

ENVIRONMENTAL CLEANING AND DISINFECTION RIPS EDUCATION

DEVELOPED BY:
NC STATEWIDE PROGRAM FOR INFECTION CONTROL AND EPIDEMIOLOGY (SPICE)

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ENVIRONMENTAL CLEANING AND DISINFECTION TOOLKIT OBJECTIVES

- ▶ Identify the important role environmental services plays in infection prevention
- ▶ Identify cleaning and disinfection guidance and the principle of environmental services
- ▶ Describe the difference between cleaning and disinfection
- ▶ Describe appropriate cleaning techniques
- ▶ Identify training resources for environmental cleaning and disinfection
- ▶ Identify the importance of monitoring and feedback of cleaning and disinfection
- ▶ Describe different monitoring techniques for compliance

The Environmental Services (EVS) department is usually the first line of defense against germs in a healthcare setting.

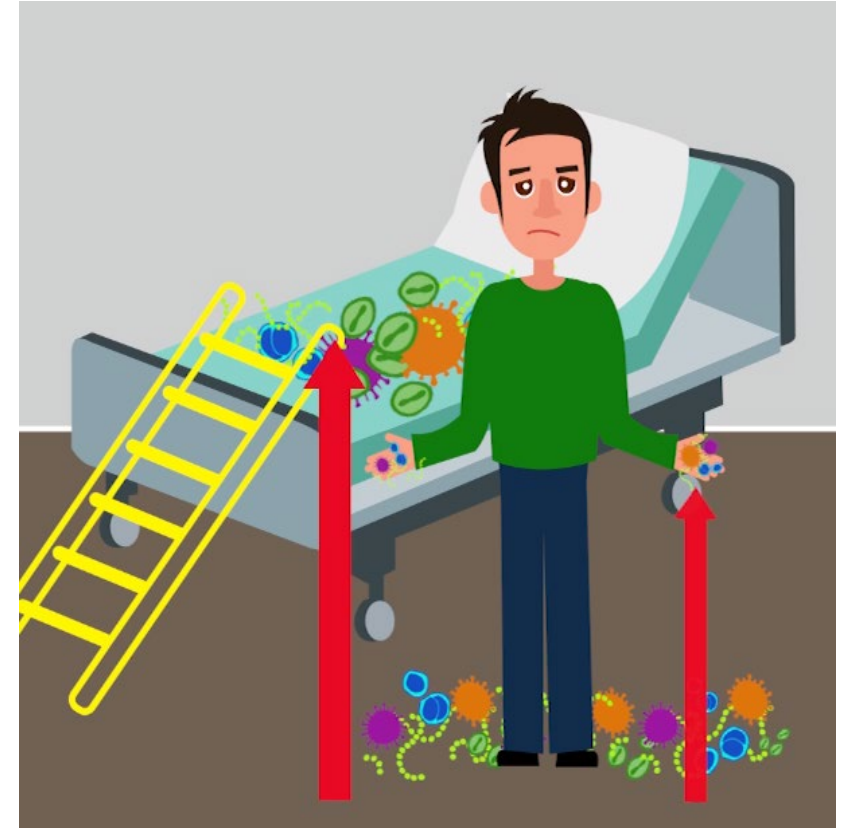
The diligent work of Environmental Services is crucial to the success of preventing infections.

EVS actions in infection prevention can mean the difference between a patient/resident being exposed to a germ and getting sick or NOT being exposed to germs and avoiding an infection.



TRANSMISSION OF INFECTIOUS AGENTS: ROLE OF THE ENVIRONMENT

- Until recently, the role of the environment in disease transmission has been thought to be insignificant.
- Recent studies have shown major pathogens like MRSA, *C.difficile*, Norovirus and others are shed by colonized or infected patients and contaminate surfaces in their environments at levels sufficient for transmission.
- Inadequate **OR** lack of hand hygiene, by healthcare personnel, is a common way infectious organisms can be transmitted from the environment to our patient/residents.
- Routine cleaning and disinfection is essential to interrupt transmission of organism(s)



HICPAC Core Practice: Environmental Cleaning and Disinfection

Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings
Recommendations of the HICPAC

