Healthcare Facility Environmental Cleaning and Disinfection

Combating the Multidrug-Resistant Organism Together

Elizabeth Soda, MD

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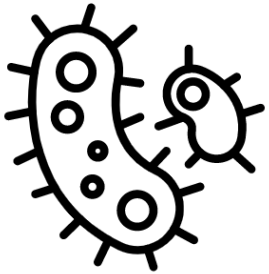
Objectives

- Identify infection prevention and control practices healthcare facilities should implement to prevent multidrug-resistant organism (MDRO) transmission
  - To describe the role the healthcare environment has in the transmission of MDROs
  - To describe CDC's 6 Core Competencies for Environmental Cleaning and Disinfection in the Healthcare Setting
  - To use this training to identify which Core Competencies healthcare facilities can strengthen
- Recognize current practices for communicating a patient/resident MDRO status both inside and outside healthcare facilities and identify key strategies for improving interprofessional care through clear multidisciplinary communication.

Today's Talk

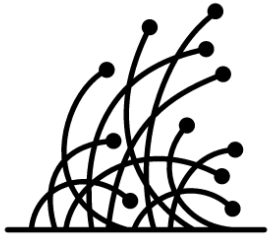
- **This talk is an overview of basic cleaning and disinfecting principles in healthcare settings**
- **Primarily intended for novice infection preventionists and environmental services supervisors**
- **It does not cover all topics nor is as in-depth as some other trainings**

What are Multidrug-Resistant Organisms (MDROs)?

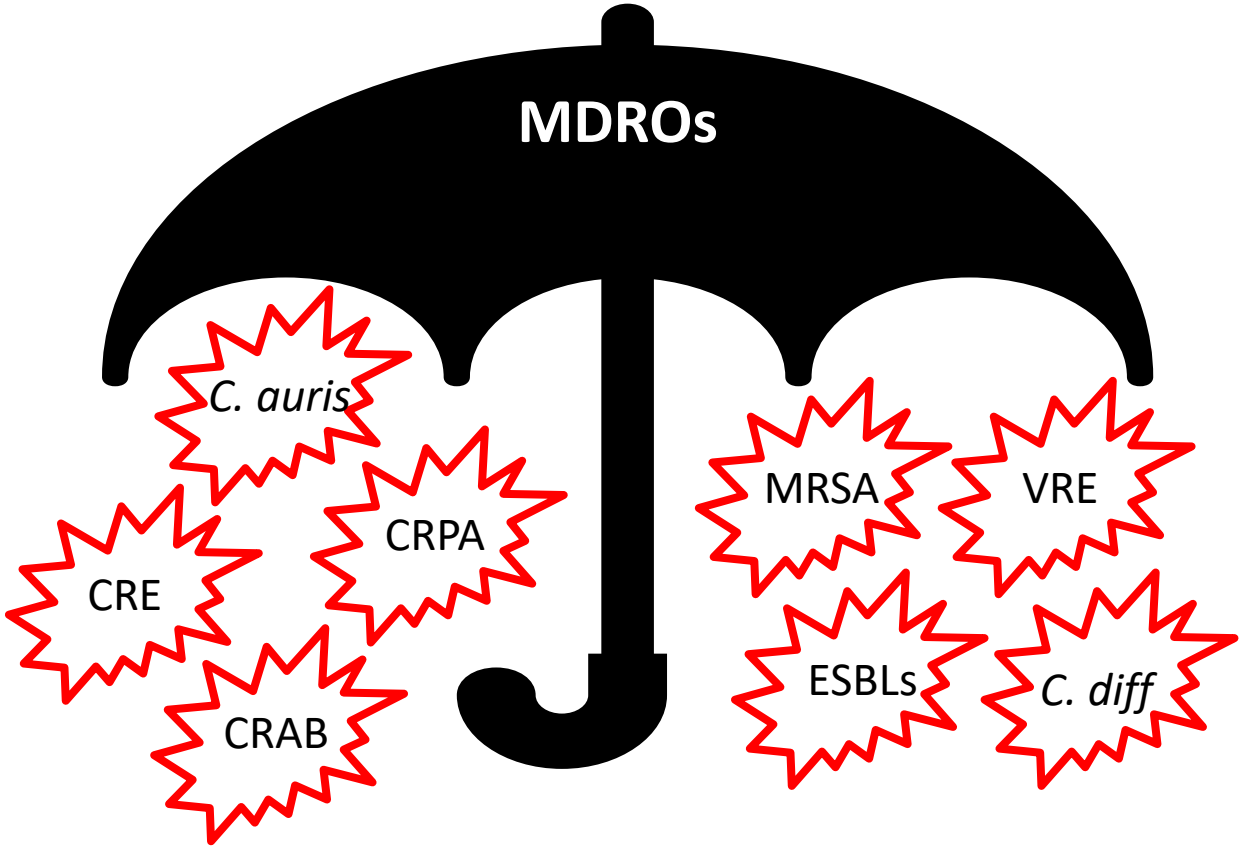


Bacteria

Germs that certain drug treatments will no longer work against, making them harder to treat



Fungi


MDROs
C. auris
CRE
CRPA
CRAB
MRSA
VRE
ESBLs
C. diff

Infection versus colonization

- **Infection: when a germ makes someone sick**
  - **Infected people can pass the germ to other people**

- **Colonization: when a germ lives on or inside of someone but does not make them sick**
  - **Colonized people can develop infections and spread the germ to other people**

