



Interactive Reference

Environmental Safety in Outpatient Care

Foreword

Thwarting environmental threats to infection prevention is an essential component of proper care in outpatient facilities. Well-run facilities must know and follow best practices in infection control to protect patients, staff and members of the public from dangerous pathogens.

This white paper hyperlinks you to a variety of documents to aid prevention of transmission of environmental pathogens in outpatient settings. Hygienically Clean Healthcare certified laundries have collaborated to provide you with this direction. These laundries ensure cleanliness by washing, drying, ironing, packing, transporting and delivering in accordance with best management practices (BMPs) to meet key disinfection criteria. Their use of BMPs is verified through inspection and re-inspection of their facilities. Between inspections, ongoing microbial testing quantifies cleanliness and indicates laundry process adjustments.

An Advisory Board of laundry, healthcare and academic professionals sets Hygienically Clean standards, and the certification is administered by TRSA, an international organization representing companies that supply laundered linens, uniforms, garments, floor mats and other products necessary for businesses to operate clean facilities, serve their customers, and provide a clean, attractive environment and image. TRSA serves the most heavily invested textile services professionals in the healthcare market.

Links to Outpatient Care Environmental Safety Resources

- <u>Guide to Infection Prevention for Outpatient</u>
 <u>Settings: Minimum Expectations for Safe Care.</u> This document is a summary guide of infection prevention recommendations for outpatient (ambulatory care) settings (<u>http://bit.ly/hygeni-clean-ipopcdc</u>).
- <u>Guideline for Disinfection and Sterilization in</u> <u>Healthcare Facilities, 2008.</u> This document presents evidence-based recommendations on the preferred methods for cleaning, disinfection and sterilization of patient-care medical devices and for cleaning and disinfecting the healthcare environment. This document supersedes the relevant sections contained in the 1985 Centers for Disease Control and Prevention (CDC) Guideline for Handwashing and Environmental Control (<u>bit.ly/hygieni-clean-dscdc</u>).
- <u>Guideline for Infection Control in Health Care</u> <u>Personnel, 1998.</u> These guidelines address infection control procedures to protect workers from occupational exposure to infectious agents (<u>bit.ly/</u><u>hygieni-clean-iccdc</u>).
- <u>Guideline for Isolation Precautions: Preventing</u> <u>Transmission of Infectious Agents in Healthcare</u> <u>Settings, 2007.</u> This document is intended for use by infection control (IC) staff, healthcare epidemiologists, healthcare administrators, nurses, other healthcare providers, and persons responsible for developing, implementing, and evaluating IC programs for healthcare settings across the continuum of care (<u>bit.</u> <u>Iy/hygieni-clean-ipcdc</u>).

- <u>Guidelines for Environmental Infection Control in</u> <u>Health-Care Facilities, (June 6, 2003)</u>. This web page provides guidelines, recommendations and strategies for preventing environment-associated infections in healthcare facilities (<u>bit.ly/hygieni-clean-eiccdc</u>).
- Hand Hygiene in Healthcare Settings. This web page provides HCWs and patients with a variety of resources including guidelines for providers, patient empowerment materials, the latest technological advances in hand hygiene adherence measurement, frequently asked questions, and links to promotional and educational tools published by the World Health Organization (WHO), universities, and health departments (http://www.cdc.gov/handhygiene/).
- Handling Clean Linen in a Healthcare Environment. Hygienically Clean Healthcare white paper for hospital personnel covers transportation, storage, distribution (bit.ly/hygieni-clean-cleanlinen).
- <u>Healthcare-Associated Infections (HAI) Progress</u> <u>Report.</u> National and state-by-state summaries of these infections (<u>bit.ly/hygieni-clean-haicdc</u>).
- Management of Multidrug-Resistant Organisms in Healthcare Settings, 2006. This report provides recommendations for implementation of strategies and practices to prevent the transmission of these organisms (bit.ly/hygieni-clean-mdrocdc).
- Six C's: Handling Soiled Linen in a Healthcare
 Environment. Hygienically Clean Healthcare training
 video for hospital personnel (bit.ly/hygieni-clean-soiledlinen).

