



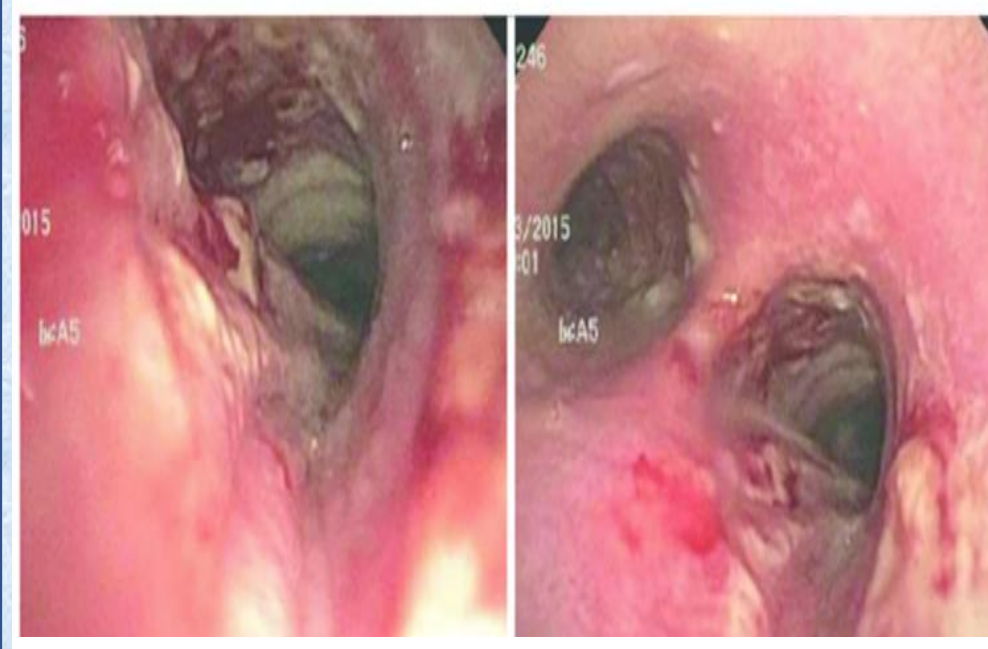
## CLINICAL AUDIT ON TRACHEOSTOMY CARE IN GENERAL WARD HOSPITAL KAJANG

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### PROBLEM STATEMENT

Data from MDRO surveillance in year 2023 in Hospital Kajang showed that 21.3% (27 cases) of hospital acquired pneumonia identified and was amongst the highest. Majority of the MDRO positive samples (24.8%) was taken from tracheal aspirate. A Survey was carried out among health professional to find out cause of poor compliance and we found out that most of them not sure availability of latest tracheostomy care guideline 2023 and time consuming on preparing equipment due to short of staff. From observation we found out that rinse solution and suction tube were reused multiple time, not practicing aseptic technique when suction is perform. Wrong suctioning technique can stimulate the vagal nerve, predisposing the patient to bradycardia and hypoxia. Hypoxia can be profound from occlusion, interruption of oxygen supply, and prolonged suctioning. Mucosal trauma, physical injuries, and bleeding can result from blunt or penetrating trauma. Infections can result from the introduction of commensals into the respiratory tract. (5)



Bronchoscopy showing distal trachea with suction trauma leading to mucosal injury (5)



FIGURE 1 : Poor Tracheostomy Care in General Ward

### INTRODUCTION

Tracheostomy is a surgical opening through the cervical trachea with the purpose of creating an air passage to the lungs in patients with an obstructed upper airway or with difficulty weaning off a ventilator. Tracheostomy tube has to be kept clear and clean to prevent infection, blockage and breathing problems. Poor tracheostomy care may lead to significant mortality and morbidity due to preventable complications. From the infection prevention control perspectives, compliance to standard precautions is crucial in preventing infection. This includes proper hand hygiene, use of correct personal protective equipment (PPE) and practicing aseptic technique when handling tracheostomy care.

**OBJECTIVE:** To improve knowledge and practise on proper tracheostomy care among healthcare workers subsequently reduced the number of MDRO cases from tracheostomies in Hospital Kajang.