Core Practice Category	Core Practices	Comments
5b. Environmental Cleaning and Disinfection References and resources: 4, 7, 10, 11, 13, 21	<ol style="list-style-type: none">1. Require routine and targeted cleaning of environmental surfaces as indicated by the level of patient contact and degree of soiling.<ol style="list-style-type: none">a. Clean and disinfect surfaces in close proximity to the patient and frequently touched surfaces in the patient care environment on a more frequent schedule compared to other surfaces.b. Promptly clean and decontaminate spills of blood or other potentially infectious materials.2. Select EPA-registered disinfectants that have microbiocidal activity against the pathogens most likely to contaminate the patient-care environment.3. Follow manufacturers' instructions for proper use of cleaning and disinfecting products (e.g., dilution, contact time, material compatibility, storage, shelf-life, safe use and disposal).	<p>When information from manufacturers is limited regarding selection and use of agents for specific microorganisms, environmental surfaces or equipment, facility policies regarding cleaning and disinfecting should be guided by the best available evidence and careful consideration of the risks and benefits of the available options.</p> <p>Refer to “CDC Guidelines for Environmental Infection Control in Health-Care Facilities” and “CDC Guideline for Disinfection and Sterilization in Healthcare Facilities” for details.</p>



Environmental Cleaning and Disinfection CDC Guidelines

All healthcare facilities must follow the Centers for Disease Control and Prevention Guidelines for Cleaning and Disinfection

Please download and always have handy a copy of the two guidance documents:

1. Guidelines for Environmental Infection Control in Health-Care Facilities Recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC)
<https://www.cdc.gov/infectioncontrol/pdf/guidelines/environmental-guidelines-P.pdf>
2. Guideline for Disinfection and Sterilization in Healthcare Facilities
<https://www.cdc.gov/infectioncontrol/pdf/guidelines/disinfection-guidelines-H.pdf>

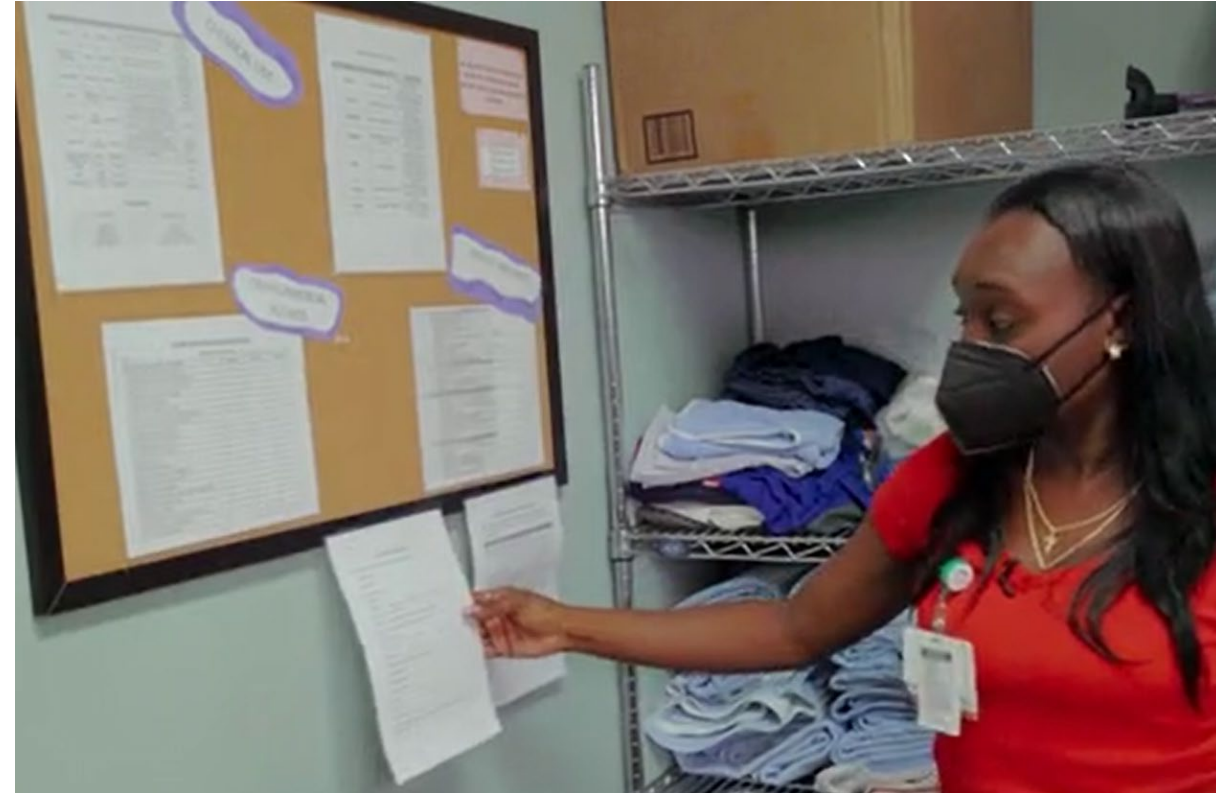
KNOWLEDGE CHECK

- ▶ True or False: The role of the environment does not play a significant role in disease transmission and there are currently no guidelines for healthcare facilities to follow for how to clean and disinfect.