Battling MDRO Spread in Three Steps

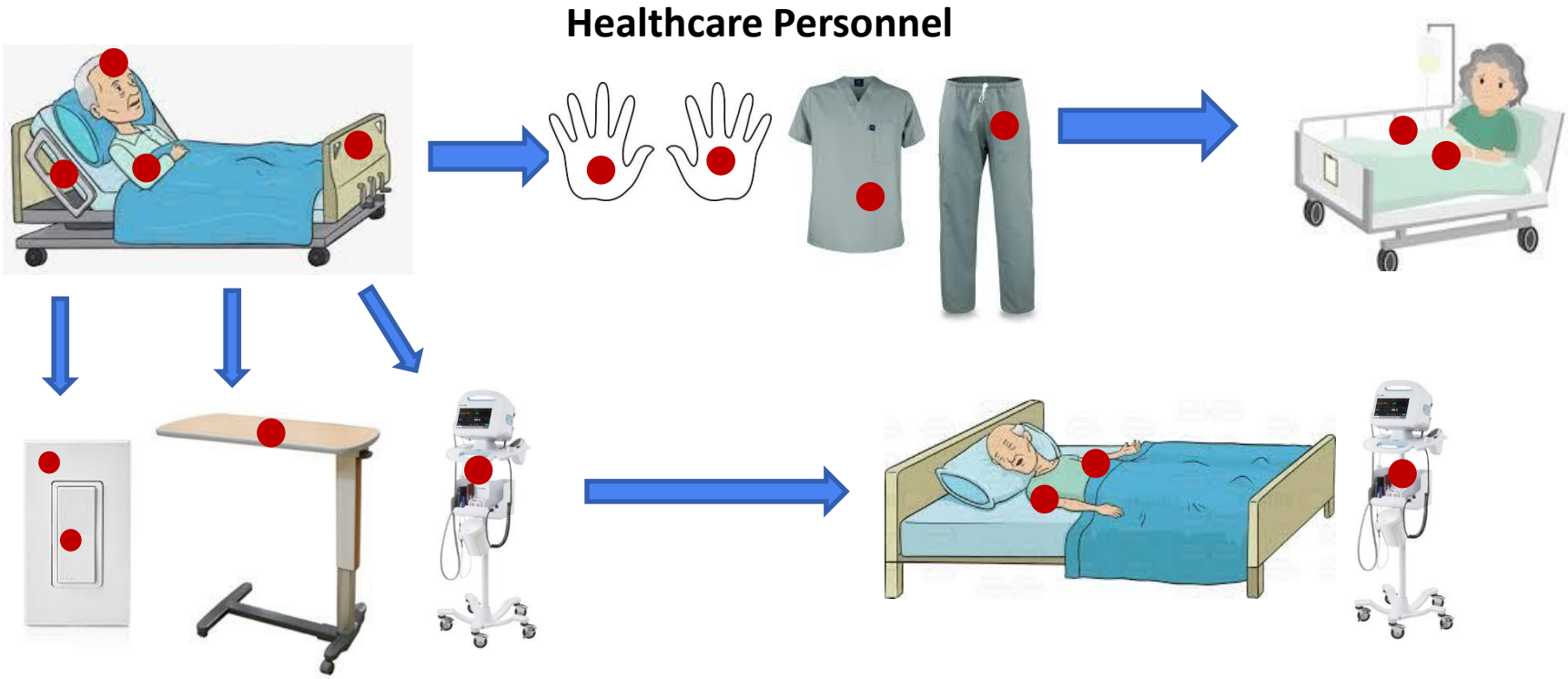
1. Identify as many people as possible who are infected or colonized with MDROs in a region

2. **Have good baseline infection control practices and use the recommended infection control practices for people with MDROs in healthcare facilities**

3. Communicate to other facilities about people with known MDROs at transfer

Cleaning and Disinfecting Basics

Healthcare surfaces can spread MDROs



Q1. *Acinetobacter baumannii* is a germ that can heavily contaminate surfaces and cause outbreaks in facilities. Up to how long do you think it can remain on surfaces if not properly cleaned and disinfected?

A) 5 minutes
B) 1 hour
C) 1 day
D) 5 months
E) I have no idea

How long can some germs live on surfaces?

Hours to months!

Organism	Survival time
Clostridioides difficile (spores)	5 months
Candida auris	Several weeks
Acinetobacter spp.	3 days to 5 months
Escherichia coli	1.5 hours – 16 months
Klebsiella spp.	2 hours to > 30 months
Pseudomonas aeruginosa	6 hours – 16 months
Staphylococcus aureus, inc. MRSA	7 days – 7 months
Enterococcus spp. including VRE	5 days – 4 month

Adapted from Kramer *et al. BMC Infect Dis* 2006;6:130.
https://www.cdc.gov/fungal/candida-auris/c-auris-health-qa.html
Osei Sekyere J. Microbiologyopen. 2018;7(4):e00578 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6079168/.

Cleaning

- **Removes the dirt you can see so a disinfectant is able to get to the germs you can’t see**
- **Uses detergents or enzymatic products (dissolve protein) that lift dirt away from surfaces**
- **May reduce the number of germs left behind but doesn’t always kill them**

Disinfecting

- **Kills most germs on surfaces/objects after cleaning with the use of a chemical called a <u>disinfectant</u>**
- **One of the most reliable ways to lower the risk of spreading germs from contaminated surfaces**
- **You should clean before disinfecting or use a product that does both**

Different germs require different levels of disinfection

TABLE 1 Classification of chemical disinfectants based on their activity against microorganisms[a]

Disinfectant	Bacterial Spores	Mycobacteria	Nonenveloped and small viruses	Fungi (vegetative and fungal spores)	Vegetative bacteria[b]	Enveloped viruses
Chemical sterilant	+	+	+	+	+	+
HLD	±	+	+	+	+	+
ILD	-	+	±	±	+	+
LLD	-	-	-	±	+	+

aVariable activity may be due to formulation and active ingredients. For example, most FDA-cleared high-level disinfectants are sporicides (or chemical sterilants if contact times are long enough), but this classification can vary depending on labeling.

bOften referred to as a "germicidal" claim including demonstrated effectiveness against Staphylococcus aureus, Pseudomonas aeruginosa, and Salmonella choleraesuis, but not against mycobacteria or bacterial spores.

Arduino MJ, McDonnel G. Disinfection and Sterilization, pp 224-242. In ASM Manual of Clinical Microbiology, 12th edition, Carroll KC, Pfaller MA, Landry ML, McAdam AJ, Patel R, Richter SS, Warnock DW (eds). ASM Press, Washington DC 2019.

