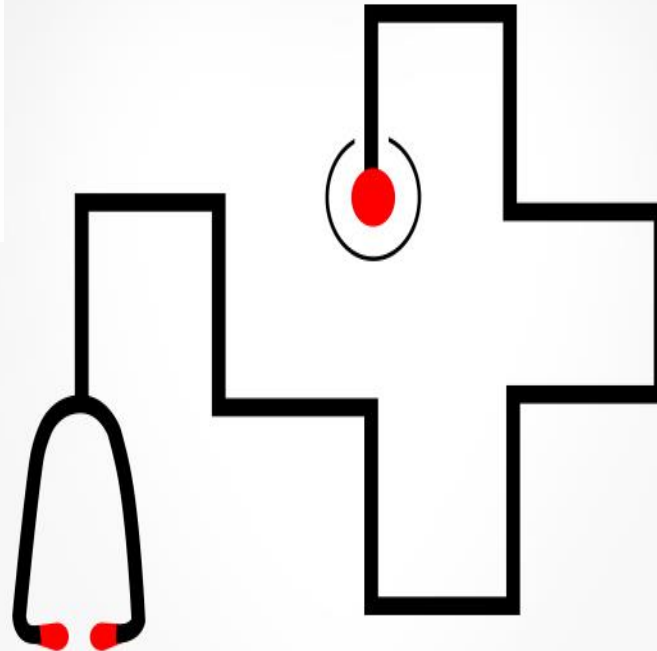




## ***Study on knowledge of Infection Control (IC) Practices among Health Care Workers (HCWs)***

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# Introduction

Civil Hospital was started as Dispensary in 1870 at Godhra and later converted into multispecialty 210-bedded hospital in around 1970.

- Bed Strength – 210
- Location – at the center of city Godhra
- Scope of Service – Multispecialty
- Area - 4.2 Acres
- Infection Control at Civil General Hospital, Godhra has been identified as a focus area to decrease transmission and acquisition of infectious agents.

# Objective

- To assess the knowledge for Infection Control Practices among Health Care Workers (HCWs) at General Civil Hospital, Godhra & to identify the major factors causing Health Care Associated Infections (HAIs) to make appropriate recommendations for the corrective action.

# Methodology

- Study type - A mix of primary and secondary research. Data analysis of the gathered data to arrive at the feasibility.
- Study place – General Civil Hospital, Godhra, Gujarat
- Study time – 05<sup>th</sup> Feb – 05<sup>th</sup> May 2018
- Study sample size - 350 Health Care Workers (HCWs)
- Study population - Nurses, Doctors ,Physiotherapist, Dialysis Technicians, Phlebotomist, Others.
- Sampling Method- Simple Random Sampling
- Study departments –  
All Critical Care Areas ( MICU / SICU, ICCU, TCU, DIALYSIS, BMT, CCU)  
Wards - GW male and female
  - Emergency department
  - Special/Semi Special wards

# Purpose of the Study

- Promote a culture of safety
- Reduce HAIs such as
  - Catheter-associated urinary tract infections (CAUTI)
  - Reduce transmission/acquisition of Multi Drug Resistant Organisms (MDRO)
- Reduce risk of outbreaks

