PDI Environmental Services Toolkit

Introduction to Environmental Hygiene for the Environmental Services Professional

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Introduction to Environmental Hygiene for the Environmental Services Professional

In today's healthcare environment, collaboration is a critical component in the prevention of Healthcare Associated Infections (HAI's). Now more than ever, a clean and sanitary patient environment is being measured as a component of the Infection Prevention and Control process. In addition, in this era of continual healthcare reform, outcome measures such as patient satisfaction and the cleanliness of the environment are common metrics within hospitals. Payers such as the Centers for Medicare and Medicaid Services (CMS) are also correlating hospital reimbursement with many of these measures, which has caused a financial impact to low performing facilities. This includes both the cleanliness of medical equipment, patient care surfaces, and environmental surfaces[1]. The Environment of Care is a shared goal between Environmental Services and also Infection Prevention. There must be a collaborative partnership formed between the Infection Prevention and Environmental Services Team in order for targeting zero HAIs to be an achievable goal.

The patients and healthcare provider team routinely contaminate the healthcare environment through daily activities, and this can increase the risk for infection transmission. Transmission can result from contact with either contaminated hands or environmental surfaces, and also the patient's own skin flora. One of the most critical interventions that can be routinely performed to decrease the risk for cross transmission and development of HAI is routine cleaning and disinfection of the healthcare environment. This includes both medical equipment and environmental surfaces. High touch items, such as those used between patients regularly, should be disinfected between each use to minimize the risk for contamination.

Recent expert opinions have asserted that it is actually the Environmental Surfaces Professional who spends the majority of time out of the entire care team with the patient in the hospital room. This creates an interesting opportunity to utilize the Environmental Services professional as an extension of the Infection Prevention advocacy team. Facilities should include the Environmental Services team members in the infection prevention unit based education, and also engage them in an active and personal role in preventing infections for patients that they serve. This concept was demonstrated by researchers at John Hopkins through the Comprehensive Unit Based Safety Program (CUSP) initiative. They can also serve as educators by informing patients of the steps that they are taking to mitigate the risk for infection such as daily and terminal cleaning, safety precautions such as the use of alcohol based hand rubs, and encouraging the patient's family to follow applicable hygiene and isolation precautions and practice hand hygiene as appropriate. There is typically a positive correlation in enhanced patient satisfaction with increased interaction with members of the healthcare delivery team, which most certainly includes Environmental Services Professionals. Environmental Services Professionals are not only subject matter experts in maintaining the Environment of Care, but also in serving as a patient safety advocate by reducing the incidence of HAIs.

Role of the Environment in the Transmission of HAIs

Now more than ever, disinfection of the patient's environment is a key component of the Infection Prevention and Control process. One of the most critical interventions that can be routinely performed to decrease the risk for cross transmission and development of HAI is routine cleaning and disinfection of the healthcare environment. This includes both medical equipment and environmental surfaces, both of which are found in great quantities in today's healthcare environments.

Environmental surface disinfection is an important factor in the prevention of HAIs. There are many environmental surfaces that are in healthcare settings are considered "non-critical" surfaces and therefore require a low-level disinfectant. Cross-contamination can occur in a variety of ways, but most often the environmental surface becomes contaminated and then serves as a reservoir for microbial growth. The hands of either the healthcare provider or the patient come in contact with this contaminated surface, and then contact is made with another device or surface, thereby contaminating it as well.

[1] www.cdc.gov/hai, US Centers for Disease Control and Prevention, 2012.

The ability of microorganisms to successfully survive and reproduce on environmental surfaces has never been greater. Organisms such as Methicillin-Resistant *Staphylococcus aureus* (MRSA), *Escherichia coli* (E. coli), and *Clostridium Difficile* (C-diff), can survive on surfaces for several months. Because of the resilience of these microorganisms, it is important to routinely disinfect potentially contaminated surfaces to reduce the risk of transmission.

Before effective disinfection can occur, it is important to thoroughly clean visibly soiled environmental surfaces to allow the full efficacy of the chosen disinfectant product to be achieved. Cleaning as defined by the latest Centers for Disease Control and Prevention (CDC) Guideline for Disinfection and Sterilization in Healthcare Facilities released in 2008 is "the removal of foreign material (e.g. soil, and organic matter) from objects, and is normally accomplished using water with detergents or enzymatic products. Thorough cleaning is essential before high-level disinfection and sterilization because inorganic and organic materials that remain on the surfaces of instruments interfere with the effectiveness of these processes." Cleaning removes bioburden from the affected surface by reducing the number of microorganisms that must be inactivated.[2] Removing bioburden from the surface prior to application of the disinfectant solution will result in increased disinfectant efficacy. It is also important to also apply friction to the area being cleaning and disinfected in order to remove more resistant forms of microorganisms such as spores (i.e. *C-diff*) from the surfaces that may not be readily inactivated by the disinfectant. This will decrease the risk for development of Multi-Drug Resistant Organisms (MDROs).

High-touch surfaces such as blood pressure cuffs, stethoscopes, and glucometers require frequent disinfection to prevent cross-transmission between patients. The physical number of microorganisms present on any given surface is influenced by a number of factors including: 1) the amount of moisture present on the surface, 2) the amount of activity taking place in the immediate environment, 3) the number of people having contact with the environment, and 4) the type of environmental surfaces present and their ability to support the growth of microorganism.

For more information on disinfection and sterilization, visit the Association for the Healthcare Environment (AHE) website at www.ahe.org.