Common low and intermediate-level disinfectants used on environmental healthcare surfaces

- Quaternary ammonium compounds
- Alcohol (ethyl or isopropyl)
- Chlorine releasing agents (e.g., bleach)
- Improved hydrogen peroxide
- See this link for a list of advantages and disadvantages of each:
  - https://www.cdc.gov/hai/prevent/resource-limited/supplies-equipment.html#T4

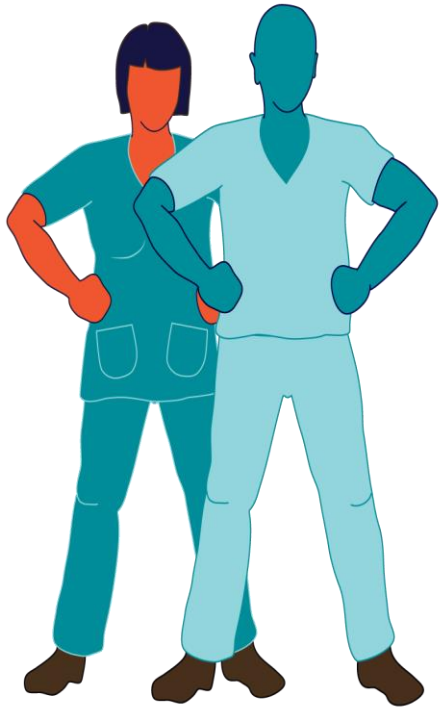
Core Components of Environmental Cleaning and Disinfection in Healthcare Settings

Core Components of Environmental Cleaning and Disinfection in Healthcare Settings

https://www.cdc.gov/hai/prevent/environment/surfaces.html

Environmental services (EVS) personnel

- **Are responsible for cleaning and disinfecting the healthcare environment**
- **Essential members of the healthcare team**
- **Should be part of a multidisciplinary environmental cleaning and disinfection program**



Core Components of Environmental Cleaning and Disinfection in Healthcare Settings

https://www.cdc.gov/hai/prevent/environment/surfaces.html

Educate and train all healthcare personnel (HCP) with cleaning and disinfecting duties

- **HCP other than EVS personnel (e.g., nursing, respiratory therapy) will also have cleaning/disinfecting duties**
  - **Education, training, and demonstration of competency is required for all**
  - **Tailored to education levels, language, learning styles**
- **When to educate and train:**
  - **At hire**
  - **At least annually,**
  - **When introducing new equipment/protocols,**
  - **Outbreak threat or detection**
  - **To address weaknesses detected during routine auditing activities**
- **Keep documentation of all training completion**

Educate and train all healthcare personnel (HCP) with cleaning and disinfecting duties

- **Topics should at a minimum include:**
  - **How germs spread in the healthcare setting**
  - **Importance of cleaning and disinfection for infection control and patient safety**
  - **A review of facility policies and standard operating procedures**
    - **Safe and correct use of products and materials**
  - **Required changes in procedures for certain germs**
    - **Different products**
  - **Infection control risks**
    - **Sharps safety**
  - **Personal protective equipment use**

Core Components of Environmental Cleaning and Disinfection in Healthcare Settings

https://www.cdc.gov/hai/prevent/environment/surfaces.html

Considerations when selecting cleaning and disinfecting products

- **Germs targeted for disinfection (e.g., *C. difficile*, *Candida auris,* MRSA, SARS-CoV-2)***
- **Contact time**
- **Product effectiveness/efficiency (e.g., one step vs two step cleaning/disinfection)**
- **Safety/health risk**
- **Product preparation and storage**
- **Effect on surfaces or devices with repeat exposure**
- **Healthcare personnel and patient acceptability**
- **Required expertise and training**

*See: https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants

Q2. My facility is currently using a disinfecting product with activity against *Candida auris.*

A) **Yes**

B) **No**

C) **I don’t know**

D) **We don’t need to use a disinfectant with *Candida auris* activity currently**

Strongly consider using disinfectants that kill germs identified in your area even if not yet in your facility

Make sure your product targets the right germs

Always use an EPA-registered hospital-grade disinfectant

→ ***Acientobacter baumannii,***
ESBLs, NDM, KPC, MRSA, VRE

→ ***Candida albicans***

What about *Candida auris*?

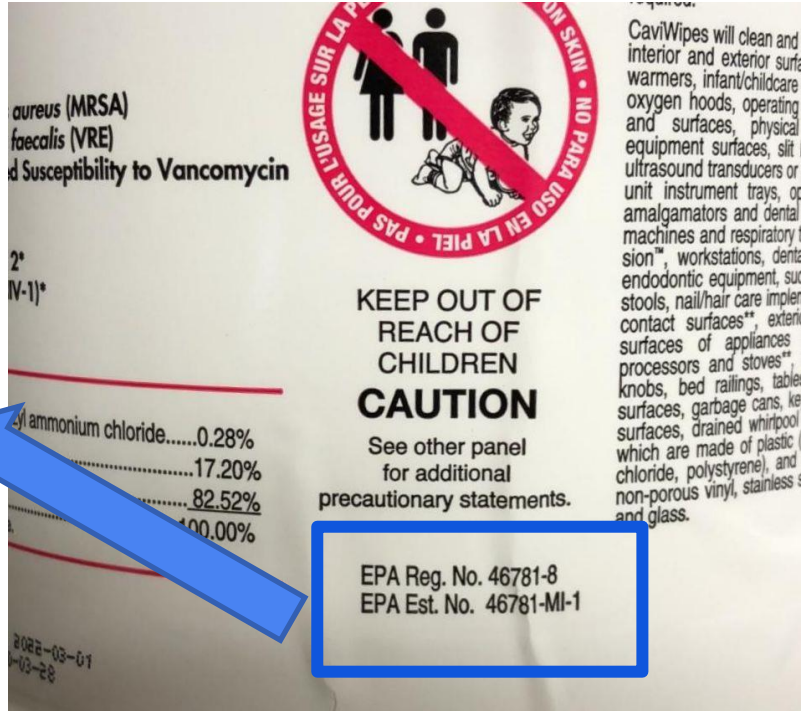
Make sure your product targets the right germs