FALSE

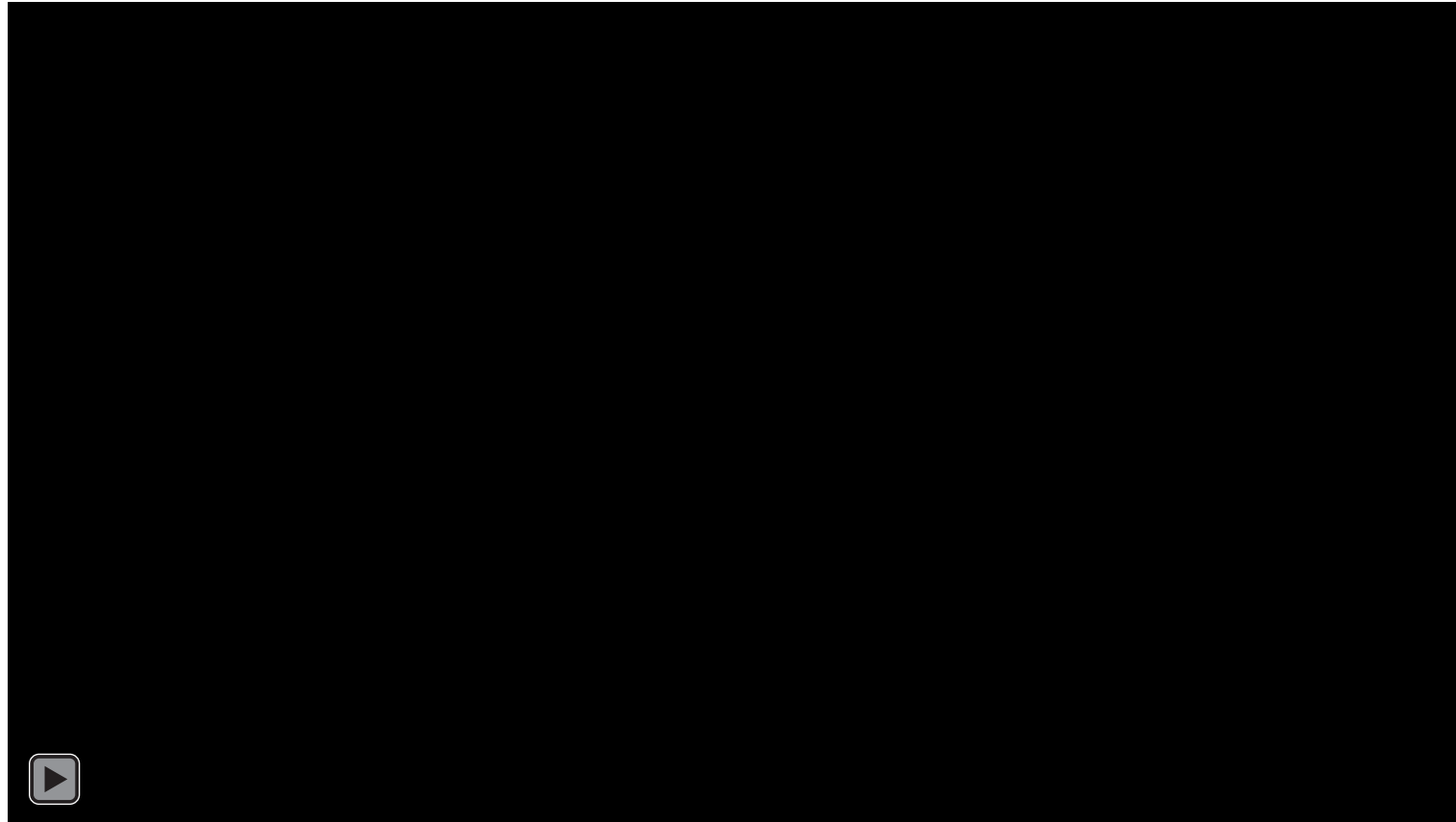
Key characteristics of a successful EVS department

- ▶ Standardized protocols/procedures for cleaning and disinfection
 - ▶ Identify the person responsible
 - ▶ Frequency
 - ▶ Method (product, process)
- ▶ Select EPA-registered disinfectants that have microbiocidal activity against the pathogens most likely to contaminate the patient-care environment
- ▶ Ensure staff follows manufacturers' instructions for proper use of cleaning and disinfection products
- ▶ Thoroughly trained staff