MDROs and Other Emergent Pathogens

The CDC routinely monitors the globe for emergent microbial threats. To prevent these MDROs, healthcare facilities should follow the CDC evidence-based recommendations to prevent HAI transmission including:

- Appropriate Use of Personal Protective Equipment (PPE)
- Routine Cleaning
- Disinfection (both daily and terminal)
- Appropriate Use of Antibiotics
- Hand Hygiene (for healthcare team, Environmental Services Professionals, and patients)

Regulatory Pathways of EPA-Registered Healthcare Disinfectants

Every day Environmental Services Professionals and other healthcare personnel face significant challenges due to evolving technology, healthcare reform and, of course, time constraints. Choosing the right disinfectant products must be a carefully made decision but it shouldn't be burdensome. Yet, because healthcare products are continually being released, updated and retired from the marketplace, Environmental Services Professionals would be challenged to monitor the status of every single item within their facilities. This article will provide a methodical approach to evaluate and effectively use healthcare disinfectants including:

- Understanding Product Labels
- Evaluating Broad Spectrum Efficacy Claims

[2] Rutala, W A; Weber, D J; CDC Guideline for Disinfection and Sterilization in Healthcare Facilities, Centers for Disease Control and Prevention, 2008.

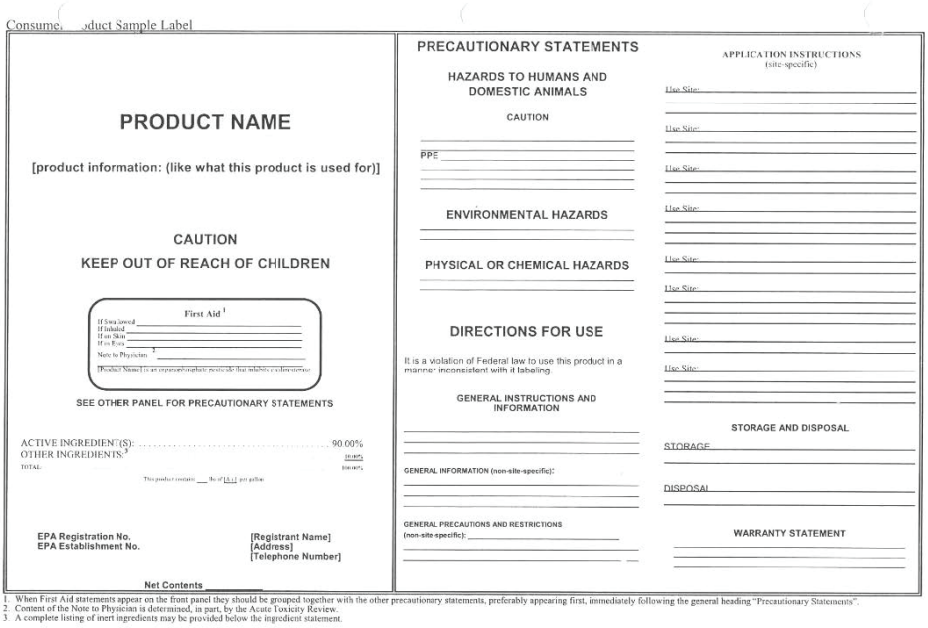
• Adhering to Overall Contact Time

• Educating Staff to Improve Compliance

Components of Healthcare Disinfectant Labels

In the United States, all disinfectants must be registered with the United States Environmental Protection Agency (EPA), the federal government agency responsible for registration of all products containing ingredients with the potential to enter the environment. Once a product is registered by the EPA, the manufacturer will receive an EPA registration number for that specific product. In addition, the EPA assigns an establishment number to the manufacturer and specific manufacturing locations.

EPA regulates what information must be included on EPA-registered product labels (See Figure 1). For healthcare disinfectant labels, these include the product name, ingredient statement, "Keep Out of Reach of Children" statement, signal words, first aid instructions, net contents/net weight, EPA Registration number, EPA Establishment number, precautionary statements, directions for use information, storage and disposal statement, and any product specific marketing claims and graphics.


Consumer Product Sample Label

PRODUCT NAME

[product information: (like what this product is used for)]

CAUTION

KEEP OUT OF REACH OF CHILDREN

First Aid [1]

SEE OTHER PANEL FOR PRECAUTIONARY STATEMENTS

ACTIVE INGREDIENT(S): 90.00%

OTHER INGREDIENTS [3]

TOTAL: 100.00%

EPA Registration No.
EPA Establishment No.

[Registrant Name]
[Address]
[Telephone Number]

Net Contents

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

PPE

ENVIRONMENTAL HAZARDS

PHYSICAL OR CHEMICAL HAZARDS

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with it labeling.

GENERAL INSTRUCTIONS AND INFORMATION

GENERAL INFORMATION (non-site-specific):

GENERAL PRECAUTIONS AND RESTRICTIONS (non-site-specific):

APPLICATION INSTRUCTIONS (site-specific)

Use Site:

STORAGE AND DISPOSAL

STORAGE

DISPOSAL

WARRANTY STATEMENT

1. When First Aid statements appear on the front panel they should be grouped together with the other precautionary statements, preferably appearing first, immediately following the general heading "Precautionary Statements".
2. Content of the Note to Physician is determined, in part, by the Acute Toxicity Review.
3. A complete listing of inert ingredients may be provided below the ingredient statement.

Figure 1: Standard Healthcare Disinfectant Label Master Template

Criticality of Broad Spectrum Efficacy Claims

When evaluating a new or existing healthcare disinfectant, you should review the full listing of efficacy claims available from the product's manufacturer. It is also important to review other ancillary materials such as the Safety Data Sheet (SDS) and instructions for use documents. Product labels typically list efficacy claims by class of microorganism, including bacteria, viruses, mycobacterium (TB), and fungi.