## Observations of WHO 5 Moments of Hand Hygiene Practices among HCWs

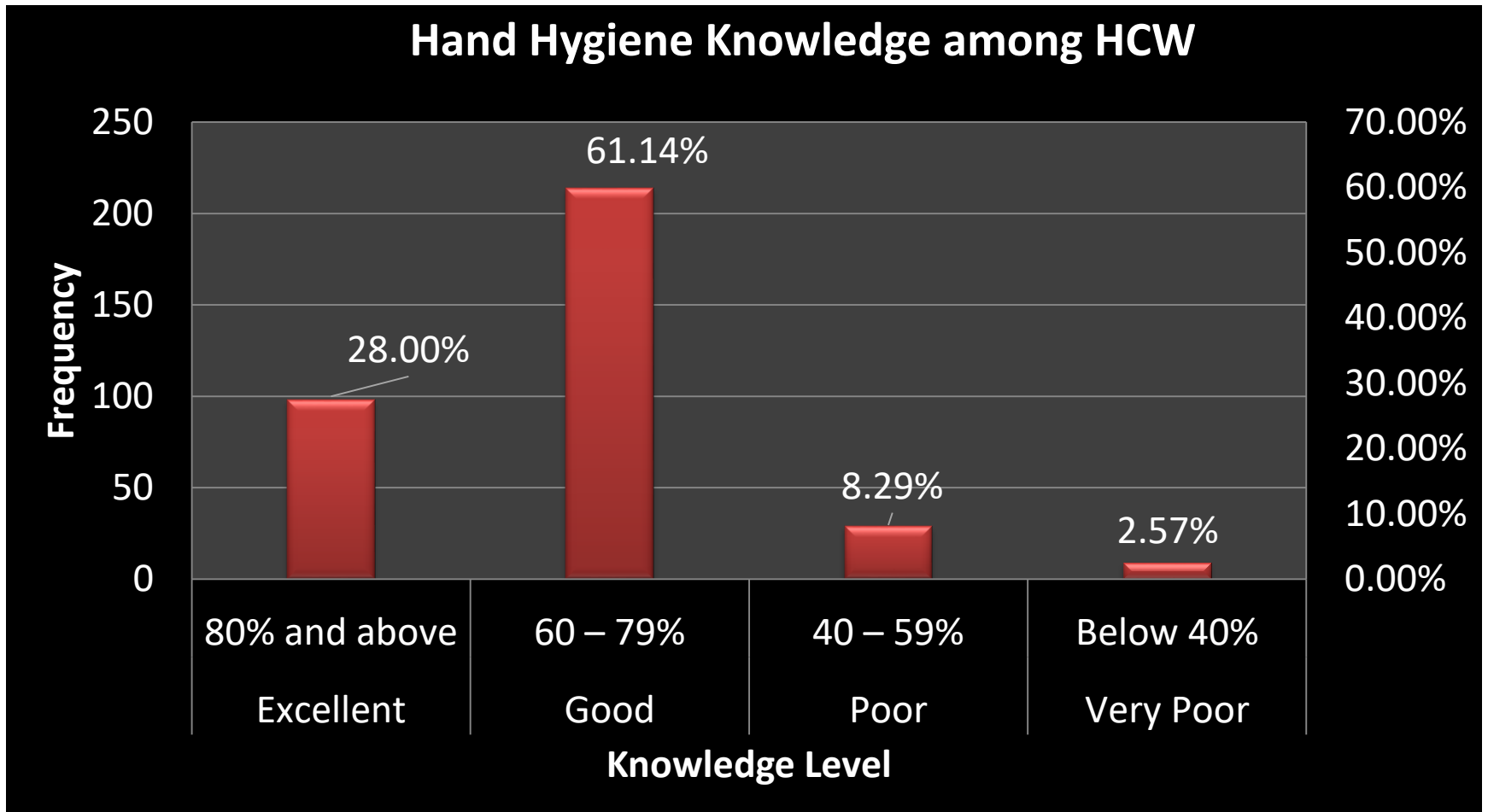
- The Hand Hygiene Compliance (HHC) was calculated using the following formula:
- **$\text{HHC} = (\text{Total Number of Correct Moments} / \text{Total Number of Observed moments}) * 100$**
- The total number of observed moments (considering all five moments of hand hygiene) was 1118, of which there were 877 correct moments, giving an overall Hand hygiene compliance rate of 78.45%.
- The total number of observed moments and the total number of correct moments are recorded separately for each WHO 5 Moments of hand hygiene. For each moment, percentage of correct hand hygiene moments was also calculated separately which indicates the moment specific hand hygiene compliance rate.

# Key Findings

Knowledge of Health Care Associated Infections (HAIs) among Healthcare workers was categorized as follows:

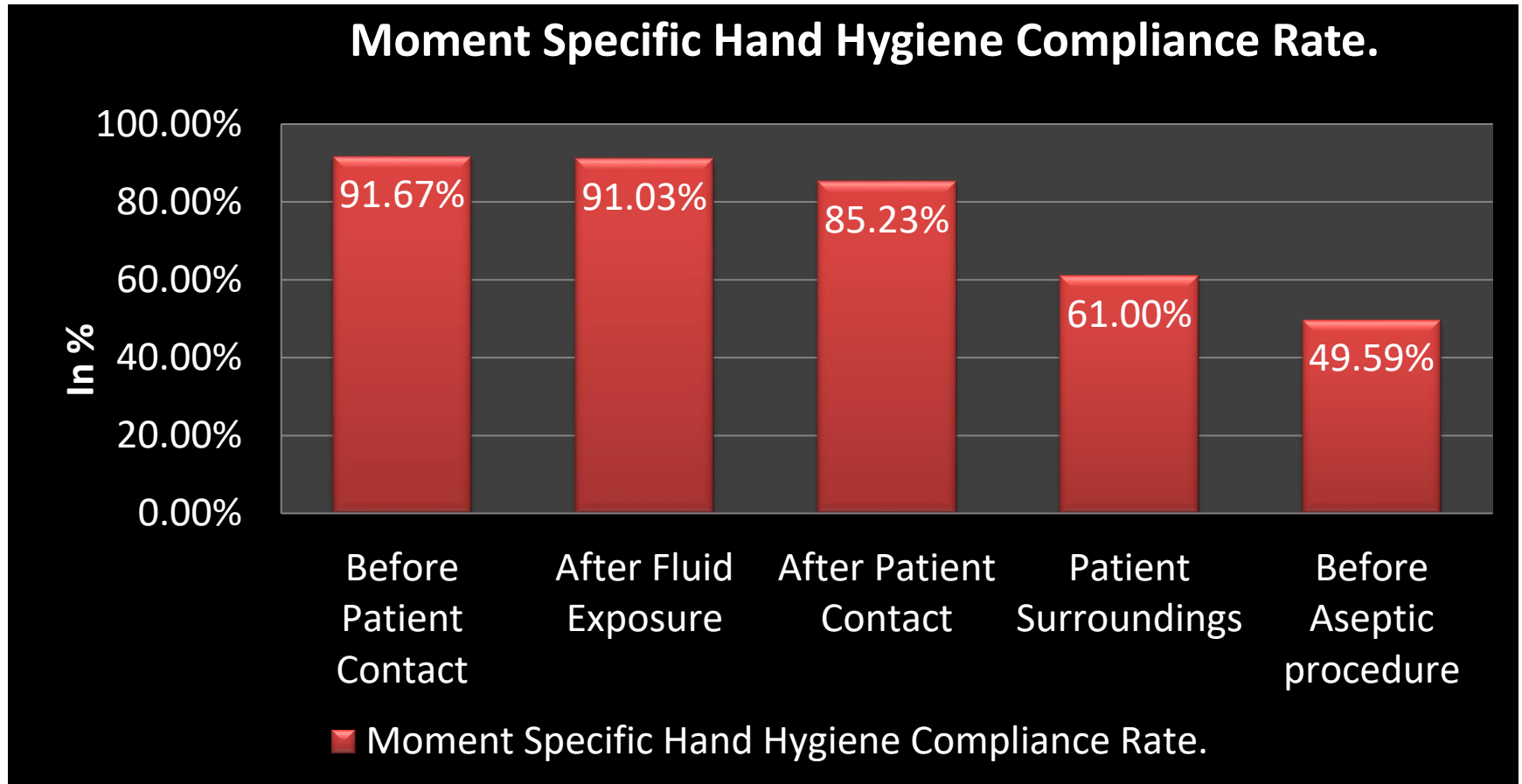
- Excellent Knowledge: 80% and above
- Good Knowledge: 60-79 %
- Poor Knowledge: 40 – 59%
- Very Poor Knowledge: below 40%