- **EPA Lists A-P are registered products that are effective against common germs**
  - **Products can be found on multiple lists**
- https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants
  - **List H: Products against MRSA and/or VRE**
  - **List K: *C. difficile***
  - **List N: SARS-CoV-2**
  - **List P: *Candida auris***

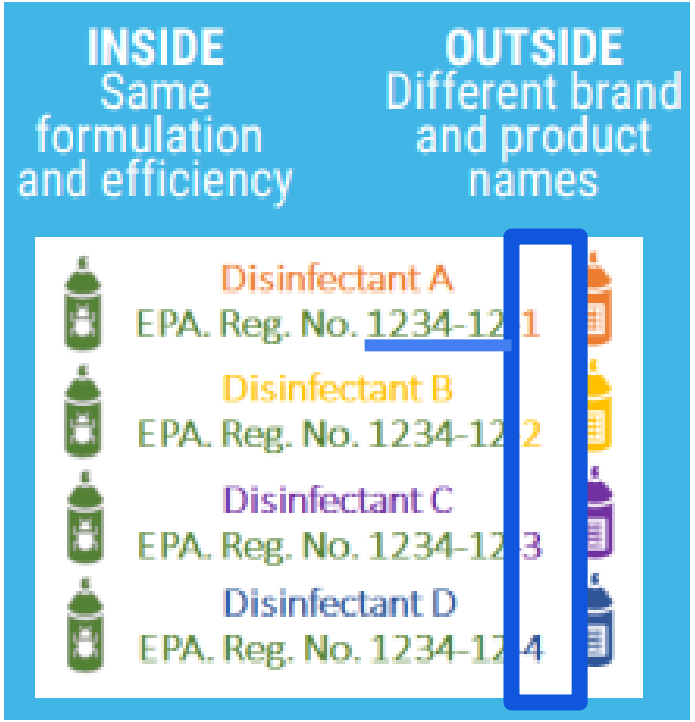
Looking up a product on an EPA list

Use EPA Registration Number

Example: EPA Reg. No 46781-8



Why does the entry on the EPA List not have the same commercial name?



https://www.epa.gov/sites/production/files/2020-12/documents/list_n_how-to_infographic_final_0.pdf

Q3. Which of the following is FALSE about disinfectant contact time?

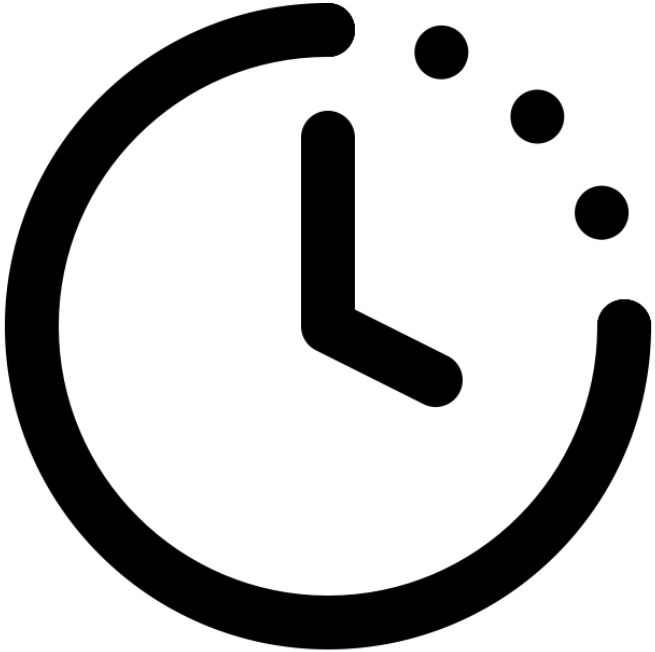
A) Is the amount of time the surface needs to stay wet for adequate disinfection

B) You can just use the shortest contact time listed on the front of the bottle

C) If the surface dries before the contact time, you must reapply the disinfectant

D) Can also be called a wet time or kill time

Contact time is the amount of time the surface needs to stay wet for adequate disinfection.



If it dries…
re-apply!

Contact times and bottle labels…read the fine print

For Use as a One-Step Cleaner/Disinfectant Product: Pre-clean heavily soiled areas. Apply product by coarse trigger sprayer to hard, non-porous inanimate surfaces. Spray 6 – 8 inches from surface, making sure to wet surfaces thoroughly. All surfaces must remain wet for 1 minute. Use a 5 minute contact time for Tb and a 10 minute contact time for fungi. Wipe surfaces dry, rinse, or allow to air dry.

Note: Rinsing is not necessary unless floors are to be coated with finish or restorer. All food contact surfaces must be rinsed with potable water. Do not use on glassware, utensils, or dishes.

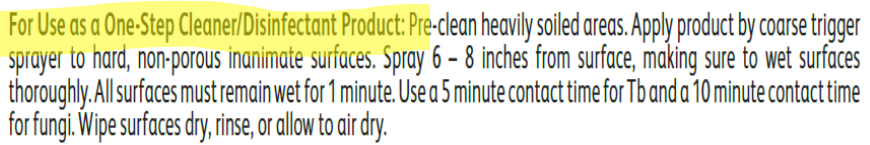
For Use as a Cleaner and/or Deodorizer: Apply product by coarse trigger sprayer to hard, non-porous inanimate surfaces. Wipe surfaces dry, rinse or allow to air dry.

For Use as a Tuberculocide: Pre-clean heavily soiled areas. Apply product by coarse trigger sprayer to hard, non-porous inanimate surfaces. Spray 6 – 8 inches from surface, making sure to wet surfaces thoroughly. Allow the surface to remain wet for 5 minutes. Wipe surfaces dry, or rinse, or allow to air dry. Change solution after each use.

To Kill Fungi: Pre-clean heavily soiled areas. Apply product by coarse trigger sprayer to hard, non-porous inanimate surfaces. Spray 6 – 8 inches from surface, making sure to wet surfaces thoroughly. Allow surface to remain wet for 10 minutes. Wipe surfaces dry, or rinse or allow to air dry.

