

International Journal of Innovative Pharmaceutical Sciences and Research

www.ijipsr.com

HAND HYGIENE- A REVIEW

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Abstract

Proper hand hygiene helps the patient in hospital, nursing homes and long term care facilities who are at high risk of developing infections that they did not have before admission. WHO regards hand hygiene is the most important method to prevent spread of infectious disease which is associated with increase morbidity, mortality, and increased health care cost prolonged hospital stay and antibiotic resistance in both acute and long term care facilities. Control of compliance is one of the interventions to improve hand hygiene which is mostly carried out by direct observation. Timely practice of both hand hygiene and protection of skin may improve the adherence among society.

Keywords: Hand Hygiene, Antibiotic Resistance, Infectious Disease, Adherence.

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INTRODUCTION

Hand hygiene is considered as one of the most important and effective method for preventing infection hence hands is the primary mode of transmission of infectious disease [1]. It is the simplest method to prevent increasing severity of illness and complexity of treatment superimposed by multidrug resistance, pathogen infection care [2]. Hand hygiene such as hand washing and hand rub has been the corner stone of infection prevention and control measures in reducing HCAs (centre for disease control 2010) [3]. Routine or daily hand washing with soap and water has been cited by WHO as being the most important hygiene measure in preventing the spread of infection [4]. In mid 1800s the concept of hand hygiene was first introduced by Hungarian physicians named Ignaz who found that when physicians washes their hand before delivery babies, it prevent death in post prandom women [5]. In healthcare institutions and in the community, improving hand hygiene remains the major challenge for infection control practitioners. Spreading of infection is one of the most serious problems that are facing by the developing countries especially in high risk settings such as hospitals; the rate of infectious disease in developing countries remains extremely high[6]. Finding a proper method to improve hand hygiene is difficult. The effort to improve hand hygiene mainly focused on education [23]. It is estimated that at any one time, more than 1.4 million people worldwide are suffering from infections acquired in hospitals. In developing countries between 5% and 10 % of patients acquired one or more infections. it is established that at one time more than 1.4 million people worldwide are suffering from infection acquired in hospital [7].

IMPORTANCE OF HAND HYGEINE

Hand hygiene is considered as the first line defense against germs. Major to more severe illness such as meningitis, flu, hepatitis A, and most type of infectious diarrhea. Diarrhea is the second largest killer of children aged 1-15 month. Poor sanitation and hygiene are linked to high rates of fecal borne illnesses, such as diarrhea worm infections. These infections leads the bodies ability to absorb nutrients, they can lead to malnutrients, stunting and death n [17]. To minimize these type of infections we should make regular hand washing as a rule among public especially, before eating and cooking, after using bathrooms after cleaning around the house, after touching animals, including family pets before and after visiting of taking care of any sick persons, after coughing or sneezing, after being outside [8]. In both developing and developed countries the rate of diarrheal cases seems to be reduced through the implementation of effective hand washing

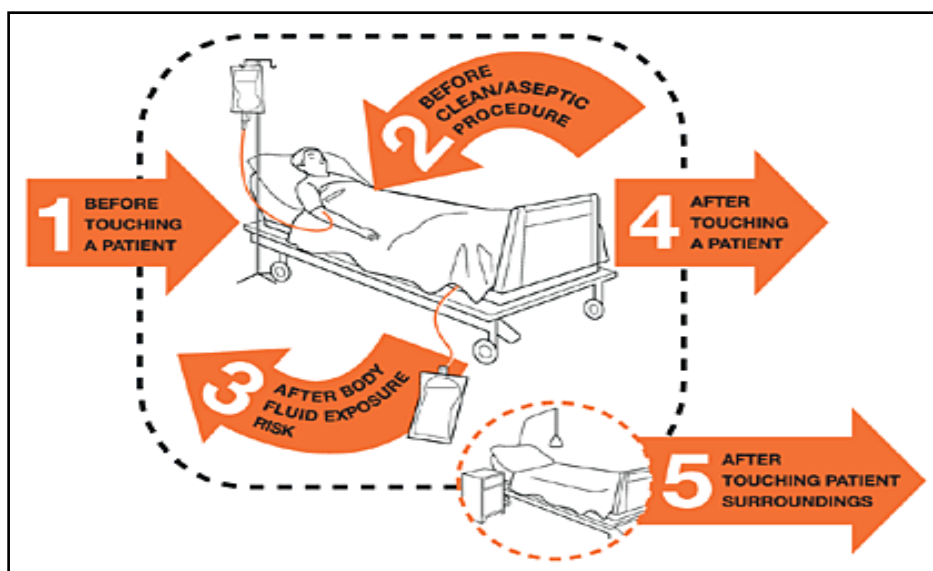
programs. Approximately 42-47% reduction in the diarrheal incidence was found, which could reduce the number of death by about one million [9]. Hospital acquired infections are occurring in 10% of all in patients among this infections 1/3 are preventable through proper hand washing [28]. In hospital settings organisms found on health care workers (HCW) hand after patient contact may include klebsilla spp, streptococcus auries, clostridium difficile, MRSA and gram negative bacteria. The HCW's hand may also contaminate through touching the contaminated patient environment. This spread of infection between patients can be limited by hand washing among health care workers before and after patient contact[5]. Proper hand washing include washing of hand with warm water by using soap and lather up for about 20secs and then rinse and dry with a clean towel [8]. The best way to stop the spreading of germs is proper hand washing five common ways the germs are spread include-Nose, mouth or eyes to hands to others, hands to food, foods to hand, infected Childs hand to other children, animal to people and also the health care workers take responsibility for making sure that the hand washing becomes an every part of patient care [10, 30]. According to new CDC data approximately one in twenty five patients acquires a health care associated infections during the hospital care. Adding up to 722000 infections a year of these 75000 patients die of their infections [5]. A few second you spend at the sink could save you from lots of diseases and make you away from doctors clinic [8].

