

Frequently Asked Questions: Use of Alcohol-Based Hand Rubs in Illinois Long-Term Care Facilities

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Glossary of Terms

Alcohol-based hand rub (ABHR): 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 percent ethanol or isopropanol.

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

Antiseptic hand rub: Applying an antiseptic hand-rub product to all surfaces of the hands to reduce the number of microorganisms present.

Antimicrobial or antibiotic resistance: Antimicrobial resistance is the ability of microorganisms to change and adapt so that medications used to treat them are not able to kill them anymore. Antimicrobial resistance is the broader term for resistance in different types of microorganisms and includes resistance to antibacterial, antiviral, antiparasitic, and antifungal drugs.

Clostridioides difficile or C. difficile (formerly Clostridium difficile): Is a bacterium that causes inflammation of the colon, known as colitis, often resulting in severe diarrhea. People who have required prolonged courses of antibiotics are most at risk of acquiring an infection from *C. difficile*. *C. difficile* bacteria are killed by ABHR, but *C. difficile* spores are not inactivated by ABHR.

Hand hygiene: A general term that applies to either handwashing, antiseptic hand wash, antiseptic hand rub, or surgical hand antisepsis.

Handwashing: Washing hands with plain (i.e., non-antimicrobial) soap and water.

Visibly soiled hands: Hands showing visible dirt or visibly contaminated with proteinaceous material, blood, or other body fluids (e.g., fecal material or urine).

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Q: We feel that the only way to clean hands the right way is to wash with soap and water. What evidence is there that alcohol-based hand rubs work?

A: Alcohol-based hand rub (ABHR) is the preferred method for standard hand hygiene. Soap and water are recommended in specific circumstances, including when hands are visibly soiled or during outbreaks of *C. difficile* or *norovirus* (see table 1). Evidence shows that alcohol-based hand rubs are more effective than soap at reducing the amount of germs on health care worker hands.¹ For instance, one study showed that nurses transferred germs from a urinary catheter to a patient’s skin 92 percent of the time when practicing hand hygiene with plain soap and water. The same experiment showed that this rate dropped to 17 percent when using alcohol-based hand rub.² Another study showed that alcohol-based hand rubs were more effective than antimicrobial soap at removing germs from the hands of health care workers wearing artificial nails.³ In addition, alcohol-based hand rubs require less time than hand washing, are less irritating to the skin than soap and water, and can be more accessible than sinks.

Table 1. From the Centers for Disease Control and Prevention’s Guidance on Hand Hygiene in Healthcare Settings: *Two Methods for Hand Hygiene: Alcohol-Based Hand Sanitizer vs. Washing with Soap and Water*⁴

Use Soap and Water	Use an Alcohol-Based Hand Rub
<ul style="list-style-type: none">• When hands are visibly dirty• After known or suspected exposure to <i>Clostridium difficile</i> if your facility is experiencing an outbreak or higher endemic rates• After known or suspected exposure to patients with infectious diarrhea during <i>norovirus</i> outbreaks• Before eating• After using the restroom• If exposure to <i>Bacillus anthracis</i> is suspected or proven	For everything else

Q: Which alcohol-based hand rub should I use?

A: When deciding which alcohol-based hand rub to use, involve frontline staff in the decision-making process. Choosing an alcohol-based hand rub that your staff will use is key in improving overall adherence to hand hygiene guidelines. Alcohol-based hand rubs are traditionally available in gel, rinse, or foam form. Certain products leave a “sticky” film on the hands, all of which can decrease hand hygiene adherence.⁵ It is also important to consider the product’s antimicrobial and antiviral activity. Alcohol-based hand rubs containing 60 – 95 percent alcohol

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are most effective, and health care personnel should only use the alcohol-based hand rub provided by their facility.

Q: What is the proper way to use alcohol-based hand rubs?

A: Dispense enough alcohol-based hand rub to cover all surfaces of your hands. Rub your hands together until they are dry. Your hands should stay wet for at least 20 seconds if you used the right amount. Pay extra attention to areas that are often missed, such as fingertips, thumbs, and in between fingers. Go directly to the patient/resident without touching anything else or putting hands into pockets.

