



## IMPLEMENTING A SPECIAL PROTOCOL TO PROMOTE HYGIENE AMONG PATIENTS AND HEALTHCARE PROVIDERS; REVIEW

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### Abstract:

An infection that is connected with medical care is a significant contributor to both morbidity and mortality. One of the most effective preventative measures is practicing proper hand hygiene. The purpose of this article is to provide a summary of recent research that demonstrate the value of multidisciplinary hand-hygiene promotion programs and the possible role that alcohol-based hand rubs could play in enhancing techniques for hand hygiene. It is possible to increase the compliance of health care professionals with regard to HH by providing them with information, education, and communication while also monitoring them continuously.

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### Introduction:

Hand hygiene (HH) is the single most essential intervention for avoiding nosocomial infections, the spread of multidrug-resistant bacteria, and mortality in a health care setting [1]. [HH] stands for "hand hygiene." According to the findings of a number of studies, the general adherence to hand-hygiene procedures is lower than fifty percent [2]. "My five moments of hand hygiene" was designed by the World Health Organization (WHO) in 2009 with the intention of reducing the burden of health care-associated infections (HAI). These times include: before touching a patient, before procedures, after exposure to body fluids, after touching a patient, and after touching a patient's surroundings [3].

On the basis of the World Health Organization's five moments of hand hygiene, the authors carried out this study in order to enhance the level of hand hygiene compliance in their environment. Both the investigation of the influence of hand hygiene compliance on the rate of healthcare-associated infections (HAIs) in their special newborn care unit (SNCU) and the improvement of hand hygiene compliance among health care professionals from 69 to 85 percent by the end of the fourth month were the primary goals of the current project [3].

With the introduction of the "5 Moments of Hand Hygiene" in 2009, the World Health Organization (WHO) initiated the Patient Global Safety Challenge in 2005. The goal of this initiative was to minimize the transmission of hospital-acquired illnesses [4]. The "5 moments" provide healthcare professionals with information regarding the five distinct instances in which they should cleanse their hands while providing care to patients. These instances are before patient contact, before aseptic procedure, after exposure to body fluids, after patient contact, and after communication with the patient environment [4]. The Healthcare Infection Control Practices Advisory Committee (HICPAC) has previously provided guidelines for HH before and after entering a patient's room [5]. This expanded on that guidance. After that, in 2009, the World Health Organization (WHO) expanded the Patient Global Safety Challenge by establishing a global campaign called "SAVE LIVES: Clean Your Hands." This campaign assisted in translating commitments to improve HAI rates into actual action at the point of care, replete with a toolbox for HH improvement [6].

### Review:

It has been demonstrated that the hands of healthcare staff (HCP) are microscopically polluted

and serve as a vector for the spread of diseases throughout the healthcare infrastructure [1]. In the United States of America, healthcare-associated infections (HAIs) affect one out of every thirty-one patients who are hospitalized. Hand hygiene continues to be an essential component of infection prevention for all types of HAIs, including central line-associated bloodstream infections (CLABSI), catheter-associated urinary tract infections (CAUTI), surgical site infections (SSI), ventilator-associated pneumonia (VAP), and *Clostridium difficile* [7]. Having hands that are contaminated makes it easier for diseases to spread from one person to another, including between patients, healthcare personnel, and the healthcare environment [6]. The healthcare professionals working in a wound care clinic got at least one pathogen on their hands during 28.3 percent of all patient care encounters [5]. This occurred in the outpatient environment. Although the hands of healthcare professionals constitute the primary vector for transmission, the "transfer efficiency" varies depending on the organism, as well as other parameters like as humidity and contact surface [6]. It is estimated that twenty percent of healthcare-associated infections (HAIs) that occur from HCP hands are connected to direct or indirect hand-to-mucosa contact. There are a number of activities that are done in hospitals to avoid the spread of illnesses; nevertheless, the most straightforward and essential of these practices is hand hygiene (HH). In spite of this, healthcare facilities continue to struggle with a lack of compliance with hand hygiene standards, which may be a significant factor in the further spread of healthcare-associated infections (HAIs) and the development of antibiotic resistance [7].

It was in the 1860s that Ignaz Semmelweis, a Hungarian physician, discovered the association between contaminated provider hands and puerperal sepsis in a maternity unit. This was even before Lister invented antiseptics [7, 8]. The evidence that supports the need of hand cleanliness dates back to the period of Ignaz Semmelweis. One of the most famous quotes attributed to Florence Nightingale is that "Every nurse ought to take cautious to wash her hands quite frequently during the day." On the other hand, it is challenging to obtain and maintain high levels of compliance with hand hygiene among healthcare personnel. It is "elective" hand hygiene opportunities that are abundant in hospital settings since they do not elicit the intrinsic urge to clean the hands [9]. According to behavioral theory, healthcare staff (HCP) will execute "inherent" hand hygiene when their hands are visibly filthy, sticky, or gritty. It is challenging

to treat this behavioral aspect of HH because of the complexity of the situation.

