

Revised CDC Guidelines for Hand Hygiene in Health Care Settings

On October 25, 2002, the Centers for Disease Control (CDC) published their updated hand hygiene guidelines, developed by CDC's Health Care Infection Control Practices Advisory Committee (HICPAC), in collaboration with the Society for Healthcare Epidemiology of America (SHEA), the Association of Professionals in Infection Control and Epidemiology (APIC), and the Infectious Disease Society of America (IDSA). This report, *Guideline for Hand Hygiene in Health Care Settings*, is part of an overall CDC strategy to promote patient safety by reducing infections.

This issue of *Disease Prevention News* (DPN), which provides a summary of these new CDC guidelines, updates the March 30, 1998, issue of DPN on hand washing by providing an easy-to-use summary of the most recent CDC guidelines. Also included is our revised public health education flier, *Wash Your Hands!*

The most important changes concern recommendations for use of hand sanitizers. In 1961, the US Public Health Service produced a training film that demonstrated hand washing techniques recommended for use by health care workers (HCWs). At the time, recommendations directed that personnel wash their hands with soap and water for 1–2 minutes before and after patient contact. Rinsing hands with an antiseptic agent was believed to be less effective than hand washing and was recommended only in emergencies or in areas where sinks were unavailable.

In 1975 and 1985, formal written guidelines on hand washing practices in hospitals were published by CDC (5,6). These guidelines recommended hand washing with nonantimicrobial soap between the majority of patient contacts and washing with antimicrobial soap before and after performing invasive procedures or caring for patients at high risk. Use of waterless antiseptic agents (eg, alcohol-based solutions) was recommended only in situations where sinks were not available.

In 1988 and 1995, guidelines for hand washing and hand antisepsis were published by the Association for Professionals in Infection Control (APIC). Recommended indications for hand washing were similar to those listed in the CDC guidelines. The 1995 APIC guideline included more detailed discussion of alcohol-based hand rubs and supported their use in more clinical settings than had been recommended in earlier guidelines. In 1995 and 1996, the Healthcare Infection Control Practices Advisory Committee (HICPAC) recommended that either antimicrobial soap or a waterless antiseptic agent be used for cleaning hands upon leaving the rooms of patients with multidrug-resistant pathogens (eg, vancomycin-resistant enterococci and methicillin-resistant *Staphylococcus aureus*). These guidelines also provided recommendations for hand washing and hand antisepsis in other clinical settings, including routine patient care. Although the APIC and HICPAC guidelines were adopted by the majority of hospitals, adherence of HCWs to recommended hand washing practices has remained low. Recent developments in the field have stimulated a review of the scientific data regarding hygiene and the development of new guidelines designed to improve hand hygiene practices in health care facilities.

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Also in this issue:
Wash Your Hands!

Recommendations for Hand Hygiene in Health Care Settings

The following recommendations were prepared by a task force comprising representatives from HICPAC, the Society for Healthcare Epidemiology of America (SHEA), APIC, and the Infectious Diseases Society of America (IDSA).

These recommendations are designed to improve hand hygiene practices of HCWs and to reduce transmission of pathogenic microorganisms to patients and personnel in health care settings. This guideline and its recommendations are not intended for use in food processing or food service establishments, and are not meant to replace guidance provided by FDA's Model Food Code. As in previous CDC/HICPAC guidelines, each recommendation is categorized on the basis of existing scientific data, theoretical rationale, applicability, and economic impact.

Categories

CDC/HICPAC System

Category IA. Strongly recommended for implementation and strongly supported by well-designed experimental, clinical, or epidemiologic studies.

Category IB. Strongly recommended for implementation and supported by certain experimental, clinical, or epidemiologic studies and a strong theoretical rationale.

Category IC. Required for implementation, as mandated by federal or state regulation or standard.

Category II. Suggested for implementation and supported by suggestive clinical or epidemiologic studies or a theoretical rationale.

No recommendation. Unresolved issue. Practices for which insufficient evidence or no consensus regarding efficacy exist.


Food and Drug Administration (FDA) System

The 1994 FDA Tentative Monograph for Health Care Antiseptic Drug Products divides products into 3 categories as follows:

Patient preoperative skin preparation. a fast-acting, broad-spectrum, and persistent antiseptic-containing preparation that substantially reduces the number of microorganisms on intact skin.