The Science of Infection

The primary routes for transmitting infectious diseases in U.S. healthcare settings are contact, droplet and airborne, the U.S. Centers for Disease Control and Prevention (CDC) notes. Some types of pathogens can be transmitted by direct physical contact with an infected individual. They also can be transmitted indirectly when an individual makes physical contact with contaminated items or surfaces.

Those contaminated surfaces might be medical instruments, equipment, bed rails or door knobs. They might also be sheets, towels, pillows, privacy curtains, patients' clothing or medical personnel's clothing.

A 2008 study found that 42 percent of privacy curtains in a U.S. hospital were contaminated with vancomycinresistant enterococci (VRE), 22 percent with MRSA, and 4 percent with *C. difficile*.¹

A 2009 study at a large U.S. teaching hospital sampled the lapels, pockets and cuffs of 149 white coats. Twenty-three percent were contaminated with methicillin-sensitive *S. aureus*, of which 18 percent were MRSA. About 70 percent of the survey participants reported that they laundered their own white coats.²

It is possible for some pathogens to survive on linens for weeks. A study of various types of textiles—100 percent cotton clothing, 100 percent cotton terry towels, 60 percent cotton/40 percent polyester blend scrub suits and lab coats, 100 percent polyester privacy drapes—found that all bacteria survived for at least one day, and some survived for more than 90 days.³

Good Housekeeping

With so many pathogens to combat, outpatient facilities must maintain good housekeeping practices that observe the Standard Precautions set by the CDC's

2007 *Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings.*

In keeping with those standards, facilities should establish policies and procedures for routine cleaning and disinfecting as part of their infection prevention plan. These should be tailored to the specific facility and reassessed on a regular basis, taking into consideration the types of services provided and the patient population that is served, according to the CDC's <u>Guide to</u> <u>Infection Prevention in Outpatient Settings: Minimum</u> <u>Expectations for Safe Care</u>.

The greatest emphasis for cleaning and disinfecting should be placed on surfaces most likely to become contaminated with pathogens, including those in close proximity to the patient and frequently-touched surfaces in the patient-care environment. Facility policies and procedures should also address prompt and appropriate cleaning and decontamination of spills of blood or other potentially infectious materials.⁴

Ideally, the facility would employ at least one individual with training in infection prevention, but at least one such person should be available for immediate consultation. This person should be involved in developing written infection prevention policies and regularly communicate those policies to other healthcare personnel.

"Responsibility for routine cleaning and disinfection of environmental surfaces should be assigned to appropriately trained healthcare personnel. Cleaning procedures can be periodically monitored or assessed to ensure that they are consistently and correctly performed. EPA-registered disinfectants or detergents/disinfectants with label claims for use in healthcare should be selected for disinfection," says the CDC guide.⁵

In addition, the <u>Guidelines for Environmental Infection</u> <u>Control in Healthcare Facilities</u> and the <u>Guideline for</u> <u>Disinfection and Sterilization in Healthcare Facilities</u> provide thorough guidance for cleaning and disinfecting surfaces, including for cleaning blood or body substance spills.

^{1.} Sally F. Bloomfield, et al. "The infection risks associated with clothing and household linens in home and everyday life settings, and the role of laundry," International Scientific Forum on Home Hygiene, April 2011.

^{2.} Ibid.

^{3.} Ibid.

^{4.} Guide to Infection Prevention in Outpatient Settings: Minimum Expectations for Safe Care, Version 2.3, U.S. Centers for Disease Control and Prevention, September 2016

^{5.} Ibid.

Handling Linens

Throughout the process of transporting and distributing clean linen used in outpatient settings, it is vital to avoid any possibility of mixing it with soiled linen.

According to the Occupational Safety and Health Administration (OSHA), soiled linen should not be sorted or rinsed in the location of its use. It should be transported to the laundry for washing, and placed and transported in properly marked bags or containers (see Hygienically Clean Healthcare <u>Handling Clean Linen in a Healthcare</u> <u>Environment</u>).

When handling soiled linen in any healthcare setting, following the Six C's—Cover, Collect, Contain, Consolidate, Clean, Cooperate—can not only reduce the spread of infections, it can also reduce healthcare costs by eliminating the expense of lost linen products, as Hygienically Clean Healthcare explains in a training video for healthcare personnel, *The Six C's: Handling Soiled Linen in a Healthcare Environment*.

