

Infection Prevention Training for Skilled Nursing Facilities

Cleaning, Disinfection & Reprocessing



SNF INFECTION
PREVENTION

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Learning Objectives

Upon completing this course, staff will be able to:

6

Core Learning Objectives



OBJECTIVE 01

Describe the role of the environment in transmitting infections



OBJECTIVE 02

Discuss strategies to ensure effectiveness of cleaning and disinfection



OBJECTIVE 03

Review methods for reprocessing reusable medical devices and equipment



OBJECTIVE 04

Demonstrate use of adherence monitoring tools and feedback



OBJECTIVE 05

Provide examples of non-critical, semi-critical, and critical devices



OBJECTIVE 06

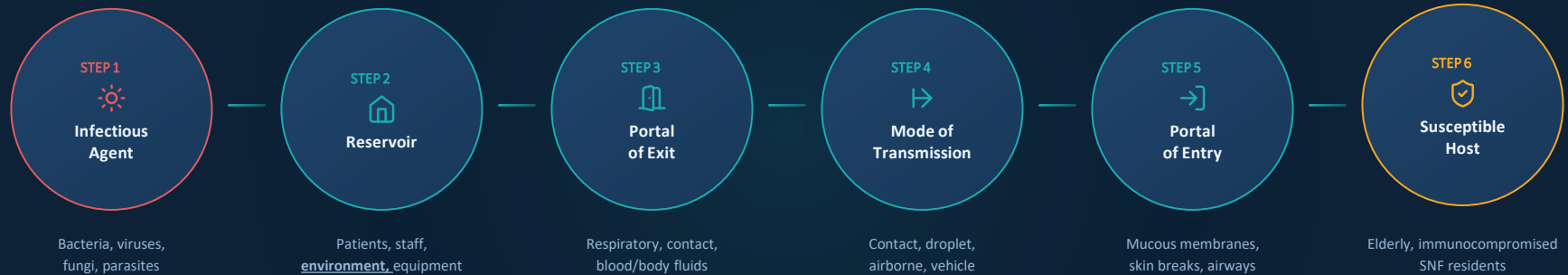
Apply facility protocols for cleaning, disinfection, and reprocessing



Role of Environmental Surfaces in Disease Transmission

Understanding the Chain of Infection

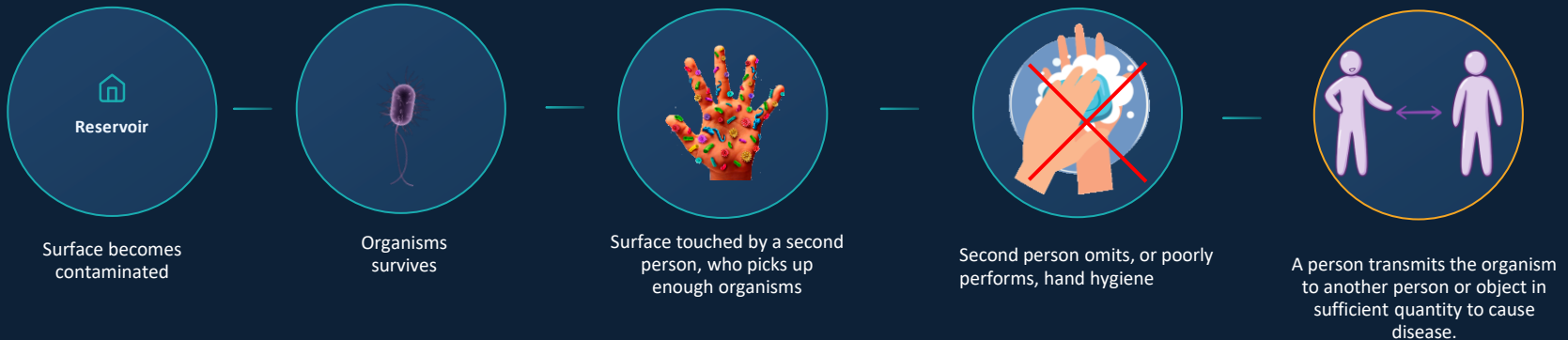
🔗 SIX-LINK PATHWAY



🔗 **BREAKING ANY LINK STOPS INFECTION.**

✅ Environmental cleaning is your most powerful intervention.

How a Contaminated Environmental Surface Leads to Résident Infection



 **BREAKING ANY LINK STOPS INFECTION.**

 Environmental cleaning one of the most powerful intervention.