One step versus two step cleaning and disinfection

- **One step: using a product that can both clean and disinfect**
  - **Consult the product label or other manufacturer information to determine**
  - **Can still require a pre-clean if heavily soiled**
- **Two step: using a cleaning product first followed by a disinfecting product**
  - **Liquid bleach**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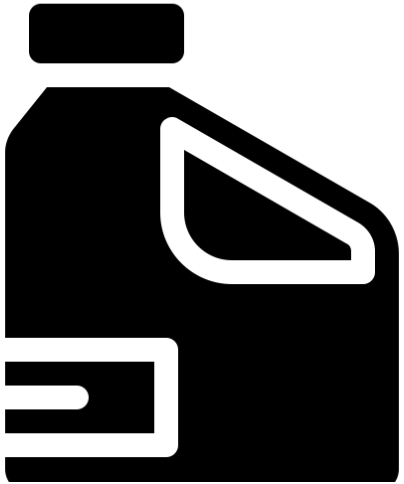
Liquid Bleach

- Should only use EPA-registered hospital grade bleach product
- Clean before using bleach as a disinfectant
- Must dilute correctly and per manufacturer instructions
  - Wear required PPE when diluting
  - Do not mix with other products
  - Discard after 24 hours
- Adhere to the listed contact time
- Can’t be used on all surfaces



Instructions for use (product label and supplements)

1. Always dispense wipe through lid. Find center of wipe roll, remove first wipe for use, thread next wipe through the hole in the canister lid. Pull through at least one inch. Replace lid. To secure wipe, pull wipe down into small opening.

1. Siempre extraiga la toalla a través de la tapa. Busque el centro del rollo de toallas, saque la primera toalla que va a usar y después inserte la siguiente toalla a través de la abertura de la tapa del envase. Extraiga, al menos, una pulgada. Vuelva a colocar la tapa. Para asegurar la toalla, empújela al interior de la pequeña abertura.

2a. Cover the opening half way with one hand. Remove wipe(s) with a uniform pull away from face and eyes.

2b. Dispense single wipes as necessary by pulling out at an angle through the small opening.

2c. Dispense multiple wipes as necessary by pulling vertically through the large opening. Pull down into small opening to tear.

2a. Cubra la mitad de la abertura con una mano. Extraiga las toallas con un tirón uniforme alejado del rostro y los ojos.

2b. Dispense toallas individualmente según se necesiten tirando de ellas a un ángulo a través de la pequeña abertura.

2c. Dispense varias toallas según se necesiten tirando de ellas verticalmente a través de la abertura grande. Empújelas hacia la pequeña abertura para rasgarlas.

3a. If present, use a wipe to remove visible soil prior to disinfecting.

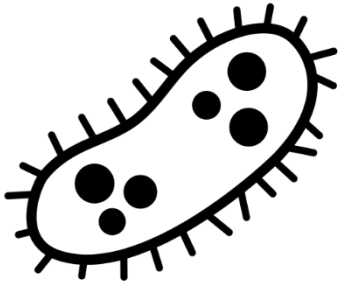
3a. Antes de desinfectar, use una toalla para eliminar la suciedad visible si existiera.

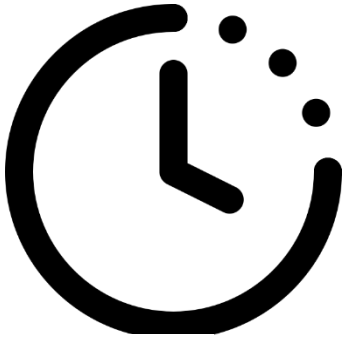
Safety Data Sheet (SDS)

- Required for each product to tell users how to use it safely
  - Chemical ingredients
  - Symptoms and health problems that can be caused by the product
  - First aid measures if exposed
  - Recommended PPE
  - Procedures for cleaning up spills

- Employers must obtain the SDS for all chemical products used and make readily accessible to staff

How to I pick the “best” product?





There is limited data on the effectiveness of “no touch” disinfection products and they should not replace traditional cleaning & disinfection.

Hydrogen peroxide vapor (HPV)

Aerosolised hydrogen peroxide (aHP)

Ultraviolet radiation C (UVC)

Pulsed-xenon UV (PX-UV)

Core Components of Environmental Cleaning and Disinfection in Healthcare Settings

https://www.cdc.gov/hai/prevent/environment/surfaces.html

Develop systematic cleaning and disinfecting protocols and procedures

- High touch surfaces
- Who cleans what?
- Frequency
- General cleaning techniques
- Create checklists
  - Routine cleans
  - Terminal cleans

High-touch surfaces/equipment identification is needed to develop protocols and procedures

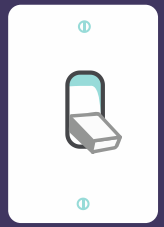
- **Surfaces found in patient/resident rooms or care areas that are frequently touched**
- **Cleaning and disinfection of these surfaces is critical to prevent the spread of germs**
- **May differ by room, ward, and facility**

Examples of high-touch surfaces

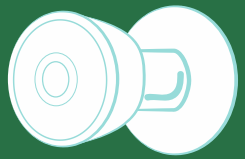
- Bed rails and controls
- Overbed table and controls
- Underside of overbed table
- Handles on bedside stand

- Toilet seat and flush handle

- Sinks in room and bathroom



- Light switches in room and bathroom



- Doorknobs in room and bathroom

- Call light/button
- TV remote
- Telephone
- Chairs and recliners

Q4. My facility currently shares a who cleans what list with healthcare personnel.

A) Yes
B) No
C) Don’t know
D) What is a who cleans what list?

Who cleans what?