Proper procedures for handling the clean linen are important because every stage of the process involves opportunities for contamination. Every surface that touches the healthcare textile must be as hygienically clean as the textile itself.⁶

Staff members must presume that linen storage covers, cabinets, door handles or anything they contact are contaminated. All staff members should wash their hands

Key Administrative Recommendations for Outpatient Settings

- 1. Develop and maintain infection prevention and occupational health programs.
- 2. Assure availability of sufficient and appropriate supplies necessary for adherence to Standard Precautions (e.g., hand hygiene products, personal protective equipment, injection equipment).
- Assure at least one individual with training in infection prevention is employed by or regularly available (e.g., by contract) to manage the facility's infection prevention program.
- 4. Develop written infection prevention policies and procedures appropriate for the services provided by the facility and based upon evidence-based guidelines, regulations, or standards.

From: Guide to Infection Prevention for Outpatient Settings: Minimum Expectations for Safe Care before handling HCTs and any time their hands contact these potentially contaminated surfaces.⁷

Transferring pathogens and other contaminants from a staff person to the hygienically clean linen must be avoided. More than 60 percent of healthcare workers' uniforms sampled by researchers tested positive for pathogens, according to a 2011 study published in the *American Journal of Infection Control*.

Staff members who handle clean linen should avoid pressing the clean linen to their uniforms. It is especially important that clean linen do not come in contact with an employee's clothing below the waist level. Many potentially contaminated surfaces are below waist level, making it more likely that this area could be contaminated.

And staff members should never carry clean or contaminated linen cradled in unclothed arms because pathogens may be transferred to the linen. The skin comes in contact with linen more often in a healthcare setting than people might realize.⁸

Outpatient clinics must protect their employees as well as their patients from infection. OSHA requires that protection be provided "wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact."That includes personal protective equipment for eyes, face, head, and extremities, protective clothing and respiratory devices (see OSHA standard, Subpart I, *Personal Projective Equipment*, 1910.132.).

Protecting the Public

Concerns about transmitting infectious diseases shouldn't end at the clinic door.

Healthcare organizations may encourage workers to change out of soiled scrub uniforms before leaving work, but infection control experts note this is often just an option, according to a *New York Times* article.

Brief contact with a scrub-wearing healthcare worker on the subway probably would not lead to infection, according to Marcia Patrick, coauthor of the Association of Professionals

^{6.} *Handling Clean Linen in a Healthcare Environment*, Hygienically Clean Healthcare white paper, April 2017.

^{7.} Ibid.

^{8.} Ibid.

Hand Hygiene: Simple and Effective

Cleaning hands can prevent the spread of germs, including those that are resistant to antibiotics and are becoming difficult, if not impossible, to treat. But, on average, the CDC reports that healthcare providers clean their hands less than half of the times they should. Make sure employees know when and how to practice proper hand hygiene.

in Infection Control and Epidemiology's guidelines for eliminating MRSA in hospitals. "The likelihood is that the risk is low, but it's also probably not zero."⁹

Employees in some hospitals in Europe avoid the problem by requiring that employees change into hospital provided scrubs when they arrive at work and even wear sanitized plastic shoes, also provided by the hospital. At the end of the day, they change back into their street clothes before going home.¹⁰

If employees wash their dirty scrubs at home, can their laundry facilities handle the pathogens?

Domestic washing machines typically operate at temperatures of 60°C (140°F) for 30- to 40-minute cycles. That means that laundering scrub uniforms at 71°C (160°F) to meet CDC recommendations is not achievable using most home washing machine temperatures. Evidence suggests that bacterial eradication from clothing is less effective using lower temperatures, according to a report in the AANA Journal.¹¹

The use of bleach in the wash has been found to reduce microorganisms found on uniforms that were home-laundered. However, the practice of adding bleach to home-laundered clothing is not a routine practice and cannot be ensured, the *AANA Journal* continues.

"It is reasonable to allow for self-laundering of scrub uniforms by staff provided that they follow standard recommendations for employing a proper decontamination process at home. To ensure proper decontamination of scrubs, specific guidance should be provided for a home-laundering program to include recommendations derived from available research."