Difference between cleaning and disinfection

Listen to Project Firstline break down the difference between cleaning and disinfection



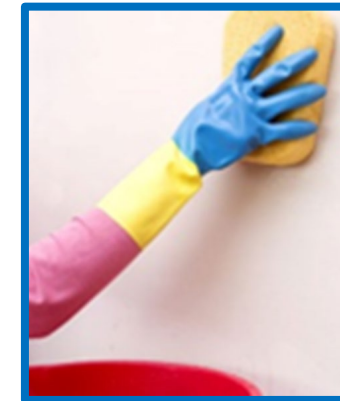
KNOWLEDGE CHECK

- ▶ True or False: Cleaning refers to the process of REMOVING debris, dirt, and germs from surfaces and disinfection is a separate step done after cleaning that KILLS or INACTIVES germs on surfaces or objects.

TRUE

CLEANING AND DISINFECTION

- ▶ Right product -EPA registered
 - ▶ EPA approved disinfectant lists:
<https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants>
- ▶ Right preparation and dilution-Follow manufacturer's instructions for use
- ▶ Right application method
- ▶ Right contact time
- ▶ Wear appropriate PPE(*gloves, gown, mask, eye protection*)



BLOOD AND BODY FLUID SPILLS

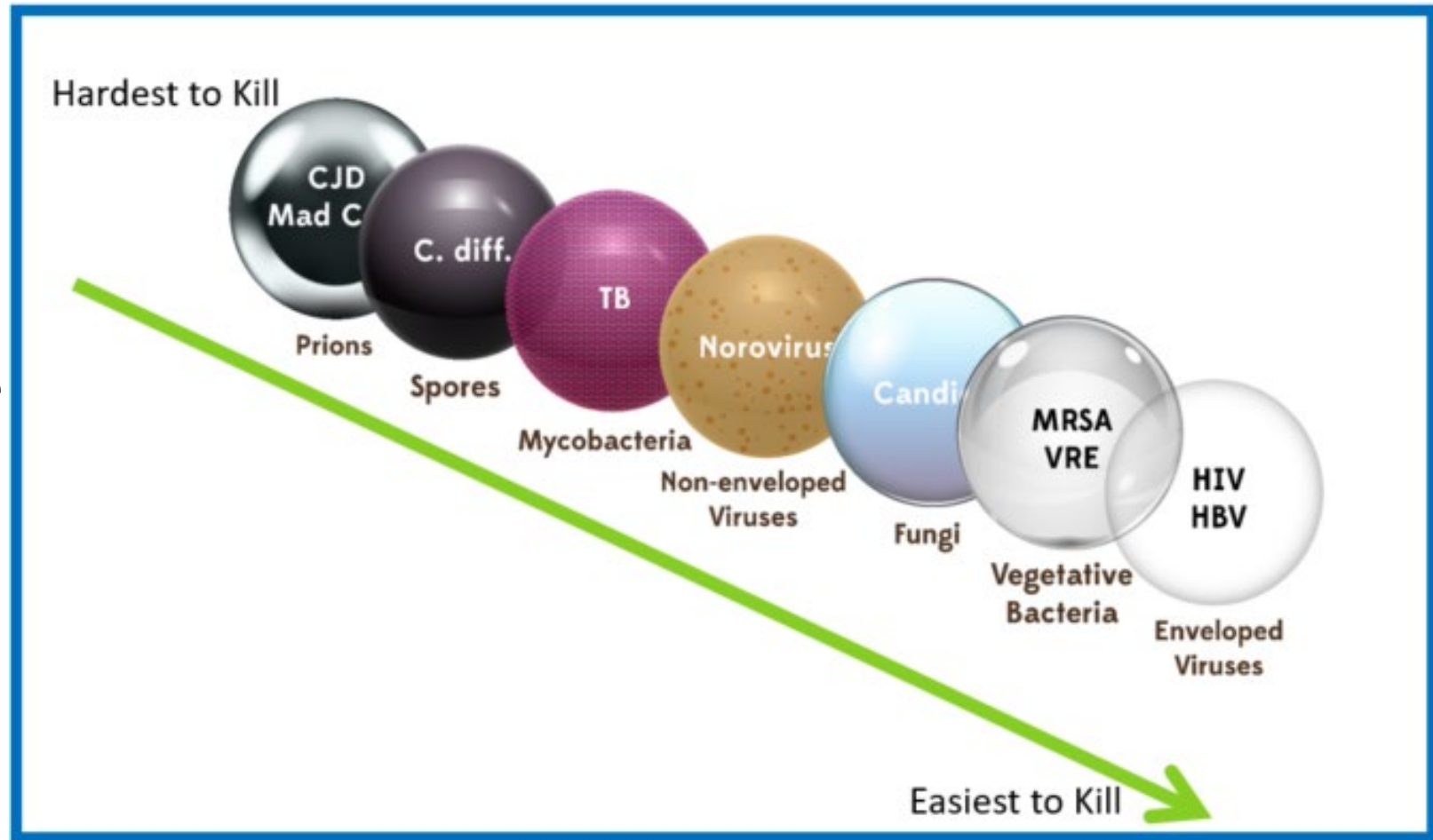
- When there are large spills of blood and/or body fluid those need to be removed/cleaned up first and then disinfection can take place.
- OSHA requires that there be a formalized process for cleaning and disinfecting blood and body fluid spills:
 - Use appropriate PPE
 - If the spill contains large amounts of blood or body fluids (e.g., > 10mls) clean up with a 1:10 dilute bleach solution
 - Then decontaminate the area with a dilute bleach solution of either a 1:10 or 1:100 concentration OR an EPA-registered disinfectant labeled as tuberculocidal or with specific label claims against Hepatitis B and HIV
 - ▶ Use appropriate PPE and promptly clean and decontaminate the spill.