Antiseptic handwash or HCW handwash. an antiseptic-containing preparation designed for frequent use. It reduces the number of microorganisms on intact skin to an initial baseline level after adequate washing, rinsing, and drying. It is broad-spectrum, fast-acting, and can be persistent.

Surgical hand scrub. an antiseptic-containing preparation that substantially reduces the number of microorganisms on intact skin. It is broad-spectrum, fast-acting, and persistent.

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The full CDC report of October 2002 is available at the following Web site: www.cdc.gov/mmwr/preview/mmwrhtml/rr5116a1.htm. Please refer to the complete CDC report for a comprehensive literature review, as well as the lengthy citation of sources.

Definition of Terms

alcohol-based hand rub: an alcohol-containing preparation designed for application to the hands for reducing the number of viable microorganisms on the hands. In the United States, such preparations usually contain 60%—95% ethanol or isopropanol

antimicrobial soap: soap (ie, detergent) containing an antiseptic agent.

antiseptic agent: antimicrobial substances that are applied to the skin to reduce the number of microbial flora. Examples include alcohols, chlorhexidine, chlorine, hexachlorophene, iodine, chloroxylenol (PCMX), quaternary ammonium compounds, and triclosan.

antiseptic handwash: washing hands with water and soap or other detergents containing an antiseptic agent.

antiseptic hand rub: applying an antiseptic hand sanitizer to all surfaces of the hands to reduce the number of microorganisms present.

cumulative effect: a progressive decrease in the numbers of microorganisms recovered after repeated applications of a test material.

decontaminate hands: reduce bacterial counts on hands by performing antiseptic hand rub or antiseptic handwash.

detergent. compounds (ie, surfactants) that possess a cleaning action. They are composed of both hydrophilic and lipophilic parts and can be divided into 4 groups: anionic, cationic, amphoteric, and nonionic detergents. Although products used for handwashing or antiseptic handwash in health-care settings represent various types of detergents, the term “soap” is used to refer to such detergents in this guideline.

hand antisepsis. use of either antiseptic handwash or antiseptic hand rub.

hand hygiene. general term that applies to either handwashing, antiseptic handwash, antiseptic hand rub, or surgical hand antisepsis.

hand washing. washing hands with plain (ie, nonantimicrobial) soap and water.

persistent activity. the prolonged or extended antimicrobial activity that prevents or inhibits the proliferation or survival of microorganisms after application of the product. This activity may be demonstrated by sampling a site several minutes or hours after application and demonstrating bacterial antimicrobial effectiveness when compared with a baseline level. This property also has been referred to as “residual activity.” Both substantive and nonsubstantive active ingredients can show a persistent effect if they substantially lower the number of bacteria during the wash period.

plain soap. detergents that contain no antimicrobial agents or only low concentrations that are effective solely as preservatives.

substantivity. the attribute of certain active ingredients that allows them to adhere to the stratum corneum (ie, remain on the skin after rinsing or drying) and provide an inhibitory effect on the growth of bacteria remaining on the skin.

surgical hand antisepsis. antiseptic handwash or antiseptic hand rub performed preoperatively by surgical personnel to eliminate transient and reduce resident hand flora. Antiseptic detergent preparations often have persistent antimicrobial activity.

visibly soiled hands. hands showing visible dirt or visibly contaminated with proteinaceous material, blood, or other body fluids (eg, fecal material or urine).

waterless antiseptic agent. an antiseptic agent that does not require use of exogenous water. After applying such an agent, the hands are rubbed together until the agent has dried.