When evaluating microorganism efficacy claims, review your facility's infection prevention risk assessment and infection prevention and control plan, as well as the pharmacy antibiogram to ensure proper selection of a product with relevant pathogenic efficacy claims. The broader spectrum a product's efficacy, the more effective the product will be against a wide variety of gram positive and gram negative bacteria. In addition, with the continual emergence of new and mutations of existing MDROs, Infection Preventionists should seek products with broad general bactericidal efficacy, but also products that have demonstrated effectiveness against organisms such as Multi-Drug Resistant *Acinetobacter baumannii*, Extended Spectrum Beta-Lactamase (ESBL) producing organisms such as *E. coli*, and Carbapenem Resistant organisms such as

Klebsiella pneumoniae. Products with efficacy against these more resistant pathogens will assist the Infection Preventionist and Environmental Services professional in combatting the daily threats of these microorganisms.

Viruses, particularly the bloodborne pathogens and those with the potential for causing outbreaks (i.e.: Norovirus, Influenza, and rotavirus) are also of concern to the users of healthcare disinfectants. You should expect (and require) claims against bloodborne pathogens such as HIV, Hepatitis B and Hepatitis C for any product that will be used in the healthcare environment. Also, seek products with other efficacy claims including enveloped and non-enveloped viruses where appropriate. NOTE: Products may have different contact times for viruses than for bacteria. (See Figure 2)

Products effective against Mycobacterium are considered intermediate level disinfectants. Many clinicians inquire as to why TB is not specifically tested in the laboratory setting for initial product approval. This is due to the high pathogenicity and potential transmission of this organism to the laboratory worker. Rather than put the laboratory workers at risk, a surrogate organism, typically *Mycobacterium bovis*, is utilized for testing procedures.

Increasingly more prevalent are fungal organisms being recovered in the healthcare environment such as *Candida albicans* and *Aspergillus*. When evaluating fungal efficacy claims, seek products with efficacy against pathogenic fungal organisms that are clinically relevant based on the facility's risk assessment.

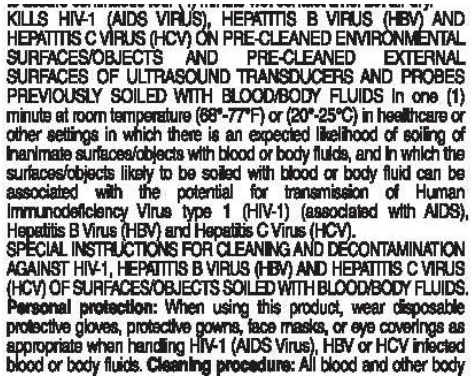

KILLS HIV-1 (AIDS VIRUS), HEPATITIS B VIRUS (HBV) AND HEPATITIS C VIRUS (HCV) ON PRE-CLEANED ENVIRONMENTAL SURFACES/OBJECTS AND PRE-CLEANED EXTERNAL SURFACES OF ULTRASOUND TRANSDUCERS AND PROBES PREVIOUSLY SOILED WITH BLOOD/BODY FLUIDS in one (1) minute at room temperature (68°-77°F) or (20°-25°C) in healthcare or other settings in which there is an expected likelihood of soiling of inanimate surfaces/objects with blood or body fluids, and in which the surfaces/objects likely to be soiled with blood or body fluid can be associated with the potential for transmission of Human Immunodeficiency Virus type 1 (HIV-1) (associated with AIDS), Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV).
SPECIAL INSTRUCTIONS FOR CLEANING AND DECONTAMINATION AGAINST HIV-1, HEPATITIS B VIRUS (HBV) AND HEPATITIS C VIRUS (HCV) OF SURFACES/OBJECTS SOILED WITH BLOOD/BODY FLUIDS.
Personal protection: When using this product, wear disposable protective gloves, protective gowns, face masks, or eye coverings as appropriate when handling HIV-1 (AIDS Virus), HBV or HCV infected blood or body fluids. **Cleaning procedure:** All blood and other body

Figure 2: Standard Language from Disinfectant Label Specific to Bloodborne Pathogens

It's all about the Time: Importance of Overall Contact Time

Manufacturers of disinfectants are required to list detailed information regarding efficacy claims and contact time for each class of microorganism for which the product is effective. This typically includes the classes of bacteria (both gram positive and gram negative), viruses, mycobacterium and fungi. In accordance with the current requirements from OSHA, labels must also provide detailed information on the product's effectiveness against bloodborne pathogens including HIV, Hepatitis B Virus and Hepatitis C Virus.

As you can see from the illustration above, PDI's special instructions for cleaning and disinfecting surfaces or other objects potentially contaminated with bloodborne pathogens are simple and easy to interpret. Many manufacturers provide several contact times, most often one for bacteria, one for viruses, another for mycobacterium and possibly one for fungi, as well. These contact times may vary greatly from anywhere from one minute to ten minutes. Because it is impossible for the user of the product to determine the type of potential contamination that exists on the surface to be treated without using advanced laboratory methods, the user should disinfect the surface according to the longest contact time found on the product label to ensure full efficacy of the solution. For example, a healthcare disinfectant that you are reviewing has a contact time for bacteria of one minute, a contact time of two minutes for viruses including HIV, a five minute contact time for *Mycobacterium bovis* (TB), and a ten minute contact time for fungi, then the total contact time for the product when used correctly is ten minutes. Utilizing the longest contact time will ensure that all microorganisms included on the product's label are successfully inactivated.