Environmental Cleaning and Disinfection

Not all microorganisms are created equal

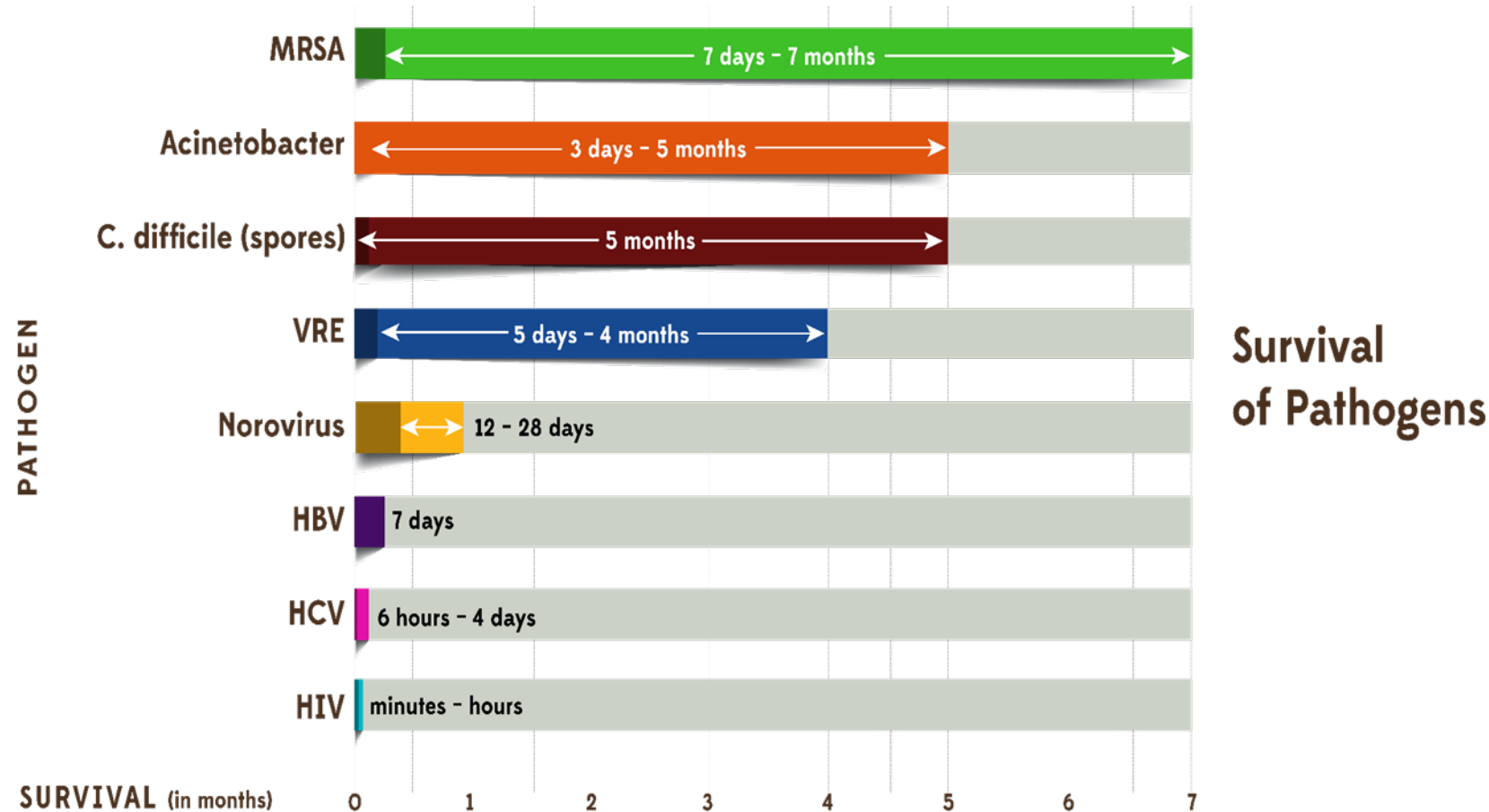
Various types of microorganisms have differing levels of resistance to disinfectants.



