infection control practice from Universal precautions to Standard precautions (SPs).





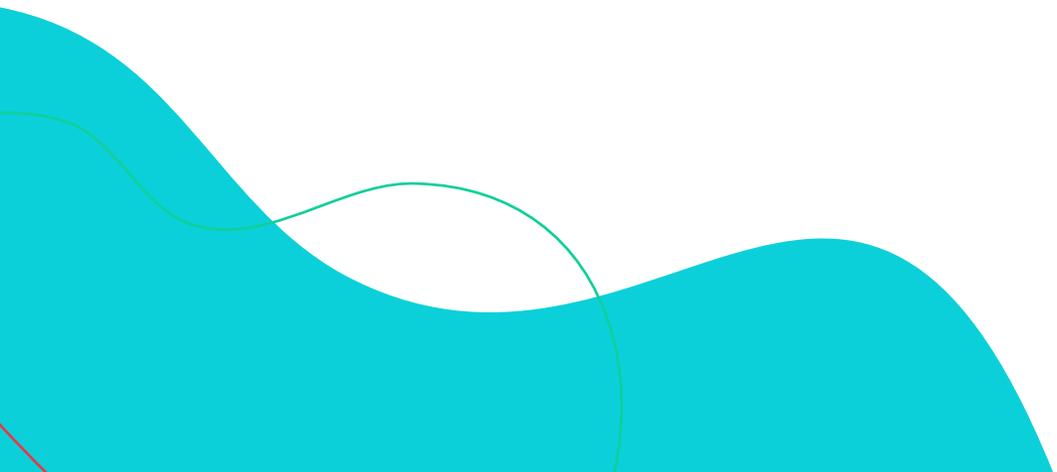
Standard Precautions are the minimum practices to prevent infection that should be practiced on all patients regardless of suspected or confirmed infection status of the patient in all health care facilities.

Following the standard precautions (SPs) is the most effective and simple way to prevent infection.





The components of SPs include hand hygiene, injection safety, use of personal protective equipment (PPE) and environmental cleanliness, as well as waste management, and respiratory hygiene and cough etiquette.





Lack of awareness of infection control among HCWs has been recognized to hamper compliance with SPs.

Therefore, strengthening SPs' training for HCWs is recommended as a major means of promoting adherence to SP and protecting physicians as well as patients from nosocomial infections.





# **RESEARCH QUESTIONS**

# RESEARCH QUESTIONS

What is the level of compliance of physicians with standard precautions of handling patients with infectious respiratory disease?



# OBJECTIVE



# GENERAL OBJECTIVE



To assess the level of compliance of physicians with standard precautions of handling patients with infectious respiratory disease.

# SPECIFIC OBJECTIVE

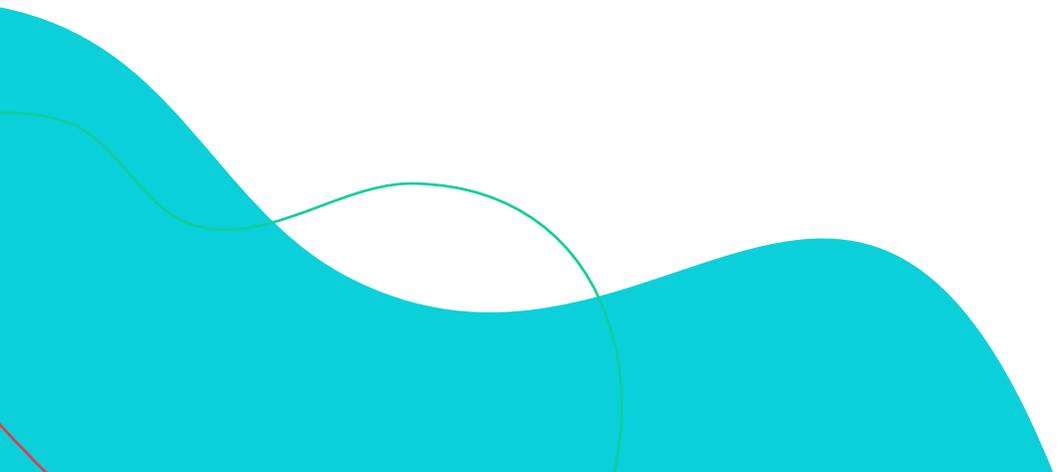
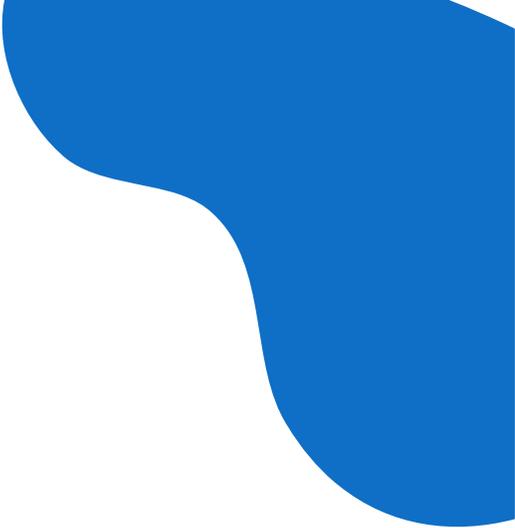
To determine the socio-demographic characteristics of respondents.

To find out the level of awareness of physicians

To find out the reasons for non-compliance

To evaluate the level of compliance of physicians





# **OPERATIONAL DEFINITIONS**

**Compliance  
with standard  
precautions**

**Physician's adherence to the components of SP related to infection prevention control of respiratory diseases recommended by WHO.**

**Awareness  
of standard  
precaution**

**Physician's perception about the components of SP related to infection prevention control of respiratory diseases recommended by WHO and understanding of their application and utilities.**

**Physicians**

**Physicians handling patients with infectious respiratory diseases in outdoor and indoor of Medicine, Paediatrics, Anaesthesia and Otolaryngology department.**

# Standard precautions

The main components of standard precautions are



**Hand hygiene**

**01**



**Use of personal protective equipment**

**02**



**Respiratory hygiene and cough etiquette**

**03**



**Prevention of injury from needles or other sharp objects**

**04**



**Cleaning and disinfection of the environment and equipment**

**05**



**Cleaning the patient-care environment**

**06**



## NATIONAL GUIDELINE ON INFECTION PREVENTION AND CONTROL IN HEALTHCARE SETTINGS

WITH ADDITIONAL MEASURES FOR COVID-19



Directorate General of Health Services (DGHS)  
Ministry of Health and Family Welfare (MOHFW), Bangladesh



<https://amr.cdc.gov.bd/wp-content/uploads/2022/03/02-IPC-guideline-v6.pdf>

# Epidemic-prone & pandemic-prone acute respiratory diseases

Infection prevention & control in health-care facilities

Summary guidance



[https://apps.who.int/iris/bitstream/handle/10665/69793/WHO\\_CDS\\_EPR\\_2007.8\\_e](https://apps.who.int/iris/bitstream/handle/10665/69793/WHO_CDS_EPR_2007.8_e)

# Hand hygiene

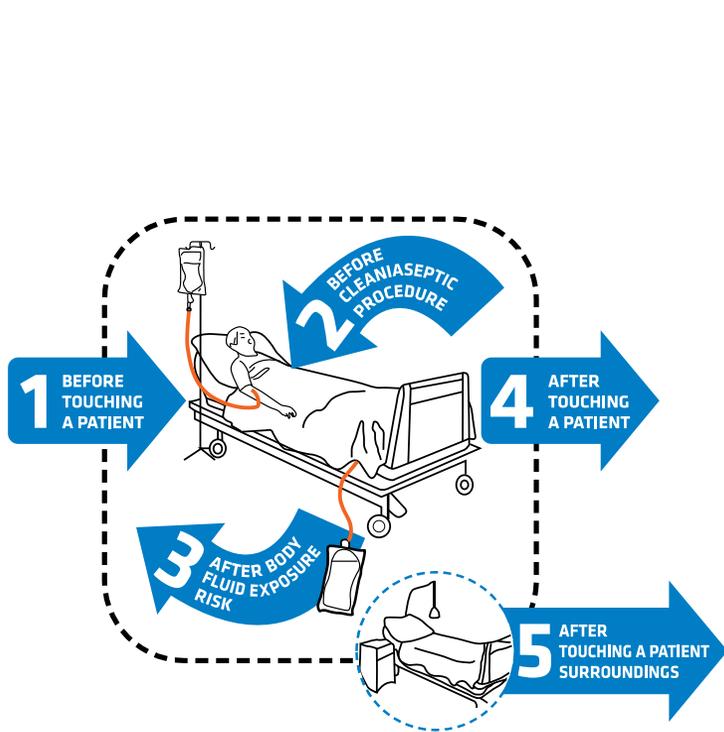
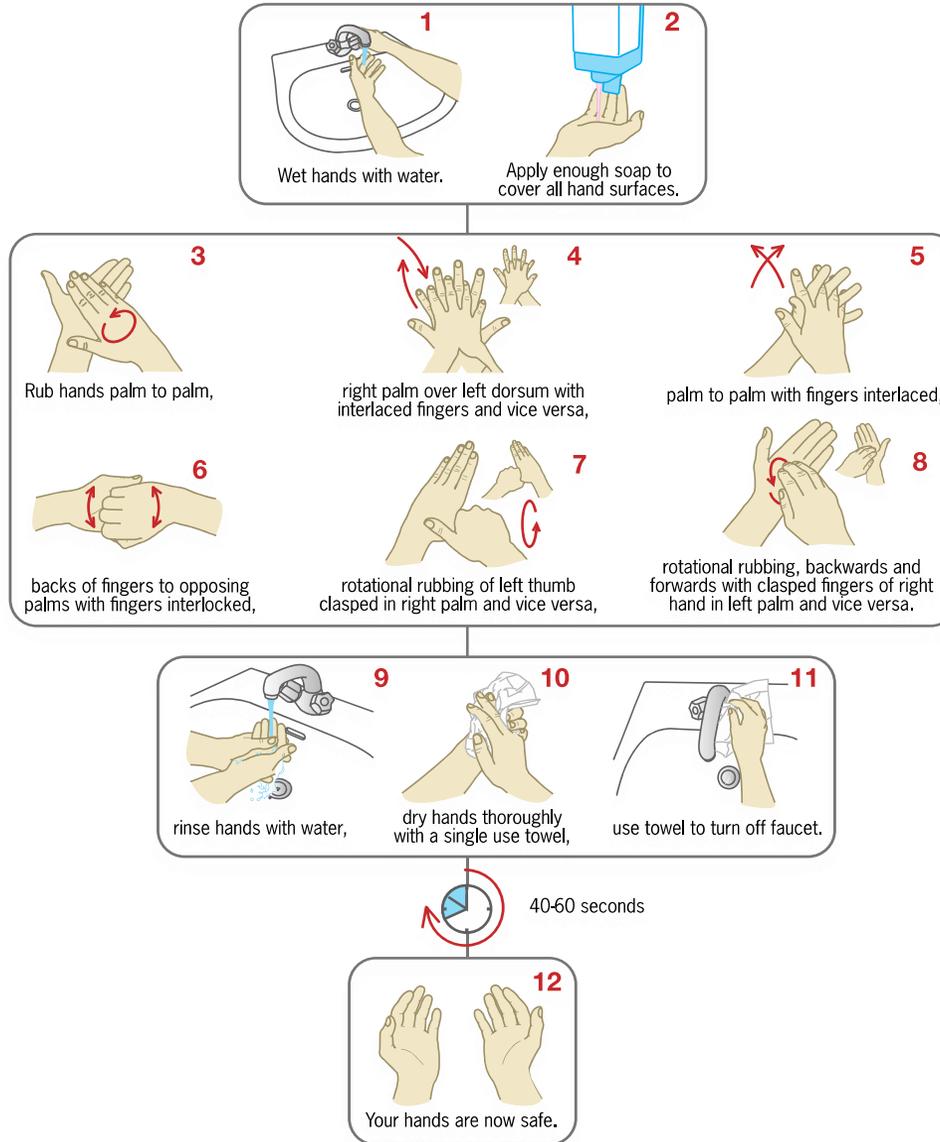


