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INFECTION CONTROL UPDATE

Infection control can be a confusing and unclear management component for home care and hospice organizations' clinical staff. Especially troubling topics surround the use and storage of irrigation solutions, cleaning of nursing supply bags, TB skin testing, and operational aspects surrounding hand hygiene. These and other topics are addressed in this article to help give you "the bottom line."

for Home Care and Hospice Organizations

Many home care and hospice organizations' clinical management find aspects of infection control confusing and unclear. This article addresses frequently asked questions on this topic ranging from irrigation solution storage to operational aspects of the Centers for Disease Control and Prevention (CDC)'s Hand Hygiene guidelines. Written in an easy-to-read format of Question, Response, and The Bottom Line, clinicians and managers can quickly learn new infection control strategies.

Irrigating Solution Storage and Use

QUESTION: How long should containers of 500 ml irrigating solutions, such as normal saline, remain open for use in the home?

RESPONSE: There are no specific authoritative guidelines or data in place that provide guidance on the time frame. Even for parenteral infusion of normal saline, the CDC has no recommendation for the maximum time that this type of product can be hung (CDC, 2002a). Anecdotally, the current storage time frame for home care and hospice organizations varies from 48 hours, to weekly, monthly, and whenever the container is empty.



For consistency in practice and staff knowledge, your organization should establish a maximum time frame that defines how long the product may be used after it is opened. Implementing these guidelines can avoid the arbitrary waste of large amounts of irrigation solution. The following guiding principles should also be considered to ultimately improve patient safety by reducing the risk of patient infection:

- Use smaller (e.g., 50-100 ml) containers of irrigation solution designed for single use whenever possible. If irrigating solution is leftover in the smaller container after the intended amount has been removed, do not save the leftover content or combine it for later use.
- Do not use any container of irrigation solution that has visible turbidity, leaks, cracks, or particulate matter, or if the manufacturer's expiration date has passed.
- When using larger (500 ml) containers of irrigation solution that will be used on multiple, separate occasions:

- date the container when opened;
- write the "discard by" date after which time the solution should be discarded, according to the time set by the organization;
- open the container without contaminating the fluid, the inside neck of the bottle, or the inside of the top of the cap;
- place the cap face up when the container is open and being used, and replace the cap as soon as possible to reduce risk of contamination;
- pour the intended amount of irrigation solution into a secondary container, if necessary (do not place a syringe inside the container to remove the contents, unless the syringe is sterile);
- store the irrigation solution in a safe place that minimizes the possibility for tampering;
- consider refrigerating after the initial use to reduce bacterial growth; warm to room temperature just prior to use;
- discard the container of irrigation solution if the integrity is compromised or the solution is contaminated (Home Health Systems, 2003).

Many home care and hospice organizations have already addressed this issue by purchasing smaller containers of irrigation solution for staff and caregiver's use. These smaller containers often have the added benefit of not containing pharmaceutical legend labeling on the container, as do the larger containers of normal saline and sterile water.

THE BOTTOM LINE: Without specific data it is not known what time frame is safe.

Fire Hazards Associated With Alcohol-Based Hand Rubs

QUESTION: There has been discussion where alcohol-based hand rubs should be placed in facilities because they can present a fire hazard. What are the storage implications for home care and hospice organizations?

RESPONSE: Since the CDC's new Hand Hygiene guidelines were released, most home care and hospice organizations have begun routinely using antiseptic hand rubs. Anecdotally, most home care and hospice organizations use an alcohol-based hand rub for hand hygiene.

Flammability

For antiseptic hand rubs to be effective, the CDC requires that they contain over 60% alcohol by

Decontaminating the hands may be performed with an antiseptic hand rub, or by washing the hands with water and soap or other detergents containing an antiseptic agent, but *not* by using antimicrobial-impregnated wipes.

volume (CDC, 2002b). According to the National Fire Protection Association (NFPA), this concentration of alcohol classifies the product as:

- a Flammable Liquid Class IB (flash point <73°F; boiling point ≥100°F),
- a Flammable Level 1 Aerosol (for foam products) (NFPA, 2003).