Recommendations

Indications for Handwashing and Hand Antisepsis

1. When hands are visibly dirty or contaminated with proteinaceous material or are visibly soiled with blood or other body fluids, wash hands with either a nonantimicrobial soap and water or an antimicrobial soap and water (IA).
2. If hands are not visibly soiled, use an alcohol-based hand rub for routinely decontaminating hands in the following clinical situations (IA): (An alternative is to wash hands with an antimicrobial soap and water [IB])
 - a. Before direct contact with patients (IB)
 - b. Before donning sterile gloves when inserting a central intravascular catheter (IB)
 - c. Before inserting indwelling urinary catheters, peripheral vascular catheters, or other invasive devices that do not require a surgical procedure (IB)
 - d. After contact with a patient's intact skin (eg, when taking a pulse or blood pressure, or when lifting a patient) (IB).
 - e. After contact with body fluids or excretions, mucous membranes, nonintact skin, and wound dressings if hands are not visibly soiled (IA).
 - f. If moving from a contaminated-body site to a clean-body site during patient care (II).
 - g. After contact with inanimate objects (including medical equipment) in the immediate vicinity of the patient (II).
 - h. After removing gloves (IB).
3. Before eating and after using a restroom, wash hands with a nonantimicrobial soap and water or with an antimicrobial soap and water (IB).
4. Antimicrobial-impregnated wipes (ie, towelettes) may be considered as an alternative to washing hands with nonantimicrobial soap and water but **should not** be substituted for washing hands with an antimicrobial soap and water or using an alcohol-based hand rub. These towelettes are not as effective for reducing bacterial counts on the hands (IB).
5. Wash hands with nonantimicrobial soap and water or with antimicrobial soap and water if exposure to *Bacillus anthracis* is suspected or proven. The physical action of washing and rinsing hands under such circumstances is recommended because alcohols, chlorhexidine, iodophors, and other antiseptic agents have poor activity against spores (II).

Unresolved issue: *the use of nonalcohol-based hand rubs for hand hygiene in health care settings (No recommendation).*

Hand Hygiene Technique

1. When decontaminating hands with an alcohol-based hand rub, apply product to palm of one hand and rub hands together, covering all surfaces of hands and fingers, until hands are dry (IB). Follow the manufacturer's recommendations regarding volume of product to use.
2. When washing hands with soap and water, wet hands first with water, apply an amount of product recommended by the manufacturer to hands and rub hands together vigorously for at least 15 seconds, covering all

surfaces of the hands and fingers. Rinse hands with water and dry thoroughly with a disposable towel. Use towel to turn off the faucet (IB). Avoid using hot water, because repeated exposure to hot water may increase the risk of dermatitis (IB).

3. Liquid, bar, leaflet, or powdered forms of plain soap are acceptable when washing hands with a nonantimicrobial soap and water. When bar soap is used, soap racks that facilitate drainage and small bars of soap should be used (II).
4. Multiple-use cloth towels of the hanging or roll type are not recommended (II).

Surgical Hand Antisepsis

1. Remove rings, watches, and bracelets before beginning the surgical hand scrub (II).
2. Remove debris from underneath fingernails using a nail cleaner under running water (II).
3. Use either an antimicrobial soap or an alcohol-based hand rub with persistent activity before donning sterile gloves (IB).
4. When using an antimicrobial soap, scrub hands and forearms for the length of time recommended by the manufacturer, usually 2-6 minutes. Long scrub times (eg, 10 minutes) are not necessary (IB).
5. When using an alcohol-based surgical hand-scrub product with persistent activity, follow the manufacturer's instructions. Before applying the alcohol solution, prewash hands and forearms with a nonantimicrobial soap and dry hands and forearms completely. After applying the alcohol-based product as recommended, allow hands and forearms to dry thoroughly before donning sterile gloves (IB).

Selection of Hand Hygiene Agents

1. Provide personnel with efficacious hand hygiene products that have low irritancy potential, particularly when these products are used multiple times per shift (IB). This recommendation applies to products used for hand antisepsis before and after patient care in clinical areas and to products used for surgical hand antisepsis by surgical personnel.
2. To maximize acceptance of hand hygiene products by HCWs, solicit input from these employees regarding the feel, fragrance, and skin tolerance of any products under consideration. The cost of hand hygiene products should not be the primary factor influencing product selection (IB).
3. When selecting nonantimicrobial soaps, antimicrobial soaps, or alcohol-based hand rubs, solicit information from manufacturers regarding any known interactions between products used to clean hands, skin care products, and the types of gloves used in the institution (II).
4. Before making purchasing decisions, evaluate the dispenser systems of various product manufacturers or distributors to ensure that dispensers function adequately and deliver an appropriate volume of product (II).
5. Do not add soap to a partially empty soap dispenser. This practice of "topping off" dispensers can lead to bacterial contamination of soap (IA).

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Skin Care

1. Provide HCWs with hand lotions or creams to minimize the occurrence of irritant contact dermatitis associated with hand antisepsis or handwashing (IA).
2. Solicit information from manufacturers regarding any effects that hand lotions, creams, or alcohol-based hand antiseptics may have on the persistent effects of antimicrobial soaps being used in the institution (IB).

