A study on identifying hospital acquired infections with a focus on aseptic precautions followed by staff to prevent them

at

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Submitted by

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Hospital acquired Infection

- These infections are acquired in hospitals and other healthcare facilities.
- To be classified as a nosocomial infection

a) The patient must have been admitted for reasons other than the infection.

b) He or she must also have shown no signs of active or incubating infection.

- These infections occur:
  - ➢ up to 48 hours after hospital admission
  - ➢ up to 3 days after discharge
  - ➢ up to 30 days after an operation
  - ➢ in a healthcare facility when a patient was admitted for reasons other than the infection

Examples of HAI

- Catheter associated urinary tract infection (CAUTI)
- Central line associated blood stream infection (CLABSI)
- Surgical site infection (SSI)
- Ventilator associated pneumonia (VAP)
- Bed sores

Problem Statement

- Cases of HAI are not reported by hospitals as it creates bad image at the time of audits.
- As a result of no reporting of cases, there are no interventions designed to stop the spread.
- Due to delay in recovery or non- recovery of patients, hospital stay of patients gets prolonged causing huge financial loss to patients.
- Causes mortality in hospital.
- Controlling such infections is a necessity in order to reduce infection rates in a hospital.

Research Question

- What is the level of knowledge and practice among health staff regarding aseptic precautions in order to prevent hospital acquired infections?

- Which are the suspected cases of hospital acquired infections that were not managed as HAI and were unreported?

Objectives

- To improve the reporting of HAI
- To analyze the reasons at different levels responsible for causing infections
- To assess the infection control measures used by hospital
- To reduce the incidence of HAI
- To suggest new intervention to counter non-reporting of HAI cases

Literature Review

- HCAI is acknowledged as the most frequent adverse event in health care, but the global burden remains unknown because of the difficulty of gathering reliable data.

- According to a literature review of national or multicentre studies published from 1995 to 2008, the overall prevalence of HCAI in developed countries varies between 5.1% and 11.6%.

- Nosocomial infections are also one of the leading causes of death. The increased length of stay for infected patients is the greatest contributor to cost.

Source: Prevention of hospital-acquired infections, A practical guide
2nd edition
(WHO/CDS/CSR/EPH/2002.12)

Methodology

- Source of data:
  a) Primary- by observing staff
  b)Secondary- active and passive files
- Study type- Analytical
- Data type- Quantitative
- Study area- ICU's, Wards and MRD for auditing files
- Sampling method- Purposive
- Sample size- Passive files 250, active files 150 and 54 Hospital staff (nurses)
- Study technique- Observation with the help of prepared checklist.
- Data collection tool- Checklist was prepared with the help of NABH guidelines and CDC (centre for disease control)
- Data analysis- With the help of MS-excel sheet.

Results and Interpretation

- **Suspected cases of Hospital acquired infection**: Out of 400 files audited, cases of