### STANDARD/CRITERIA

#### INCLUSION CRITERIA :

- ❖ All patient in general ward Hospital Kajang on tracheostomy
- ❖ Ventilated and not ventilated patient on tracheostomy tube

#### EXCLUSION CRITERIA:

- ❖ Tracheostomy patient plan on discharge
- ❖ Patient admitted for trial off tracheostomy
- ❖ Pediatric and ICU patient on tracheostomy

**STANDARD :** Adapted from National Tracheostomy Care Guideline 2023 MOH (>90% Good Compliance )

### METHODOLOGY

A prospective clinical audit was carried out using self-administered questionnaires and audit checklist among 100 Healthcare professionals at all clinical departments including doctors, nurses and medical assistant on their knowledge and practices of tracheostomy care. This audit was carried out from December 2023 until April 2024.

### INTERVENTION

**TRACHEOSTOMY CARE PAMPHLET**

**Suction Method**

- ❖ Hyper-oxygenate the patient before suctioning
- ❖ Insert the suction catheter without applying any suction pressure.
- ❖ Suctioning Pressure should be around 100-120mmhg
- ❖ The length of the suction catheter inserted is limited to 0.5cm longer than the length of the tracheostomy tube only
- ❖ If the patient has excessive secretions, do chest percussion before suctioning.
- ❖ Do not perform continuous suction for more than 20 seconds at any one time

**CALCULATION SIZE SUCTION TUBE FOR TRACHEOSTOMY TUBE**  
Tracheostomy size (inner diameter) x 3 = FG of suction catheter

Size of Tracy Tube	Size of Suction Tube (FG)
6.5	10
7.0	10
7.5	10
8.0	12

**Stoma Infection**

- ❖ Excessive leakage of secretion
- ❖ Foul smell
- ❖ Erythema around the stoma site
- ❖ Erosion of stoma site