Other Aspects of Hand Hygiene

1. Do not wear artificial fingernails or extenders when having direct contact with patients at high risk (eg, those in intensive-care units or operating rooms) (IA).
2. Keep natural nails tips less than 1/4-inch long (II).
3. Wear gloves when contact with blood or other potentially infectious materials, mucous membranes, and nonintact skin could occur (IC).
4. Remove gloves after caring for a patient. Do not wear the same pair of gloves for the care of more than one patient and do not wash gloves between uses with different patients (IB).
5. Change gloves during patient care if moving from a contaminated body site to a clean body site (II).

Unresolved issue: *whether or not rings should be worn in health care settings other than the operating room (See Surgical Hand Antisepsis, #1) (No recommendation).*

Health Care Worker Educational and Motivational Programs

1. As part of an overall program to improve hand hygiene practices of HCWs, educate personnel regarding the types of patient care activities that can result in hand contamination and the advantages and disadvantages of various methods used to clean their hands (II).
2. Monitor HCWs' adherence with recommended hand hygiene practices and provide personnel with information regarding their performance (IA).
3. Encourage patients and their families to remind HCWs to decontaminate their hands (II).

Administrative Measures

1. Make improved hand hygiene adherence an institutional priority and provide appropriate administrative support and financial resources (IB).
2. Implement a multidisciplinary program designed to improve adherence to recommended hand hygiene practices (IB).
3. Provide HCWs with a readily accessible alcohol-based hand-rub product (IA).
4. In areas of high workload and high intensity of patient care, make an alcohol-based hand rub available at the entrance to the patient's room or at the bedside and at other convenient locations, and provide HCWs with individual pocket-sized containers to carry with them (IA).
5. Store supplies of alcohol-based hand rubs in cabinets or areas approved for flammable materials (IC).

The following Texas Department of Health flier is included in this issue to provide health professionals with an easy-to-use public health education piece.

Wash Your Hands!

Your skin constantly makes oil that stays on its surface. The germs that get on your skin get trapped in the oil. Skin does not have to look dirty to be loaded with tiny germs that can cause big problems—like colds, diarrhea, and more serious diseases. Washing your hands with soap and warm water is one of the best things you can do to stay healthy.

But I wash my hands a lot.

We are all usually in a hurry—to eat, to get back to work, to make that important meeting. Too often we forget or "don't have time." Or we think a quick cold water rinse will do. But that doesn't "cut it" ...literally.

Oils, and any attached germs, must be **removed** from the skin. A dash of cold water and a quick rub with a towel doesn't do much good. You need to use **warm water and soap** to get the oil and germs off your skin.

Should I use antibacterial soap?

Antibacterial soap helps kill some germs—but not all. Some germs **can't be killed**, no matter how strong the soap is or how long you leave it on. Besides, you might not always have special soap with you. That's why it's very important to spend enough time and care to **wash germs away**.

Remember. . . How you wash and dry your hands makes a difference.

- ☞ Use soap and warm hot running water
- ☞ Take at least 15 seconds to do the washing (at least 20 seconds with cold water)
- ☞ Wash all surfaces, including wrists, palms, backs of hands, between fingers, and as much as possible under fingernails
- ☞ Away from home, use disposable paper towels or the hot air blower if possible.
- ☞ At home, provide a separate towel for each member of the household, and wash towels regularly in hot water and detergent.

To do the most good, washing your hands has to become a habit. You're more likely to learn a new habit and stick with it if it's easy. Most of the time, proper handwashing is easy.

Can I just use a waterless hand sanitizer?

Washing your hands with soap and warm water is still best. The waterless sanitizer doesn't get germs **off** your skin and can't kill all harmful germs. But you should at least use an alcohol-based hand sanitizer if you don't have time to wash or don't have soap and warm water handy.

When should I wash my hands?

Before you

- ◆ eat
- ◆ treat a break in the skin
- ◆ care for an ill/injured person or animal
- ◆ insert or remove contact lenses

Immediately after you

- ◆ use the restroom
- ◆ handle uncooked foods (especially raw meat, poultry or fish)
- ◆ change a diaper
- ◆ blow your nose, sneeze, or cough
- ◆ touch an animal (especially a reptile)
- ◆ handle garbage
- ◆ care for an ill/injured person or animal

Whenever you've been touching things many people have handled. Routine hand washing can help reduce your chances of getting an infection.



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