  a. CAUTI- 12

  b. CLABSI- 10

  c. SSI- 8

  d. VAP- 20

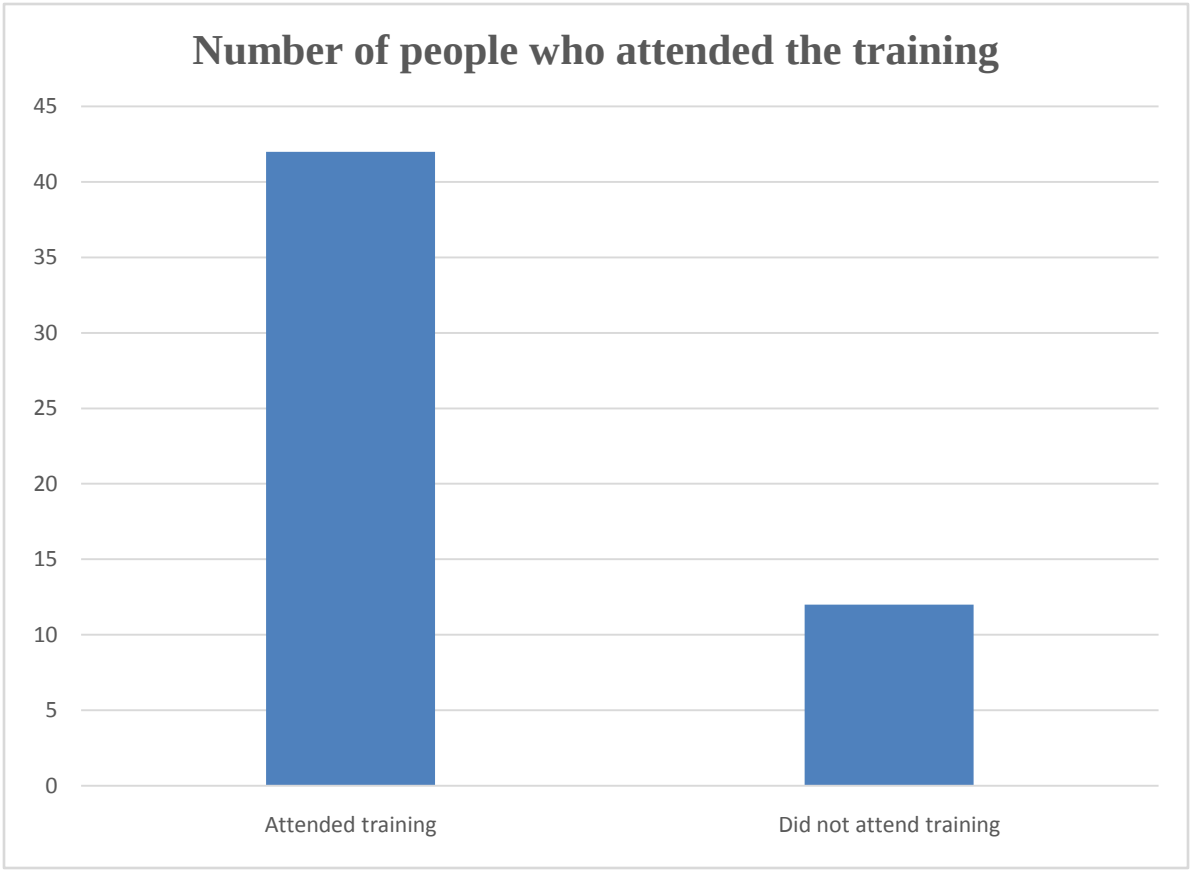
  e. Bed sores- 3

It was found that there are around 12, 8, 10, 20 and 3 suspected cases of CAUTI, SSI, CLABSI, VAP and Bedsore respectively found after auditing the files. These cases were not differentiated between HAI and clinical cases.

Findings of study

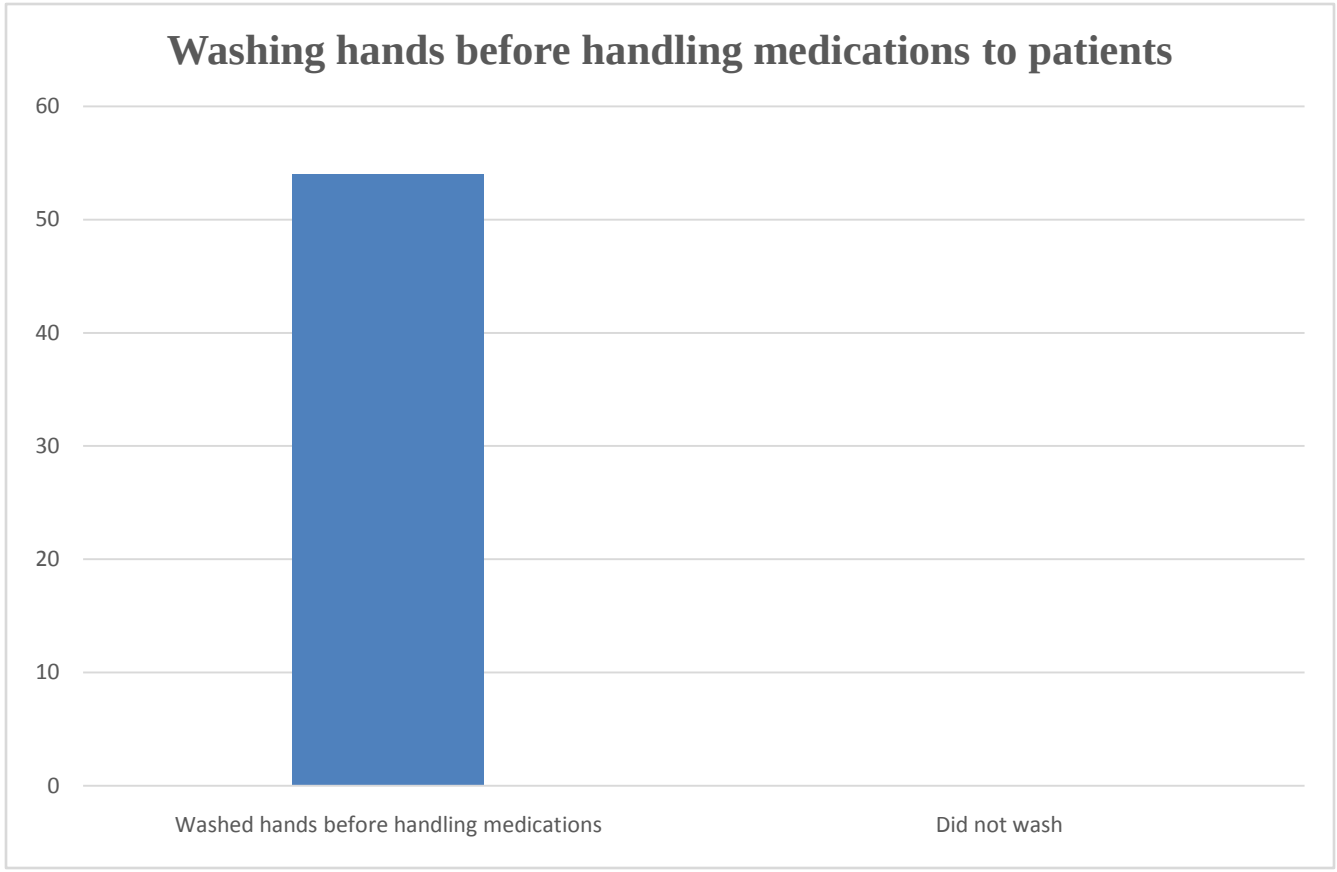
- **Hand hygiene knowledge and practice**:

  a. Nurses with training-



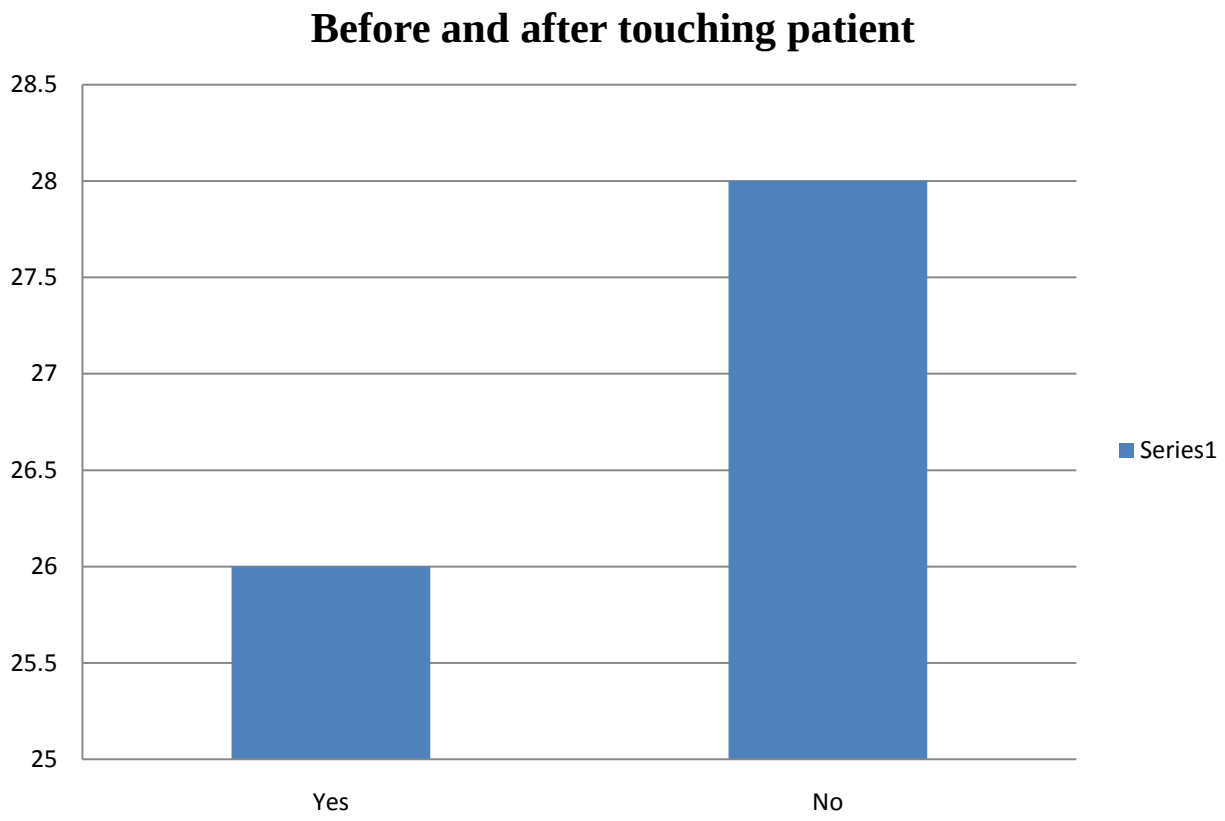
Interpretation- Out of 54 persons, 42 were those professionals who attended training and 12 were those who did not attend the training