But another study, conducted by Bioscience Laboratories, Inc., found significantly greater contamination among home-laundered attire than scrubs laundered by the healthcare facility or scrubs sent out by the facility to a third-party company for laundering. In fact, according to the study, home-laundered scrubs "cleaned and ready to wear" had as much bacteria present as facility-laundered, third-party-laundered, and single-use scrubs worn for one day.¹²

Role of Professional Laundries

Outpatient clinics that want to protect patients, staff and the public from dangerous pathogens turn to professional healthcare laundries that provide the highest quality hygienically clean linens.

In turn, laundry facilities that want to assure customers that they have the highest standards turn to Hygienically Clean Healthcare certification. The certification ensures cleanliness through laundry plant inspection and third-party, quantified biological testing. Inspection and re-inspection verify that items are washed, dried, ironed, packed, transported and delivered using best management practices to meet key disinfection criteria. Between inspections, ongoing microbial testing quantifies cleanliness and indicates laundry process adjustments.

A laundry's dedication to compliance and processing healthcare linens and garments using best management as described in its quality assurance (QA) documentation is confirmed. QA is the focus of Hygienically Clean Healthcare inspectors' evaluation of critical control points to minimize risk.

The independent, third-party inspection confirms essential evidence that:

^{12. &}quot;Study Shows Bacterial Contamination Associated With Home-Laundered Surgical Scrubs is Significantly Greater Than Other Options," *Infection Control Today*, Jan. 8, 2010.



^{9.} Parker-Pope, Tara, "The Doctor's Hands Are Germ Free. The Scrubs Too?" New York Times, Sept. 22, 2008.

^{10.} Ibid.

^{11.} Christina M.Vera, Tony Umadhay, Marquessa Fisher, "Laundering Methods for Reusable Surgical Scrubs: A Literature Review" AANA Journal, August 2016, Vol. 84, No. 4.

- Employees are properly trained and protected
- Managers understand legal requirements
- The company is OSHA-compliant
- The physical plant operates effectively

Laundries pass three rounds of outcome-based microbial testing, indicating that their processes are producing hygienically clean healthcare linens with zero presence

of harmful bacteria. To maintain certification, laundry plants must pass quarterly testing to ensure that as laundry conditions change, such as water quality, textile fabric composition and wash chemistry, laundered product quality is consistently maintained.

Outpatient clinics that value proper hygiene value the role professional laundry facilities play in effective infection control.

Environmental Surface Cleaning and Disinfection Priorities

Category 1C: Legally Required

- a. Promptly clean and decontaminate spills of blood and other potentially infectious materials. Discard bloodcontaminated items in compliance with federal regulations. (*Also 1B*).
- b. If the spill contains large amounts of blood or body fluids, clean the visible matter with disposable absorbent material, and discard the contaminated materials in appropriate, labeled containment. (Also 2).

Category 1B: Strongly Recommended

- c. Do not use disinfectants to clean infant bassinets and incubators while these items are occupied. If disinfectants (e.g., phenolics) are used for the terminal cleaning of infant bassinets and incubators, thoroughly rinse the surfaces of these items with water and dry them before these items are reused.
- d. Do not use high-level disinfectants/liquid chemical sterilants for disinfection of non-critical surfaces.
- e. If chlorine solution is not prepared fresh daily, it can be stored at room temperature for up to 30 days in a capped, opaque plastic bottle with a 50% reduction in chlorine concentration after 30 days of storage (e.g., 1000 ppm chlorine [approximately a 1:50 dilution] at day 0 decreases to 500 ppm chlorine by day 30).
- f. Prepare disinfecting (or detergent) solutions as needed and replace these with fresh solution frequently (e.g., replace floor mopping solution every three patient rooms, change no less often than at 60-minute intervals), according to the facility's policy.
- g. If sodium hypochlorite solutions are selected, use a 1:100 dilution (e.g., 1:100 dilution of a 5.25-6.15% sodium hypochlorite provides 525-615 ppm available chlorine) to decontaminate nonporous surfaces after a small spill (e.g., <10 mL) of either blood or OPIM. If a spill involves large amounts (e.g., >10 mL) of blood or OPIM, or involves a culture spill in the laboratory, use a 1:10 dilution for the first application of hypochlorite solution before cleaning in order to reduce the risk of infection during the cleaning process in the event of a sharp injury. Follow this decontamination process with a terminal disinfection, using a 1:100 dilution of sodium hypochlorite. (*Also 1C*).