# Bar Graph 1



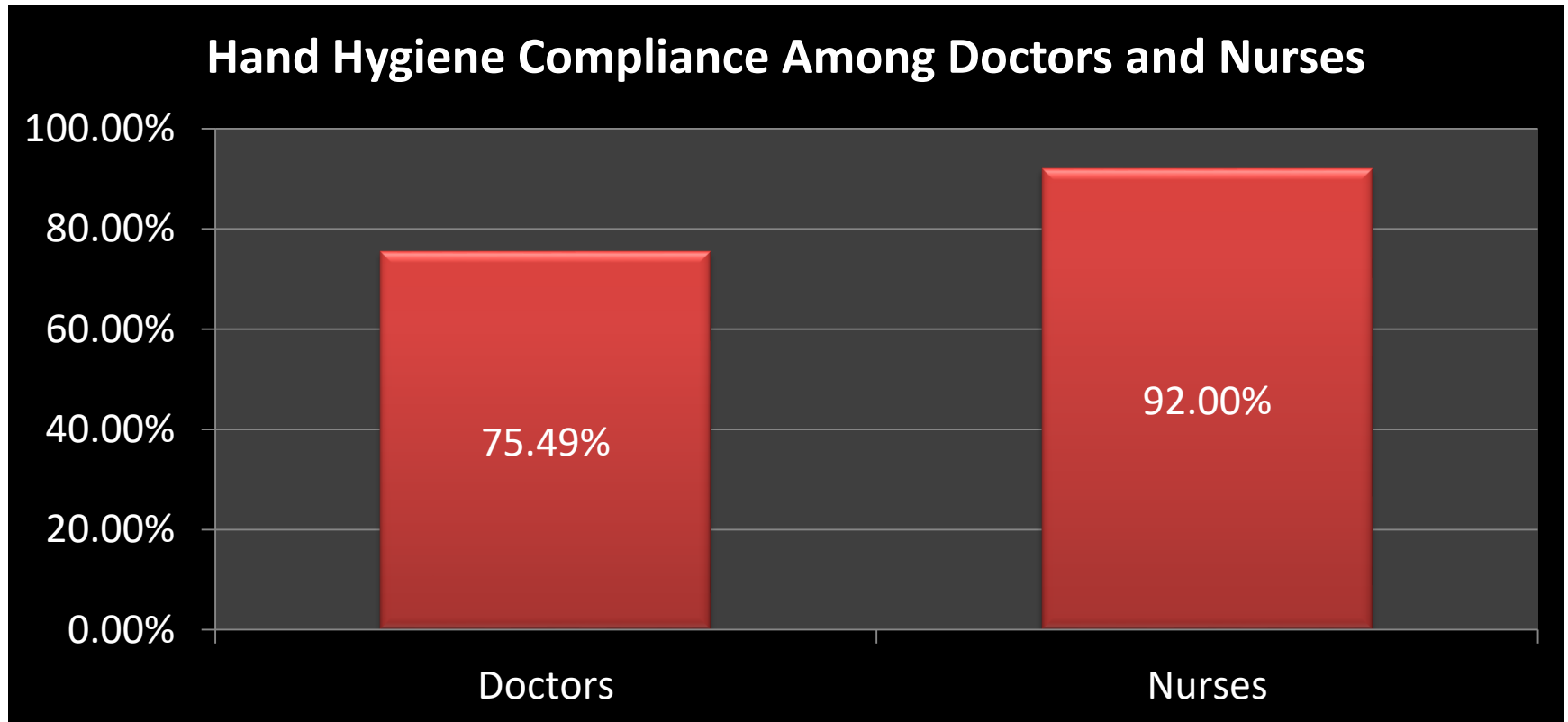
The bar graph above indicates that from the sample size of 350 workers, 28% (98 healthcare workers) have an excellent knowledge on hand hygiene, 61.14 % (214 workers) have good knowledge, 8.29% ( 29 workers) have poor knowledge while 2.57% ( 9 workers) have very poor knowledge about the hand hygiene.

## Bar Graph 2



The bar graph above shows Moment Specific Hand Hygiene Compliance Rates. It shows that hand hygiene compliance was found to be highest before patient contact at 91.67%, followed by after fluid exposure at 91.03% followed by after patient contact at 85.23% with after patient surroundings at 61.00% and before Aseptic procedure at 49.59% with the lowest hand hygiene compliance rate.