Q: I have a staff member who reports he/she is sensitive to alcohol-based hand rubs. What can I do?

A: There are two types of skin reactions associated with hand hygiene: irritant contact dermatitis and allergic contact dermatitis. Allergic contact dermatitis attributable to alcohol-based hand rub is very rare.⁶ Health care workers with skin complaints related to alcohol-based hand rub should be referred for evaluation by occupational health or a medical provider.

In winter months, dry skin is common in health care workers and can lead to irritant contact dermatitis irrespective of alcohol-based hand rub use, but alcohol-based hand rubs can result in less drying than hand washing. Health care facilities can provide lotions for their staff. However, lotions should be compatible with gloves and alcohol-based hand rub. Staff should not be permitted to use their own lotion in the clinical setting.

Other strategies for skin health will also reduce winter irritation: Keep baths and showers short, apply moisturizers after getting out of the bath or shower, and wear soft fabrics such as 100 percent cotton.⁷

Q: Alcohol-based hand rub does not kill spores or some viruses. Why should we be using it at all when we frequently care for residents with *C. difficile*?

A: In accordance with Centers for Disease Control and Prevention, Centers for Medicare and Medicaid Services, Society for Healthcare Epidemiology of America, and Illinois Department of Public Health guidelines, use of alcohol-based hand rubs for hand hygiene is still recommended during routine infection prevention responses to *C. difficile*.⁸ Clinical studies have not found an increase in *C. difficile* infections with the use of alcohol-based hand rub or a decrease in *C. difficile* infection with the use of soap and water.⁸ Conversely, several of the studies did identify

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decreases in other drug-resistant organisms associated with the use of alcohol-based hand rub.⁹

If a facility is experiencing an outbreak of *C. difficile* or have high baseline *C. difficile* rates, soap and water should be used instead of alcohol-based hand rub.

Q: Will frequent use of alcohol-based hand rubs lead to antibiotic or antimicrobial resistance?

A: No. According to the Centers for Disease Control and Prevention, alcohol-based hand rubs kill germs differently than antibiotics. Alcohol-based hand rubs work quickly so germs do not have the opportunity to survive and develop resistance.¹⁰

Q: We are concerned about placing alcohol-based hand rub dispensers in resident/patient rooms. Why should we have alcohol-based hand rubs at the point of care when there are sinks in each room?

A: Studies have shown that when alcohol-based hand rub dispensers are located where hand hygiene needs to occur, their accessibility and ease of use greatly improve hand hygiene compliance.¹¹ In most organizations, accommodation of this kind would result in placement of dispensers in patient rooms and hallways. Options are available for wall- or floor-mounted dispensers along with gel, liquid, or foam forms. The more visible and accessible your alcohol-based hand rub dispensers are, the more likely staff will be willing and able to perform the necessary hand hygiene.

Alcohol-based hand rubs can be used between patients in a safe and effective manner. For example, for hands that are not visibly soiled, alcohol-based hand rub can be used before direct contact with a second patient in a room, before donning sterile gloves, after contact with a patient's skin such as when taking a pulse or blood pressure, or after removing gloves.

Q: What do federal regulations say about alcohol-based hand rubs?

A: Both federal and state guidelines allow and recommend the use of alcohol-based hand rub. The Centers for Disease Control and Prevention recommends the use of alcohol-based hand rub as a part of standard practice when hands are not visibly dirty, while soap and water are recommended for visibly dirty hands and in certain situations as noted in [Table 1](#).

Q: What are the Illinois Department of Public Health's recommendations for hand hygiene in long-term care facilities?

A: The Illinois Department of Public Health recommends that all long-term care facilities incorporate alcohol-based hand rubs into hand hygiene programs in accordance with nationally recognized standards.