Several manufacturers advertise that their products are not flammable. However, these products many contain as little as 10% alcohol by volume, which does not meet the CDC's requirements.

In the United States there has been only one recent report of a flash fire. This occurred as a result of a healthcare worker applying an alcohol gel to her hands, immediately removing a polyester isolation gown, and then touching a metal door before the alcohol had evaporated. When the polyester gown was removed, it created a substantial amount of static electricity that generated an audible static spark when the worker touched the metal door, which ignited the unevaporated alcohol on her hands (Bryant, 2002).

This event, although isolated, emphasizes the need to stress to home care and hospice staff the importance of rubbing their hands together after applying alcohol-based products until their hands are dry and *all* the alcohol has evaporated.

Storage Issues

Most home care and hospice offices would be classified as a business occupancy (i.e., used for accounting and record keeping, with no sale of merchandise). According to the NFPA, business occupancies may store up to 10 gallons of a flammable liquid, Class 1B (e.g., alcohol-based hand rub solution) openly without special storage requirements such as in safety cans.

Aerosolized hand rub containers should not be stored at high temperatures. Although there is no specific NFPA prohibition against storing aerosolized containers or foam dispensers in the trunk of a vehicle, common sense should prevail, as extreme heat can certainly become a safety factor.

THE BOTTOM LINE: The limited quantities of alcohol-based hand rub products stored in a home care and hospice office, in staff's supply bags taken into the home, and in staff's vehicles would be considered minimal in causing a fire or contributing to its spread.

Use of Towelettes for Hand Hygiene

QUESTION: Following the new hand hygiene guidelines, our home care staff have been issued alcohol-based towelettes to use for hand hygiene. Is this acceptable?

RESPONSE: Antimicrobial-impregnated wipes such as alcohol-based towelettes are *not* an acceptable substitute for alcohol-based hand rubs or antimicrobial soap. The wipes may be used as an alternative to washing hands with *nonantimicrobial* soap and water.

Studies have found that the antimicrobial-impregnated wipes are not as effective as the alcohol-based hand rubs or as washing the hands with an antimicrobial soap and water for reducing bacterial counts on the hands of healthcare workers (CDC, 2002b).

Most home care and hospice patient care scenarios require using an:

- *antiseptic handwash*: washing the hands with soap and water or other detergents containing an antiseptic agent, or
- *antiseptic hand rub*: applying an antiseptic hand-rub product to all surfaces of the hands to reduce the number of microorganisms present.

At present, the CDC has no recommendation regarding the routine use of non-alcohol-based hand rubs for hand hygiene in healthcare settings.

The CDC's *Guideline for Hand Hygiene in Health Care Settings* lists scenarios that specifically recommend when hands should be decontaminated. Decontaminating the hands may be performed with an antiseptic hand rub, or by washing the hands with water and soap or other detergents containing an antiseptic agent, but *not* by using

antimicrobial-impregnated wipes. Home care and hospice patient care activities that require hand decontamination include, but are not limited to, the following:

- after contact with body fluids or excretions, mucous membranes, nonintact skin, and wound dressings if hands are not visibly soiled;
- before having direct contact with patients;
- before inserting indwelling urinary catheters, peripheral vascular catheters, or other invasive devices;
- after removing gloves;
- after contact with a patient's intact skin (e.g., when taking a pulse or blood pressure, and lifting a patient);
- if moving from a contaminated-body site to a clean-body site during patient care; and
- after contact with inanimate objects (including medical equipment) in the patient's immediate vicinity (CDC, 2002b).

THE BOTTOM LINE: Even though the package says “antimicrobial” and “contains alcohol,” antimicrobial-impregnated wipes or towelettes should *only* be used under conditions in which regular handwashing with plain (nonantimicrobial) soap and water would be indicated.

Hand Hygiene Policy

QUESTION: Our hand washing policy states that hands must be washed with soap and water after every five applications of alcohol-based hand rub. Is this really necessary?



RESPONSE: Several manufacturers of alcohol-based hand rub products recommend that you wash your hands with soap and water after a certain number of product applications, to avoid product build-up on the hands.