**PROPER PPE DURING SUCTIONING**

- FACE SHIELD
- SURGICAL MASK
- STERILE GLOVE
- APRON

**TRACHEOSTOMY SUCTION KIT**

- WAX CUP
- APRON
- DISPOSABLE DRESSING SET

INFECTION CONTROL TEAM HOSPITAL KAJANG  
ADAPTATION FROM NATIONAL TRACHEOSTOMY CARE GUIDELINE 2023

FIGURE 2: TRACHEOSTOMY CARE PAMPHLET ADAPTATION FROM NATIONAL TRACHEOSTOMY CARE GUIDELINE 2023



FIGURE 3: TRACHEOSTOMY SUCTION KIT

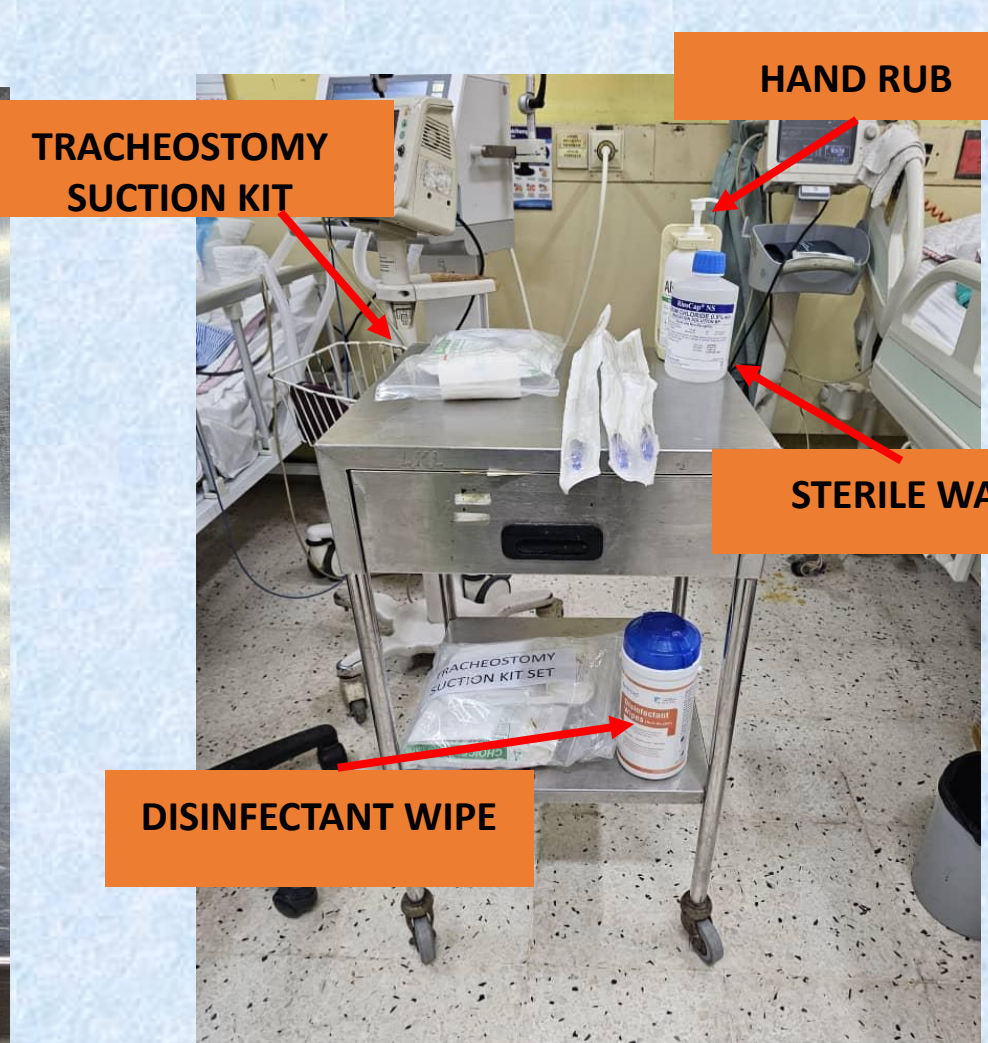


FIGURE 4: SUCTION TROLLEY

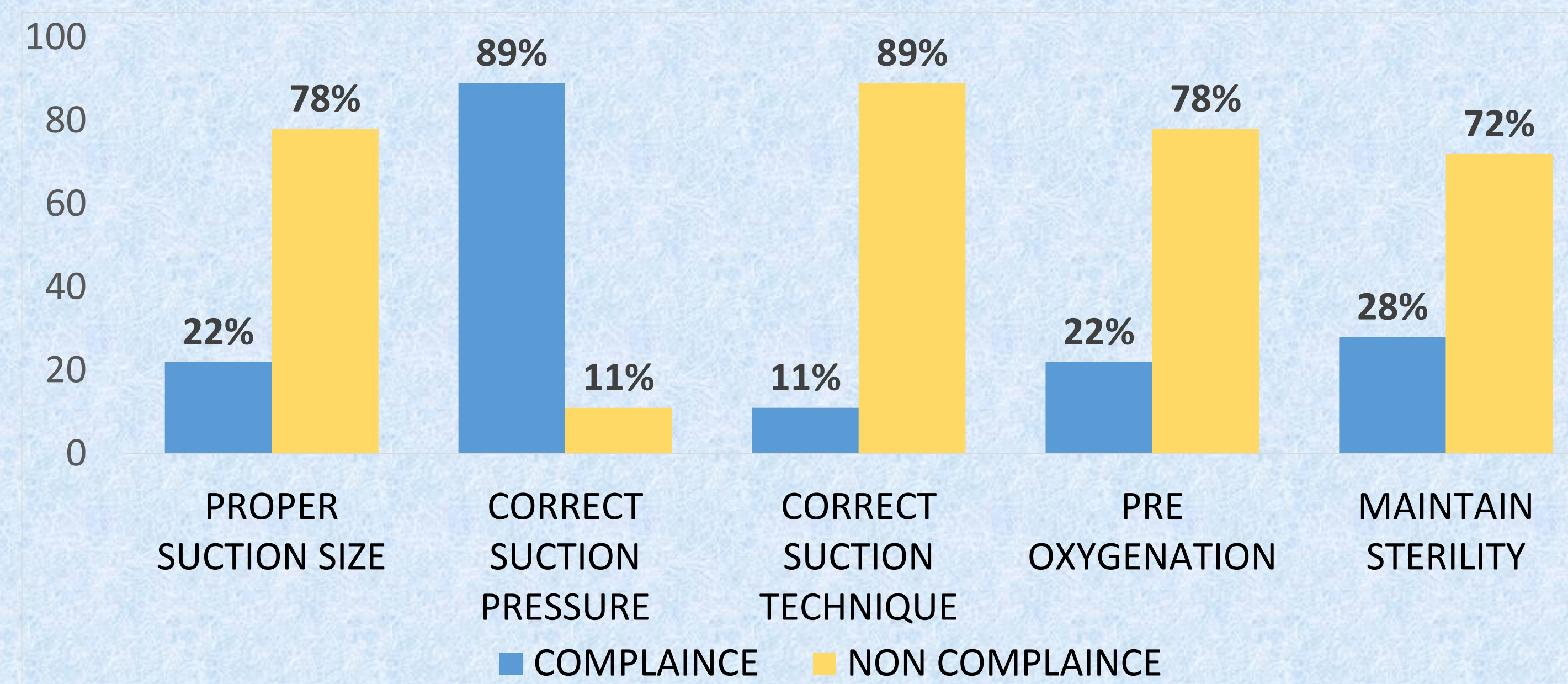


FIGURE 5: BEDSIDE TEACHING

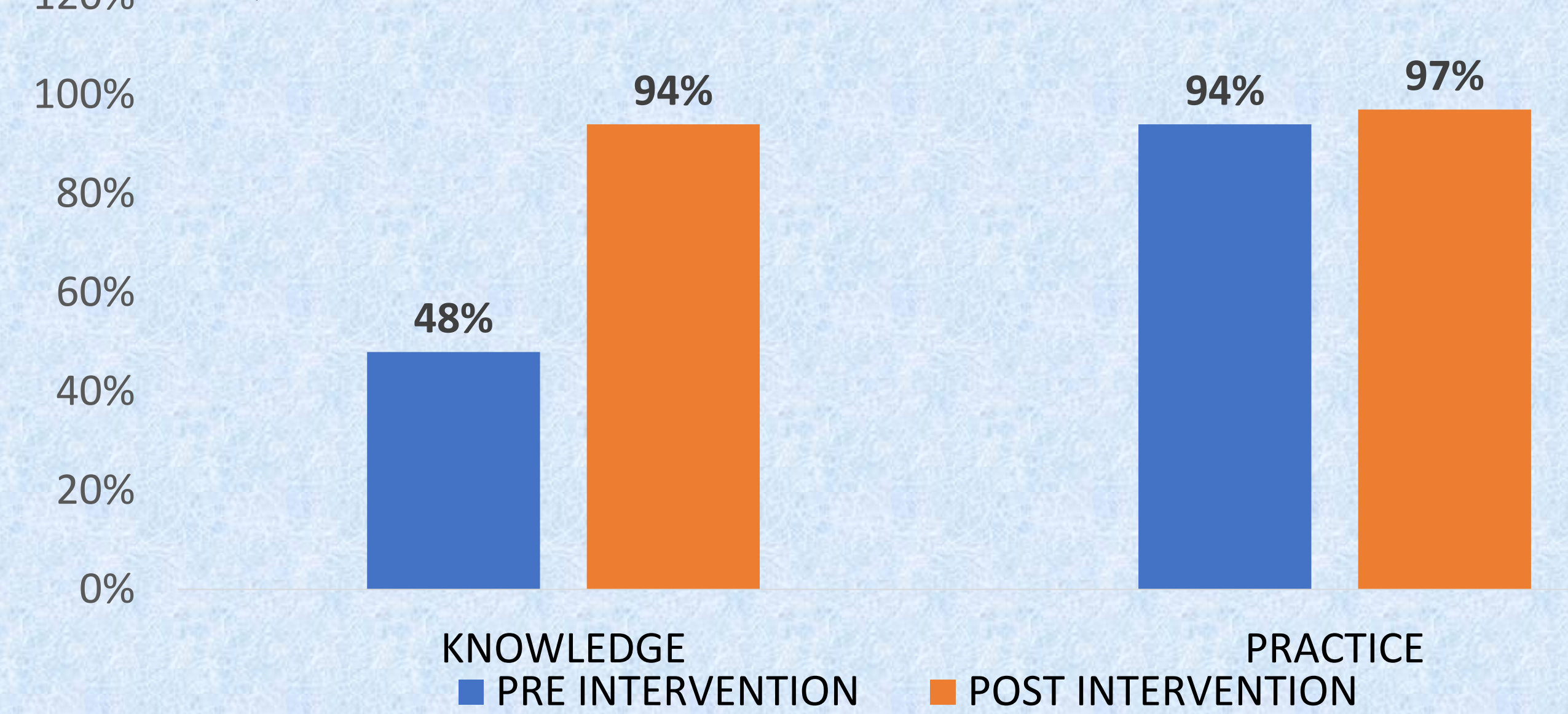
### RESULTS

Pre-intervention questionnaires showed that 40% of Healthcare workers had poor knowledge while another 60% had poor practices. Pre-audit findings on tracheostomy care among in patients showed 80% poor compliance to proper tracheostomy care. Interventions were then implemented to increase knowledge and practices among Healthcare professionals. These include continuous medical education (CME), provisions of tracheostomy suction kit, bedside teaching and training, distribution of tracheostomy care pamphlet and creating a tracheostomy suction trolley. Through these interventions we could see improvements in terms of knowledge and practices among Health care professionals on proper tracheostomy care. Post interventions, 94% of participants had good knowledge while 97% had good practices through post intervention questionnaire. Post audit checklist shown 70% had good compliance in practising proper tracheostomy care inpatient