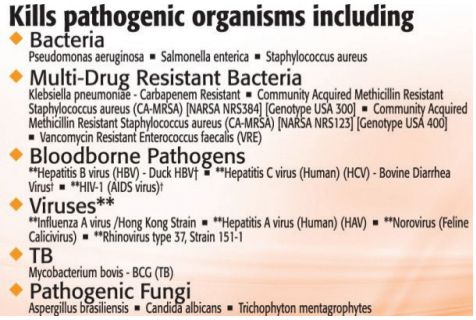


Figure 3: Enhanced Healthcare Disinfectant Label

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) regulates pesticide distribution, sale, and use in the United States. Healthcare disinfectants, when used in accordance with manufacturer's instructions, should not cause unreasonable harm to the environment. The use of the product, however, must be consistent with the directions for use and also any labeling instructions. This is typically found on the product's label with the following verbiage: "It is a violation of Federal Law to use this product in a manner inconsistent with its labeling."

Importance of Staff Education

To meet The Joint Commission and other accreditation/regulatory agency requirements, the users of any healthcare disinfectant must be properly trained on the use of the products in accordance with the facility's policy, as well as the manufacturer's label and instructions for use. This training should include all relevant indications for use, instructions for use and any relevant safety information. Healthcare facilities should take full advantage of any educational services, including product in-service training, from the product's manufacturer to ensure that all potential users of the products receive full training to meet regulatory and accreditation requirements and, more importantly, to ensure safe use of the product.

Regulatory and accreditation agencies such as the CMS, state departments of public health, and The Joint Commission all assess compliance and proper usage of healthcare disinfectants in healthcare facilities, including hospitals and long term care facilities. Specifically, surveyors from these agencies solicit feedback from users of healthcare disinfectants regarding proper contact time, efficacy claims, and MSDS or SDS information.

For more information on the approval process and federal regulations for healthcare disinfectants, visit the Environmental Protection Agency's website at http://www.epa.gov/oppad001/ad_info.htm. When used correctly, healthcare disinfectants assist in maintaining a clean environment in all healthcare settings, both inpatient and outpatient. Regular cleaning and disinfection protocols are critically important in reducing the presence of these pathogens on high touch surfaces such as bedrails, over bed tables, glucose meters, blood pressure cuffs, and stethoscopes and preventing cross-transmission. Always be sure to formally evaluate efficacy, safety, labeling instructions, and potential impact on the users of healthcare disinfectants prior to making a decision regarding a potential product.

For specific information disinfection guidelines in healthcare settings, visit the CDC website at www.cdc.gov/hai.

Implementation of Evidence-Based Practices for Environmental Services

See Following Sample Protocols

Pretest and Posttest for Environmental Hygiene

Name: _____ **Date:** _____

Use the following questions as a pretest and posttest for staff comprehension regarding environmental hygiene compliance.

1) True/False: Environmental Services Professionals do not play a role in preventing the transmission of Healthcare Associated Infections.

2) True/False: It is important to follow the total contact time for disinfectants.

3) True/False: All disinfectants in the United States must be EPA registered.

4) True/False: It is not important to follow the manufacturer's instructions for use when utilizing disinfectants in the healthcare setting.

5) True/False: Bacteria and viruses are not considered critical claims for healthcare disinfectants.

Test for Environmental Hygiene

Answer Key

1) True/**False**: Environmental Services Professionals do not play a role in preventing the transmission of Healthcare Associated Infections.

2) **True**/False: It is important to follow the total contact time for disinfectants.

3) **True**/False: All disinfectants in the United States must be EPA registered.

4) True/**False**: It is not important to follow the manufacturer's instructions for use when utilizing disinfectants in the healthcare setting.

5) True/**False**: Bacteria and viruses are not considered critical claims for healthcare disinfectants.

Evaluating a Surface Disinfectant: Key Questions to Ask

1) Is the product an EPA registered disinfectant?

2) How long has the product been on the market?

3) What level disinfectant is the product (low, intermediate, high)?

4) What is the active ingredient of the product?

5) Is the product available in both canister and individual formats?

6) What is the overall contact time for the product (the total time it takes to kill all organisms listed on the product's label)?

7) Is the product manufactured in the United States?

8) Does the company directly manufacture the product or is out outsourced to another organization? If outsourced, to whom?

9) Does the facility have an on-site quality laboratory?

10) Is the company ISO certified? If so, provide documentations of certifications.

11) What value add services and education/training does the company provide in addition to the product (such as in-service training)?

12) Does the company offer wall brackets and/or floor stands to meet The Joint Commission and CMS requirements for a Sanitary Environment?

13) Does the company offer fanny packs and mobile mounting solutions for Point-of-Care use?

14) Does the company have relationships with medical equipment manufacturers to test compatibility of the product on their equipment? Is the product safe to use on major types of medical equipment? If so, describe the equipment compatibility program. Will you work with major contracted equipment vendors to seek necessary compatibility?

15) Does the product have any independent clinical studies to support its efficacy?

16) Does the product meet the CDC Guidelines for Disinfection and Sterilization of non-critical items?

17) Does the product meet the Federal OSHA Bloodborne Pathogens Standard (HIV, Hepatitis B, and Hepatitis C)?

18) Does the organization have any formal relationships with Infection Prevention Industry Partners such as the Centers for Disease Control and Prevention or the Association for Professionals in Infection Control and Epidemiology (APIC)?

19) What personal protective equipment is required for general use of the product (i.e. gloves, masks, gowns, and eye protection)?

