

Evaluation of Hand Hygiene Compliance among Health Care Workers of ICU at Tertiary Care Hospital Chandkheda, Gujarat (India)

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Abstract: *Introduction:* Hand hygiene is one of the simplest and most effective methods to reduce the risk of cross transmission of infection in healthcare workers. By regular monitoring of hand hygiene compliance among healthcare workers and conveying them proper guidance, we can have successful hand hygiene. *Aims & Objectives:* To achieve good hand hygiene compliance and to reduce hospital acquired infection. *Material and Methods:* Cross sectional observational study was conducted in tertiary care hospital. Single observer direct observation technique was used and hand hygiene compliance was noted. *Results:* Hand hygiene compliance of WHO 5 moments was compared among doctors, nurses and other staff of ICU. Results were calculated for overall compliance. *Conclusions:* Hand hygiene is associated with positive attitude of health care worker. It is a long way to go for infection control practices in present scenario. The first step of infection control practices is hand hygiene. With good training and support of health care worker and administration. We can achieve good hand hygiene compliance and we can reduce hospital acquired infection.

Keywords: Hand hygiene, infection control, healthcare workers, hospital acquired infection.

1. Introduction

Hand hygiene is one of the simplest and most effective methods to reduce the risk of cross transmission of infection in healthcare workers. Healthcare associated infection (HAIs) are a major cause of increasing morbidity and mortality. A high prevalence of 19% of HAIs poses a serious challenge for health care providers in developing countries. 50% of such HAIs are transmitted through hands of health care workers (HCWs).

Hands of HCW's remain common mode of transmission of HAIs. Therefore, effective hand hygiene (HH) is the cornerstone among all the measures of preventing HAIs.¹⁻⁹

Microbial flora of hand^{2,4,5}

Microbial flora of hand comprises of transient flora and resident flora; both considerably differ from each other

Difference between resident flora and transient flora of hand.

	Resident flora	Transient flora
Site	Resides on stratum corneum and skin surface	Colonizes on superficial layer of the skin surface
Normal flora	Yes	No
Pathogenic Potential	Non - pathogenic	Pathogenic
Transmission	Not easily transmitted	Easy, by direct or indirect contact
Removal	Difficult, by surgical scrub	Easy, by hand - wash or rub
When reduction is indicated	Only before surgery or aseptic procedure	During routine patient care activities
Examples	Diphtheroids Propionibacterium CONS Malassezia furfur	GNB, MRSA, MSSA, VRSA, VRE, Clostridium difficile, Norovirus

(CONS: coagulase - negative staphylococci; MRSA: methicillin - resistant S. aureus; MSSA: methicillin - sensitive S. aureus; VRSA: vancomycin - resistant S. aureus; VRE: vancomycin - resistant enterococci; GNB: Gram - negative bacilli).

Hand Hygiene Methods^{1,2,3,4,5}

There are three methods of hand hygiene: handrub, handwash and surgical hand scrub. The indications for all

three methods are described below and the method of performing handrub and handwash described below

Indications for using hand hygiene methods ^{2,7}

Indications for using handrub:

- Handrub should be used during routine clinical rounds and handling the patient
- If the hands are not visibly dirty, not contaminated with blood, or body fluids

Indications for using handwash:

