



THE GENERAL SERVICES DIVISION OF THE PUBLIC WORKS DEPARTMENT IS INSTALLING WATERLESS ANTISEPTIC SOAP DISPENSERS AT STRATEGIC LOCATIONS THROUGHOUT CITY HALL AND OTHER PUBLIC FACILITIES FOR INFECTION CONTROL INTERVENTION TO PREVENT DISEASE TRANSMISSION

Recommendations

- Hand hygiene is an important infection control intervention to prevent the transmission of micro-organisms and should be practiced before and after client contact, when hands are visibly dirty, after using the washroom, and at other times when hands may be contain illness causing bacteria.
- Waterless hand hygiene rubs are a proven alternative to hand washing agents and are preferred in settings where there are time constraints or a lack of access to sinks and running water. (Visible organic material must be removed for waterless agents to exert their antimicrobial activity.)
- Skin emollients/moisturizers should be used to prevent skin damage from frequent hand washing. If skin emollients are used, care must be taken to ensure that specific products do not interfere with the activity of antiseptic hand hygiene products.

Background

Influenza, commonly known as the flu, is a contagious respiratory disease caused by a virus. It attacks the nose, throat, and lungs, and is different from a cold. Influenza symptoms usually come on suddenly and may include fever, headache, extreme tiredness, dry cough, sore throat, nasal congestion, and body aches. Most people who get the flu recover in a week or two, but some people develop life-threatening complications (such as pneumonia) as a result.

Seasonal (or common) flu is a respiratory illness that can be transmitted person to person. Most people have some immunity, and a vaccine is available.

Avian (or bird) flu is caused by influenza viruses that occur naturally among wild birds. The H5N1 variant is deadly to domestic fowl and can be transmitted from birds to humans. There is no human immunity and no vaccine is available.

Pandemic flu is virulent human flu that causes a global outbreak, or pandemic, of serious illness. Because there is little natural immunity, the disease can spread easily from person to person. Currently, there is no pandemic flu.

The hands of those who provide service to the public cannot avoid multiple physical contact opportunities for microorganisms to travel between the service provider and the client. Hand washing has traditionally been identified as the most important infection control intervention to prevent disease transmission and is recommended before and after contact with clients before and after performing transactions; and after using the washroom. In recent years, a plethora of hand hygiene products, including many with

antimicrobial activity, have become available and some are marketed to the general public.

Just like other bodily organs, human skin has a normal physiological state. The function of skin as a barrier is maintained by water content, intercellular lipids, temperature and rates of desquamation. Skin normally is colonized by bacteria that can reach counts as high as 1,000 colony-forming units/cm² near the hands. Bacteria are thought to be resident if they are attached to deeper layers of skin, and transient if they colonize superficial layers of skin. Hand hygiene eliminates the transient flora that is acquired by staff during direct contact with clients or contaminated environmental surfaces adjacent to a client. The products available can be categorized into hand washing agents (plain soaps or antiseptic soaps) and handrubs (antiseptic waterless agents).

Plain Soap

Hand washing with plain soap suspends microorganisms and mechanically removes them by rinsing with water. Plain bar soap, leaf, tissue or liquid preparations are comprised of detergents with surfactant or 'surface-active' activity that holds dirt or transient flora in suspension. Cleaning is due to the physical removal of foreign material or microorganisms, not killing.

Antimicrobial Soap

An antimicrobial soap combines the cleaning action of the physical removal of foreign material with an antiseptic agent that kills microorganisms. The antimicrobial agents (eg, alcohol, chlorhexidine, iodine, triclosan, hexachlorophene) usually have sustained activity on the skin that continues to reduce the number of microbial flora after the hand wash is complete.

Waterless Agents

Antiseptic hand rubs are waterless agents with disinfectant properties that decrease the number of microorganisms present. The individual applies a small amount (approximately 3 mL) to the hands, then rubs the hands together until the agent has dried. An antiseptic hand rub does not require the use of exogenous water. Most alcohol-based hand antiseptics contain either isopropanol, ethanol, n-propanol or a combination of two of these products. They are available in varying concentrations, or in combination with a small amount of other antiseptics. Antimicrobial activity is due to their ability to denature proteins. Because these hand rubs do not remove organic material, they cannot be used if hands are visibly soiled.

Considerations For Use

The important considerations in evaluating the suitability of a hand hygiene product for use in a public setting are its efficacy in preventing the transmission of microorganisms, adverse consequences (odor, skin damage) for service providers, ease of access for users, affordability, and concerns about the induction of resistant bacteria. Skin irritation from hand washing (dryness, dermatitis) affects compliance with hand hygiene and increases the ability of pathogenic bacteria to adhere to skin.

Studies of the efficacy of hand hygiene agents have shown that antiseptic agents (antimicrobial soaps or waterless antiseptic hand rubs) are significantly more effective in

reducing microbial counts on skin than plain soap and water hand washing in reducing skin flora). The *Guidelines for Hand Hygiene in Healthcare Settings* produced by a joint task force of national infection control societies and the Centers for Disease Control and Prevention concluded that alcohol-based hand rubs are more effective than washing hands with antimicrobial or nonantimicrobial soap, can be made more accessible, require less time to use, and are less prone to cause irritant contact dermatitis in service settings that involve ambulatory clients who are not at high risk for serious infectious diseases. If the risk of infection is thought to be increased, an antimicrobial hand hygiene agent will reduce the risk of transmission of pathogen organisms. Waterless agents have the additional benefit of not requiring access to water and sinks, ease of use, rapid action and no risk of antimicrobial resistance. Infection control personnel are an invaluable resource when making a choice among the plethora of hand hygiene agents that balance client safety, service worker acceptability and affordability.

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