Figure: WHO recommended five-moments for hand hygiene

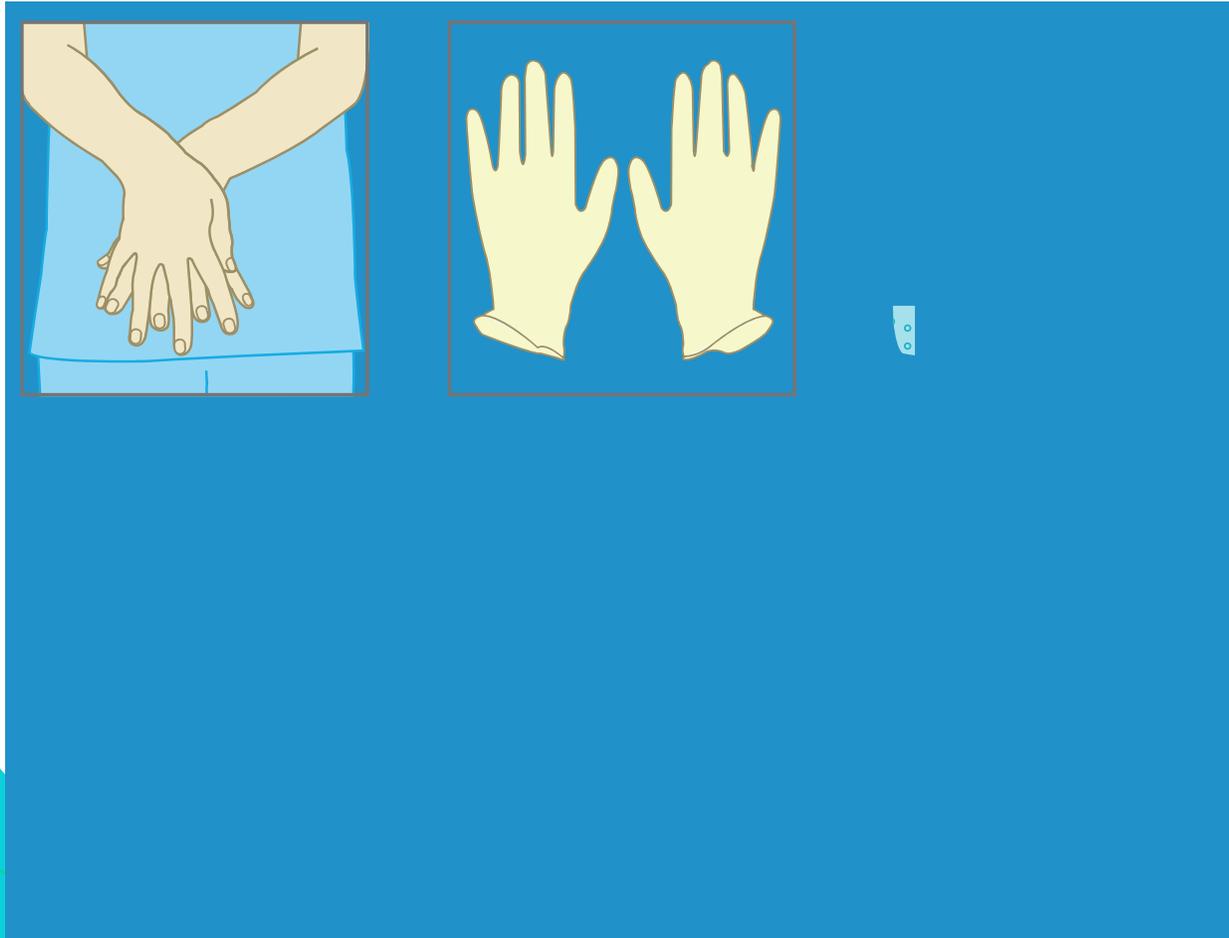


## Points to remember when performing hand hygiene



- ✓ When hands are visibly dirty or contaminated with proteinaceous material, they should be washed with soap and water.
- ✓ If hands are NOT visibly soiled or contaminated, an alcohol-based hand product for routine decontamination of hands should be used.
- ✓ Ensure hands are dry before starting any activity.

# Personal protective equipment (PPE)



## General PPE Guidelines

- ✓ Hand hygiene should always be performed despite PPE use.
- ✓ Remove and replace if necessary any damaged or broken pieces of re-usable PPE as soon as you become aware that they are not in full working order.
- ✓ Remove all PPE as soon as possible after completing the care and avoid contaminating:
  - the environment outside the isolation room;
  - any other patient or worker; and
  - yourself.
- ✓ Discard all items of PPE carefully and perform hand hygiene immediately afterwards.

# Personal protective equipment (PPE)

**1. Take out a glove from its original box**

**2. Touch only a restricted surface of the glove corresponding to the wrist (at the top edge of the cuff)**

**3. Don the first glove**

**4. Take the second glove with the bare hand and touch only a restricted surface of glove corresponding to the wrist**

**5. To avoid touching the skin of the forearm with gloved hand, turn the external surface of the glove to be donned on the folded fingers of the gloved hand, thus permitting to glove the second hand**

**6. Once gloved, hands should not touch anything else that is not defined by indications and conditions for glove use**

**1. Pinch one glove at the wrist level to remove it, without touching the skin of the forearm, and peel away from the hand, thus allowing the glove to turn inside out**

**2. Hold the removed glove in the gloved hand and slide the fingers of the ungloved hand inside between the glove and the wrist. Remove the second glove by rolling it down the hand and fold into the first glove**

**3. Discard the removed gloves**

**Donning**

**1. Wash hands.**  
Perform hand hygiene with soap and water or alcohol-based hand sanitizer.

**2. Put on mask.**  
• Straps should be secured at the crown of the head and base of the neck, or behind the ears.  
• Fit the nosepiece by pressing with both hands to form around the nose.  
• Ensure mask fits snugly to the face and extends below the chin.  
**Seal Check:** If wearing a respirator, perform a seal check. Cup your hands around the mask. The respirator should collapse slightly when inhaling. While exhaling, check for leakage of air around the seal. If respirator fails to collapse or airflow is detected around the mask, readjust until a proper seal is obtained.

**3. Put on face shield or goggles.**  
If wearing glasses, fogging can be reduced by washing lenses with soap and water.

**4. Put on isolation gown.**  
Gown should cover neck to knees and arms to wrists. Secure all ties or buttons.

**5. Put on gloves.**  
Extend to cover the wrist of the gown.

**Hand Hygiene**

**5. Wash hands.**  
Perform hand hygiene with soap and water or alcohol-based hand sanitizer.

**4. Remove mask.**  
• Remove lower strap followed by upper strap. Pull away from face without touching the front of the mask.  
• Or remove by unhooking the ear loops.  
• Discard or place in storage or reprocessing container.

**3. Remove face shield or goggles.**  
Lift the strap from the back and pull up and away from the head. Avoid touching the front of the goggles or face shield. Discard or place in reprocessing bin, if reusable.

**2. Remove gown.**  
Unfasten gown and pull down and away from the body, rolling gown inside out. Avoid touching the outside of gown. Discard or place in reprocessing bin, if reusable. If wearing disposable gown, gloves, and gown can be removed together.

**1. Remove gloves.**  
• Remove first glove by pinching the palm of the glove and peeling off.  
• Hold the removed glove in gloved hand. Insert finger under the remaining glove at the wrist.  
• Peel off second glove over first glove. Discard.

**Doffing**

A video demonstration of donning and doffing can be found here: [www.covidppeguide.com](http://www.covidppeguide.com)

icddr,b

# Respiratory hygiene and cough etiquette



mucous membranes of your eyes, nose or mouth are where germs enter your body!