Because there is no “magic number” here, as you update your hand hygiene policies to reflect the CDC's guidelines, avoid being overly prescriptive. For example, the policy may state “At any time, staff members may wash their hands with soap and running water in addition to using the antiseptic hand rub.”

This policy gives the home care or hospice staff member flexibility in using the antiseptic hand rub at the required points in patient care. Yet, if they feel a “build-up” on their hands after repeated use of the alcohol hand gels, they are still complying with the organization's hand hygiene policies.

THE BOTTOM LINE: There is no requirement to wash the hands with soap and water after a specific number of antiseptic hand rub applications. Creating a flexible policy statement allows staff to use their judgment and remain within policy guidelines.

Hand Hygiene Intervals

QUESTION: Should staff members wash their hands immediately or as soon as feasible after the removal of gloves when performing wound care?

RESPONSE: When performing wound care, the hands should be decontaminated by using either an antiseptic handwash or antiseptic hand rub after removing the gloves. Using an antiseptic hand rub is the simplest method and does not require that the nurse leave the wound exposed and unattended to go to a sink to perform an antiseptic handwash.

The phrase “washing hands as soon as feasible” was common in home care and hospice before the CDC officially recommended the use of waterless hand-rub products. In some homes, no running water was present and staff could not wash their hands with soap and water. Handwashing policies were written to accommodate this situation.

THE BOTTOM LINE: With the availability of antiseptic hand rubs for home care and hospice staff's use, it is expected that those products would be used immediately after removal of gloves when performing wound care.

Double Gloving

QUESTION: Is it acceptable to double glove in lieu of changing gloves after removal of dirty dressings and then reglove before the actual wound care?

RESPONSE: The CDC hand hygiene guidelines do not specifically address the issue of double gloving, nor do the home care infection con-

trol standards of the Joint Commission. However, Joint Commission and CDC representatives who were contacted about this issue do not recommend double gloving so that the hands do not need to be washed between glove changes.

THE BOTTOM LINE: Double gloving in lieu of washing hands and changing gloves during wound care is not acceptable.

Wearing Gloves During Dressing Change

QUESTION: Must home care staff wear gloves when removing a dirty dressing?

RESPONSE: Yes, if the dirty dressing to be removed is soaked with blood or body fluids that may be contaminated with blood. According to the Occupational Safety and Health Administration (OSHA) bloodborne pathogen standards, gloves must be worn during all patient-care activities that may involve this type of exposure.



The CDC's hand hygiene guidelines recommend that healthcare staff wear gloves to prevent their flora from being transmitted to patients and to reduce the transient contamination of staff's hands by flora that can be transmitted from

one patient to another. The home care and hospice organization's infection prevention and control policies and procedures should be based on guidelines, such as those published by the CDC, Infusion Nurses Society, Association for Professionals in Infection Control and Epidemiology, and the Wound, Ostomy, Continence Nurses Society.

THE BOTTOM LINE: Minimally, clean gloves should be worn when removing a dirty dressing.

Cleaning Nursing Bags

QUESTION: The most common question posed to a large volume seller of nursing bags and supplies is, "What are we supposed to use to clean our nursing bags?" How and how often are we required to clean the bags?



RESPONSE:

The key word is "clean." Assuming that the bag is not contaminated with blood or other potentially infectious material (as defined by the OSHA

bloodborne pathogen standard), the nursing bag can only be decontaminated and then cleaned. It cannot be disinfected because the only surface that can truly be disinfected is a hard nonporous surface.

Three steps are required to decontaminate and clean a nursing bag:

1. Remove all contents from the bag.
2. Remove any gross materials that may be adhering to the surface of the bag by wiping the bag's interior and exterior with a "moist" or "wet" product of the organization's choice.
3. If the bag is machine washable, place it in the washing machine or hand wash with soap and hot water; dry in a dryer or hang the bag to air dry. Place the bag in a 1:10 bleach solution or a germicidal detergent solution, soak it, then rinse and dry it. The bag may be dried in the dryer or hung to air dry. The heat from the drier can further reduce the overall microbial load; however, this may shorten the bag's longevity.