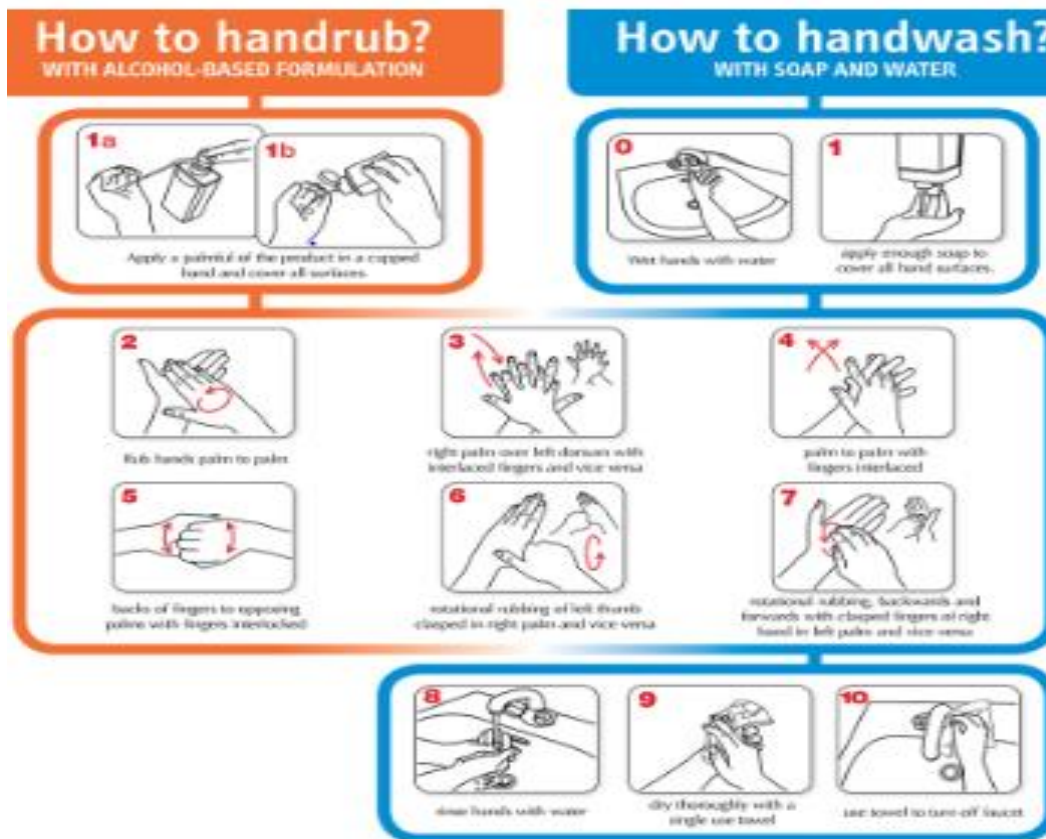
- Hands are visibly dirty, contaminated with blood, or body fluids

- Potential exposure to spore forming organisms, (e. g. Clostridioides difficile); nonenveloped viruses (e. g. Norovirus, rotavirus, Enteroviruses)
- Handling patients having diarrhea
- After using restroom
- Before handling medication or food

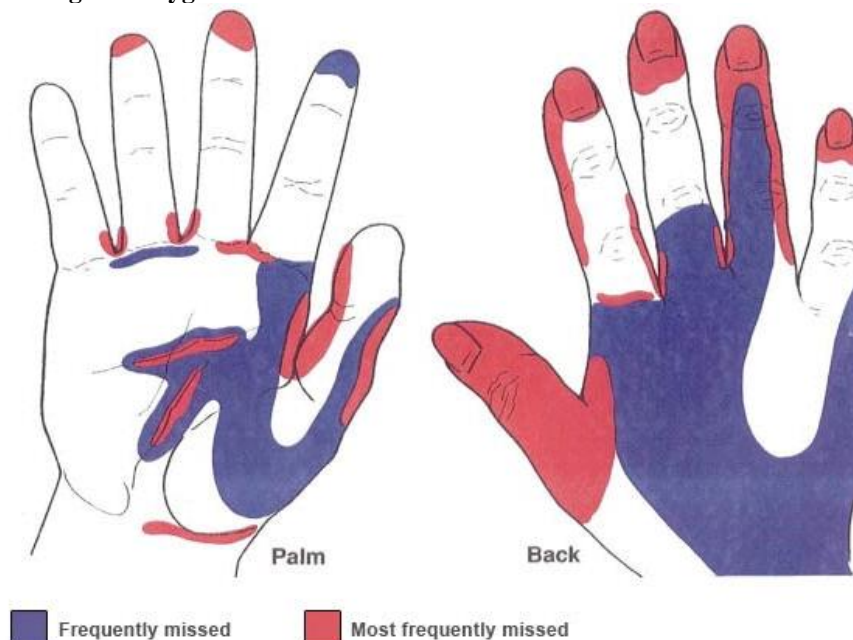
Indications for using surgical hand scrub:

- Prior to any surgical procedure and also in - between the cases

Method of performing handrub and handwash



Area of hand missed during hand hygiene



World Health Organization (WHO) launcher a global campaign of "SAVE LIVES: CLEAN YOUR HANDS" in 2009, Promotes "5 Moments of HAND HYGIENE". It was a natural extension of the WHO's First Global Patient Safety Challenge: CLEAN CARE IS SAFER CARE". The 5th May every year is celebrated as "WORLD HAND HYGIENE DAY".¹⁰

Aims & Objectives

To achieve good hand hygiene compliance and to reduce hospital acquired infection.

