

Importance of Hand Hygiene in Health Care Setting

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The word hygiene comes from Hygieia, daughter of Asclepius and the Greek goddess of healing. At present hygiene refers to cleanliness or practice which leads to the absence or reduction of harmful infectious agents¹.

The concept of Hand Hygiene (HH) in relation to patient care began in 1840. In the maternity clinic of Vienna hospital where medical students usually came directly to delivery room from mortuary, the average maternal mortality rate due to puerperal fever was nearly 10%. On the contrary, the other clinic, which was attended by midwives, maternal mortality rate was only 2%. Ignaz Philipp Semmelweis, the pioneer of antiseptic procedure, observed this difference across both the clinics and instituted the policy of washing hands with chlorinated lime for those leaving the autopsy room that resulted in a drop in the rate of maternal mortality tenfold in 1950².

In 1995, the Hospital Infection Control Practices Advisory Committee (HICPAC) advised the use of soap or antiseptic agent for sanitation of hands, after leaving the patient's rooms infected with multidrug-resistant pathogens. In 2008, Global hand washing day was observed and in 2009 the World Health Organization launched a program linked with patients' safety called "Save Lives: Clean Your Hands"².

There are 2-3 million deaths worldwide each year from diarrhoeal diseases, many of which could be prevented simply by hand washing with soap³. Proper HH has been proven to decrease deaths from respiratory and diarrheal diseases in children under five by 21% and 30% respectively. Yet in 2021, an estimated 2.3 billion people globally did not get facilities to wash their hands with soap water at residence and almost 33 percent of the health facilities around the world lacked HH resources at patient care centres. About 50 percent schools throughout the world could not provide basic hygiene, causing suffering to 817 million children⁴.

It is the common habit of people to touch their eyes, nose and mouth frequently and germs can get into the

body through these routes. Teaching people about hand washing helps the whole community remain healthy. Hand washing education in the community reduces the number of people who get sick with diarrhea by 23-40%, diarrheal illness in people with weakened immune systems by 58%, respiratory illnesses, like fever and colds in general population by 16-21%, reduces absenteeism of school going children due to gastrointestinal illness in by 29-57%⁵.

Recognition of the importance of HH in the control of spread of infectious diseases is reflected in the increased number articles on HH in prominent general medical journals⁶. The Centre for Disease Control & Prevention has focused on improving the healthcare provider compliance to HH activities.

COVID-19 created a new dimension for Hand Hygiene with unprecedented attention, resources and political will. During last five years, 50 million people have gained access to basic HH facilities, at a rate of 0.3 million per day. At the current rate, almost two billion people would still lack access to basic HH facilities in 2030, negatively impacting other development priorities, including education, nutrition, health and economic growth⁴.

Hand hygiene is a health care issue that is considered to be cost effective way for reducing cross infections in both Advanced Health Care system and Primary Health Care centers. The practice of HH is considered simple yet met with little compliance of less than 40% among the health care providers⁷.

To address this problem strategies that are sustainable are being developed with maximum effort like "My Five Moments of Hand Hygiene" by World Health Organization. The moments included are before being in contact and after being in contact with the patient, before performing aseptic techniques and procedure, when exposed to body fluids that are hazardous and after being in touch with the patient environments. Another strategy is proper training of health workforce trainee of the health facility on how to prevent and control infections⁸.

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The transient flora colonize the superficial layers of the skin are frequently associated with nosocomial infection and can be removed by hand washing. They can be transferred by direct contact between human skin and work surfaces or food⁹. The number of microorganisms¹⁰ on intact areas of skin in the same person can vary from 100-106cm². Common pathogens available on hands of healthcare personnel include Methicillin-Resistant *Staphylococcus Aureus* (MRSA), and Vancomycin-Resistant *Enterococcus* (VRE). Multi drug resistant Gram Negative Bacteria (GNBs), *Candida* spp and *Clostridium difficile* can survive for more than 150 hours².

Backman et al reviewed 31 studies, among them 18 studies showed that HH compliance can lead to reduction of nosocomial infections. Ten other studies that showed reduction had a range between 0.37% in rotavirus to 57% in MRSA bacteria^{11,12}. There is improvement in HH practices following HH campaigns based on WHO's guidelines at national and sub-national level^{13,14}.

The efforts to improve the compliance of health care workers in relation to hand hygiene practice, by providing required facilities and conducting broad-based educational and motivational programs, only had minimal sustained success¹⁵. Therefore, there is a need to understand culture and the factors specifically driving sustainability in applying a multimodal comprehensive program¹⁵⁻¹⁶. Role models, group behaviour, hospital management communication openness and the level of managerial support can influence the reported levels of compliance.

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