There is no set frequency as to how often the nursing supply bags taken into the home should be cleaned. Obviously if the bag becomes soiled, it needs to be cleaned. Under routine home care conditions; the home care or hospice organization sets the time interval for cleaning the nursing bag.

Anecdotally, the current time frame set by home care and hospice organizations varies from monthly, to yearly, to "only if the bag becomes soiled." Whatever frequency and methods are selected, especially if the time frame is prescriptive (such as requiring the bags to be cleaned monthly), make sure that the staff are actually adhering to the time frame and method established.

THE BOTTOM LINE: There is no set method or frequency for cleaning the bag.

When performing wound care, the hands should be decontaminated by using either an anti-septic handwash or antiseptic rub after removing the gloves.

TB Skin Testing

QUESTION: Is true that home care agencies are no longer required to perform TB skin testing?

RESPONSE: That is correct. On June 3, 2002, OSHA responded to a letter from the Joint Commission, stating that because home healthcare is not provided in one of the workplaces (healthcare facilities, correctional institutions, long-term care facilities for the elderly, homeless shelters, and drug treatment centers) where the CDC has identified workers as having a higher incidence of TB infection than the general population, OSHA would not cite home healthcare employers for not conducting TB testing (OSHA, 2002).

THE BOTTOM LINE: Before you stop performing TB skin testing, check your state regulations regarding TB skin testing, check the TB rate in your service area to determine your local TB prevalence, and if you are employed by a hospital-based home care agency or hospice, check the facility's policy for healthcare worker before abandoning this practice.

Disposal of "Activated" Safety Devices



QUESTION: The needles on safety devices are now covered with plastic after being activated. Can they be disposed of in regular waste or a "non-sharps" container?

RESPONSE: No. According to OSHA, the needle sheath on a self-sheathing needle is *not* considered a "waste container" be-

cause it is a temporary measure. Self-sheathing needle products and other sharps with engineered sharp injury protection (SESIPs), even after activation, must be disposed of in a sharps container (OSHA 2001).

THE BOTTOM LINE: Place *all* used safety needles in a sharps container. ■

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Infection Control Update for Home Care and Hospice Organizations

Instructions:

- Read the article on page 753.
- Take the test, recording your answers in the test answers section (Section B) of the CE enrollment form. Each question has only one correct answer.
- Complete registration information (Section A) and course evaluation (Section C).
- Mail completed test with registration fee to: Lippincott Williams & Wilkins, CE Dept., 345 Hudson Street, New York, NY 10014.
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- If you pass, you will receive a certificate of earned contact hours and answer key. If you fail, you have the option of taking the test again at no additional cost.
- A passing score for this test is 11 correct answers.
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CE TEST QUESTIONS

GENERAL PURPOSE: To present registered professional nurses with an update of infection control practices for home care and hospice organizations' clinical staff.

LEARNING OBJECTIVES: After reading this article and taking the test below, you will be able to:

1. Discuss the appropriate recommendations for hand hygiene in home care and hospice settings.
2. Outline the various storage issues that apply in home care and hospice settings.
3. List at least three safe practices for home care and hospice staff.

1. In the absence of any specific authoritative guidelines for storage of previously opened saline containers in the home, it is recommended that

- a. such containers be discarded after 1 week.
- b. open containers be recapped and stored in a dark area.
- c. such containers be discarded once opened.
- d. 50 mL to 100 mL single-use containers be used whenever possible.

2. When large (500 mL) containers of irrigation solution are used, they should

- a. have the cap placed face down during use to avoid contamination of the inner surface of the cap by airborne particles.
- b. be discarded after use to avoid the risk of contamination.
- c. be dated with the discard date indicated by the home care agency's or hospice organization's policy.
- d. have the cap and upper surface of the bottle wiped with an appropriate disinfecting solution to allow repeated use.

3. Nonflammable antiseptic hand rubs

- a. contain approximately 70% alcohol.
- b. are likely to be ineffective.
- c. are approved by the Centers for Disease Control and Prevention (CDC).
- d. are recommended for home use.