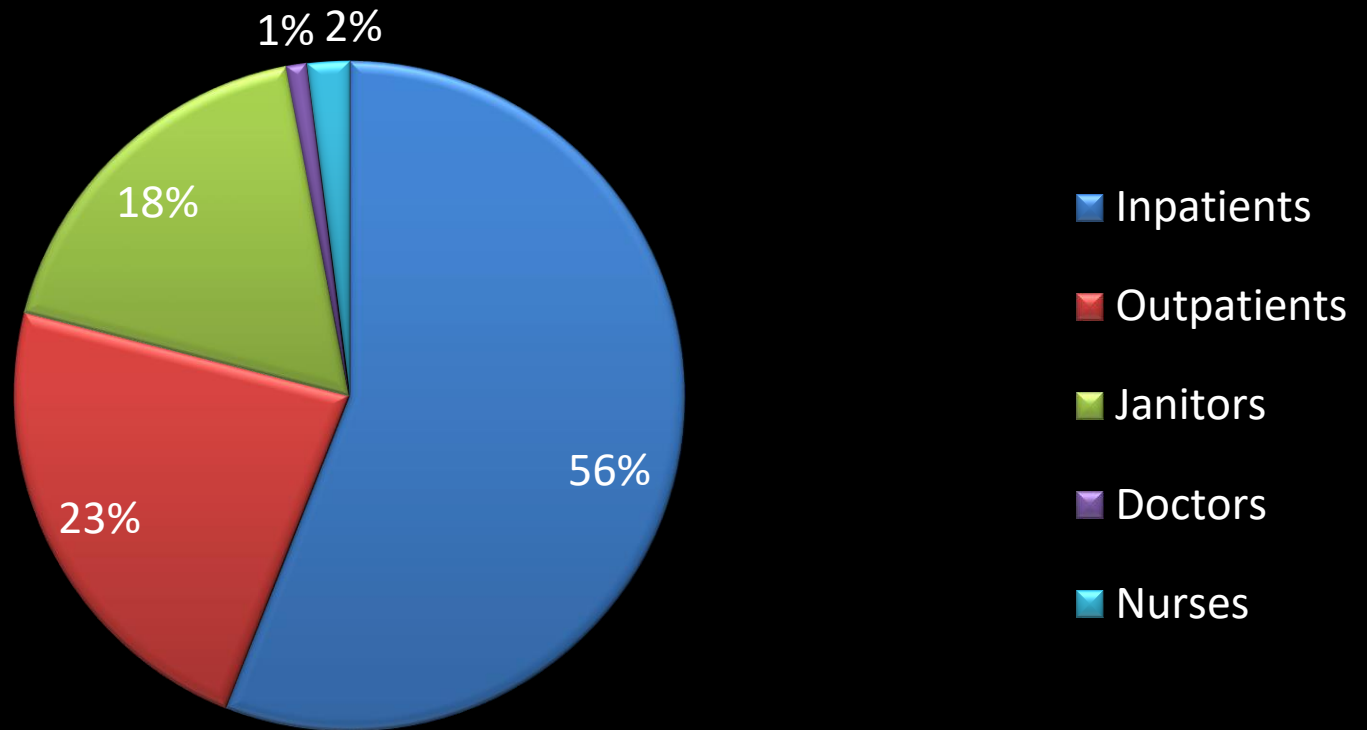
## Bar Graph 3



The study established that the nurses has a better compliance rate compared to doctors. The compliance rate for the observed nurses was 92.00% while that of doctors was found to be 75.49% indicating that the nurses have a better hand hygiene practices.