2. Material and Methods

- 1) Cross sectional observational study was conducted in ICU of tertiary care hospital.
- 2) Single observer, direct observation technique was used and hand hygiene opportunities was noted among health

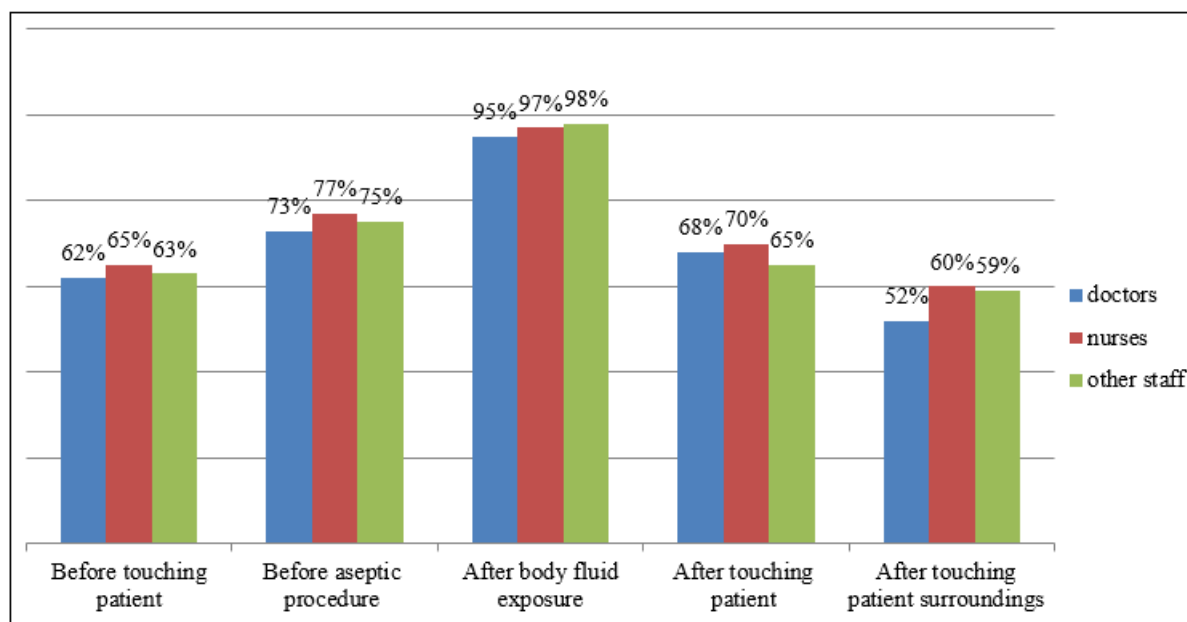
care workers (HCWs) (Doctors, Nurse, Other staff) were observed during routine patient care.

- 3) Hand hygiene compliance was noted for all 5 moments of hand hygiene as per WHO.
 - a) Before touching patient
 - b) Before aseptic procedure
 - c) After body fluid exposure
 - d) After touching patient
 - e) After touching patient surroundings

3. Results

- A total 318 HH opportunities were observed 159 doctors, 100 nurse, 59 other staff opportunities were observed.
- The compliance was compared among individual categories as well as for each moment of HH.

Hand Hygiene done by health care worker



4. Discussion

- In our study Hand Hygiene done for exposure to a body fluid by doctor (95%), nurses (97%), other staff (98%) and after touching a patient by doctor (68%), nurses (70%), other staff (65%) followed by before touching a patient by doctor (62%), nurses (65%), other staff (63%) and before any aseptic procedures by doctor (73%), nurses (77%), other staff (75%).
- While we compare with the study Gulilat K, Tiruneh G. among the 5 moments of hand hygiene recommended by WHO, HHC was observed mostly after risk of exposure to a body fluid (84.77%) or after touching a patient (71.5%) followed by (69.24%) compliance before touching a patient and (60%) compliance before any aseptic procedures.¹¹
- Data analysis revealed that compliance of hand hygiene in nurses is better than other health care worker.
- HH compliance remain more or less same but in after touching patient surrounding moment doctors HH is less than other health care worker.

- In maximum of occasions, health care worker had responded that their hand were not visibly dirty and while wearing of gloves was reason given by health care worker for not following hand hygiene.
- Hand hygiene in usually practiced by cleaning hands with soap and water or using alcohol based hand rub.
- Decrease in prevalence of HAIs means lesser amount of antibiotics required to treat them, thus decreasing the rate of antimicrobial resistance (AMR).

5. Conclusion

Hand hygiene is associated with positive attitude of health care worker. It is a long way to go for infection control practices in present scenario. The first step of infection control practices is hand hygiene. With good training and support of health care worker and administration. We can achieve good hand hygiene compliance and we can reduce hospital acquired infection.

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