- **Sometimes HCP don't know what they should be cleaning**
  - **Example: daily IV pole cleaning; EVS or nurses?**

- **Make a list of all high touch surfaces/equipment:**
  - **Assign to the different HCP types**
  - **Share with all HCP with cleaning duties**
    - **New and veteran employees**
  - **Include frequency**

ROLES AND RESPONSIBILITIES - WHO CLEANS AND DISINFECTS WHAT IN URGENT CARE

AREA	EVS	FREQ	NURSING	FREQ	OTHER (Specify)	FREQ
Patient Room						
Mattresses	X	AM&PM	X	After every patient		
Bed rails	X	AM&PM	X	After every patient		
Bed frame	X	AM&PM	X	After every patient		
Patient Chair	X	AM&PM	X	After every patient		
Additional Chairs in room	X	AM&PM	X	After every patient		

Frequency of environmental cleaning should be based on the risk of germ transmission

- **The probability that surfaces and equipment can become heavily contaminated (ex. birthing suite or trauma bay)**

- **The susceptibility of the patient/resident population (ex., units with immunocompromised patients)**

The higher the risk of germ transmission the more frequently you need to clean and disinfect

- **High-risk areas such as birthing suites should be cleaned after each use and more as needed.**

- **Intermediate risk areas such as most patient/resident rooms should be cleaned at least once a day and more as needed.**

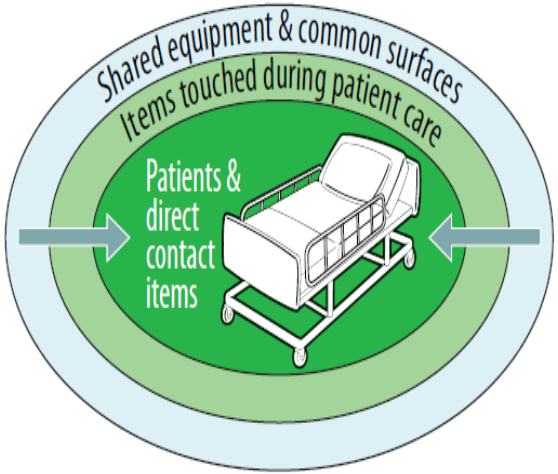
- **Low risk areas (e.g., offices) should be cleaned on a fixed schedule and more as needed.**

General cleaning and disinfection techniques

- **Always start by looking at the area that needs cleaning first**
  - **Is the patient's status a challenge to safe cleaning?**
  - **Any obstacles (e.g., clutter) in the room?**
  - **Any damaged furniture or surfaces that should be reported?**
  - **What additional PPE and supplies are needed (e.g., is there a blood spill or is the patient on Transmission-Based Precautions?)**

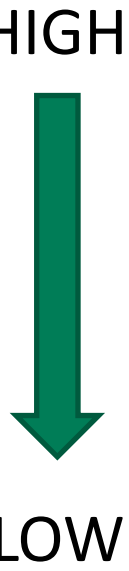
General cleaning and disinfection techniques

- **Move from clean to dirty: Don't spread germs!**
  - **Patient zone: surface and items directly touched by the patient**
  - **Start by cleaning high-touch surfaces outside the patient zone first**
  - **Always clean bathrooms last**
  - **Clean rooms under Transmission-Based Precautions after those that are not**



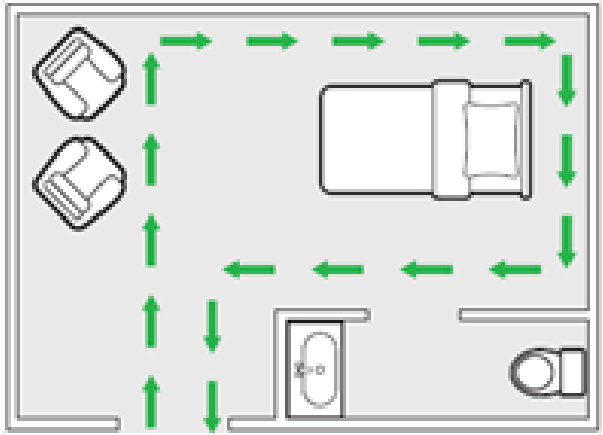
General cleaning and disinfection techniques

- **Move from <u>high to low:</u> Don’t let germs drip or fall onto already clean areas**
  - **Clean bed rails before bed legs**
  - **Clean surfaces before the floor**
  - **Clean floors last to remove any germs that may have fallen**



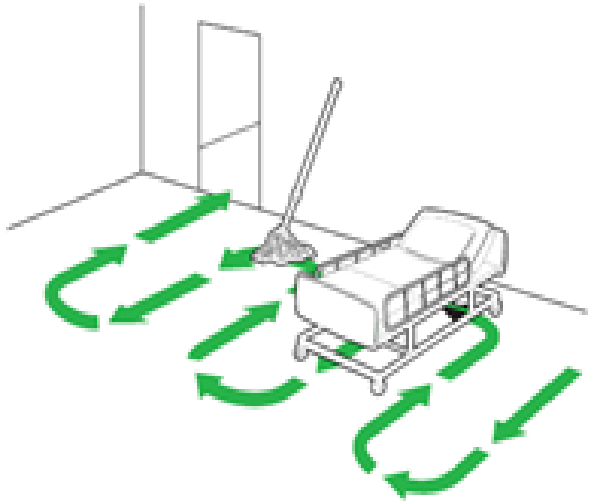
General cleaning and disinfection techniques

- **Move the same way around a room (e.g., clockwise): Don’t miss areas**
- **Make sure you wipe surfaces with pressure and friction**
- **Make sure surfaces remain wet for the required contact time**



Floors

- Do not use brooms
  - Mops or floor cloths instead
- Mop in a figure 8 pattern with overlapping strokes
- Move from cleaner to dirtier areas starting farthest from the exit and moving towards it
- Change mops/floor cloths and product solution often
  - Immediately after rooms on Transmission-Based Precautions or if visibly soiled



Cloths

- If not using prepared wipes, consider the types of cleaning cloth materials
  - Microfiber:
    - Can absorb more germs and dirt than cotton cloths
    - Damaged by high pH disinfectants (especially chlorine-based)
    - Should be washed separately from cotton cloths
- Clean cloths should be saturated in cleaning/disinfecting solution
  - Fold and then rotate/unfold to use all sides
  - Get a new cloth once all sides are used and/or no longer saturated
  - Never put a used cloth back into clean solution and store away from clean cloths

The eight-sided fold methodology for microfiber cloths helps **maximize the use of the cloth** while **reducing the risk of cross-contamination** during the cleaning process.