## Pie Chart 1

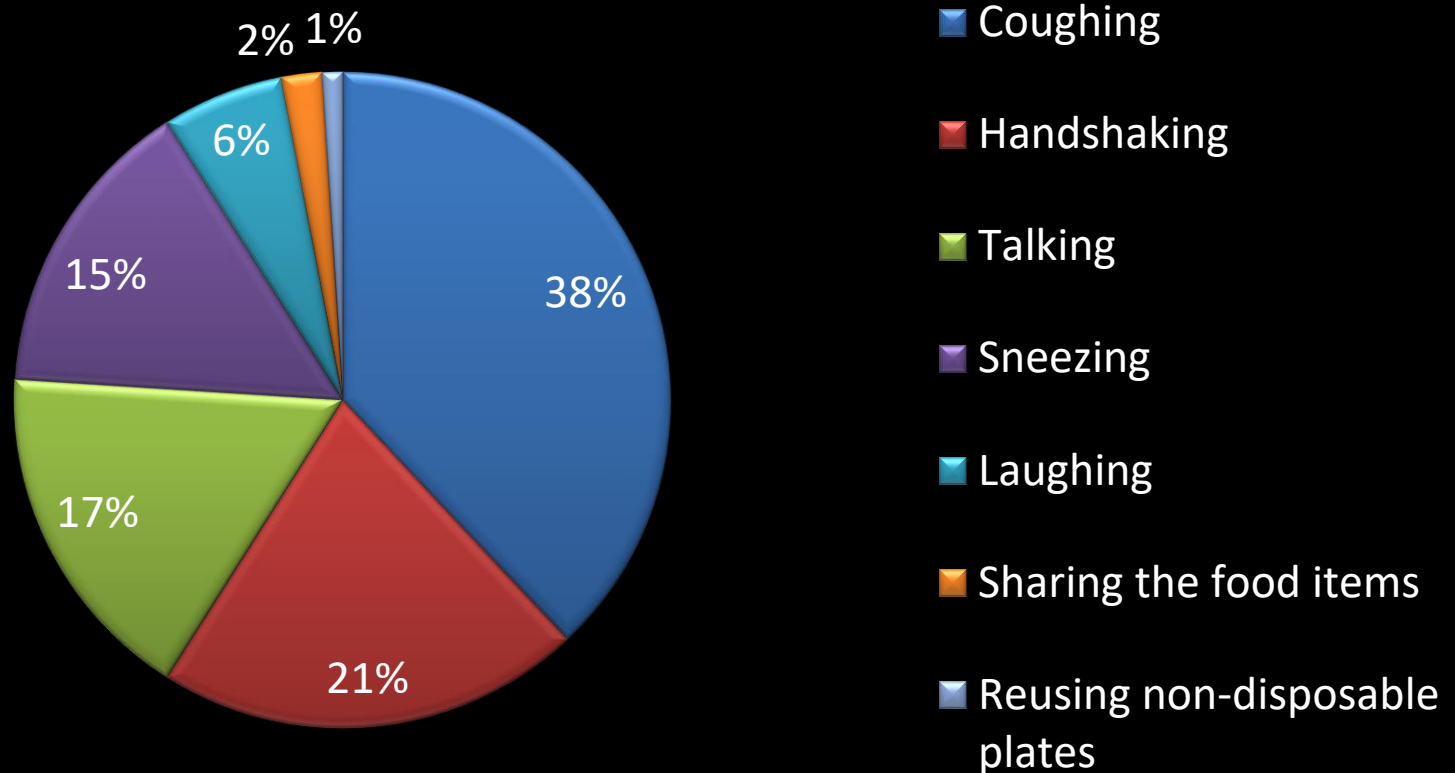
**HAIs Susceptible Population**



From the study, inpatients are most susceptible to HAIs which is indicated by 56% of the research response. Outpatients are second likely to be infected with HAIs, 23%. The respondents also revealed that the frequency of janitors to be affected is 18% while doctors and nurses are the least likely to be affected as represented by 1% and 2% respectively by the respondents.

## Pie Chart 2

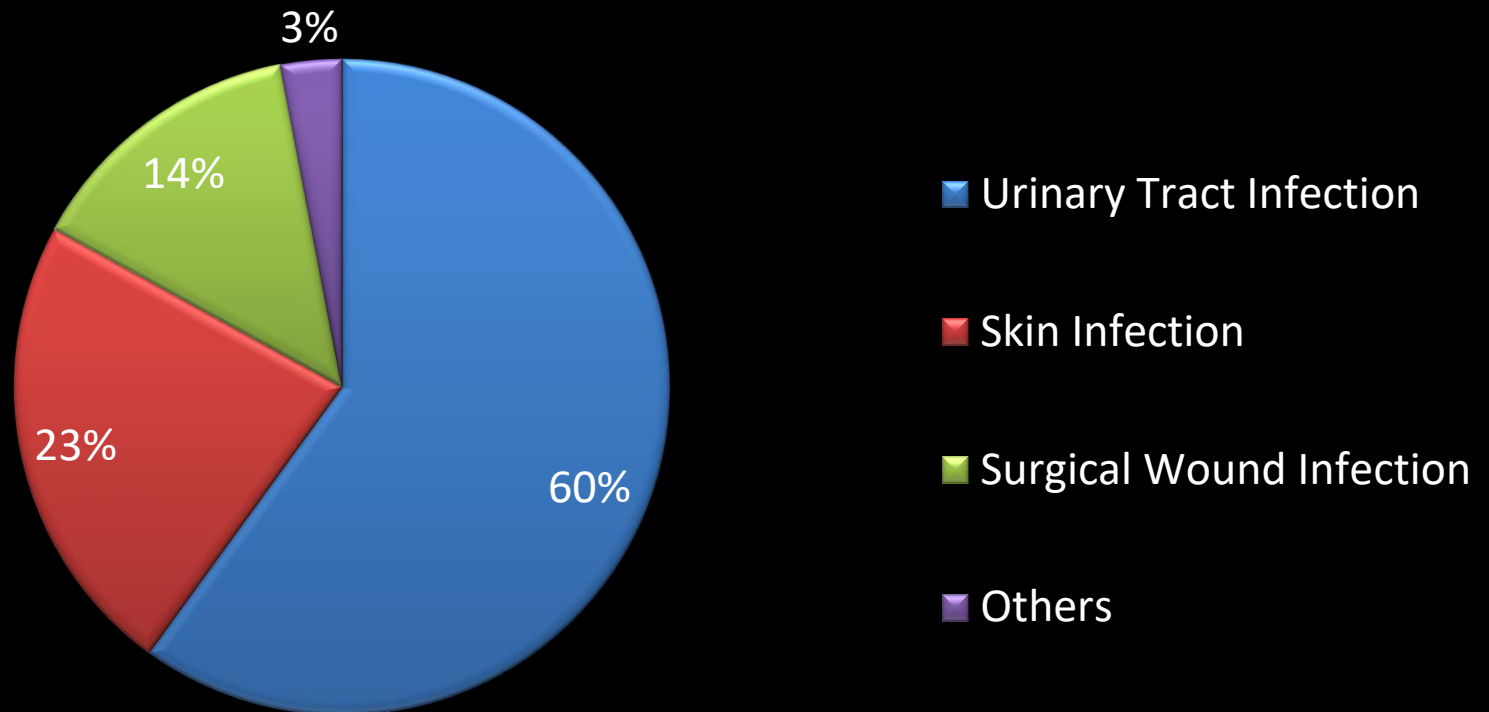
**Means of Spreading of Infectious Organisms**