20) Does the product have efficacy against the following clinical relevant microorganisms:

i. MRSA

ii. VRE

iii. *Acinetobacter baumannii*

iv. Influenza

v. RSV

vi. Hepatitis B virus

vii. Hepatitis C virus

viii. HIV

ix. *Staphylococcus aureus*

x. ESBL Producing Organisms such as *Escherichia coli*

xi. Klebsiella pneumoniae

21) Does the product have approved efficacy claims for the following classifications of microorganisms:

a. Gram Positive Bacteria

b. Gram Negative Bacteria

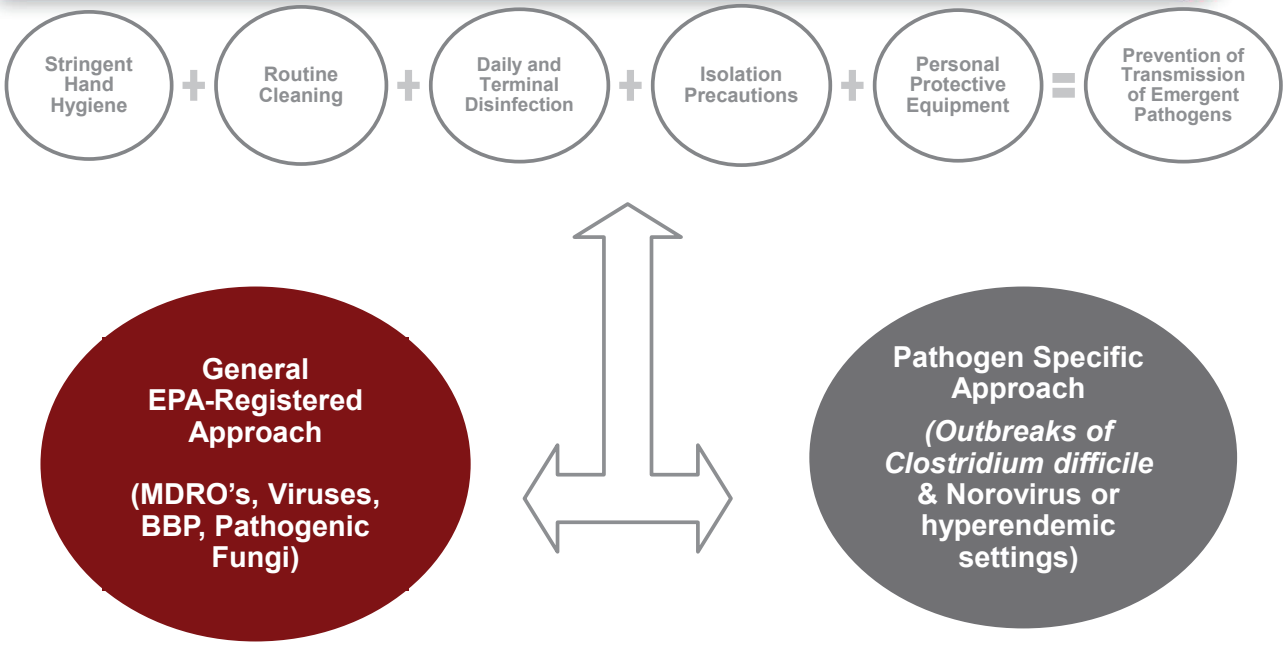
c. Enveloped Viruses

d. Non-enveloped Viruses

e. Pathogenic Fungi

f. Bloodborne Pathogens

CDC's Approach to the Prevention of Transmission of Emergent Pathogens



Source: Guideline for Disinfection and Sterilization in Healthcare Settings, Centers for Disease Control and Prevention, 2008.

Facility Name:

Sample Protocol

Disinfection of Environmental Surfaces and Mobile Clinical Equipment
Sani-Cloth® AF3 Germicidal Wipe Canister Protocol

Guideline: Clinical and environmental staff shall clean and disinfect environmental surfaces and non-critical patient care items and equipment utilizing the PDI Sani-Cloth® AF3 Germicidal Disposable Cloth. Sani-Cloth® disinfectant wipes are EPA registered for hospital disinfection. The frequency of cleaning is determined by the degree of risk of infection transmission. "High touch" surfaces shall be cleaned on a more frequent basis than minimal touch surfaces and includes mobile equipment such as EKG machines, portable radiology equipment, and emergency and medication carts, etc. Recommendations on frequency of disinfection can be found in the attached table. Appropriate use of Sani-Cloth® AF3 disinfectant wipes will facilitate compliance with the regulations and standards as listed below.

Intended Audience:

- Clinical Nursing Personnel
- Environmental Services Professionals
- Infection Preventionists
- Radiology Technologists
- Cardiac Technologists
- Laboratory Personnel (i.e. Phlebotomists)
- Emergency Medical Services Professionals
- Biomedical Services

Suggested Point of Care Locations:

- Medication Carts
- Patient Care Areas and Rooms
- Nursing Stations
- Environmental Services Carts
- Isolation Carts
- Ambulance Units
- Soiled and Clean Utility Rooms
- Medication Rooms
- IV Poles

Approval Date: ___/___/___

Revision Date: ___/___/___

Facility Name:

Sample Protocol

Disinfection of Environmental Surfaces and Mobile Clinical Equipment
Sani-Cloth® AF3 Germicidal Wipe Canister Protocol

References and Compliance Requirements:

Occupational Safety and Health Administration (OSHA) Bloodborne Pathogens Standard: *Employers shall provide work practice controls and housekeeping practices to reduce likelihood of exposure to bloodborne pathogens.*

Department of Public Health (DOH): *Facilities must provide a safe, functional, sanitary and comfortable environment for the residents, staff and the public. The facility must establish and maintain an infection control program designed to help prevent the development and transmission of disease and infection.*

Centers for Disease Control and Prevention (CDC): Guidelines for Environmental Infection Control in Health Care Facilities: *Clean and disinfect "high touch" surfaces on a more frequent schedule than minimal touch surfaces. Use a one-step process with an EPA approved hospital disinfectant designed for housekeeping purposes in patient care areas.*

The Joint Commission (TJC): National Patient Safety Goals: *Reduce the risk of healthcare associated infections.*

Association for the Healthcare Environment (AHE) Practice Guidance for Environmental Cleaning: *Evidence-based practices for proper environmental cleaning and disinfection, as well as evaluating the effectiveness of an environment cleaning program.*