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Category 2: Suggested

- h. An EPA-registered sodium hypochlorite product is preferred, but if such products are not available, generic versions of sodium hypochlorite solutions (e.g., household chlorine bleach) can be used.
- i. Clean housekeeping surfaces (e.g., floors, tabletops) on a regular basis, when spills occur, and when these surfaces are visibly soiled.
- j. Clean walls, blinds, and window curtains in patient-care areas when these surfaces are visibly contaminated or soiled.
- k. Decontaminate mop heads and cleaning cloths regularly to prevent contamination (e.g., launder and dry at least daily).
- I. Detergent and water are adequate for cleaning surfaces in nonpatient-care areas (e.g., administrative offices).
- m. Disinfect (or clean) environmental surfaces on a regular basis (e.g., daily, three times per week) and when surfaces are visibly soiled.
- n. Follow manufacturers' instructions for proper use of disinfecting (or detergent) products such as recommended usedilution, material compatibility, storage, shelf-life, and safe use and disposal.
- In units with high rates of endemic Clostridium difficile infection or in an outbreak setting, use dilute solutions of 5.25%–6.15% sodium hypochlorite (e.g., 1:10 dilution of household bleach) for routine environmental disinfection. Currently, no products are EPA-registered specifically for inactivating C. difficile spores.
- p. Use a one-step process and an EPA-registered hospital disinfectant designed for housekeeping purposes in patient care areas where 1) uncertainty exists about the nature of the soil on the surfaces (e.g., blood or body fluid contamination versus routine dust or dirt); or 2) uncertainty exists about the presence of multidrug resistant organisms on such surfaces. See 5n for recommendations requiring cleaning and disinfecting blood-contaminated surfaces.
- q. Wet-dust horizontal surfaces regularly (e.g., daily, three times per week) using clean cloths moistened with an EPAregistered hospital disinfectant (or detergent). Prepare the disinfectant (or detergent) as recommended by the manufacturer.
- r. Disinfect noncritical surfaces with an EPA-registered hospital disinfectant according to the label's safety precautions and use directions. Most EPA-registered hospital disinfectants have a label contact time of 10 minutes. However, many scientific studies have demonstrated the efficacy of hospital disinfectants against pathogens with a contact time of at least 1 minute. By law, the user must follow all applicable label instructions on EPA-registered products. If the user selects exposure conditions that differ from those on the EPA-registered product label, the user assumes liability for any injuries resulting from off-label use and is potentially subject to enforcement action under FIFRA. (Also 1C).
- s. For site decontamination of spills of blood or other potentially infectious materials (OPIM), implement the following procedures. Use protective gloves and other PPE (e.g., when sharps are involved use forceps to pick up sharps, and discard these items in a puncture-resistant container) appropriate for this task. Disinfect areas contaminated with blood spills using an EPA-registered tuberculocidal agent, a registered germicide on the EPA Lists D and E (i.e., products with specific label claims for HIV or HBV or freshly diluted hypochlorite solution. (Also 1C).
- t. Use protective gloves and other PPE appropriate for this task. Category II (Also IC).

Category Definitions:

1C: Required by state or federal regulations. Because of state differences, readers should not assume that the absence of an IC recommendation implies the absence of state regulations.

1B: Strongly recommended for implementation and supported by some experimental, clinical, or epidemiologic studies, and by a strong theoretical rationale.

2: Suggested for implementation and supported by suggestive clinical or epidemiologic studies or by a theoretical rationale.

From: Guideline for Disinfection and Sterilization in Healthcare Facilities



USE ONLY LAUNDRY PROVEN CLEAN & GREEN

TRSA certified textile services cost-effectively launder and deliver reusable linens, gowns, scrubs, garments, towels, floor mats and more to hospitals and medical centers, allowing you to focus on patients.

To be Hygienically Clean, launderers' processes must be verified and outcomes must be quantified. To be Clean Green, laundry water and energy conservation success must be gauged.

It's the same kind of scientifically rigorous and valid performance measurement required of more and more functions in healthcare facilities. TRSA inspects laundries for compliance with industry laundry management practices and requires microbial testing to confirm cleanliness.

Prove your linen contributes to your efforts to conserve resources and control infection. Find a Hygienically Clean and Clean Green laundry at www.trsa.org.