The Centers for Disease Control and Prevention and the Illinois Department of Public Health recommend the routine use of alcohol-based hand rubs over soap and water due to improved adherence, effectiveness, and accessibility, except in situations where soap/water handwashing is specifically recommended, such as when hands are visibly dirty. To control the spread of certain pathogens during outbreak situations (e.g., *norovirus*, *C. difficile* outbreaks), soap and water remain the preferred method of hand hygiene. Alcohol-based hand rub recommendations exclude food preparation areas, where food handlers must wash their hands with soap and water.

Q: What do state and federal regulations say about the use of alcohol-based hand rub in long-term care facilities?

A. Regulations and Guidelines for Alcohol-Based Hand Rub in Health Care Facilities:

The recommendation for making alcohol-based hand rub available in long-term care facility settings is in compliance with state and federal regulations. The Illinois Joint Committee on Administrative Rules (JCAR) publishes administrative codes for long-term care facilities. [Part 300 of Title 77](#) covers skilled nursing and intermediate care facilities. This section covers general requirements, incorporated and referenced materials, and rules on how to best manage infection control. These rules are applicable to all long-term care facilities. According to [77 Ill. Adm. Code 300.696 Infection Control](#),¹² each long-term care facility shall adhere to CDC guidelines on hand hygiene.

In [77 Ill. Adm. Code 300.340](#), the National Fire Protection Association (NFPA) standards are listed as an incorporated and referenced material, among other private and professional standards. Specifically, they include practices found in:

- HICPAC: *Guideline for Hand Hygiene in Health-Care Settings*¹
- NFPA: *2012 Life Safety Code - Alcohol based hand rubs 18.3.2.6*¹³

The Centers for Medicare and Medicaid Services states that facilities may install alcohol-based hand rub dispensers if the dispensers are installed in a manner that adequately protects against inappropriate access.¹⁴

Q: What are the safety guidelines for the placement of alcohol-based hand rubs?

A: The National Fire Protection Association and Centers for Medicare and Medicaid Services issue safety codes on the placement of alcohol-based hand rubs.

2012 LIFE SAFETY CODE – ALCOHOL-BASED HAND RUBS 18.3.2.6

Overview:

The National Fire Protection Association publishes the Life Safety Code (LSC), a set of industry standards and codes for buildings to minimize the risk of fire. The LSC is updated every three years with 2018 being the most recent edition. Illinois administrative code currently lists the 2000 LSC as an incorporated and referenced material for long-term care facilities, but the Illinois Department of Public Health follows the **2012 LSC**. Additionally, the Centers for Medicare and Medicaid Services uses the 2012 LSC when surveying skilled nursing facilities for certification.

2012 Life Safety Code – Alcohol-Based Hand Rubs 18.3.2.6

Alcohol-based hand rub dispensers shall be protected in accordance with 8.7.3.1, unless all the following conditions are met:

- 1) Where dispensers are installed in a corridor, the corridor shall have a minimum width of 6 feet (1830 mm).
- 2) The maximum individual dispenser fluid capacity shall be as follows:
 - a. 0.32 gal (1.2 L) for dispensers in rooms, corridors, and areas open to corridors.
 - b. 0.53 gal (2.0 L) for dispensers in suites of rooms.
- 3) Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz. (0.51 kg) and shall be limited to Level 1 aerosols as defined in NFPA 30B.
- 4) Dispensers shall be separated from each other by horizontal spacing of not less than 48 in (1220 mm).
- 5) Not more than an aggregate 10 gal of alcohol-based hand rub solution or 1135 oz. of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed in total, the equivalent of 10 gal or 1135 oz., shall be in use outside of a storage cabinet in a single smoke compartment, except as otherwise provided in 18.3.2.6(6).
- 6) One dispenser complying with 18.3.2.6(2) or (3) per room and located in that room shall not be included in the aggregated quantity addressed in 18.3.2.6(5).
- 7) Storage of quantities greater than 5 gal in a single smoke compartment shall meet the requirements of NFPA 30, Flammable and Combustible Liquids Code.
- 8) Dispensers shall not be installed in the following locations:
 - a. Above an ignition source within a 1 inch horizontal distance from each side of the ignition source.
 - b. To the side of an ignition source within a 1 inch horizontal distance from the ignition source.
 - c. Beneath an ignition source within a 1 inch vertical distance from the ignition source.