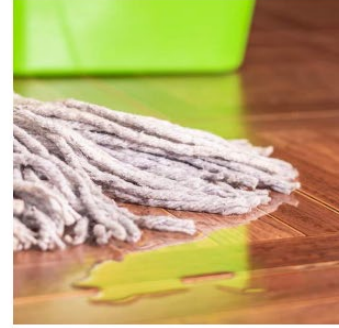
Environmental Cleaning and Disinfection

Not all microorganisms are created equal

- Additional, microorganisms can survive on surfaces for varying periods of time



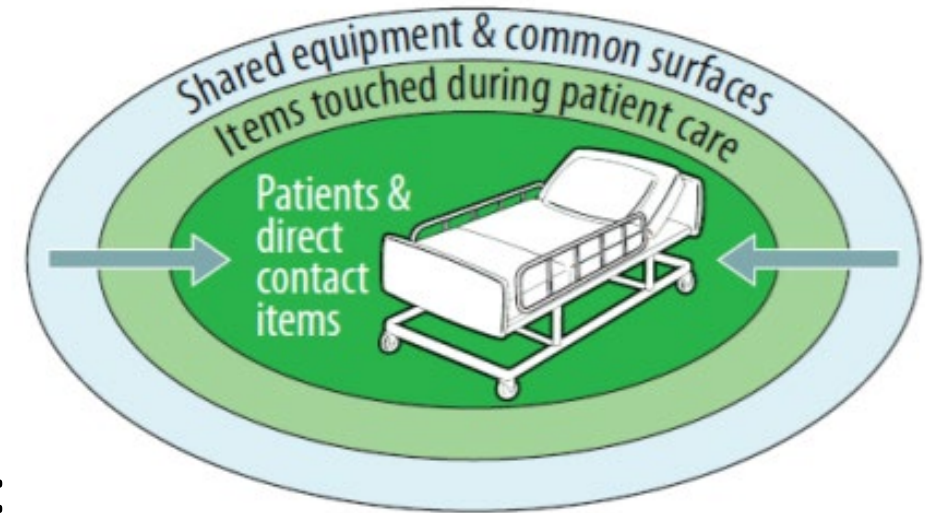
GENERAL ENVIRONMENTAL CLEANING TECHNIQUES



- ▶ Best practices for environmental cleaning of surfaces:
 - ▶ Fresh cleaning cloths at the start of each cleaning session
 - ▶ Change when no longer saturate or dried out
 - ▶ Change between each patient zone
- ▶ Never double dip cleaning cloths
- ▶ Never shake mop heads or cleaning cloths
 - ▶ This could disperse dust or droplets that could contain microorganisms
- ▶ Never leave soiled mop heads and cleaning cloths soaking in buckets

Proper Cleaning Techniques

- ▶ Clean to Dirtier to avoid spreading dirt and microorganisms:
 - ▶ Start with shared equipment and common surfaces
 - ▶ Surfaces touched during patient care (outside of patient zone)
 - ▶ Surfaces and items directly touched by the patient
 - ▶ Clean general patient care areas before cleaning areas under transmission-based precautions
- ▶ Proceed from High to Low (Top to Bottom)-prevent dirt and microorganisms from dripping or falling and contaminating clear areas:
 - ▶ Bed rails before bed legs
 - ▶ Environmental surfaces before floors (clean last)