Hand hygiene before handling medication



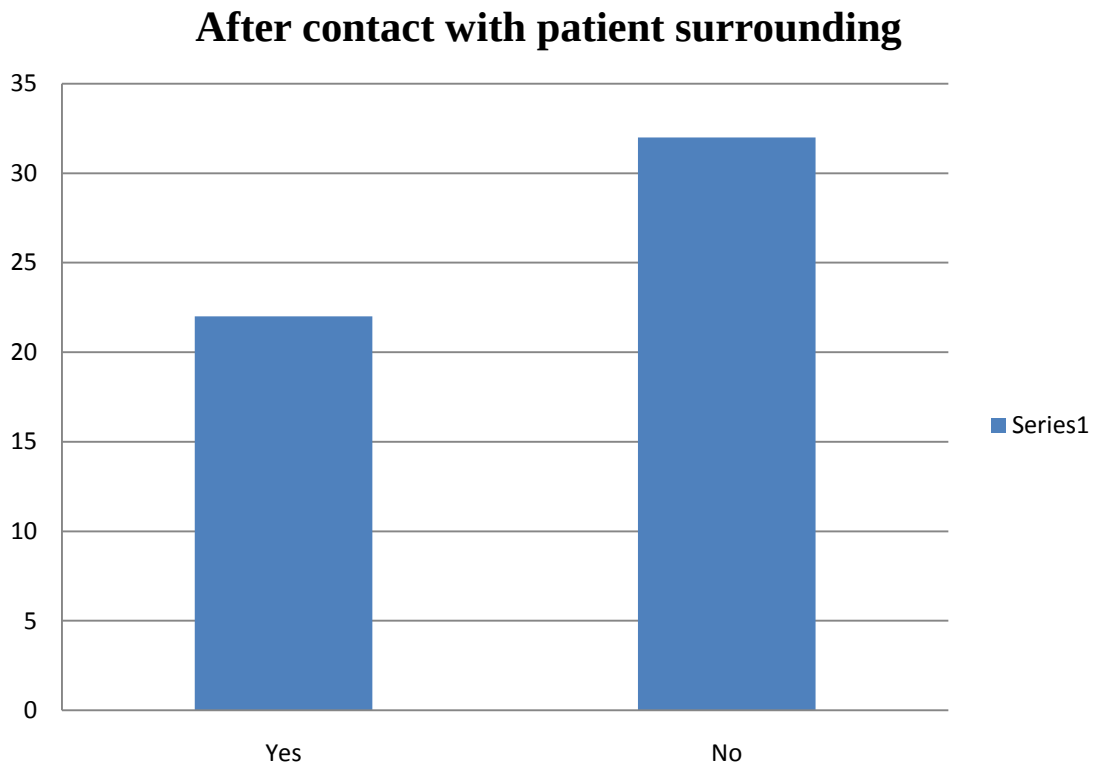
Interpretation: Common practice among staff to wash hands before giving food or medicines to patients

Wash hands before and after touching patient



Interpretation- 28 staff members does not perform hand hygiene both before and after touching patient while 26 perform either before or after touching patient.