## When you cough or sneeze



Cover your nose and mouth

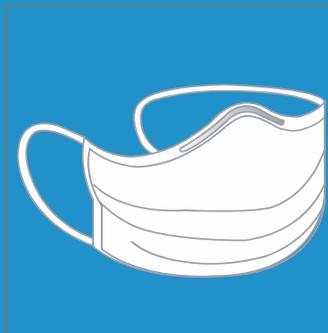


Throw the used tissue away straight after



Perform hand hygiene

## In health-care facilities



*Cough etiquette and respiratory hygiene should be followed in all parts of the hospital, in community settings and even in the home.*

**It's always the right time to take these important measures to control the source of potential infection.**

# Prevention of injury from needles or other sharp objects

## Recommendations on safe injection practice

- Prepare injections using aseptic techniques
- Do not use needles/syringe for more than one patient
- Disinfect the rubber septum on a medication vial with alcohol before piercing
- Do not use fluid infusion sets (e.g., IV bags, tubings) for more than one patient

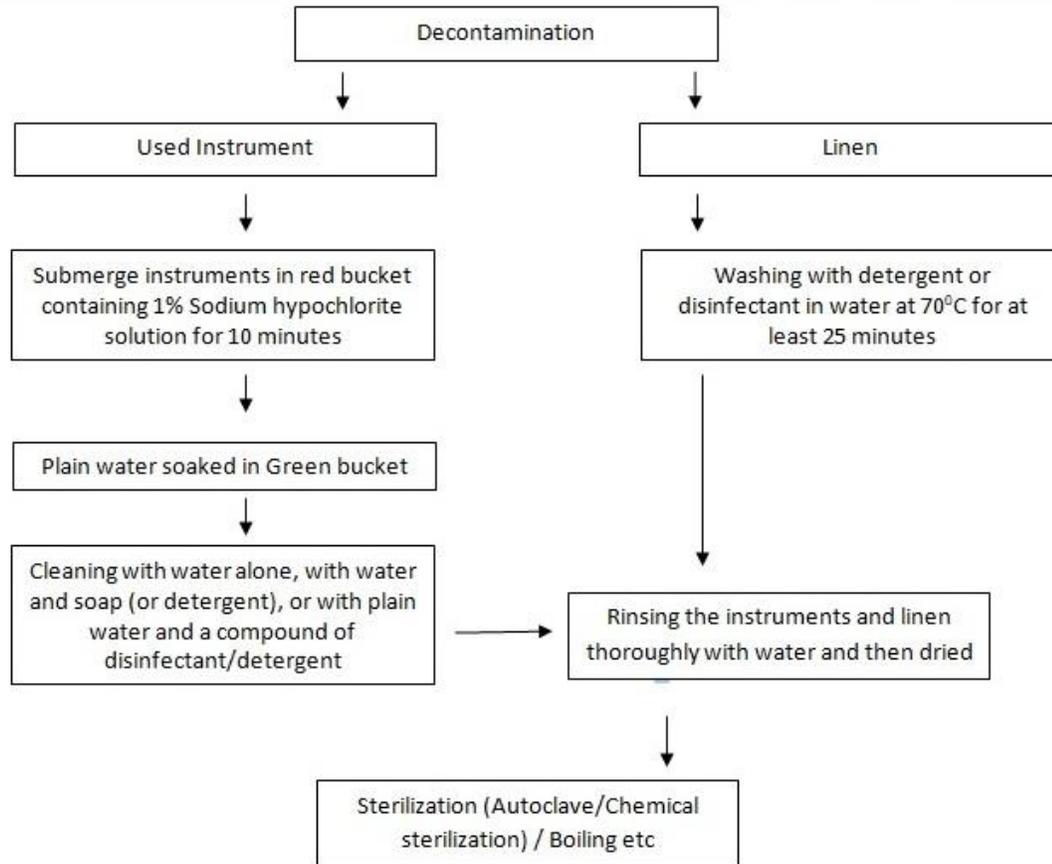


### General needle stick and sharp object guidelines

- ✓ Never recap used needles.
- ✓ Never direct the point of a needle towards any part of the body except prior to injection.
- ✓ Do not remove used needles from disposable syringes by hand, and do not bend, break, or otherwise manipulate used needles by hand.
- ✓ Dispose of syringes, needles, scalpel blades, and other sharp items in appropriate puncture-resistant containers, which should be located as close as practical to the area in which the items were used.
- ✓ Avoid the use of re-usable syringes.
- ✓ Do not re-use needles.

# Cleaning and disinfection of respiratory equipment

## Equipment sterilization/decontamination procedure

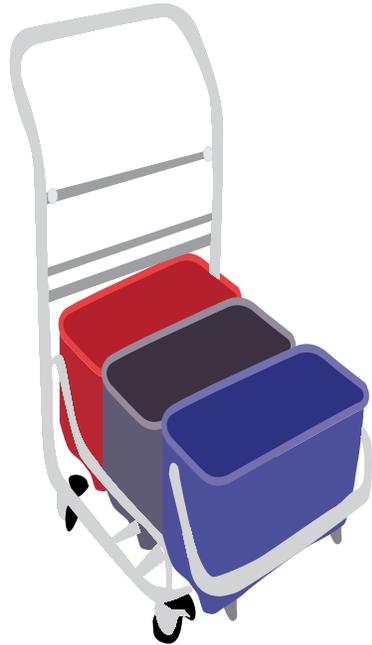
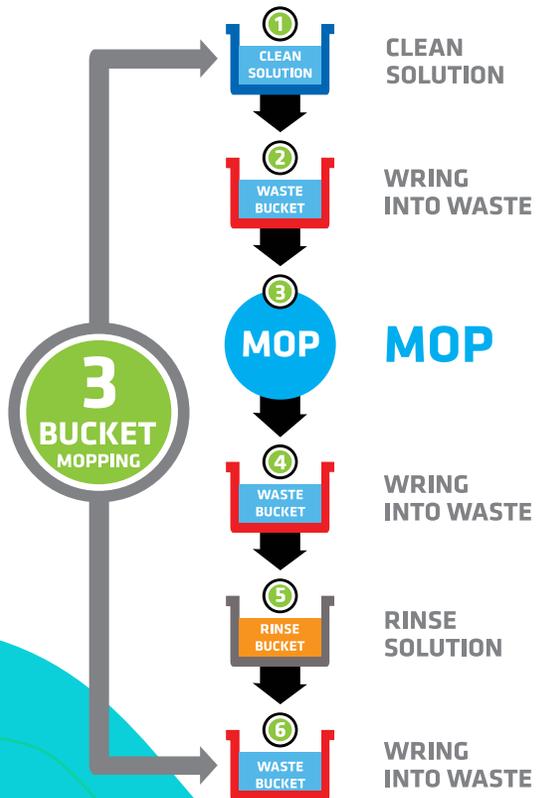


## Essential points for cleaning & disinfecting equipment



- ✓ Clean and disinfect all respiratory equipment between uses.
- ✓ Thoroughly clean respiratory and re-usable equipment prior to disinfection.
- ✓ Health-care workers must use PPE for cleaning and disinfection of respiratory equipment.
- ✓ Keep clean and disinfected items dry and in individual packages.

# Cleaning the patient-care environment



## Key issues about cleaning and disinfection

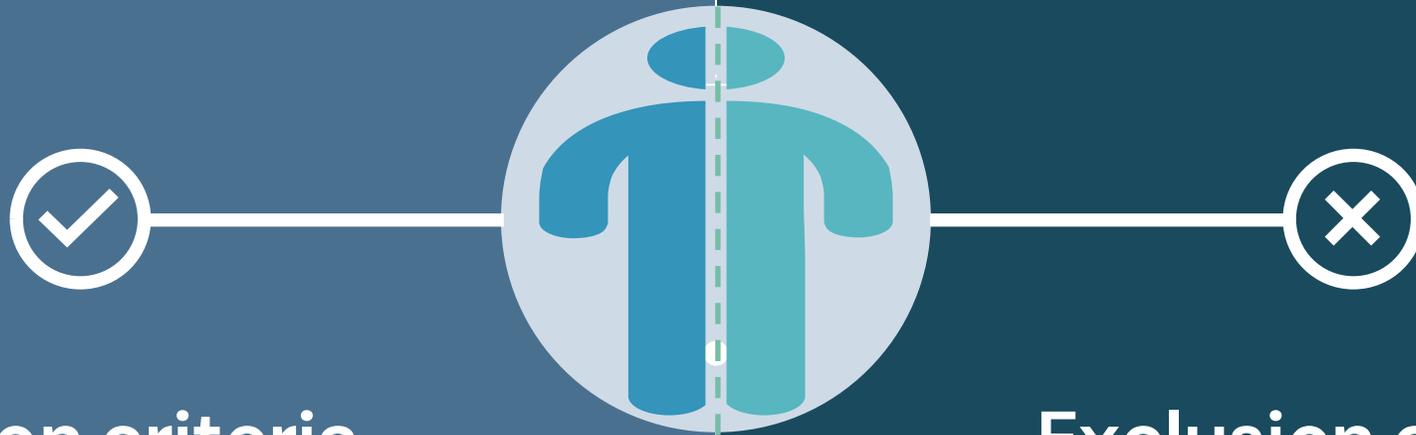


- ✓ The environment used by the patient **MUST** be regularly cleaned.
- ✓ Cleaning should use proper techniques to avoid aerosolization of dust.
- ✓ Only surfaces that enter in contact with the patient's skin/mucosa and surfaces frequently touched by health-care workers require disinfection after cleaning.
- ✓ Health-care workers **MUST** use PPE for cleaning and disinfection of respiratory equipment and hand hygiene must be performed after PPE removal.