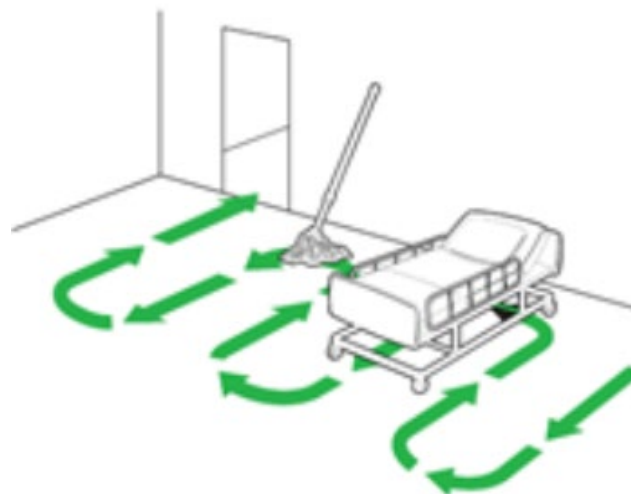
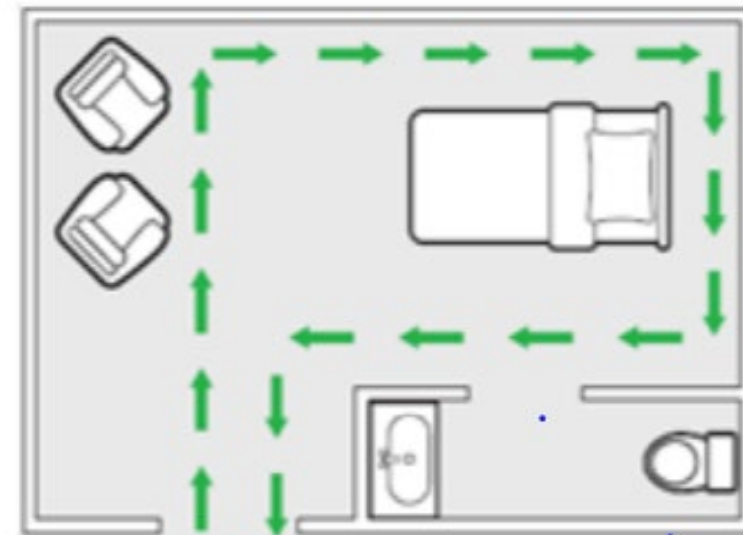


Proper Cleaning Techniques

Methodical, Systematic Manner to avoid missing areas:

- ▶ left to right or clockwise

Floors mopped in a figure-8 pattern with overlapping strokes, turning the mop head regularly and moving in the direction towards the door.



KNOWLEDGE CHECK

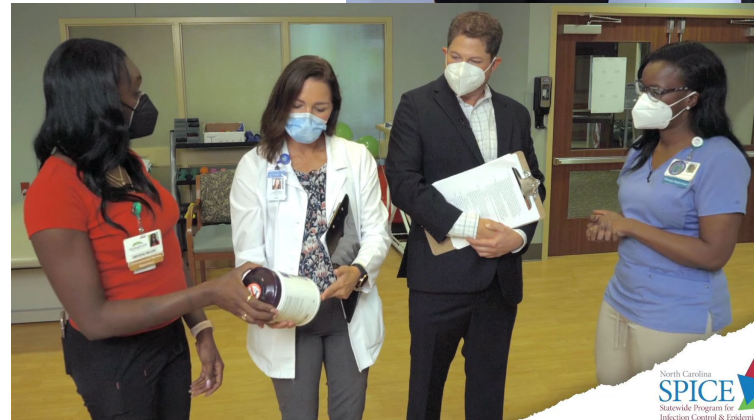
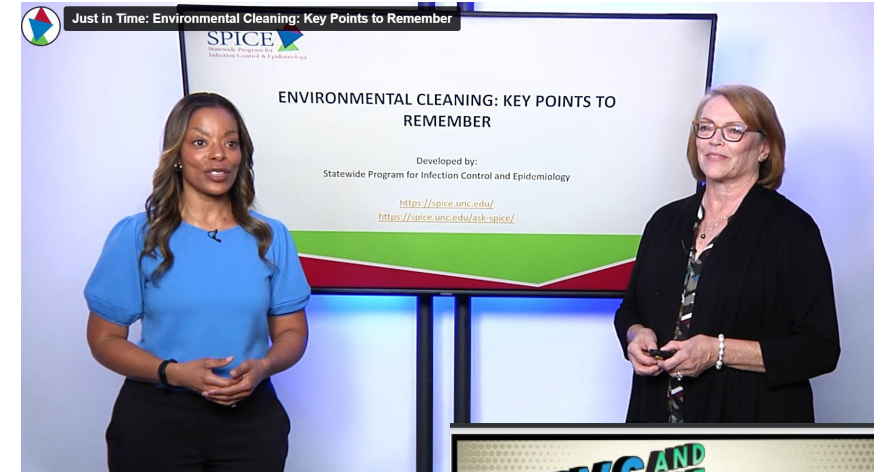
- ▶ Which statement is true regarding cleaning and disinfection methods:
 - ▶ A. Cleaning and disinfection should begin by cleaning the floors then moving up the wall and last to the ceiling.
 - ▶ B. When cleaning and disinfecting the room, it's important to start in the areas closest to the resident/patient (the patient zone), then work your way outside of the zone.
 - ▶ C. When cleaning and disinfecting a room, we should work in a methodical fashion to ensure no areas are missed during the processes (example: working in a clockwise fashion).
 - ▶ D. Transmission based precautions rooms should be cleaned ahead of general patient/resident care areas.