Evidence of Environment and Disease Transmission

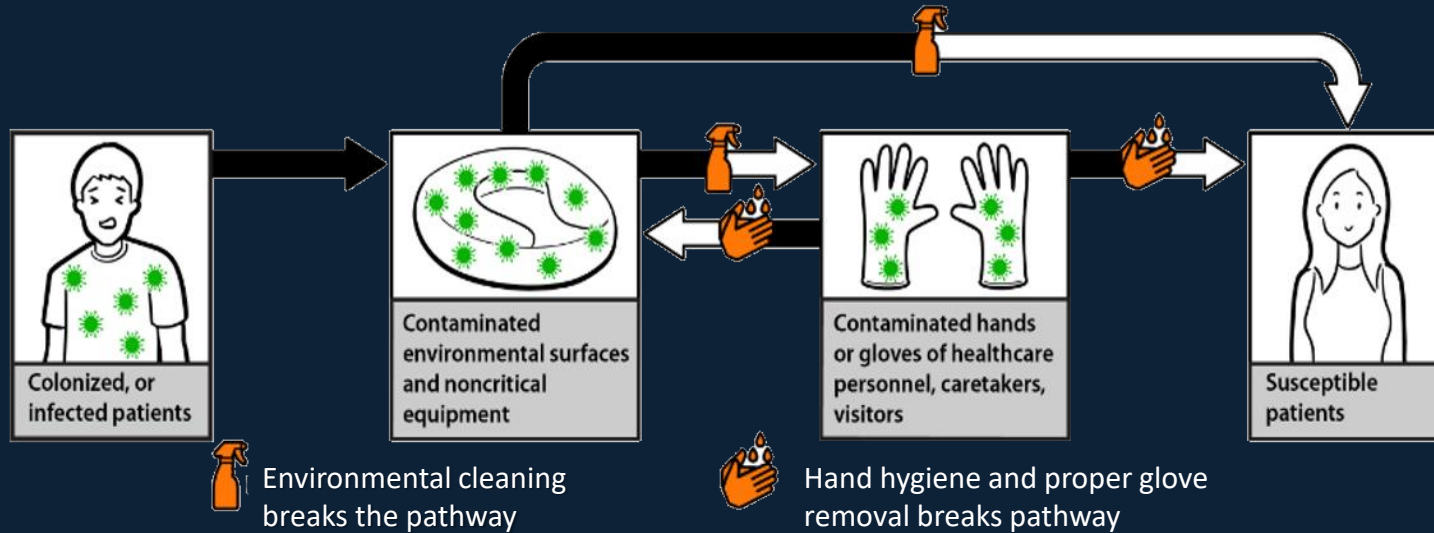
- Admission to a room previously occupied by a colonized or infected resident is a significant risk factor for infection
- *C. difficile* acquisition
 - 11% residents admitted to an ICU room previously occupied by a CDI resident developed CDI infection afterward
 - 4.6% residents admitted to a room without a prior CDI positive occupant developed CDI

Weber DJ et.al. AJIC 2013 .Shaughnessy et al. Infect Contr Hosp Epidemiol. 2011 (PDF)
(www.idse.net/download/HAI_IDSE13_WM.pdf)

The Role of Environmental Contamination 2018
(<https://link.springer.com/article/10.1007/s11908-018-0620-2>)

Increased Acquisition Risk from Prior Infected Room Occupant

Figure 1. Contact transmission pathway showing role of environmental surface, role of environmental cleaning, and hand hygiene in breaking the chain of transmission.



Pathogen Survival in the Environment

Multiple factors influence duration of survival:

1. Type of microbe – spore formation ability
2. Temperature
3. Humidity

Clostridioides difficile (C. diff) spores are shed in high numbers, are resistant to drying (desiccation) and some disinfectants, and survive on surfaces for months to years

Microorganism	Survival (range)
<i>Acinetobacter</i> spp.	3 days - 5 months
<i>Bordetella pertussis</i>	3 - 5 days
<i>Campylobacter jejuni</i>	≥ 6 days
<i>Candida albicans</i>	1 - 120 days
<i>Candida auris</i>	7 days
<i>Clostridioides difficile</i> (spores)	5 months
Coronavirus	hours - days
<i>Escherichia coli</i>	1.5 hours - 16 months
<i>Enterococcus</i> spp. /VRE	5 days - 4 months
<i>Haemophilus influenzae</i>	12 days
Hepatitis A	2 hours - 60 days
Hepatitis B	≥ 1 week
HIV	≥ 7 days
<i>Klebsiella</i> spp.	2 hours - 30 months
<i>Listeria</i> spp.	1 day - months
Norovirus	8 hours - 7 days

[Understanding *Clostridium difficile* colonization. SM Journals.\(2018\)](#)
(doi.org/10.1128/CMR.00021-17)

[Survival of Microorganisms on Inanimate Objects and Surfaces Pocket Card](#)

Ensure Environmental Cleaning Staff Perform Hand Hygiene

- Emphasize the importance of hand hygiene for all staff in infection prevention
- Change perception that hand hygiene is to protect staff
 - Hand hygiene is to protect the resident
- Orient EVS staff thoroughly to infection control principles and practices prior to starting work in a clinical area

PPE for Cleaning

Select PPE based on:

1. Type of infection prevention precautions assigned to the resident
2. Chemicals to be used to clean the room
3. Refer to the Safety Data Sheet (SDS), directions sheet, and facility policy

- Appropriate use of PPE is critical

Inappropriate use may result in contamination of the HCP hands and the environment

How to Reduce Environmental Bioburden

Bioburden is the number of organisms on an object or surface

To reduce bioburden:

1. Perform hand hygiene
2. Clean and disinfect high-touch surfaces daily
3. Improve cleaning and disinfection of rooms after discharge of residents known to carry healthcare-associated pathogens
4. Clean and disinfect portable equipment
5. Ensure thorough cleaning and disinfection of all rooms