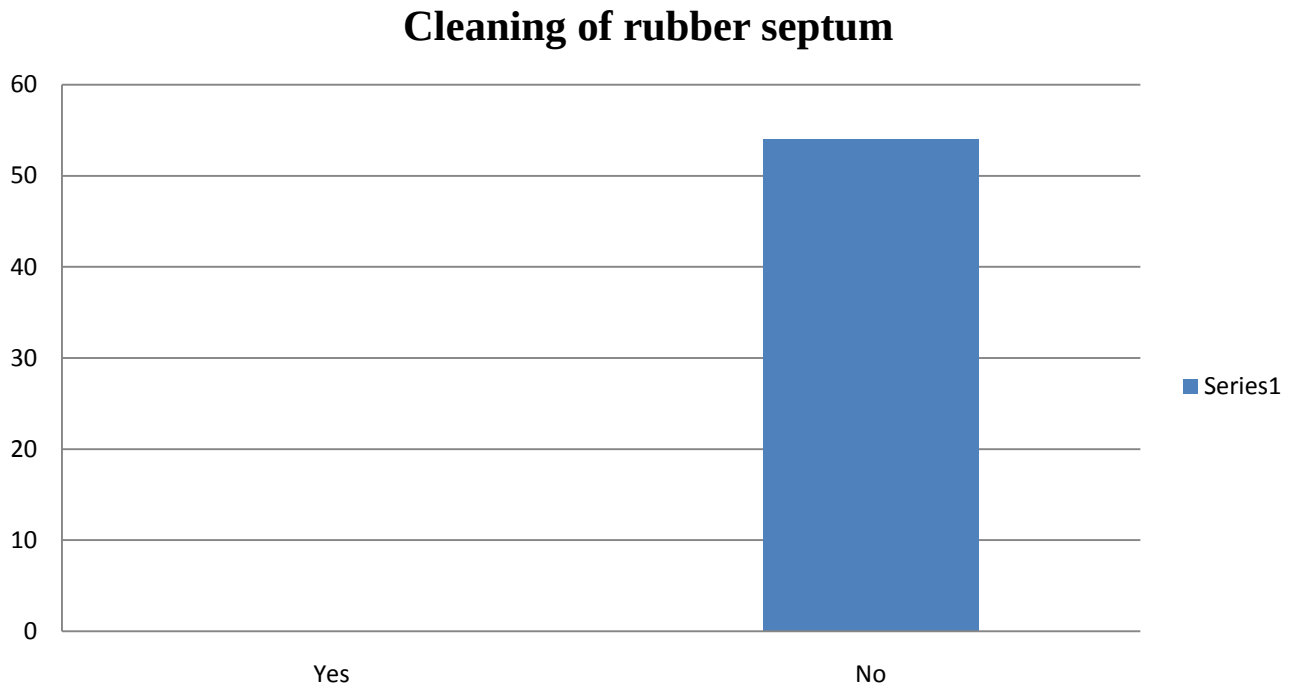
After contact with patient surroundings



Interpretation: 22 staff members performs hand hygiene after contact with inanimate surfaces and objects (including medical equipment) in the immediate vicinity of the patient while 32 staffs do not perform hand hygiene after contact with inanimate surfaces and objects (Including medical equipment) in the immediate vicinity of the patient.

Safe injection and infusion process

a.Cleaning of rubber septum of medication vial-



Interpretation: Rubber septum on a medication vial is not disinfected with spirit prior to piercing. Its purpose is that the infection from the surface is not transferred.

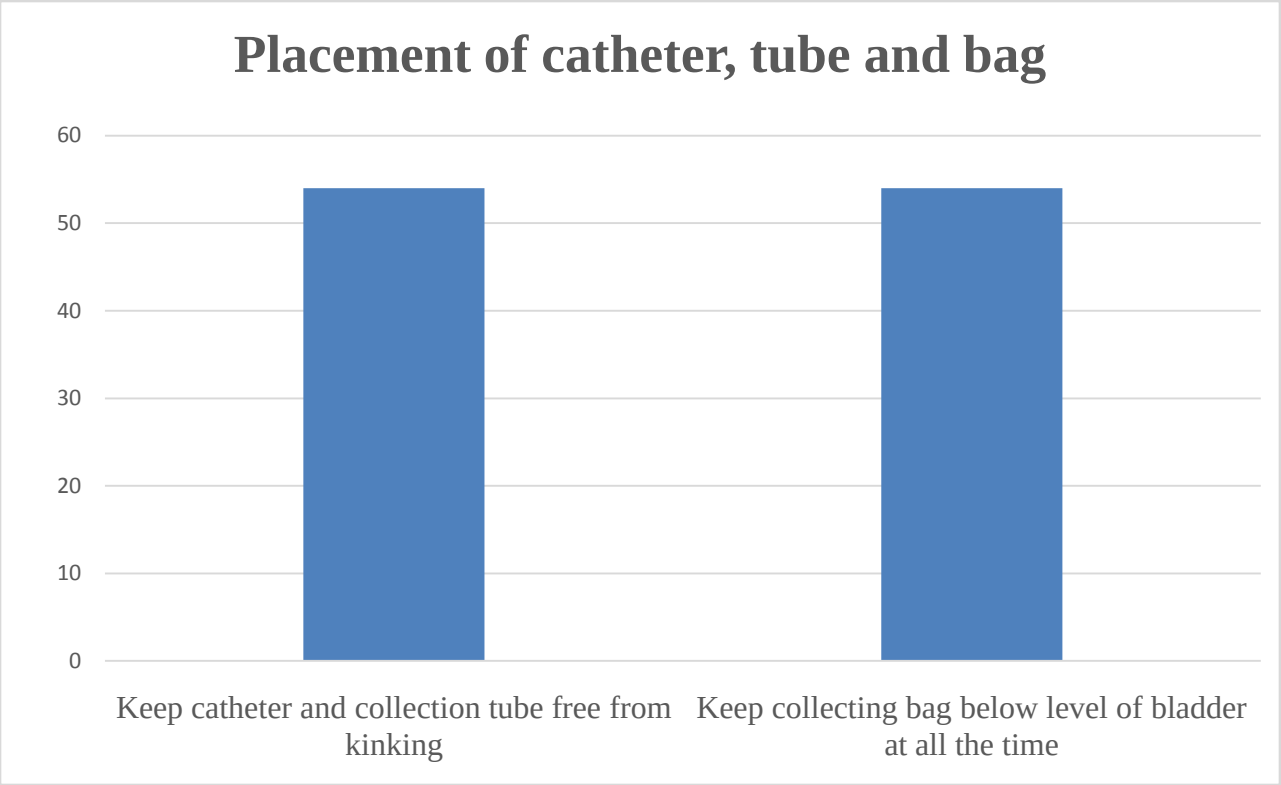
Safe insertion of urinary catheter practice:

a.Indication for catheter insertion (according to CDC)

