

Importance of Hand Hygiene in General and Clinical Practice

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Hand hygiene could be defined as cleaning hands for removal of dirt and microorganisms. It is the most effective way to prevent the spread of infections. Usually it is done with soap and water or alcohol based hand rub but if not available hands can be cleaned with ash also¹.

Hands of health workers are the most common vehicle for the transmission of healthcare-associated pathogens from one patient to the other patient and within the healthcare environment. Hand hygiene is the basic measure for preventing the spread of healthcare-associated infections, but healthcare worker compliance with optimal practices remains low in most settings.

Hand washing with soap is one of the most effective and inexpensive way to prevent diarrhoea, cholera and acute respiratory infections. Diarrhoea and pneumonia together account for almost 3.5 million child deaths annually². Diarrhoeal episodes can be reduced upto 48% with hand washing with soap³.

There are critical times during the day when washing hands with soap is required to reduce transmission of microorganisms and diseases for example after defecation or using the washroom or after cleaning a child's bottom, and changing the diapers. Hand washing is also recommended when hands are visibly dirty, before feeding a child, before eating and before preparing food or after handling raw meat, fish, or poultry. Hands should be

washed after touching your nose, coughing and sneezing, before and after touching your eyes and face and after handling garbage. It is also important to wash your hands before and after caring for someone who is sick even if you have used gloves, before and after treating a cut or wound and after touching hospital surfaces like walls, stair rails or tables. It is also advisable to wash your hands after using remote controls or cell phones

Unfortunately, in many countries, there is a low prevalence of handwashing with soap. A study of handwashing in 54 countries in 2015 found that on average, 38.7% of households practiced handwashing with soap⁴.

Removal of microorganisms from skin is enhanced by the addition of soaps or detergents to water. Solid soap, because of its reusable nature, may hold bacteria acquired from previous users⁵. Liquid soaps with hands-free controls for use is preferable. Antibacterial soaps contain common antibacterial agents such as triclosan, but many strains of micro organisms are resistant to it. So, antibacterial soaps might not be as effective as they are marketed to be⁶.

Hot water used for washing hands is not hot enough to kill bacteria. Bacterial growth is much rapid at body temperature (37°C). Warm, soapy water is more effective than cold, soapy water for removing natural oils which hold soil and bacteria. Scientific studies have shown that using warm water has no effect on reducing the microbial load on hands⁷.

A hand sanitizer or hand antiseptic is a non-water-based hand hygiene agent. Hand sanitizers containing a minimum of 60 to 95% alcohol are efficient germ killers. They are most effective against bacteria and less effective against some viruses⁸.

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Frequent use of alcohol-based hand sanitizers can cause dry skin unless emollients and/or skin moisturizers are added to the formula which can be reduced or eliminated by adding glycerine and/or other emollients to the formula⁹. Many people in low-income communities cannot afford soap and use ash or soil instead which may be more effective than water alone, but may be less effective than soap. One concern is that if the soil or ash is contaminated with microorganisms it may increase the spread of disease rather than decrease it. Like soap, ash is also a disinfecting agent (alkaline). WHO recommended ash or sand as alternative to soap when soap is not available¹⁰.

Hand washing using hand sanitizing wipes is an alternative during travelling in the absence of soap and water. Alcohol-based hand sanitizer must contain at least 60% alcohol to be effective¹¹.

Medical hand-washing is for a minimum of 15 seconds, using generous amount of soap and water or gel to lather and rub each part of the hands. Hands should be rubbed together with digits interlocking. If there is debris under fingernails, a bristle brush may be used to remove it. Since germs may remain in the water on the hands, it is important to rinse well and wipe dry with a clean towel. After drying, the paper towel should be used to turn off the water (and open any exit door if necessary). This avoids re-contaminating the hands from those surfaces¹².

Symbolic hand washing, using water but no soap to wash hands, is a part of ritual hand washing featured in many religions, including Bahá'í Faith, Hinduism, and tevilah and netilatadayim in Judaism. Similar to these are the practices of Lavabo in Christianity and Wudu in Islam .

The promotion and advocacy of hand washing with soap can raise awareness, but to gain the benefits of hand washing long-term behavioural change of the population are required. Long term monitoring and evaluation are also required. So, prevention is better than cure. We should educate people about hand washing to decrease the transmission of diseases and promote better health.

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