# Methodology

|                           |  |
|---------------------------|--|
| <b>Study Design</b>       | <b>Cross-sectional Study</b>   |
| <b>Study Period</b>       | <b>One year (from 1st January 2020 to 31st December 2020)</b>  |
| <b>Study Place</b>        | <b>Rajshahi Medical College and Hospital, Rajshahi<br/>Dinajpur Medical College and Hospital, Dinajpur</b> |
| <b>Study population</b>   | <b>Physicians handling patients with infectious respiratory disease</b>                                    |
| <b>Sample size</b>        | <b>285 respondents</b>   |
| <b>Sampling technique</b> | <b>Purposive sampling</b>  |

# Sample Selection



## Inclusion criteria

- ✓ Physicians handling outdoor and indoor patients with infectious respiratory diseases
- ✓ Physicians who were willing to participate

## Exclusion criteria

- × Health care workers other than physician

# Data collection instrument

## A semi structured questionnaire



| 1   | 2                     | 3      | 4 | 5                |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
|---|-----------------------|--------|---|------------------|---|---|--|---|----------------------------|----------|--|-----------------------|--|-----------------------|--------------------|-----------------------|---|-----------------------|---|-----------------------|--------------------|-----------------------|--------------------------------------|-----------------------|-----------------------------------|-----------------------|-------------------------------------|-----------------------|------------|-----------------------|
| <p><b>Part 1: Socio-demographic characteristics:</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Age</td> <td style="width: 50%; text-align: center;">Gender</td> </tr> <tr> <td></td> <td style="text-align: center;">Male      Female</td> </tr> </table> | Age                   | Gender |   | Male      Female | <p>Q6. During use of double gloves small one should be worn first the big one (for example 6.5 first then 7) <input type="radio"/> True <input type="radio"/> False</p> <p>Q7. Physicians can touch the front of the mask or the eye protection when removing these items. <input type="radio"/> True <input type="radio"/> False</p> <p>Q8. Masks can be allowed to hang loose around neck when not in use. <input type="radio"/> True <input type="radio"/> False</p> <p>Q9. While putting on PPE gloves should be worn after putting on masks and eye protective shield. <input type="radio"/> True <input type="radio"/> False</p> <p>Q10. While removing PPE gloves should be removed after removing mask and eye protective shield. <input type="radio"/> True <input type="radio"/> False</p> <p>Q11. The gloves should be the correct size for the wearer's hands <input type="radio"/> True <input type="radio"/> False</p> <p><b>D. Awareness about Hand hygiene</b></p> <p>Q1. You should wash hands with soap and running water when visibly dirty or contaminated with proteinaceous material <input type="radio"/> True <input type="radio"/> False</p> <p>Q2. You should use alcohol-based hand products after exposure of non-intact skin to blood or body fluids. <input type="radio"/> True <input type="radio"/> False</p> <p><b>E. Awareness about Prevention of injuries and other sharp instruments</b></p> <p>Q1. Needles should be re-capped after use. <input type="radio"/> True <input type="radio"/> False</p> <p>Q2. Needles should be bend after use. <input type="radio"/> True <input type="radio"/> False</p> <p><b>F. Awareness about Disinfection of respiratory equipment</b></p> <p>Q1. Re-usable respiratory equipment should be washed with soap or detergent and water before disinfection. <input type="radio"/> True <input type="radio"/> False</p> <p><b>G. Awareness about Cleaning the patient-care environment</b></p> <p>Q1. Only items and surfaces that have had contact with the patient's skin or mucosa or have been frequently touched by physicians require disinfection after cleaning. <input type="radio"/> True <input type="radio"/> False</p> <p>Q2. All cloths used for cleaning the patient care environment should be dampened before use to avoid aerosolization. <input type="radio"/> True <input type="radio"/> False</p> | <p><b>Question 4</b> Perform hand hygiene between certain procedures on the same patient where soiling of hands is likely to avoid cross contamination of body sites. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 5</b> Perform hand hygiene after contact with patient. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 6</b> Perform hand hygiene after contact with blood, body fluids, secretions, excretions, exudates from wounds and contaminated items. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 7</b> Perform hand hygiene after touching patient's surrounding environment (items or surfaces known or likely to be contaminated). <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>B. Personal protective equipment according to standard precautions</b></p> <p><b>Question 1</b> Before choosing the right PPE assess the potential risk of exposure to an infectious disease that might be associated with the intended procedure when providing routine care. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 2</b> Change gloves between patient care and procedure of another patient <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 3</b> Wear plastic gown or fluid resistant gown during procedures which may result in splashes onto your body. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 4</b> Change mask promptly if it is wet with secretions. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 5</b> Remove all items of PPE as soon as possible after completing the health-care procedure. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>C. Respiratory hygiene and cough etiquette</b></p> <p><b>Question 1</b> When you cough or sneeze cover your nose and mouth. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 2</b> When you cough or sneeze, after using tissue you throw it away immediately. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 3</b> Perform hand hygiene after coughing or sneezing or contact with respiratory secretion. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 4</b> In case of sudden episode of coughing or sneezing use your upper arm. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> | <p><b>D. Prevention of injuries from needles and other sharp instruments</b></p> <p><b>Question 1</b> Recap used needles <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 2</b> Bend, break, remove or otherwise manipulate used needles by hand. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 3</b> Reuse disposable syringes. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 4</b> Always dispose syringes, needles, scalpel blades and other sharp items in appropriate puncture resistance container (red container). <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>E. Cleaning and disinfection of respiratory equipment.</b></p> <p><b>Question 1</b> Clean and disinfect respiratory equipment between uses. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 2</b> Wash re-usable respiratory equipment with soap or detergent and water before disinfection. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 3</b> Use PPE while cleaning and disinfection of respiratory equipment. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 4</b> Keep clean and disinfected items dry and in individual packages <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 5</b> Use chemical germicide such as bleach or autoclave respiratory equipment for disinfection. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>F. Cleaning the patient-care environment.</b></p> <p><b>Question 1</b> Regularly clean environment used by the patient. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 2</b> Use techniques to avoid aerosolization of dust. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 3</b> All horizontal surfaces in areas where care is being provided to a patient is cleaned every day and whenever visibly soiled. It is cleaned whenever a patient is discharged and before a new patient arrives. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 4</b> If the surface had direct contact with patients, such as an examination table or other equipment, the surface is cleaned and disinfected between different patients. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> <p><b>Question 5</b> Decontaminate all cloths/dresses used by patients and physicians by autoclave or washing with soap water. <input type="radio"/> Always <input type="radio"/> Most of the times <input type="radio"/> Sometimes <input type="radio"/> Rarely <input type="radio"/> Never</p> | <p><b>Part 4: Assessment of reasons for non-compliance with standard precautions of handling patients with infectious respiratory disease:</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Reasons for non-compliance</th> <th style="text-align: center;">Response</th> </tr> </thead> <tbody> <tr> <td>1. Lack of knowledge of standard precautions</td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>2. Lack of regular training of infection control</td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>3. Excess workload</td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>4. Colleagues do not comply with the standard precautions</td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>5. Lack of adequate facilities/resources for practice of standard precautions</td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>6. Time constrains</td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>7. Use of PPE may offend the patient</td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>8. PPE are not comfortable to use</td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>9. Not sure about proper use of PPE</td> <td style="text-align: center;"><input type="radio"/></td> </tr> <tr> <td>10. Others</td> <td style="text-align: center;"><input type="radio"/></td> </tr> </tbody> </table> | Reasons for non-compliance | Response | 1. Lack of knowledge of standard precautions | <input type="radio"/> | 2. Lack of regular training of infection control | <input type="radio"/> | 3. Excess workload | <input type="radio"/> | 4. Colleagues do not comply with the standard precautions | <input type="radio"/> | 5. Lack of adequate facilities/resources for practice of standard precautions | <input type="radio"/> | 6. Time constrains | <input type="radio"/> | 7. Use of PPE may offend the patient | <input type="radio"/> | 8. PPE are not comfortable to use | <input type="radio"/> | 9. Not sure about proper use of PPE | <input type="radio"/> | 10. Others | <input type="radio"/> |
| Age   | Gender                |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
|   | Male      Female      |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
| Reasons for non-compliance  | Response              |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
| 1. Lack of knowledge of standard precautions  | <input type="radio"/> |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
| 2. Lack of regular training of infection control  | <input type="radio"/> |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
| 3. Excess workload  | <input type="radio"/> |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
| 4. Colleagues do not comply with the standard precautions   | <input type="radio"/> |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
| 5. Lack of adequate facilities/resources for practice of standard precautions   | <input type="radio"/> |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
| 6. Time constrains  | <input type="radio"/> |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
| 7. Use of PPE may offend the patient  | <input type="radio"/> |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
| 8. PPE are not comfortable to use   | <input type="radio"/> |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
| 9. Not sure about proper use of PPE   | <input type="radio"/> |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |
| 10. Others  | <input type="radio"/> |        |   |                  |   |   |  |   |                            |          |  |                       |  |                       |                    |                       |   |                       |   |                       |                    |                       |                                      |                       |                                   |                       |                                     |                       |            |                       |

# Ethical Considerations

Formal approval of the study was obtained from Institutional Review Board (IRB) of NIPSOM.