- Acute urinary retention
- Measurement of urinary output (critical pts)
- Preoperative
- Pts with prolonged immobilization
- End life care comfort

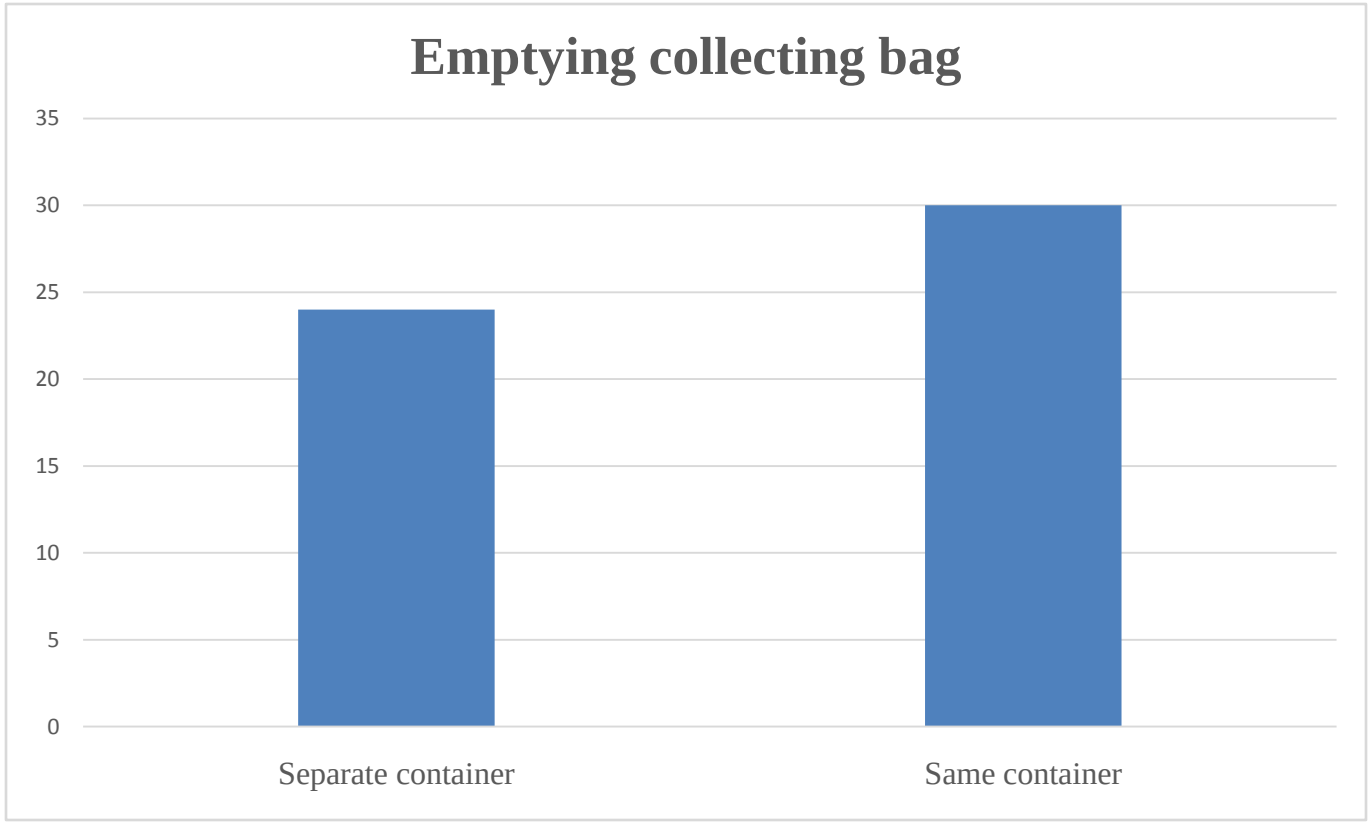
It is observed that these indications are 100% followed

b. Placement of catheter, connecting tube and urinary bag



Interpretation: Purpose is to maintain unobstructed urine flow and to avoid CAUTI. It is recommended that catheter and collecting tubes are kept free from kinking and collecting bag is kept below level of bladder. It was found to be followed 100%.