4. To avoid the risk of fire associated with the use of antiseptic hand rubs, the user must

- a. make sure the product dries completely on the hands.
- b. avoid carrying such products in supply bags taken into the home.
- c. use traditional hand washing for hand hygiene.
- d. avoid carrying such products in vehicles.

5. According to the National Fire Protection Association, effective antiseptic hand rubs

- a. are a flammable liquid, class IC.
- b. cannot be stored in open areas at all.
- c. must be stored in safety cans when the volume exceeds one gallon.
- d. must be stored in safety cans when the volume exceeds 10 gallons.

6. Alcohol-based towelettes are an acceptable substitute for

- a. alcohol-based hand rubs.
- b. hand washing with antimicrobial soap.
- c. hand washing with nonantimicrobial soap.
- d. hand washing with any type of cleansing agent.

7. The CDC

- a. allows nonalcohol-based hand rubs in home care only after contact with inanimate objects such as medical equipment.
- b. prohibits the use of nonalcohol-based hand rubs in home care.
- c. recommends nonalcohol-based hand rubs in home care only for immediate use after removing gloves.
- d. has no specific recommendations about using nonalcohol-based hand rubs for hand hygiene in healthcare settings.

8. Why do certain manufacturers of alcohol-based hand rubs recommend hand washing with soap and water after a specific number of product applications?

- a. because repeated effectiveness cannot be guaranteed
- b. to avoid product build-up on the hands
- c. to ensure removal of any microorganisms the product has not destroyed
- d. to reduce the possibility of allergy to the product

9. Of the following, the best practice for home care workers removing gloves after giving wound care is to

- a. use an antiseptic hand rub immediately.
- b. wash their hands with an antiseptic soap immediately.
- c. use an antiseptic hand rub as soon as possible.
- d. wash their hands with an antiseptic soap as soon as possible.

10. Double gloving instead of changing gloves after removing a contaminated dressing and proceeding with wound care

- a. is recommended by the CDC.
- b. is recommended by the Joint Commission (JCAHO).
- c. is acceptable only for noninfected wounds.
- d. is not considered acceptable practice.

11. Home care staff removing a dirty dressing

- a. should only wear gloves if the dressing is soiled with blood.
- b. must wear clean gloves.
- c. should only wear gloves if the dressing is soiled with purulent material.
- d. must wear sterile gloves.

12. Nursing bags cannot be effectively

- a. cleaned.
- b. decontaminated.
- c. machine washed.
- d. disinfected.

13. Home care and hospice organizations

- a. recommend replacing nursing bags twice a year.
- b. are inconsistent in their policies regarding nursing bags.
- c. are advised to replace nursing bags with hard, nonporous containers.
- d. advise a weekly attempt at cleaning nursing bags.

14. Home care agencies

- a. are required by OSHA to perform skin testing for tuberculosis (TB).
- b. are encouraged to test for TB only after possible exposure.
- c. must only perform skin testing if the prevalence rate of TB is high in their area.
- d. are encouraged to check their state regulations and organization's employee health policy for TB testing.

15. Needle sheaths on self-sheathing needles

- a. must be disposed of in a sharps container.
- b. must be isolated in their own separate container.
- c. can be disposed of in any type of container.
- d. must be destroyed before removal from the facility.

**CE Enrollment Form
Home Healthcare Nurse, November 2003
Infection Control Update for Home Care and Hospice Organizations**

A Registration Information:

Last name _____ First name _____ MI _____
 Address _____
 City _____ State _____ Zip _____
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Registration Deadline: November 30, 2005

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LPN RN CNS NP CRNA CNM other _____

Job Title _____ Specialty _____

Type of facility _____

Are you certified? Yes No

Certified by _____

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B Test Answers: Darken one for your answer to each question.

A	B	C	D	A	B	C	D
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2. <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	6. <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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A	B	C	D	A	B	C	D
9. <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	13. <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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11. <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	15. <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				

C Course Evaluation*

	A	B
1. Did this CE activity's learning objectives relate to its general purpose?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. Was the journal home study format an effective way to present the material?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3. Was the content relevant to your nursing practice?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4. How long did it take you to complete this CE activity? _____ hours _____ minutes		
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