# Data management & Analysis

A

## Awareness

Awareness was assessed by a set of 25 questions

B

## Awareness

According to the response every correct response was given 1 point and 0 was given for an incorrect answer

C

## Awareness

So, the total score of awareness of standard precautions of each participant ranged from 0 to 25

D

## Compliance

Compliance was assessed by a set of 30 questions

# Data management & Analysis

E

## Compliance

using a five point Likert's scale with responses including Always, most of the time, sometimes, rarely , never

F

## Compliance

Each questions were coded as 5 for always, 4 for most of the time, 3 for sometimes, 2 for rarely and 1 for never

G

## Analysis

Data processing and analysis was done using IBM SPSS (Statistical Package for the Social Science) version 26

I

## Awareness

% of final score for each section was classified into

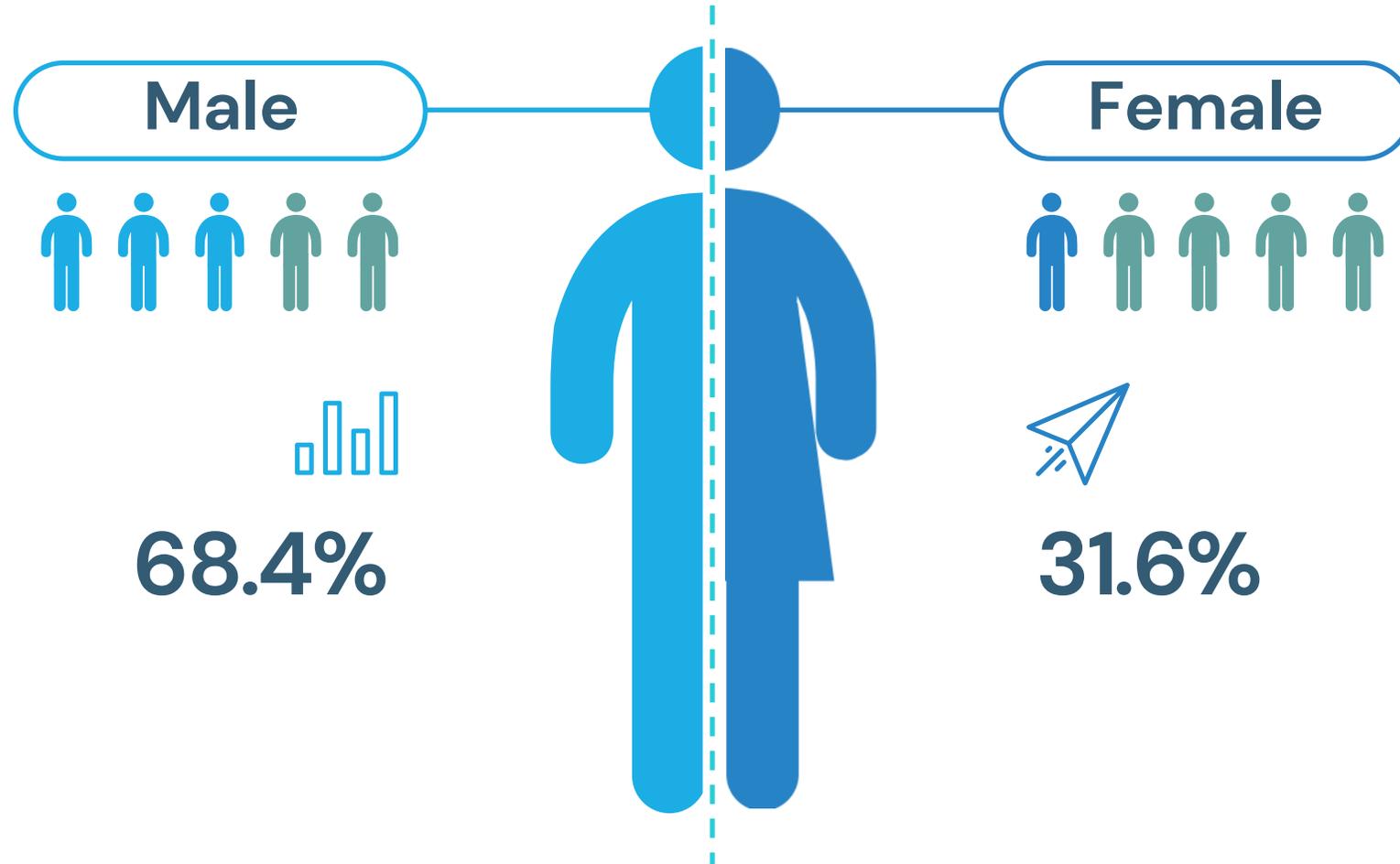
| Classification   | % of score |
|------------------|------------|
| <b>Very poor</b> | 0-25%      |
| <b>Poor</b>      | 26-50%     |
| <b>Moderate</b>  | 51-75%     |
| <b>Good</b>      | 76-100%    |

# RESULTS

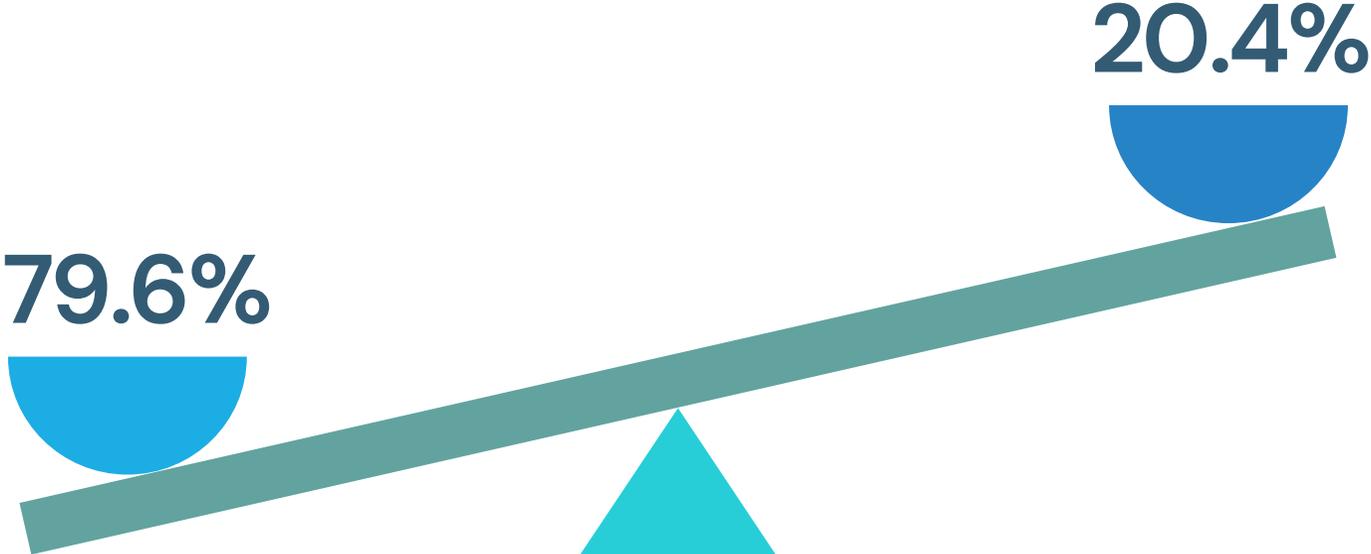
## Distribution of respondents by age group

| Age group | Frequency    | Percentage  |
|-----------|--------------|-------------|
| 25-31     | <b>116</b>   | <b>40.7</b> |
| 32-38     | 72           | 25.3        |
| 39-45     | 40           | 14.0        |
| 46-52     | 25           | 8.8         |
| 53-59     | 32           | 11.2        |
| Maximum   | 59           |             |
| Minimum   | 25           |             |
| Mean ± SD | 36.42±10.373 |             |