When compared to the previous cycle, the PDSA 2 cycle showed a decrease in the amount of HH compliance that was observed. Lockdown restrictions, understaffing as a result of COVID-19, extended work hours, a lack of positive role modeling, and the absence of periodic review team meetings were the factors that contributed to the inadequate compliance that was seen throughout this cycle. It was demonstrated by Pittet et al. that the most significant risk factors for noncompliance include an increase in workload as well as a high demand for precise adherence to HH [10].

A large percentage of HH efforts were made prior to contacting a patient; however, this percentage dropped after the patient was in contact with other patients and after the patient had been exposed to their environment. Compared to the baseline of 18.18–66.37% after three cycles, the utilization of HH after contact with the patient's surroundings showed a substantial improvement. However, when compared to other instances of hand hygiene, the result demonstrated a poor level of cleanliness. After touching a patient's surroundings, the most common hand-hygiene chances that were missed were, according to a paper written by FitzGerald et al., and the authors propose that health care professionals be made aware of the bacterial spread that can occur even during activities that are believed to be low risk. The possibility for contamination of ward computers, case files, and door knobs should be the primary focus of education and intervention initiatives [11].

The World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) do not propose that hospitals create their own goals and aggressively monitor and provide feedback on their performance. Regulatory bodies have on occasion imposed a particular target; however, the Joint Commission's current requirements for hospitals include the obligation to have a health and wellness program that adheres to the guidelines established by the Centers for Disease Control and Prevention (CDC) and/or the World Health Organization (WHO), the set of goals for improving compliance with HH guidelines, and the improvement of compliance with guidelines based on those goals [12]. It is essential to control HH compliance goals in accordance with the requirements and capabilities of each participating hospital, while simultaneously acknowledging that no facility or personnel has yet reached perfection

in HH, despite the fact that it is essential to the prevention of infections because of its significance. Based on the findings of one review, the maximum amount of ABHR that can be used throughout a 12-hour shift is approximately 140, with the highest number of applications occurring at approximately 15 per hour [13]. Intensive care units have the highest number of home health care chances (11.4 per patient hour), while mother-baby units have the lowest number (3.4 per patient hour). The mean and median numbers of medical and surgical units are 71.6 and 73.9 possibilities per patient day, with a median of 46.7 on day shift compared to 28.0 on night shift. The fact that there are so many different opportunities adds another layer of complexity to the discussion of how to adequately handle the many different motivators and barriers for HH [13].

Given the emphasis placed on HH as a crucial patient safety initiative, the scrutiny from regulatory agencies, and all of the efforts that have been made to improve compliance, it is reasonable to anticipate that the reported HH compliance in the literature may have improved over the course of the past decade. In spite of the fact that treatments have the potential to increase HH adherence, there is no evidence that any continuous and progressive improvement is taking place in the healthcare context over time. A systematic study conducted in 2015 found that the median rate of HH compliance was forty percent; unadjusted rates were lower in intensive care units (ICUs) (30–40%) compared to other settings (50–60%). The compliance rates of physicians were 33 percent lower than those of nurses, which was 48 percent, and the HH rates were 21 percent lower before patient contact than they were after patient contact, which was 47 percent. After unclean jobs, there is a greater degree of compliance observed [14]. In a meta-analysis and systematic review conducted in 2022, with the year 2010 serving as the starting point for the analysis, it was found that the rates for nurses were 52%, while the rates for doctors were 45%; the analysis revealed high heterogeneity [15]. HH rates may be lower in certain units or localities; for instance, the lowest HH rates are found in the area surrounding anesthetic care, ranking between 2 and 18 percent [15].

Prior to the World Health Organization's (WHO) adoption of the "5 moments" in 2009, a quasi-experimental study that was conducted between 2006 and 2008 addressing the implementation of the "5 moments" revealed greater compliance with HH opportunities. It was found that compliance was independently linked with gross national income (per head), and that the intervention had a

bigger effect (raising HH compliance and knowledge) in low- and middle-income (LMIC) countries than it did in high-income ones [12]. In low- and middle-income countries (LMIC), maternal health compliance was roughly 22.4% before the intervention and 46.1% after it; it did not vary significantly by category of health professional [12]. High-income nations saw their compliance rate increase from 54.3 to 68.5% after the intervention.

HCP compliance with ideal HH is further complicated by the fact that there are substantial infrastructure problems in low- and middle-income countries (LMIC). In situations where basic knowledge and resources are more scarce than in high-income nations, innovation may be required to bridge gaps. This could result in immediate and substantial progress, as well as a big return on investment, as demonstrated by the pilot program for the World Health Organization's "5 moments" [12].

#### Conclusion:

Hygiene of the hands continues to be the primary focus through which various parts of care bundles are connected in order to reduce the HAI. Increasing compliance with hand hygiene practices among health care professionals can be accomplished through the dissemination of information, education, and communication strategies. Nevertheless, regular monitoring and the presence of positive role models are required for these interventions. There is the potential for a major reduction in the strain placed on health care professionals, hospitals, and the economy if the implementation is carried out on a wide scale. An increased amount of focus ought to be made on the right way to do hand hygiene as well as the reasons why it is so crucial. There is a need for a deeper comprehension of the function of gloves, as well as the appropriate times to perform hand hygiene and replace them. It is necessary for the leadership of the system as well as senior healthcare practitioners to continue investing in them and increase their understanding of their importance as role models.

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