Centers for Disease Control and Prevention (CDC): Guideline for Disinfection and Sterilization in Healthcare Facilities: *Evidence-based recommendations on the methods for cleaning, disinfection, and sterilization of patient-care medical devices and for cleaning and disinfecting the healthcare environment.*

Approval Date: ___/___/___

Revision Date: ___/___/___

Facility Name:

Sample Protocol

Disinfection of Environmental Surfaces and Mobile Clinical Equipment
Sani-Cloth® AF3 Germicidal Wipe Canister Protocol

Definitions:

Non-Critical items and equipment: Those items that come in contact with intact skin but not with mucous membranes or equipment that is shared between patients, such as glucometers, pulse oximeters, portable radiology equipment, phlebotomy equipment, blood pressure cuffs, stethoscopes, IV poles, IV pumps, battery operated thermometers, monitors, utility carts, stretchers, wheelchairs, telephones, computer keyboards, linen hampers, etc.

Environmental surfaces: Horizontal surfaces that come in contact with patients, staff, or visitors. Examples of such high touch surfaces may include, but are not limited to, tables, beds, bed rails, chairs, ledges, lights, light switches and countertops.

Equipment Needed:

PDI Sani-Cloth® AF3 wipes Canister

Gloves as required by institutional policy and OSHA Bloodborne Pathogens Standard

Directions for Use:

Steps	Key Points
1. Wearing gloves as appropriate by institutional policy and in compliance with the OSHA Bloodborne Pathogens Standard, clean and disinfect environmental surfaces and patient care equipment with a Sani-Cloth® AF3 disinfectant wipe. For visibly soiled surfaces, clean first with one disinfectant wipe and use a second wipe for the disinfection process.	a. Use Sani-Cloth® AF3 disinfectant wipe according to manufacturer's instructions. b. Allow surfaces to air dry for three minutes to allow for sufficient contact time to kill the microorganisms.
2. Non-critical items, equipment, or surfaces shall be disinfected between patients, after each shift, daily, weekly, or monthly according to a written schedule.	c. Refer to attached table for Recommendations on Frequency of Disinfection. d. Refer to attached listing of Areas of Use for Sani-Cloth® AF3 wipes.
3. In rooms of patients on isolation precautions, non-critical items and equipment will be disinfected at least daily AND upon removal from room.	e. Sani-Cloth® AF3 wipes are effective against MDRO's, Bloodborne Pathogens, Pathogenic Fungi, Bacteria, Viruses, and Mycobacterium.
4. Discard disinfectant wipe into regular trash unless saturated with blood or other OPIM.	f. Sani-Cloth® AF3 wipes are disposable but NOT flushable.

Approval Date: ___/___/___

Revision Date: ___/___/___

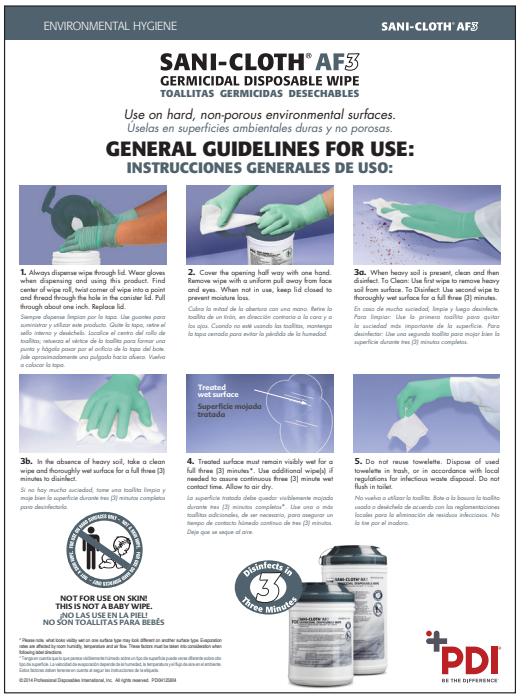
Facility Name:

Sample Protocol

Disinfection of Environmental Surfaces and Mobile Clinical Equipment
Sani-Cloth® AF3 Germicidal Wipe Canister Protocol

ITEM	FREQUENCY OF DISINFECTION			ITEM	FREQUENCY OF DISINFECTION		
	AFTER PT. USE	DAILY	WEEKLY		AFTER PT. USE	DAILY	WEEKLY
IV Poles	X	X (1)		Shower transfer benches			X
IV Pumps/Controllers	X	X(1)		Bicycles/Treadmills (Rehab)			X
Electronic Thermometers	X			Anesthesia Carts/Machines			X
Blood Glucose Monitors	X			Phlebotomy chairs	X (2)	X	
Bed Rails		X		Telephones		X	
Monitors	X	X(1)		Centrifuges			X
EKG Machines		X		Lab Specimen Baskets/Holders			X
EKG Leads		X		Medication Carts/Trays		X	
Med Carts		X		Mayo trays/stands	X(2)	X	
Stethoscopes	X			Isolation Carts	X		
Otoscopes/Ophthalmoscope	X			Pulmonary Function Machines	X		
Blood Pressure Cuff/Units	X			IV Team Baskets/Carts		X	
Ventilators	X	X(1)		Emergency/ Crash Carts	X		
Incubators/Bassinets	X	X(1)		Exercise Mats		X	
Ultrasound probe (doppler)	X			Weights (Rehab)		X	
Exam Tables/Chairs	X(2)	X		Wheelchairs	X (2)		X
Infant Scales	X			Stair railings (Rehab)		X	
Procedure Tables	X (2)	X		Activity Balls/Games (Rehab)		X	
Toys/Play Areas	X	X		Walkers/Canes		X	
Gurneys/Stretchers	X (2)		X	Massage Tables	X(2)	X	
Procedural Carts		X		Countertops		X	
Procedural Lamps		X		Work Stations		X	
Radiology machines			X	Utility Rooms		X	
Mammography Units	X (3)		X				
Radiology tables	X(2)	X					