# Distribution of respondent by their Gender



# Distribution of respondent on training on infection control

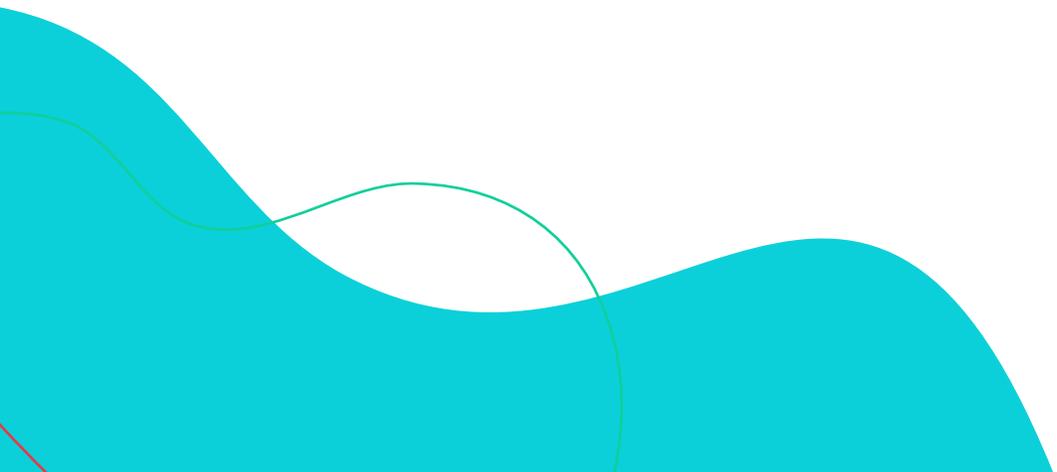


**NO**

Respondents having no training on infection control

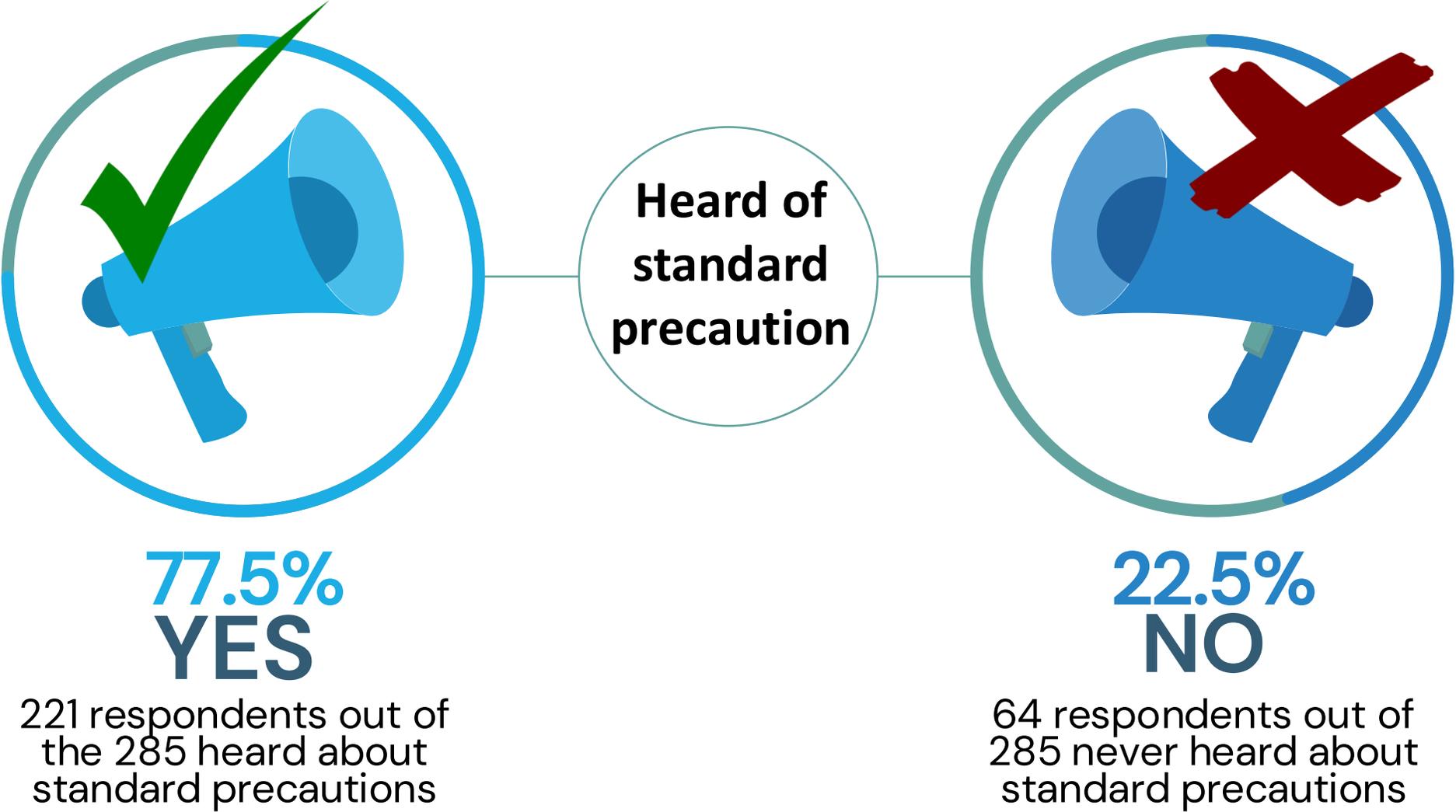
**YES**

Respondents having training on infection control

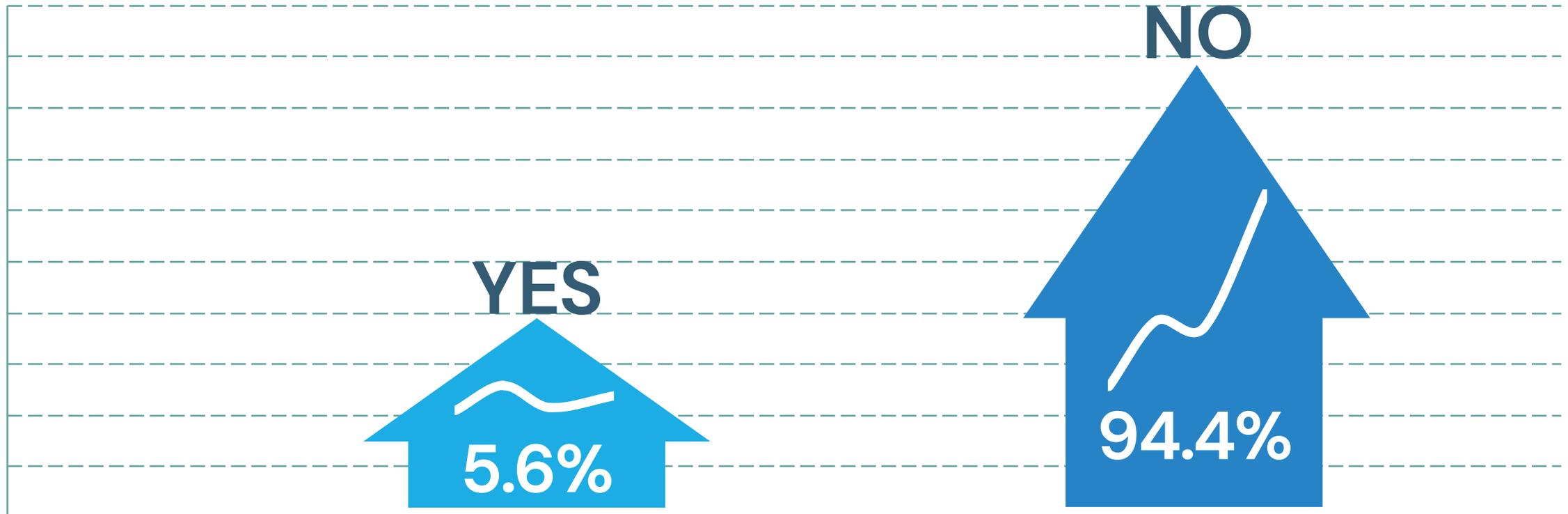


# AWARENESS OF PHYSICIANS WITH STANDARD PRECAUTIONS

# Distribution of the respondents on the basis of heard of standard precaution



# Distribution of the respondents on the basis of their knowledge about components of standard precautions



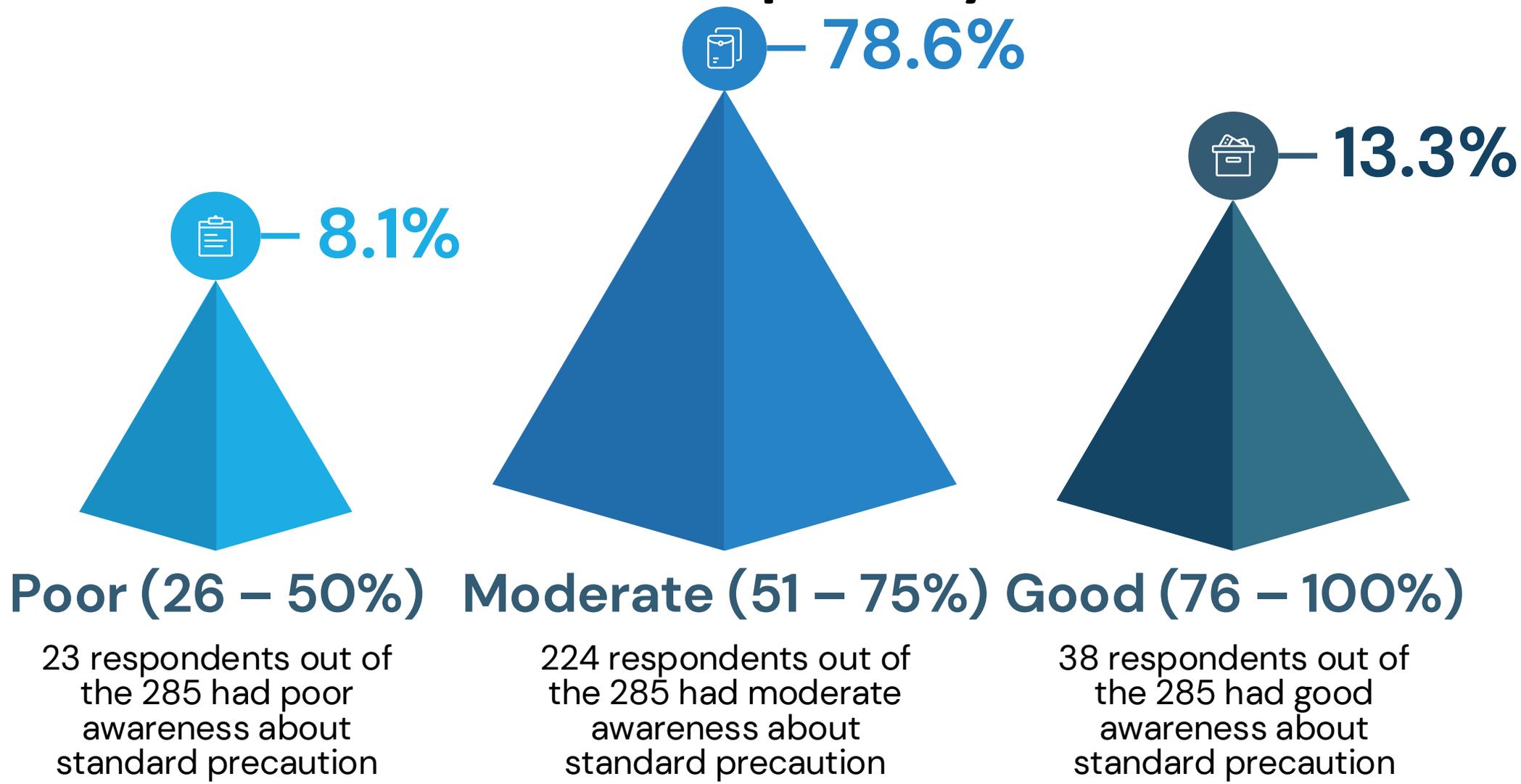
**Knew about components**  
16 respondents out of the  
285 knew about the  
components of standard  
precautions

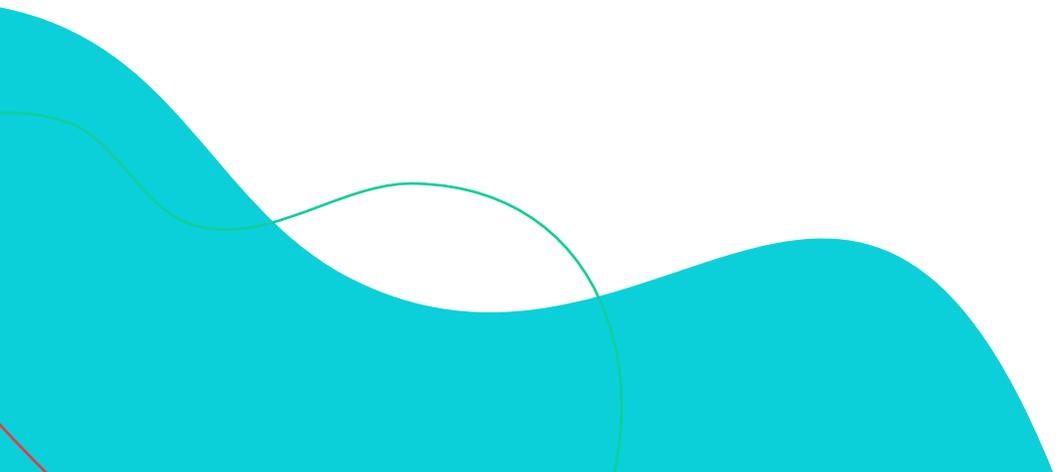
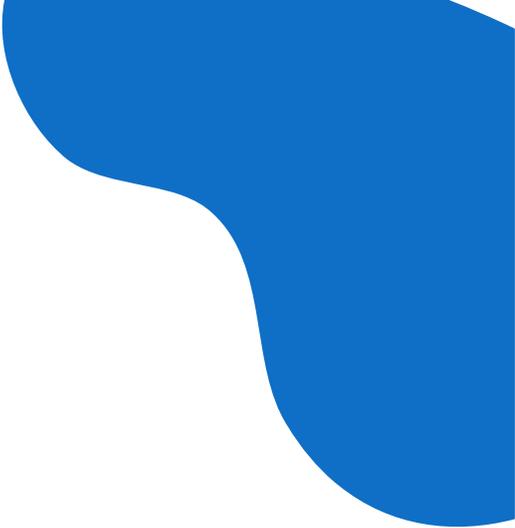
**Did not know about components**  
269 respondents out of 285  
did not know about the  
components of standard  
precautions