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TRAINING TOOLS FOR EVS

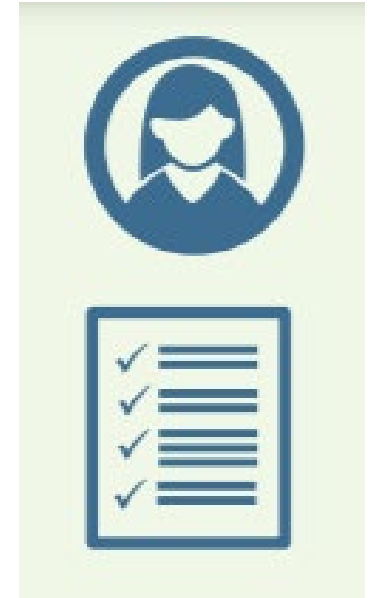
► Training- upon hire, annually, and as needed:

- [SPICE videos](#)
- [SPICE toolkit on environmental cleaning and disinfection](#)
- [CDC training](#)
- [Project Firstline](#)



Importance of Feedback, Training, and Monitoring

- ▶ Processes in place for monitoring and feedback of findings
 - ▶ Monitor individual routinely (weekly/monthly)
 - ▶ Using audit worksheet or other monitoring techniques.
 - ▶ Document findings
 - ▶ Feed back findings to staff
 - ▶ Monitor more routinely if deficiencies are found



EVS Monitoring Techniques

Direct Practice Observation

- ▶ Monitoring individual EVS staff performance and compliance with cleaning protocols

<https://www.cdc.gov/hai/pdfs/toolkits/environmental-cleaning-checklist-10-6-2010.pdf>

[Audit worksheet](#)



Visual Inspection

- ▶ Patients primarily use this approach-presence of dust, or organic debris on surfaces
 - ▶ Not a reliable indicator for microbial contamination



EVS Monitoring Techniques

Fluorescent markers

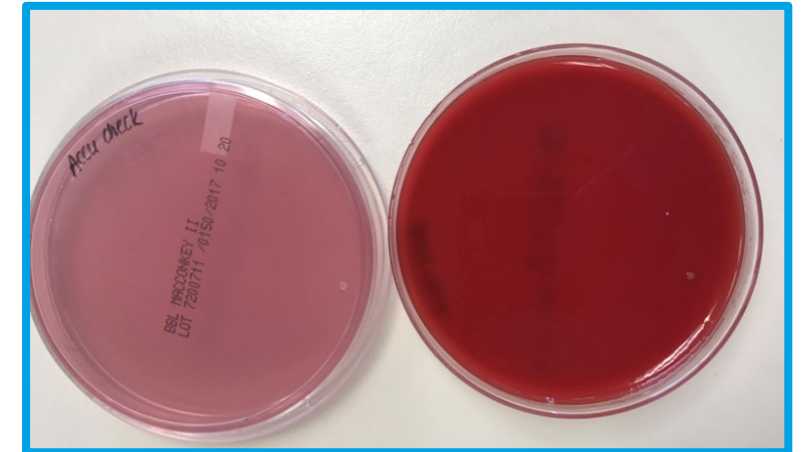
- ▶ Use of a fluorescent gel to mark surfaces prior to room cleaning
 - ▶ Fluoresces when exposed to an ultraviolet light
 - ▶ Thoroughness of the cleaning is monitored
 - ▶ Immediate feedback

Adenosine-triphosphate (ATP) assays

- ▶ ATP systems measure organic debris as well as viable bacterial counts
 - ▶ Read out scales vary between systems
 - ▶ ? Impact of bleach disinfectants on the use of ATP

Microbiologic methods

- ▶ Costly and pathogen specific
- ▶ No accepted criteria for defining a surface as clean using microbiologic methods.



Remember:

- ▶ **Consistent cleaning is essential in maintaining a clean and safe environment.**
- ▶ **Environmental cleaning is a shared responsibility between staff and the Environmental Services Department.**



QUESTIONS?