DISINFECTION OF PATIENT CARE ITEMS



ALL PATIENT CARE EQUIPMENT MUST BE DISINFECTED AFTER USE ON PATIENTS ON ISOLATION PRECAUTIONS

(1) Item/equipment should be disinfected daily while in patient use

(2) Item/equipment covered with sheet, table paper or other protective covering need daily disinfection. If no protective covering or soiled with blood/body fluids, equipment should be disinfected after patient use

(3) Parts of unit that are in direct contact with breast must be disinfected after patient use

Source: Various Regulatory Agencies and CDC/CMS Standards of Care and Hygiene

PDI BE THE DIFFERENCE

Facility Name:

Sample Protocol

Disinfection of Environmental Surfaces and Mobile Clinical Equipment
Sani-Cloth® AF3 Germicidal Wipe Canister Protocol

Approval Record:

_____ _____/_____/_____

Director, Environmental Services Date:

_____ _____/_____/_____

Director, Infection Prevention Date:

_____ _____/_____/_____

Director of Nursing / Chief Nursing Officer Date:

_____ _____/_____/_____

Director, Biomedical Engineering Date:

Summary of CDC Recommendations for Preventing Transmission of MERS-CoV

Infection Prevention Category	Recommendations	Comments
Hand Hygiene	• Healthcare Provider should perform hand hygiene frequently, including before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of PPE, including gloves. • Healthcare facilities should ensure that supplies for performing hand hygiene are available.	• Hand hygiene in healthcare settings can be performed by washing with soap and water or using alcohol-based hand rubs. If hands are visibly soiled, use soap and water, not alcohol-based hand rubs.

Environmental Infection Control	• Follow standard procedures, per hospital policy and manufacturers' instructions, for cleaning and/or disinfection of:
	  • Environmental surfaces and equipment
	  • Textiles and laundry
	  • Food utensils and dishware
		• Use EPA-registered hospital disinfectants to disinfect hard non-porous surfaces.
		  • Follow label instructions for use

Note: For full listing of CDC recommendations, visit: http://www.cdc.gov/coronavirus/mers/infection-prevention-control.html
Source: Interim Infection Prevention and Control Recommendations for Hospitalized Patients with Middle East Respiratory Syndrome Coronavirus (MERS-CoV), US Centers for Disease Control and Prevention, 2014.

Summary of US Clinical Guidelines for *Clostridium difficile* *For Environmental Hygiene and Control*

Clinical Guideline	Clinical Practice Recommendations
Centers for Disease Control and Prevention: Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008. www.cdc.gov	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. *Category II*. 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). *Category IB*. 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. *Category II.*
SHEA/IDSA Practice Recommendation: Strategies to Prevent *Clostridium difficile* Infections in Acute Care Hospitals, 2014. www.shea-online.org	Perform environmental decontamination of rooms of patients with CDI using sodium hypochlorite (household bleach) diluted 1:10 with water or an Environmental Protection Agency (EPA) approved sporicidal product in an outbreak of hyperendemic setting. Facilities should consider using a 1:10 dilution of sodium hypochlorite (household bleach) or other product with an EPA-approved claim for *C. difficile* sporicidal activity to disinfect the environment in outbreak and hyperendemic settings in conjunction with other IPC measures. The solution should have a contact time that meets the manufacturer's recommendations for *C. difficile* spores. Assess the adequacy of cleaning and disinfection practices before changing to a new cleaning product (eg, bleach). If cleaning and disinfection practices are not adequate, address this before changing products.
APIC Guide to the Elimination of *Clostridium difficile* in Healthcare settings, 2013. Summary of *C. difficile* Transmission Prevention Activities During Routine Infection Prevention and Control Responses www.apic.org	Use EPA-approved germicide for routine disinfection during non-outbreak situations. Ensure that personnel allow appropriate germicide contact time. Ensure that personnel responsible for environmental cleaning and disinfection have been appropriately trained. For routine daily cleaning of all patient rooms, address at least the following items: Bed, including bedrails and patient furniture (i.e., bedside and over-the-bed tables and chairs), Bedside commodes, Bathrooms, including sink, floor, tub/shower, toilet, Frequently touched or high-touch surfaces such as light switches, door knobs, call bell, monitor cables, computer touchpads, monitors, and medical equipment (e.g., intravenous fluid pumps). Disinfect all items that are shared between patients (e.g., glucose meters, infusion pumps, feeding pumps). Monitor adherence to cleaning and disinfection processes by personnel responsible for environmental cleaning.
APIC Guide to the Elimination of *Clostridium difficile* in Healthcare settings, 2013. Summary of Additional *C. difficile* Transmission Prevention Activities During Heightened Infection Prevention and Control Responses www.apic.org	A increased level of interventions should be implemented when there is evidence of ongoing transmission of *C difficile.,* an increase in CDI rates, and/or evidence of change in the pathogenesis of CDI (e.g., increased morbidity/mortality among patients with CDI), despite routine preventive activities. Use a 1:10 dilution of 5.25% sodium hypochlorite for disinfecting the patient's room and all equipment used in that room. Verify compatibility of the equipment with the bleach solution. Use 1:10 dilution of 5.25% sodium hypochlorite for daily disinfection as well as discharge disinfection for the room of the patient with CDI. If there is evidence of ongoing transmission, consider expanding the use of 1:10 dilution of 5.25% sodium hypochlorite for disinfection of all patient rooms and equipment. Ensure that staff members understand how to use the sodium hypochlorite (bleach) solution and allow adequate contact time. Ensure that personnel responsible for environmental cleaning and disinfection have been appropriately trained and are using the correct PPE. Use bleach wipes as an adjunct to environmental cleaning and disinfection; train staff on their use, including instruction on how large an area can be disinfected with a single wipe and potential adverse effects of the product, such as staining, corrosion, and damage to equipment.