From the study, out of the 350 respondents, 38% indicated that the most prevalent means of HCAs spreading is through coughing, 21% indicated handshaking is the second means by which the organisms spread. This leads to a translation that some percentage of healthcare workers do not comply to hand hygiene practices. Talking with an infected person and also when sneeze from an infected patient spreads HCAs indicated by response of 17% and 15% respectively. Other means is through laughing, sharing the food items and reusing non-disposable plates.

## Pie Chart 3

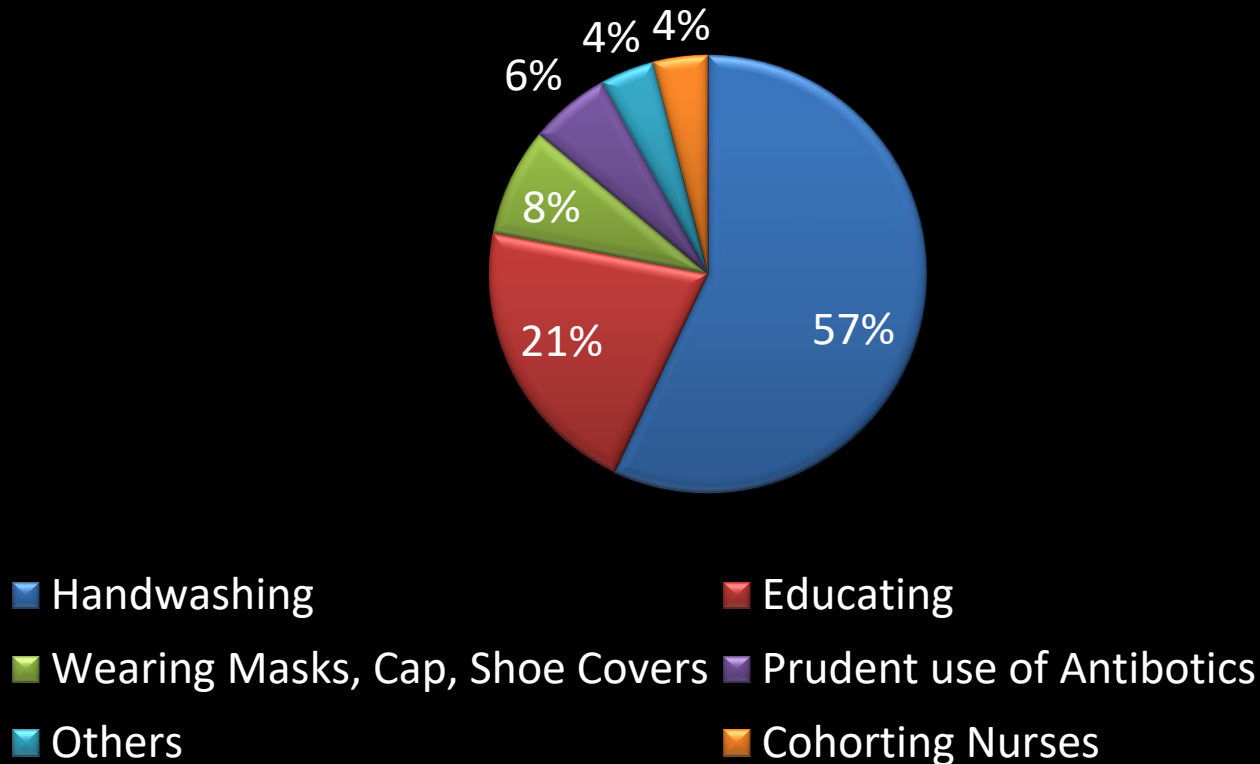
Common HAIs



The most common HAIs Urinary Tract Infection (UTI) which was reported by 60% of the respondents. 23% of the respondents indicated skin infection is also prevalent in the hospital environment. 14% of the respondents indicated surgical wound infection is also prevalent as a result of some healthcare workers not maintaining mainly hands hygiene in performing their duties. 3% of respondents indicated that there is existence of other infections such as blood stream infection.

## Pie Chart 4

Method of Preventing HAIs



From the study, 57.14% of the respondents agreed to the fact that hand washing is the most effective way of preventing HAIs in the hospital environment. 20.86% indicated educating healthcare workers in the second best approach that needs to be implemented to prevent the spread of infections. Additionally, 8.57% agreed that putting on protective garments is also a preventive measure mainly for the infections that are air-borne. Cohorting nurses is the least measure that can be implemented to prevent the infections.

# Challenges

- The main challenge in conducting this study was in data collection. This is because the healthcare workers could have realized being observed and hence change the normal practices at the hospital.
- Hawthorne Effect: The alteration of behaviour by the subjects of a study due to their awareness of being observed.
- During some of the audit sessions , there was a shortage in the number of staff members due to less number of patients in the hospital, thus limiting the amount of data collected

# Discussion

- From the study, 28% of the people who responded to the survey had excellent knowledge about health care associated infections including urinary tract infection and skin infections.
- Basing on the WHO 5 moments specific hand hygiene practices a varying percentage were observed. The higher compliance rate of before patient contact at 91.67% and after patient contact at 85.23% is attributed to the fact that a great number of healthcare workers are knowledgeable of health care associated infections. The lower rates in relation to before aseptic procedures at 49.59% could be attributed to the assurance of healthcare workers get from washing hands after “after patient contact”.