Cleaning all the surfaces with the same side of rag is just spreading the germs around!

BEGIN with open, clean Microfiber cloth

FOLD Microfiber cloth in half

FOLD Microfiber cloth in quarters

CLEAN surfaces with two exposed sides of cloth

OPEN Microfiber cloth once to change sides

REFOLD to expose two fresh cleaning sides

OPEN cloth fully once four sides have been used

REPEAT steps 2 through 7 to use all eight sides

https://www.enichols.com/userfiles/theme/documents/rcp%20cross%20contamination%20prevention.pdf

Shared equipment

- Shared, non disposable equipment must be cleaned and disinfected after each use
- Often conducted by non-EVS HCP
  - HCP need to understand the who, what, when, where, and how of this process
  - Clean equipment should be labeled and stored away from dirty equipment

Multi-patient/resident rooms

- **Each patient bedspace should be treated separately**
  - **Perform hand hygiene and change PPE between cleaning each bedspace**
  - **Change prepared wipes/cloths between each bedspace**
  - **Still apply the general cleaning techniques**
    - **Clean to dirty**
    - **High to low**
    - **Systematic manner: clean each patient bedspace in the same manner (ex. start at the foot of the bed and move clockwise)**

Q5. My facility uses cleaning checklists for: (select all that apply).

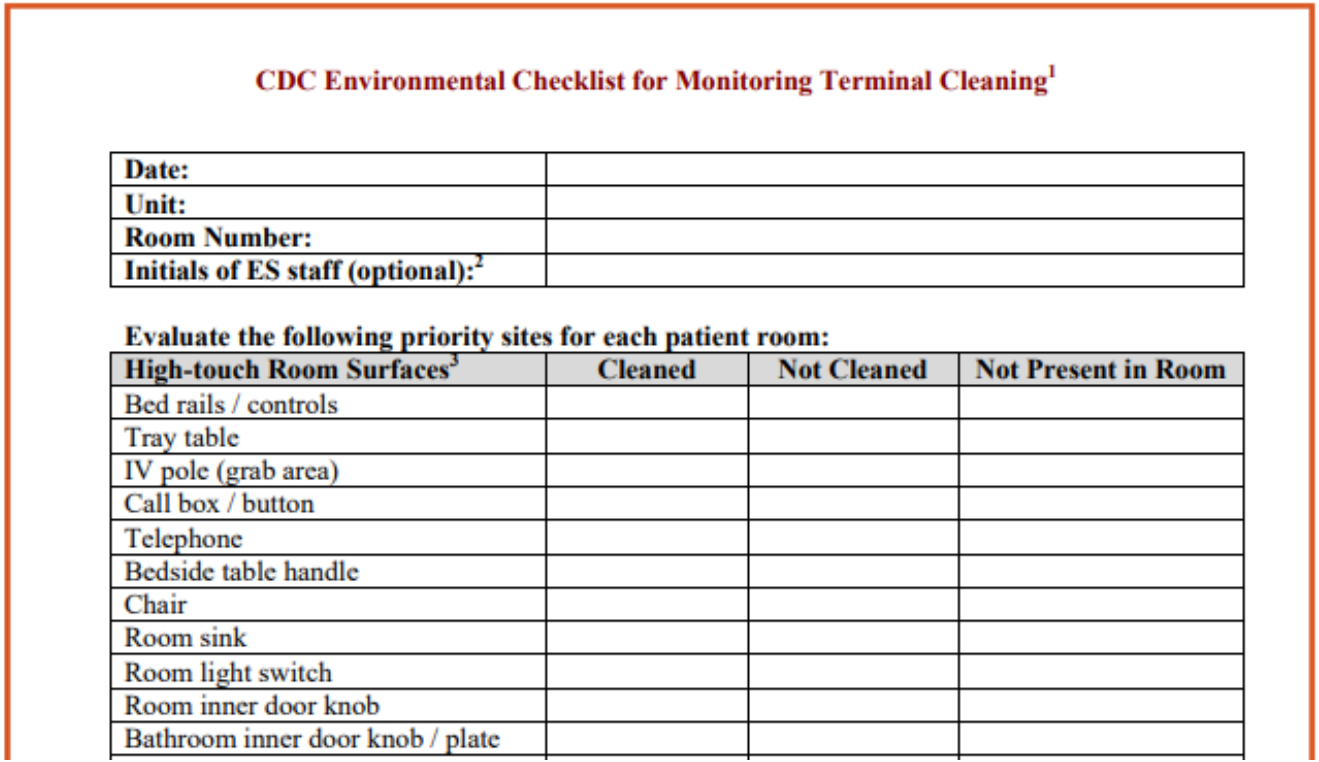
A) For routine cleaning of patient/resident rooms
B) For terminal cleaning
C) For cleaning of specialized areas like operating rooms
D) None of the above
E) Don’t know

Cleaning checklists

- **Checklist help ensure all HCP are performing cleaning and disinfecting in the same manner**
  - **Reduces the risk of missing steps**
  - **Can aid in auditing**

- **Should have separate checklist for the different types of cleaning**
  - **Routine cleaning checklist**
  - **Terminal cleaning checklist**
  - **Specialized area cleaning (ORs)**

Checklist with a focus on high-touch surfaces



CDC Environmental Checklist for Monitoring Terminal Cleaning[1]

Date:	
Unit:	
Room Number:	
Initials of ES staff (optional):[2]	

Evaluate the following priority sites for each patient room:

High-touch Room Surfaces[3]	Cleaned	Not Cleaned	Not Present in Room
Bed rails / controls			
Tray table			
IV pole (grab area)			
Call box / button			
Telephone			
Bedside table handle			
Chair			
Room sink			
Room light switch			
Room inner door knob			
Bathroom inner door knob / plate			

https://www.cdc.gov/hai/pdfs/toolkits/Environmental-Cleaning-Checklist-10-6-2010.pdf

Core Components of Environmental Cleaning and Disinfection in Healthcare Settings

https://www.cdc.gov/hai/prevent/environment/surfaces.html

Auditing

- **Auditing is defined as monitoring, documenting, and sharing healthcare personnel adherence to expected facility policies/procedures**

- **Can help a facility understand if adequate cleaning and disinfection is occurring**

- **Essential to document auditing results and routinely provide feedback to HCP**
  - **Should lead to non-punitive corrective actions (e.g., retraining)**

Direct observation is one of several auditing methods, each with pros and cons

- **Direct observation:**
  - **Watch as someone conducts the cleaning process**
  - **Inspect the room after cleaning has already occurred**

Visual assessment of hygiene does not correlate with microbial contamination, and can thus be a misleading measure of cleanliness[1-3]

1. Griffith *et al. J Hosp Infect* 2007;66:352-359.
2. Cooper *et al. Am J Infect Control* 2007;66:352-359.
3. Griffith *et al. J Hosp Infect* 2000;45:19-28.