Summary of US Clinical Recommendations for *Ebola Virus Disease and Environmental Surface Disinfection*

Clinical Guideline	Clinical Practice Recommendations
Centers for Disease Control and Prevention: Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus, 2014. http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html	**Medical Equipment:** All non-dedicated, non-disposable medical equipment used for patient care should be cleaned and disinfected according to manufacturer's instructions and hospital policies. Dedicated medical equipment should be used for the provision of patient care. **Environmental Cleaning and Disinfection:** Use a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim for a non-enveloped virus (e.g., norovirus, rotavirus, adenovirus, poliovirus) to disinfect environmental surfaces in rooms of patients with suspected or confirmed Ebola virus infection. Although there are no products with specific label claims against the Ebola virus, enveloped viruses such as Ebola are susceptible to a broad range of hospital disinfectants used to disinfect hard, non-porous surfaces. In contrast, non-enveloped viruses are more resistant to disinfectants. As a precaution, selection of a disinfectant product with a higher potency than what is normally required for an enveloped virus is being recommended at this time. EPA-registered hospital disinfectants with label claims against non-enveloped viruses (e.g., Norovirus, Rotavirus, Adenovirus, Poliovirus) are broadly antiviral and capable of inactivating both enveloped and non-enveloped viruses. **Proper Use of Healthcare-Grade Disinfectants for Ebola Virus:** Disinfectant products should be used in accordance with the manufacturer's instructions for the specific label claim and in a manner consistent with environmental infection control recommendations. The Sani-Cloth® products listed below have current efficacy claims against both non-enveloped viruses and enveloped viruses, and therefore are **compliant with the current CDC evidence-based recommendations for environmental cleaning and disinfection:** **Sani-Cloth® Bleach (1:10 Dilution of Bleach), EPA Registration Number: 9480-8** **Item SKU's: P54072, U26595, P25784, H58195, P7007P, P700RF** **Super Sani-Cloth®, EPA Registration Number: 9480-4** **Item SKU's: Q55172, Q86984, H04082, U87295** **Sani-Cloth® AF3, EPA Registration Number: 9480-9** **Item SKU's: P63884, H59200, U27500, P13872, M928S80, P1450P, P2450P** **Hand Hygiene** in healthcare settings can be performed by washing with soap and water or using alcohol-based hand rubs. If hands are visibly soiled, use soap and water, not alcohol-based hand rubs. **Disinfection of PPE prior to taking off:** CDC recommends disinfecting **visibly contaminated PPE using an EPA-registered disinfectant wipe prior to taking off equipment.** Additionally, CDC recommends **disinfection of gloved hands using either an EPA-registered disinfectant wipe or alcohol-based hand rub between steps of taking off PPE.** **Step-by-step PPE removal instructions** that include: Disinfecting visibly contaminated PPE using an EPA-registered disinfectant wipe prior to taking off equipment. **Disinfection of gloved hands:** using either an **EPA-registered disinfectant wipe or alcohol-based hand rub** between steps of taking off PPE.

Summary of Us Clinical Recommendations for *Enterovirus and Environmental Surface Disinfection*

Clinical Guideline	Clinical Practice Recommendations
Centers for Disease Control and Prevention: Guidance for Disinfectant Product Advertising and other Non-Label Communications referring to Enterovirus EV-D68, 2014. http://epa.gov/oppad001/enterovirus-d68-guidance.html	**Environmental Cleaning and Disinfection:** Use a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim for a non-enveloped virus (e.g., norovirus, rhinovirus, poliovirus) to disinfect environmental surfaces in rooms of patients with suspected or confirmed Enterovirus virus infection. EPA-registered hospital disinfectants with label claims against non-enveloped viruses (e.g., Norovirus, Rotavirus, Adenovirus, Poliovirus) are broadly antiviral and capable of inactivating both enveloped and non-enveloped viruses. **Proper Use of Healthcare-Grade Disinfectants for Enterovirus Virus:** Disinfectant products should be used on hard, nonporous surfaces in accordance with the manufacturer's instructions for the specific label claim and in a manner consistent with environmental infection control recommendations. The Sani-Cloth® products listed below have current efficacy claims against both non-enveloped viruses and enveloped viruses, and therefore are **compliant with the current CDC evidence-based recommendations for environmental cleaning and disinfection:** **Sani-Cloth® Bleach wipes (1:10 Dilution of Bleach), EPA Registration Number: 9480-8** **Item SKU's: P54072, U26595, P25784, H58195, P7007P, P700RF** **Super Sani-Cloth® wipes, EPA Registration Number: 9480-4** **Item SKU's: Q55172, Q86984, H04082, U87295** **Sani-Cloth® AF3 wipes, EPA Registration Number: 9480-9** **Item SKU's: P63884, H59200, U27500, P13872, M928S80, P1450P, P2450P** Please note that there are not specific efficacy claims for Enterovirus D68 (EV-D68) for hand hygiene or environmental disinfection products available to date. **The Centers for Disease Control and Prevention continues to recommend that environmental disinfection of surfaces in healthcare settings be performed using a hospital-grade disinfectant with an EPA label claim for any of several non-enveloped viruses (e.g. norovirus, poliovirus, rhinovirus).** Disinfectant products should be used in accordance with the manufacturer's instructions for the specific label claim and in a manner consistent with environmental infection control recommendations.