# Assessment of awareness of the respondents about standard precautions

| Awareness   | Response*  |            |
|---|------------|------------|
|   | True       | False      |
| Practice of standard precaution on all patients   | 194 (68.1) | 91 (31.9)  |
| Using a tissue paper after coughing and sneezing can be reused  | 39 (13.7)  | 246 (86.3) |
| Medical masks provide protection against fine aerosols that are kept suspended in the air             | 173 (60.7) | 112 (39.3) |
| Patients with air born disease particulate respirator used instead of medical mask                    | 200 (70.2) | 85 (29.8)  |
| During use of double gloves small one should be worn first the big one                                | 204 (71.6) | 81 (28.4)  |
| While putting on PPE gloves should be worn after putting on masks and eye protective shield           | 41 (14.4)  | 244 (85.6) |
| While removing PPE gloves should be removed after removing mask and eye protective shield             | 184 (64.6) | 101 (35.4) |
| Use alcohol-based hand products after exposure of non-intact skin to blood or body fluids             | 205 (71.9) | 80 (28.1)  |
| Needles should be re-capped after use   | 233 (81.8) | 52 (18.2)  |
| Needles should be bent after use  | 219 (76.8) | 66 (23.2)  |
| Re-usable respiratory equipment should be washed with soap or detergent and water before disinfection | 198 (69.5) | 87 (30.5)  |
| All cloths used for cleaning should be dampened before use to avoid aerosolization                    | 198 (69.5) | 87 (30.5)  |

# Distribution of the respondents according to awareness of standard precautions of handling patients with infectious respiratory disease



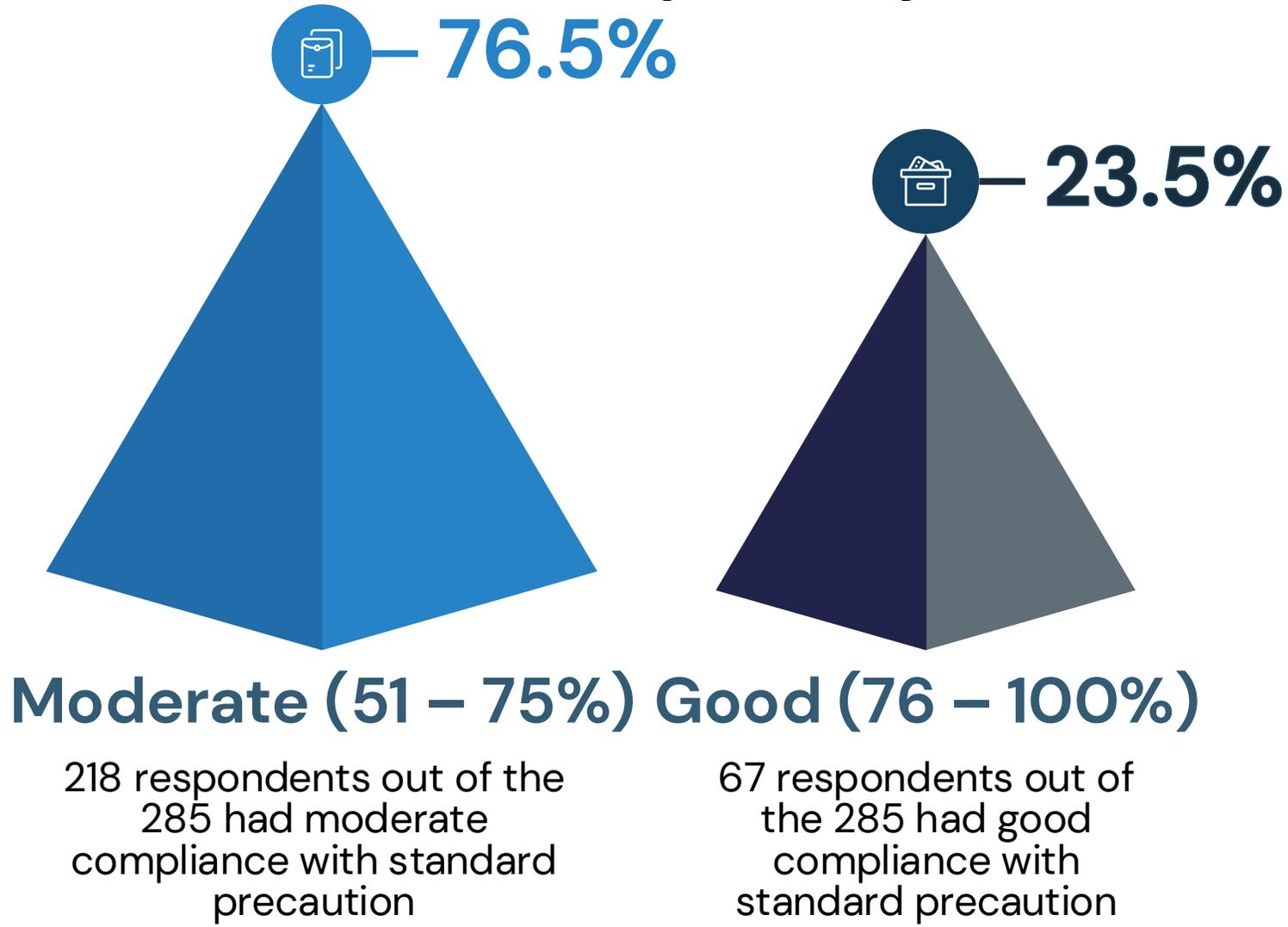


# COMPLIANCE OF PHYSICIANS WITH STANDARD PRECAUTION

# Distribution of the respondents on their compliance of standard precautions of handling patients with infectious respiratory disease

| Compliance of standard precaution                  | Compliance Category |             |             |      |             |
|--|---------------------|-------------|-------------|------|-------------|
|  | Very poor           | Poor        | Moderate    | Good | Very good   |
| Hand hygiene                                       | 0                   | 11.6        | <b>57.5</b> | 25.3 | 5.6         |
| Personal protective equipment (PPE)                | 2.1                 | <b>27.0</b> | 48.8        | 17.9 | 4.2         |
| Respiratory hygiene and cough etiquette            | 0                   | 0           | 3.9         | 37.2 | <b>58.9</b> |
| Prevention of injuries from needles and sharp      | 0.4                 | <b>18.2</b> | 60.7        | 17.9 | 2.8         |
| Cleaning and disinfection of respiratory equipment | 0.4                 | 16.8        | <b>56.1</b> | 21.4 | 5.3         |
| Cleaning patient-care environment                  | 0                   | 12.3        | <b>39.3</b> | 35.8 | 12.6        |

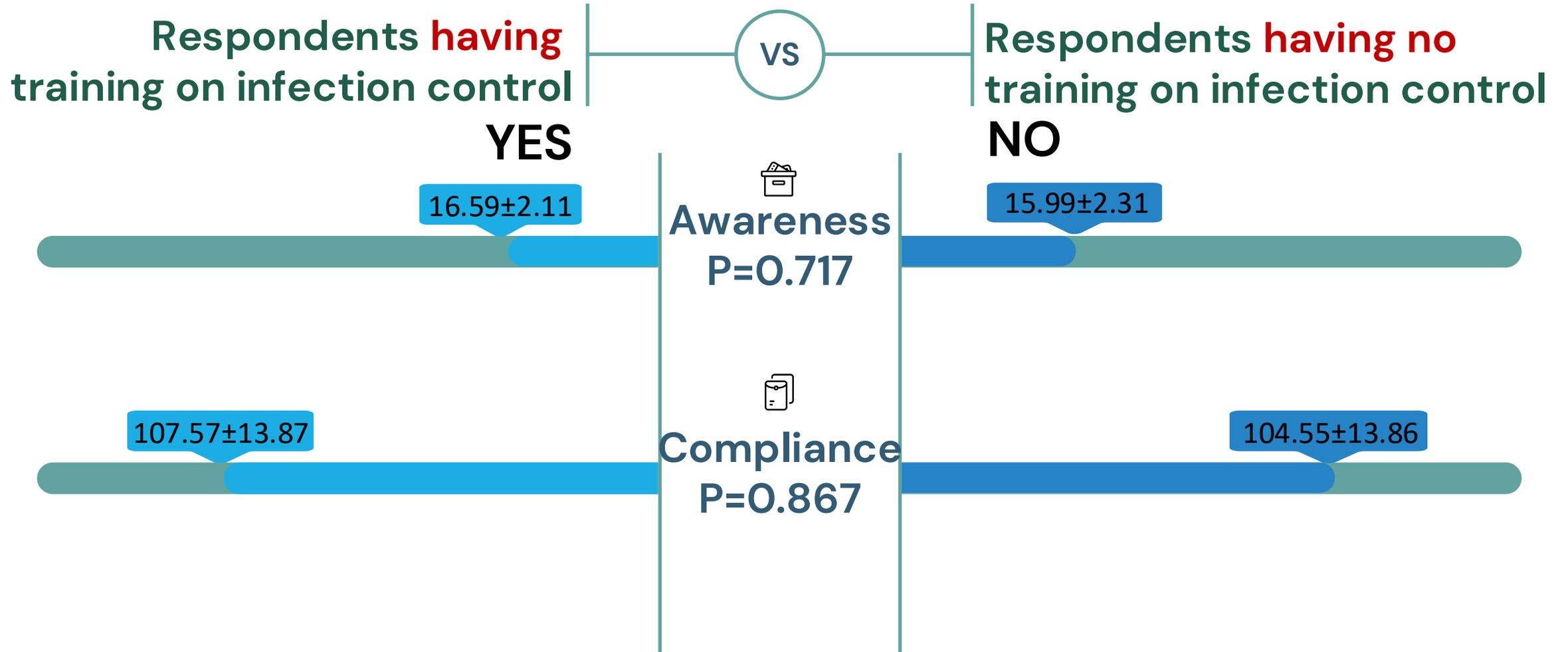
# Distribution of the respondents on their compliance of standard precautions of handling patients with infectious respiratory disease