Use of a florescencent marker is another common method of auditing

The removal of marked spots has been shown to correlate with microbial contamination in some studies;[1-2] cleaning staff may “get wise” to the location of the spots and preferentially target them[3]

1. Carling *et al. Infect Control Hosp Epidemiol* 2008; 29:1035-1041.
2. Munoz-Price *et al. Infect Control Hosp Epidemiol* 2012;33:897-904.
3. Rutala *et al. Infect Control Hosp Epidemiol* 2011;32:743-747.

Other auditing options

- **ATP Bioluminescence**
  - **Measures organic adenosine triphosphate (ATP) on surfaces (both due to germs and not germs)**
  - **Has been shown to improve daily cleaning while providing quantitative measures of cleanliness[1,2]**

- **This CDC website discusses different options for auditing:**
  - https://www.cdc.gov/hai/toolkits/appendices-evaluating-environ-cleaning.html

1.Boyce JM, Havill NL, Dumigan DG, Golebiewski M, Balogun O, Rizvani R. Monitoring the effectiveness of hospital cleaning practices by use of an adenosine triphosphate bioluminescence assay. Infect Control Hosp Epidemiol 2009;30,7:678-84.
2.Boyce JM, Havill NL, Lipka A, Havill H, Rizvani R. Variations in hospital daily cleaning practices. Infect Control Hosp Epidemiol 2010;31,1:99-101.

And don’t forget about communication

- One more plug for good communication practices when transferring those with MDROs within and between facilities:
  - It is important to share any special cleaning and disinfection needs
    - Ex. The need for *C. auris* specific products

- Think about ways to implement this:
  - Transfer forms
  - Facility to facility phone calls
  - Electronic health record reminders

Summary

Environmental cleaning and disinfection is critical to patient/resident/HCP health and safety

- **Facilities must dedicate sufficient resources to education, training, and auditing program**
- **Facilities should be thoughtful when selecting cleaning and disinfecting products to best fit their needs**
- **Facilities should establish and implement clear protocols, procedures, and checklists for their EVS program**

Core Components of Environmental Cleaning and Disinfection in Healthcare Settings

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There are many professional organizations that provide trainings on cleaning & disinfecting

APIC Spreading knowledge. Preventing infection.
Association for Professionals in Infection Control and Epidemiology

EPA United States Environmental Protection Agency

Association for the Health Care Environment

Training links

- APIC Environmental Services training: https://apic.org/resources/topic-specific-infection-prevention/environmental-services/
- AHE Certified Health Care Environmental Services Technician (CHEST): https://www.ahe.org/designations/chest
- CDC Nursing Home Infection Preventionist Training: https://www.cdc.gov/longtermcare/training.html
- CDC EVS and the Battle Against Infection: https://www.cdc.gov/infectioncontrol/training/evs-battle-infection.html
- CDC/STRIVE Infection Control Training: https://www.cdc.gov/infectioncontrol/training/strive.html

Resources

- FDA UV Lights & Lamps: UV Lights and Lamps: Ultraviolet-C Radiation, Disinfection, and Coronavirus | FDA
- EPA Ozone generators, UV Lights or Air Purifiers: https://www.epa.gov/coronavirus/why-arent-ozone-generators-uv-lights-or-air-purifiers-list-n-can-i-use-these-or-other
- CDC Healthcare Environmental Infection Prevention: https://www.cdc.gov/hai/prevent/environment/surfaces.html
- CDC Cleaning and Disinfection of Environmental Surfaces FAQ: https://www.cdc.gov/coronavirus/2019-ncov/hcp/faq.html#Cleaning-and-Disinfection-of-Environmental-Surfaces
- CDC Environmental Infection Control Guidance: https://www.cdc.gov/infectioncontrol/guidelines/environmental/index.html
- CDC Disinfection and Sterilization Guidance: https://www.cdc.gov/infectioncontrol/guidelines/disinfection/index.html
- CDC Options for Evaluating Environmental Cleaning: https://www.cdc.gov/hai/toolkits/evaluating-environmental-cleaning.html
- CDC Environmental Cleaning in resource limited settings: https://www.cdc.gov/hai/prevent/resource-limited/supplies-equipment.html, https://www.cdc.gov/hai/prevent/resource-limited/cleaning-procedures.html
- Organization for Safety Asepsis and Prevention (OSAP) Dental Best Practices: https://www.osap.org/page/covid-19-best-practices
- EPA. Antimicrobial Products Registered with EPA for Claims Against Common Pathogens. (https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants)

Contacts

- D.C. Health
  - doh.hai@dc.gov
- Maryland
  - mdh.ipcovid@maryland.gov – Maryland HAI Group
  - mdphl.arln@maryland.gov – Mid-Atlantic Regional Lab
- Virginia
  - hai@vdh.virginia.gov
- Massachusetts
  - 24/7 Epidemiology Line with questions: 617-983-6800

CE Information and Recording

- **Please see registration flyer for CE information from this live event**

- **The recording and slides will be posted to this website:**
  - **https://www.vdh.virginia.gov/haiar/mdro-containment-webinar-series/**

- **CE is also available on demand for the recording if any of your colleagues who didn't listen today would like to and receive CE in the future**

Thank you for attending!
Questions?

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.