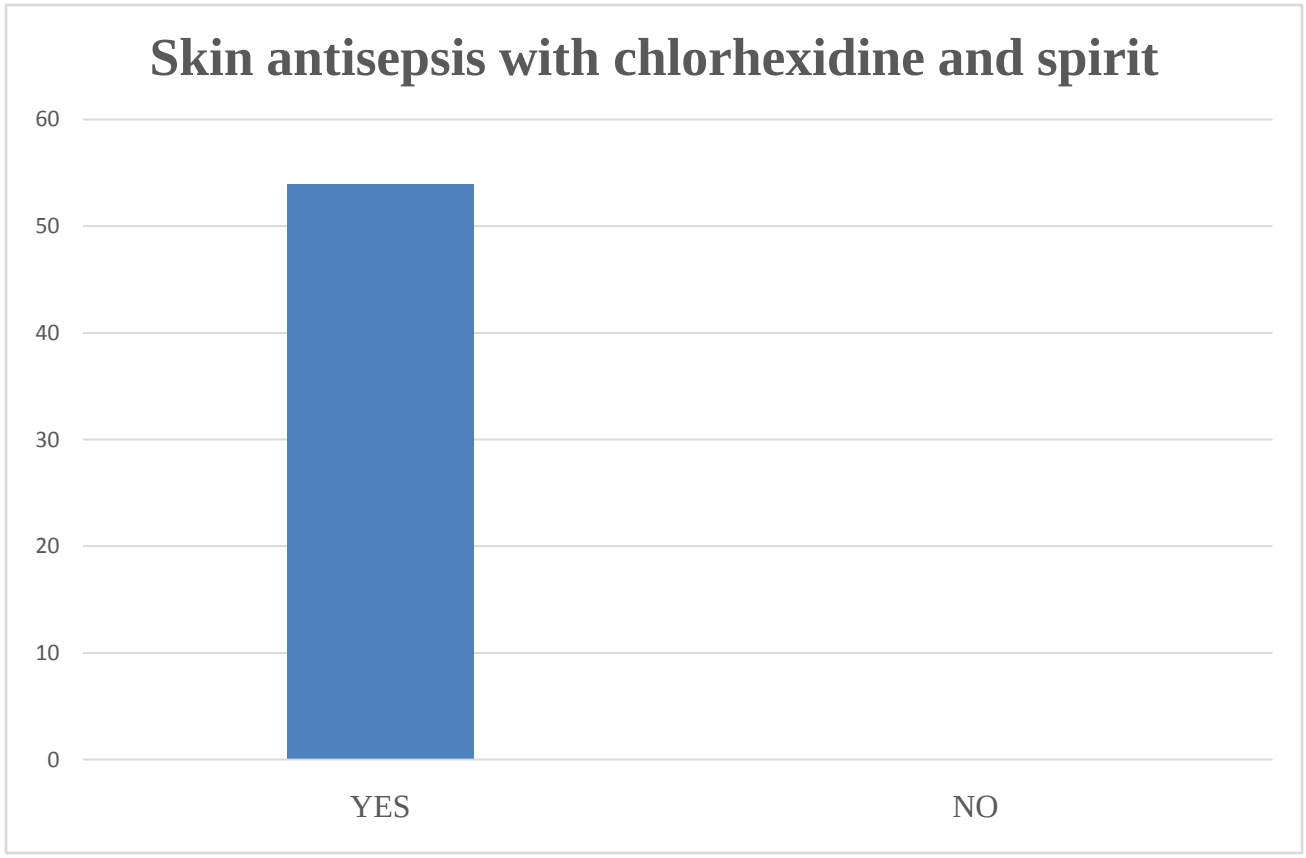
c. Emptying collecting Urobag



Interpretation: It is emptied regularly when filled. But there are not separate urine pots for each patient and all staff is not aware for the same. Only 24 staff aware about separate and clean containers.