AGENTS USED IN HAND HYGIENE

The hands of health care workers are found to be the principle route of transmission of infections [18]. Hence the transient flora must be eliminated by washing or disinfecting the hand to make the health care workers ready for next patient contact [11]. While selecting the product for hand washing the major determinants are antimicrobial profile, user acceptance, effectiveness, and cost. The product should also have at least bactericidal, fungicidal (yeast) and virucidal (coated viruses) activity [2]. The WHO provide complete guide for product selection, and these are the basic products to be used [29]. The antimicrobial soap has combined action of both cleaning as well as removal of foreign material with an antiseptic material that kills the microorganism. Cleaning of hands with plain soap will remove the foreign materials and microorganisms are not killing [12]. Alcohol based preparations are found to be more effective and rapid action than product containing other antiseptics. The antibacterial activity is due to their ability to denature the protein [12] Out of all antiseptics alcohol have excellent activity and most rapid bactericidal activity hence they are the preferred agents for hand rubs, so called "water less hand disinfection". The excellent spreading quality and rapid evaporation added the value [11].

In the ICUs, use of alcohol based hand disinfection would decrease the time for hand hygiene. In high risk ward or during outbreaks relevant additional activity against fungi, mycobacterium, and bacterial spore are necessary. The pre-operative hand hygiene should include at least bactericidal and fungicidal agents because most of the health care worker hand may carry yeast and surgical-site infections have also been associated with hand carriage of yeasts during an outbreak [2]. The recommendations to improve hand hygiene is updated, hence hand washing now a days has been replaced by hand rubs [26].

WHO 5 MOMENTS OF HAND HYGIENE



The “my 5 moments” of hand hygiene approach defines the key moment when health care workers should perform hand hygiene.

This approach recommends health care workers to clean their hands:

- Before touching the patients
- Before clean/aseptic procedures
- After body fluid exposure/risk
- After touching a patient, and
- After touching patient surrounding

MEASURING HAND HYGIENE

The implementation of hand hygiene practice can help to improve the quality of health care. The WHO'S “my five moments for hand hygiene is a very nice example of implementation science. There are several methods to monitor the adherence to hand hygiene which includes DIRECT OBSERVATION: which is considered as the standard method for evaluation of hand hygiene

practice [13]. The compliance increases dramatically when these observers who are usually well known to the staff and also the compliance rate declines when those people are no longer around [5]. ELECTRONIC COUNTER METHODE: compliance is measured by use of electronic hand wash counters. PRODUCT UTILIZATION MEASUREMENT: by measuring the volume of product utilizes can also help to measure the compliance and this is also considered as a proxy method for direct observation method [13].

BARRIERS TO HAND HYGEINE

Hand hygiene is the best way to avoid spreading of infections from one another still there exist some barriers to appropriate hand hygiene. The main barriers include skin irritation, in assessable supplies, over workload of physicians, nurses and other health care providers. Interference with worker-patients relationship, patient needs perceived as priority, wearing gloves, under staffing and insufficiencies time lack of knowledge about the importance and the steps of hand hygiene forgetfulness, insufficient sinks ignorance of guidelines [24,25]. The use of electronic device reminders to printed information is considered as an aid to overcoming barriers to discussing hand hygiene with physician [27].

STRATEGIES TO IMPROVE COMPLIANCE

There are several interventional methods to improve the hand hygiene among health care workers as well as among patients and other care givers. The educational interventional programs seems to produce great impact on the performance of health care workers, especially the programs used cognitive, emotional and behavioral method [14]. Also several compliance programs have been developed by CDC, institute for Healthcare Improvement, joint commission, and WHO and are widely available and implemented in various heath care institutions [15]. The CDC has published a guideline, interactive training and educational materials, and posters and posters for hand hygiene compliance. The guideline provide several suggestions for educational and motivational programs, these suggestion provide information regarding when hand hygiene is required, proper hand hygiene techniques, method to make the skin safe ,Indications for gloves use and expectations of managers. The educational posters help the health workers to demonstrate proper hand hygiene techniques and remind the health care workers about the importance of hand hygiene [16].

A change in hand hygiene agents is recommended during winter season, due to an increase in skin problems. Use of alcohol based solutions in critical care unit, in high stress work conditions, understaffing is the best method for achieving and maintaining a high level of compliance with

hand hygiene. Comparing with traditional techniques such as unmediated soaps, water or medicated hand antiseptic agents, alcohol based hand rub required much less time and rapid action with less skin irritation [11]. The custom of hand hygiene cannot be created by force or mandate. Everyone should accept the need for hand hygiene [6].

CONCLUSION AND RECOMMENDATIONS

Hand hygiene is one of the major processes that health care workers should follow and it is not an optional method and is mandatory [19]. Even though there are many issues related to hand hygiene which remains unresolved. The hand hygiene practice not only implemented to health care settings but also to be implemented all levels of society. It is believed that lack of motivation and increased workload may be the two main cause of poor complaints [20].

Proper education and implementation of multiple strategies can help to improve the hand hygiene practice. Proper monitoring and providing feedback can also help to improve the rate of compliance [19]. Hand hygiene at appropriate time is very important in all areas of patient care which will help to improve the quality of care and is important to patient and their family and the practice should be continued to all health care settings [21]. Evidenced based hand hygiene will help to prevent transmission of nosocomial infection and also help to keep the employees, skin healthy [18]. Furthermore observational studies are recommended to objectively measures hand hygiene compliance

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