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- 9) Dispensers installed directly over carpeted floors shall be permitted only in sprinklered smoke compartments.
- 10) The alcohol-based hand-rub solution shall not exceed 95 percent alcohol content by volume.
- 11) Operation of the dispenser shall comply with the following criteria:
 - a. The dispenser shall not release its contents except when the dispenser is activated, either manually or automatically by touch free activation.
 - b. Any activation of the dispenser shall occur only when an object is placed within 4 inches of the sensing device.
 - c. An object placed within the activation zone and left in place shall not cause more than one activation.
 - d. The dispenser shall not dispense more solution than the amount required for hand hygiene consistent with label instructions
 - e. The dispenser shall be designed, constructed, and operated in a manner that ensures that accidental or malicious activation of the dispensing device is minimized.
 - f. The dispenser shall be tested in accordance with the manufacturer's care and use instructions each time a new refill is installed.

HELPFUL DEFINITIONS

Smoke Compartment: A space that has been designed and built with barriers that will contain smoke. (Note: Often the wall will be marked [usually above the ceiling grid] with the fire rating. Otherwise, architectural drawings should be marked with the smoke compartments.)

Level 1 Aerosol: Products that have a chemical heat combustion less than or equal to 8,600 British thermal units per pound. They are primarily water-based.

ADDITIONAL INFORMATION

- 2012 Edition of the NFPA 101: Life Safety Code (Note that access is free but you must create an account): <http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards?mode=code&code=101&tab=editions>
- CMS 2786 form: <https://www.cms.gov/Medicare/CMS-forms/CMS-Forms/downloads/CMS2786R.pdf>
- CMS Manual System, Department of Health and Human Services (DHHS), Pub. 100-07 June 10, 2016: <https://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/Downloads/R157SOMA.pdf>

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CMS FORM 2786R, FIRE SAFETY SURVEY REPORT 2012 CODE

Overview:

The Centers for Medicare and Medicaid Services certify long-term care facilities on an annual basis to ensure they are in compliance with CMS guidelines in a number of areas. Institutions that fail to comply with one or more of the standards cannot participate in Medicare. Skilled nursing facilities must be in compliance with 42 CFR Part 483, Subpart B to receive payment for Medicare or Medicaid programs. Surveyors use CMS form 2786R (Table 2) to ensure compliance.

Table 2. Reproduction of the table from **CMS 2786R – Fire Safety Survey Report 2012 Code – Health Care Medicare-Medicaid Page 19**

K325	Alcohol Based Hand Rub Dispenser	MET	NOT MET	NA	Remarks
	<p>Alcohol-based hand rubs are protected in accordance with 8.7.3.1, unless all conditions are met:</p> <ul style="list-style-type: none"> • Corridor is at least 6 feet wide. • Maximum individual dispenser capacity is 0.32 gallons (0.53 gallons in suites) of fluid and 18 ounces of Level 1 aerosols. • Dispensers shall have a minimum of four foot horizontal spacing. • Not more than an aggregate of 10 gallons of fluid or 1135 ounces of aerosol are used in a single smoke compartment outside a storage cabinet, excluding one individual dispenser per room. • Storage in a single smoke compartment greater than 5 gallons complies with NFPA 30. • Dispensers are not installed within 1 inch of an ignition source. • Dispensers over carpeted floors are in sprinklered smoke compartments. • Alcohol-based hand rub does not exceed 95 percent alcohol. • Operation of the dispenser shall comply with Section 18.3.2.6(11) or 19.3.2.6(11). • Alcohol-based hand rub is protected against inappropriate access. <p>18.3.2.6, 19.3.2.6, 42 CFR Parts 403, 418m 460, 482, 483 and 485</p>				

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