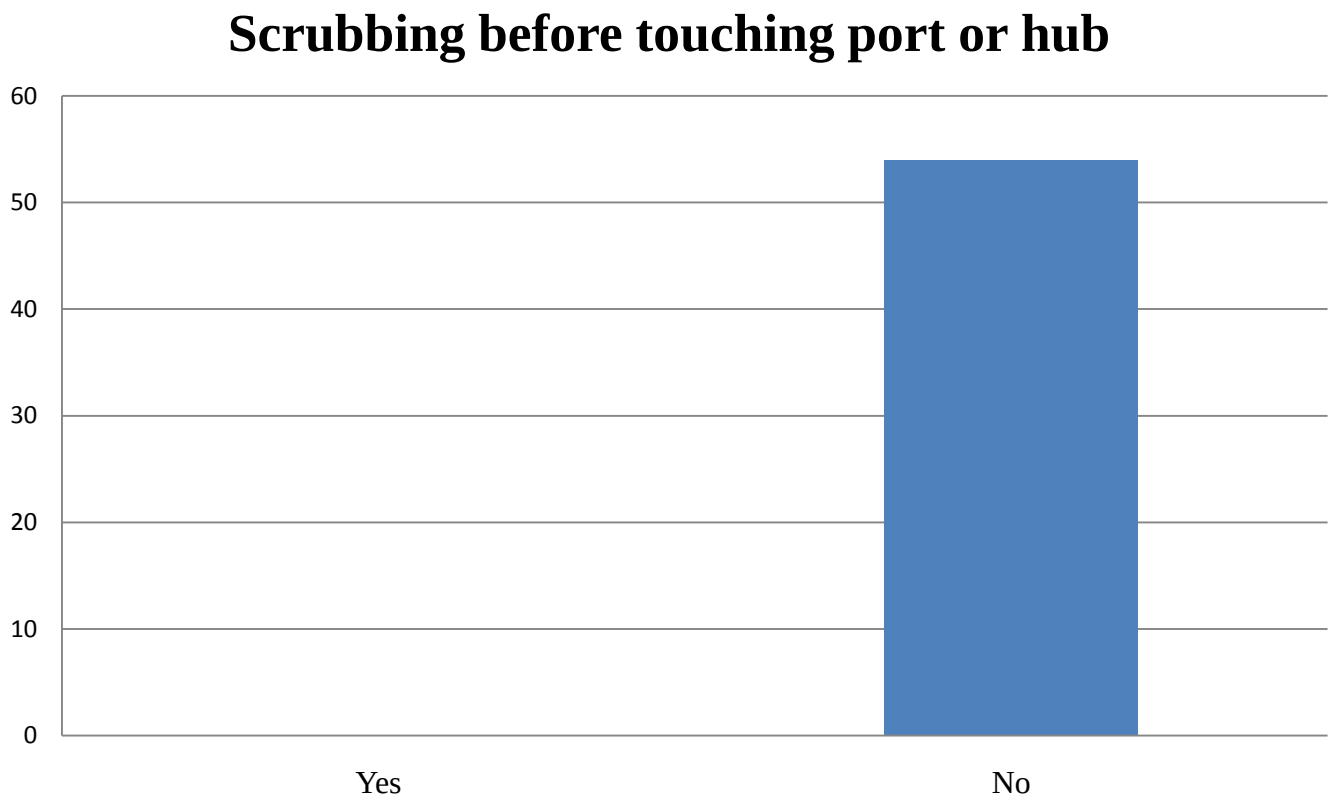
Technique used in central line patients:

a. Aseptic technique-



Interpretation: Skin antisepsis is done with chlorhexidine and spirit to avoid infection. Site is covered by sterile gauze. It was found that it is being done by all.

b. Scrubbing before touching port or hub



Interpretation: Standard practice- Scrubbing of the access port or hub immediately prior to each use with an appropriate antiseptic (e.g., chlorhexidine, povidone iodine, an iodophor, or 70% alcohol). But it is not performed by any staff.

Conclusion and Recommendation

- It was seen that staff is completely aware about the infection control measures specially the hand hygiene but they lack in following the practice. This is due to lack of motivation, and overburdened staff which is due to less number of working staff as against required by the hospital.

- Surprise inspections on weekly basis for the practical implementation of hand hygiene and PPE should be done and staff should be made aware of the importance of safety, consequences of HAI during the inspection round.

- Some staffs do not attend training due to busy schedule, so training can be planned and staff names can be sent a week ago so that their duties can be planned accordingly and can they can attend their training.
- There must be a policy that every doctor must rule out case of HAI and it should be documented in patient's file.
- The admitted patient file should have a checklist for HAI which has all the criteria to differentiate a HAI.
- Staff should note day of catheter or CVP line insertions and of other procedures which may lead to infection if not properly managed time to time.
- Urinary catheter and central line catheter tip has to be checked for presence of organism.

Checklist

- **Catheter associated urinary tract infection**

  Sign and Symptoms:

  1) Asymptomatic bacteriuria

  2) Symptomatic infection ie., fever with rigors, nausea vomiting, burning micturition, etc.

  3) Bacteremia- secondary blood stream infection.

  Criteria:

  Whose urinary tract is currently catheterized or has been catheterized within the previous 48 hours

- **Surgical site infection**

  Sign and Symptoms

  1) Wound discharge upto 30 days of operation.

  2) There may be fever and other symptoms.

  Criteria

  Discharge from wound 7-10 days of operation and up to 30 days

- **Ventilator associated pneumonia**

  Sign and Symptoms

  1) Purulent trachea-bronchial secretion. CXR shows patchy infiltration.

  2) Fever with leucocytosis.

  Criteria

  Symptoms of pneumonia after 48 hours of intubation.

- **Central line associated bloodstream infection**

  Sign and Symptoms

  1) Pathogen cultured from blood not related to infection other side.

  2) Fever, chills and hypotension

  3) Patient < 1year of age having fever, hypothermia, apnea or bradycardia.

  Criteria

  Having central line for 48 hours or more than 48 hours

THANK YOU