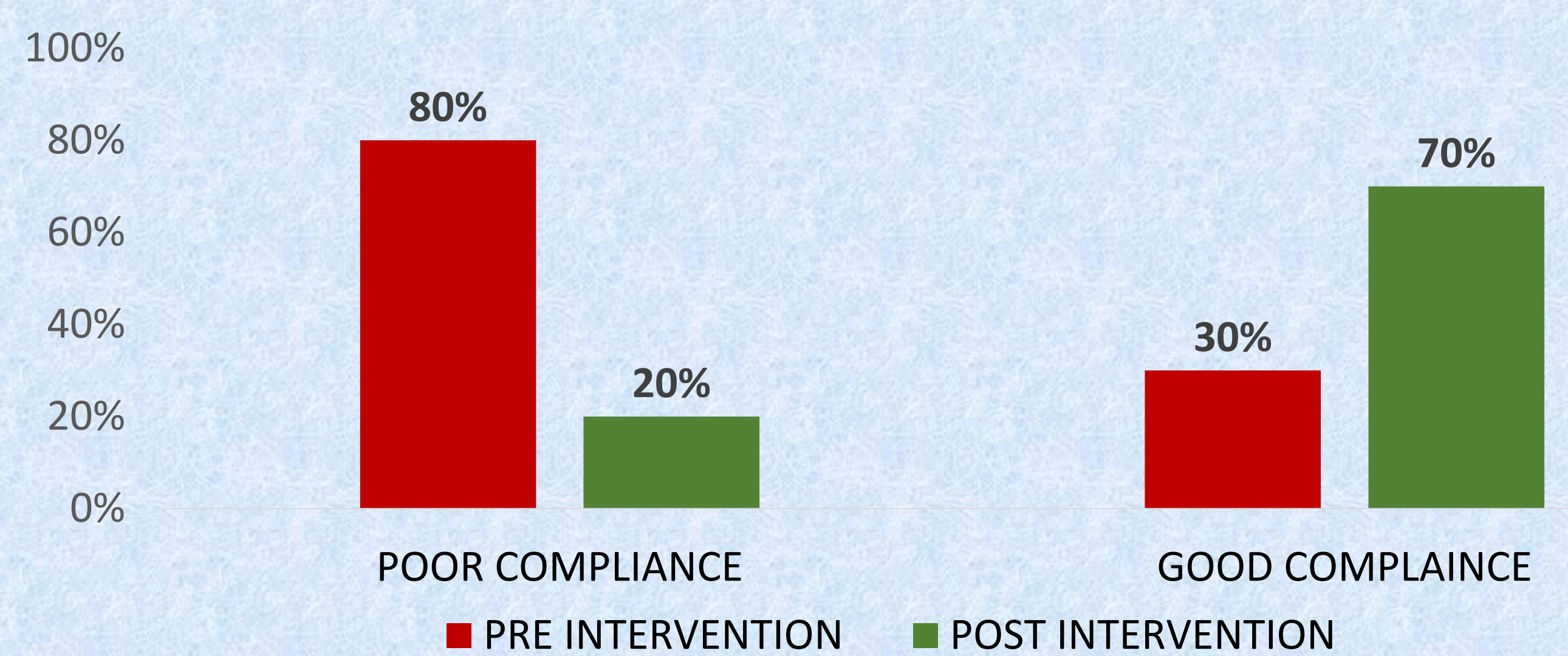
#### PRE AUDIT CHECKLIST ON TRACHEOSTOMY CARE



#### QUESTIONNAIRE KNOWLEDGE & PRACTICE ON TRACHEOSTOMY CARE



#### AUDIT CHECKLIST ON TRACHEOSTOMY CARE



### CONCLUSION

In conclusion, the main reason for poor understanding on proper tracheostomy care was due to no proper guideline introduce previously. With new tracheostomy care guideline 2023 we can standardize the practices and thus provide the best patient care possible. This clinical audit had shown an outstanding improvement in both knowledge and practices on proper tracheostomy care based on National Tracheostomy Care Guidelines 2023. With the interventions we introduce we hope that healthcare worker can continue practice and create new norm among healthcare worker thus hopes that MDRO cases related to tracheostomy care will be reduced to ensure high quality patient care.

#### Recommendation:

- ❖ Enhanced staff training and Education.
- ❖ Standardized care protocol.
- ❖ Reinforce strict infection control measures.
- ❖ Regular Audit and feedback.
- ❖ Interdisciplinary Collaboration.

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