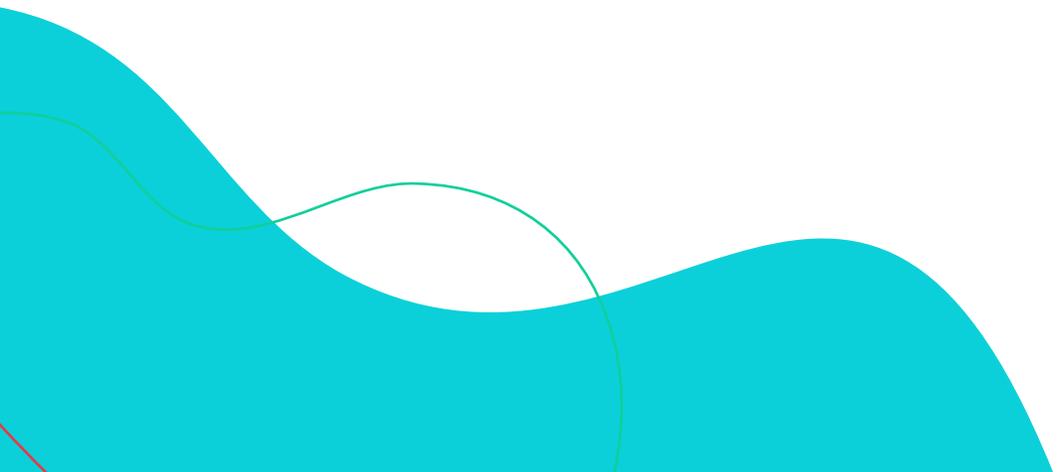


# Standard precautions compliance score with the level of awareness of physicians handling patients with infectious respiratory disease

| Awareness of standard precautions | Score of compliance with standard precautions |              |                      |        | Test significance          |
|-----------------------------------|---|--------------|----------------------|--------|----------------------------|
|                                   | f (%)   | Mean±SD      | 95% confidence limit |        |                            |
| Poor                              | 23 (8.07)                                     | 93.91±9.31   | 89.89                | 97.94  | F=8.697<br>df=2<br>p=0.000 |
| Moderate                          | 224 (78.59)                                   | 106.04±14.22 | 104.16               | 107.91 |                            |
| Good                              | 38 (13.33)                                    | 106.82±11.19 | 103.14               | 110.49 |                            |

# Difference in mean score of awareness and compliance of standard precaution with training on infection control of physicians handling patients with infectious respiratory disease





# NON-COMPLIANCE OF PHYSICIANS WITH STANDARD PRECAUTION

# Distribution of respondent's reason for non-compliance with standard precautions of handling patients with infectious respiratory disease

| Reasons for non-compliance  | Response* |
|---|-----------|
| Lack of knowledge of standard precautions                                   | 109(38.2) |
| Lack of regular training of infection control                               | 180(63.2) |
| Excess workload   | 217(76.1) |
| Colleagues do not comply with the standard precautions                      | 66(23.2)  |
| Lack of adequate facilities/ resources for practice of standard precautions | 247(86.7) |
| Time constrains   | 123(43.2) |
| Use of PPE may offend the patient   | 19(6.7)   |
| PPE are not comfortable to use  | 140(49.1) |
| Nor sure about proper use of PPE  | 66(23.2)  |
| Others  | 59(20.7)  |

# LIMITATIONS OF THE STUDY

1

## **Purposive Sampling and Purposive selection of study place**

So findings did not reflect the scenario of the entire physicians of country

2

## **Certain information was recorded by asking question not by observation**

so the respondents may have intentionally modifies the actual truth

3

## **Chances of recall bias**

in case of questions related to compliance with standard precautions

# CONCLUSION

Most physicians demonstrated moderate awareness and compliance with standard precautions

1

Awareness positively influenced compliance

2

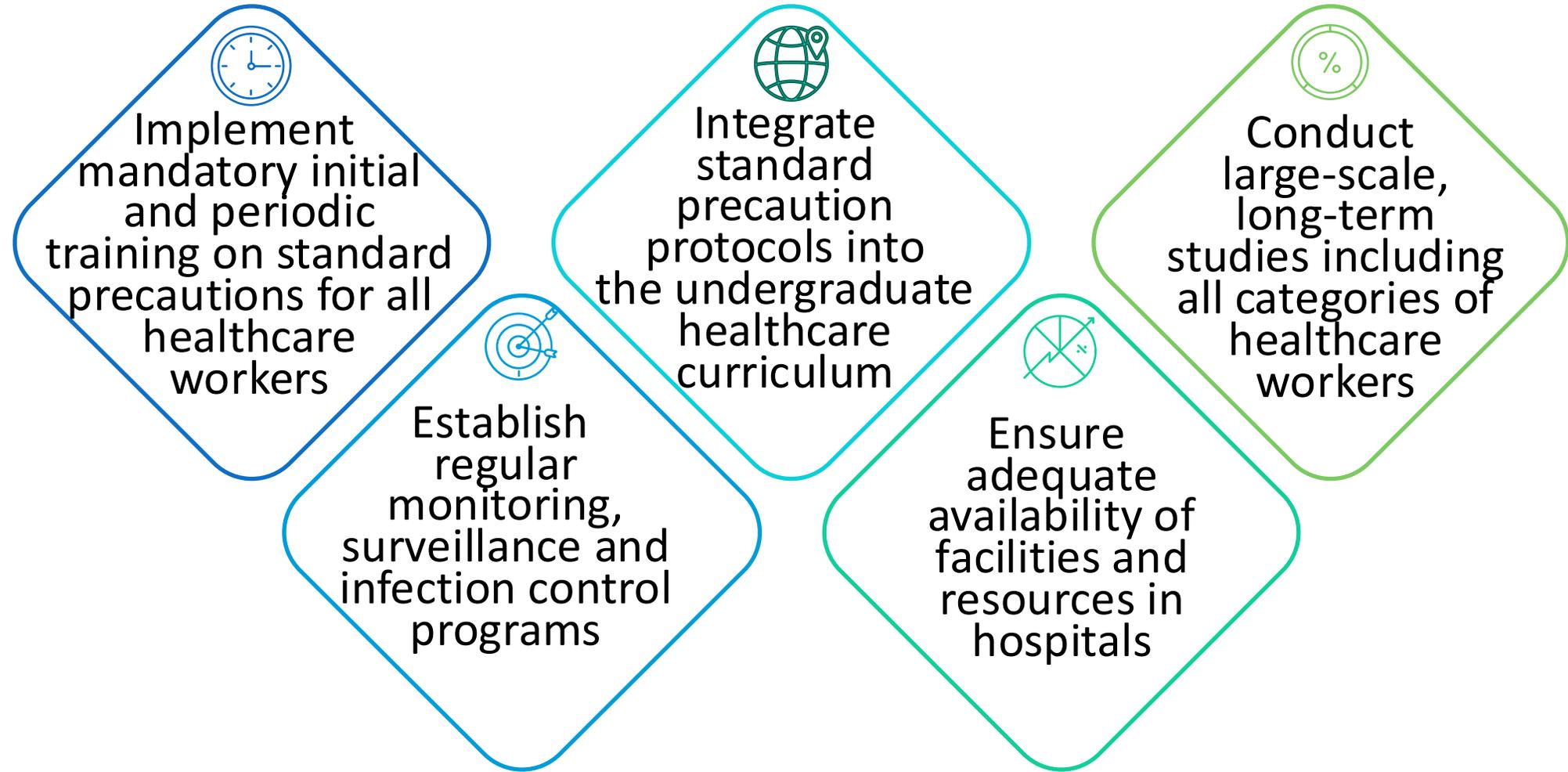
Physicians with poor awareness showed lower adherence to protocols

3

Major barriers were resource limitations, heavy workload, insufficient training, and PPE discomfort

4

# RECOMMENDATIONS



# REFERENCE

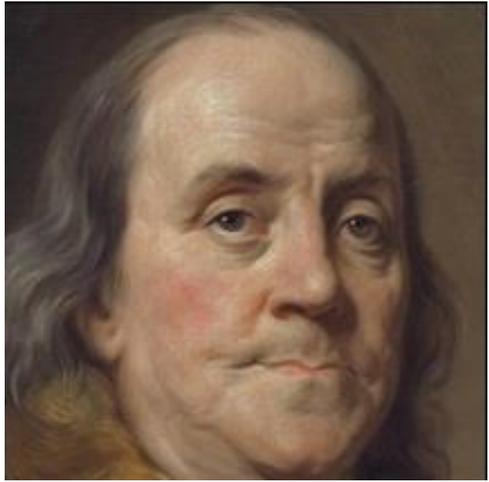
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**An ounce of prevention is worth a pound of cure**

**~ Benjamin Franklin**

**Thank You**