- The analysis also established that nurses are better at observing controls that can help prevent HAIs as compared to doctors. The analysis indicates 92% of nurses practice hand hygiene practices at various moments as discussed in WHO 5 moments. On the other hand, only 75.49% of doctors were observed to be practicing hand hygiene practices.

# Conclusion

- Firstly, most of the healthcare workers are knowledgeable about the practices to prevent HCAs. It is also concluded that the overall compliance rate of 81.48% is a clear indication that the healthcare workers have a good knowledge in terms of complying to the practices that can help control health care related infections.
- Finally, the analysis brings out the conclusion that total observation of hand hygiene practices is the best approach that can be implemented by hospitals to reduce the cases of healthcare associated infections. With regard to this, it is important for all the healthcare workers to observe hands hygiene at the WHO 5 moments.
- With regards to compliance, the study indicated the nurses have a higher compliance rate as compared to those of doctors.
- From the study, it was established from the health workers that some approaches can be implemented to prevent the spread of health care associated infections such as techniques include washing hands, Wearing caps, masks and shoe covers, educating the healthcare workers by regular seminars/training sessions on the importance and ways to avoid being infected.



# Recommendations

- Change gloves between tasks and procedures in the same patient especially when moving from a contaminated body area to a clean body area
- Wash hands with soap and water when they are soiled or visibly dirty with blood or other body fluids. Wet your hands, apply soap and then scrub them vigorously for at least 15 sec.
- Use an alcohol-based hand rub e.g. 0.5% chlorhexidine with 70% w/v ethanol, if hands are not visibly dirty. A combination of chlorhexidine and alcohol is ideal as they cover Gram-positive and Gram-negative organisms, viruses, mycobacteria and fungi.
- Wear a gown to prevent soiling of clothing and skin during procedures that are likely to generate splashes of blood, body fluids, secretions or excretions (IB).
- The sterile gown is required only for aseptic procedures and for the rest, a clean, non-sterile gown is sufficient.
- Ensure that staff (nurses, doctors, and housekeeping) enter a contact isolation room using the specified personal protective barriers (for e.g. gloves, gown) on each entry.
- Periodically monitor and record adherence with the hand hygiene guidelines - the number of times personnel washed their hands divided by the number of hand-hygiene opportunities, computed by ward or by service. Provide feedback to personnel regarding their performance.

*Thank  
you*