Effective Cleaning Strategies

KEY DEFINITIONS: A CRITICAL DISTINCTION

● Cleaning / Disinfection

● Sterilization



Cleaning & Disinfection

First & second lines of defense

CLEANING

- **Physical removal** of soil, debris, and organic matter from surfaces and equipment
- **Required BEFORE** disinfection or sterilization — organic matter blocks chemical agents
- Uses **soap/detergent and water**; mechanical action is essential

DISINFECTION

- **Kills most pathogenic microorganisms** — but does NOT eliminate spores
- Three levels of efficacy:
 - Low-Level
 - Intermediate-Level
 - High-Level
- Uses **EPA-registered chemical agents**; always follow manufacturer contact time

VS



Sterilization

Highest level — absolute microbial destruction

STERILIZATION

- **Destroys ALL microbial life** — including highly resistant bacterial spores
- Reserved for **critical items** that enter sterile tissue or the vascular system
- Verified using **biological and chemical indicators** for every load

VALIDATED METHODS



Steam Autoclave

Moist heat under pressure;
most common method

EtO Gas

Ethylene oxide for heat-
sensitive instrumentsH₂O₂ PlasmaLow-temp plasma; safe for
delicate devices

Critical Rule: Cleaning must *always* precede disinfection and sterilization — organic soil and debris inactivate chemical agents and physically block sterilant penetration, rendering the process ineffective.

Clean Before Disinfecting

Cleaning removes large numbers of microorganisms, organic material and soil from a surface that would otherwise interfere with the disinfection process

1. Disinfectants are not as effective in the presence of organic material (like blood and other body fluids)
2. Some organic materials, like dried blood, are difficult to remove but, if not removed, can inactivate some disinfectants

Disinfectants can't work if cleaning doesn't happen first!

Wet, Contact, or Dwell Time

- Time required for a disinfectant to kill microorganisms on a pre-cleaned surface
- Disinfectant must remain wet on the surface long enough to achieve the claimed level of surface disinfection
- Must follow manufacturer's guidelines for achieving the appropriate wet contact time

Detergents and Disinfectants

Detergent

- Used for cleaning
- Contains surfactants; lifts dirt
- Can become easily contaminated, does not kill microorganisms
- Less toxic, generally less odor, less costly than disinfectant

Disinfectant

- Inhibits growth or kills microorganisms
- More toxic, more costly than detergent
- Disinfectants are only for disinfecting after cleaning and are not substitutes for cleaning, **unless** they are a combined detergent-disinfectant product

Environmental Protection Agency (EPA) Label Claim for Disinfectant

The EPA label claim states if the product is:

- Virucidal

- Bactericidal

- Tuberculocidal

- Fungicidal

- Sporicidal

Includes the manufacturer's instructions for use (IFU), including wet or contact time required to achieve the desired degree of microbial killing

Environmental Protection Agency (EPA) (2020)
(www.epa.gov)



SLIDE 8 · DISINFECTANTS

Disinfectant Categories in the SNF Setting

Seven major chemical agents — their spectrum, level, and appropriate SNF applications.

Agent	Strengths	Concerns
Quaternary Ammonium (Quats)	- Non-critical items such as floors and furniture - Bactericidal, fungicidal, virucidal against lipophilic viruses	- Not effective against some gram negatives - Not sporicidal - Inactivated by cotton and charcoal - Deactivated by organic material
Phenolics	- Bactericidal, virucidal, fungicidal, tuberculocidal - Not sporicidal	- Absorbed by porous materials - Can irritate tissue - Unsafe for use in nurseries
Chlorine-based	- Broad antimicrobial activity, effective against gram-negatives, tuberculocidal, fungicidal, virucidal - Does not leave toxic residues - Inexpensive - Fast acting - Removes dried organisms, biofilms	- Can cause eye irritation, gastric burns - Inactivated by organic matter - Discolors fabrics - Relatively unstable - Corrosive in high concentrations - Can release toxic chlorine gas when mixed with ammonia
Hydrogen peroxide, Accelerated H₂O₂	- Effective, broad spectrum kill - Bactericidal, virucidal at 30- 60 sec - Fungicidal at 10 min - Low EPA toxicity rating	- Expensive - Corrosive to some materials <i>*Always consider duration of contact time</i>



Always follow manufacturer contact time — do not wipe before dry time elapses.



REQUIRED PRACTICES

OSHA Compliance Standards

- 1  Maintain current Safety Data Sheets (SDS) for all chemicals on-site
- 2  Train staff on chemical hazards before use — OSHA HazCom standard required
- 3  Use chemicals only as labeled — never mix agents together
- 4  Store disinfectants away from food, medications, and resident areas
- 5  Ensure adequate ventilation when using volatile or aerosolized chemicals
- 6  Label all secondary containers properly — product name, hazard, date



COMMON HAZARDS

Known Risks & Exposure Dangers

- 1   Bleach + ammonia creates toxic chloramine gas — never mix these agents
- 2  Splash injuries to eyes and skin from handling concentrated solutions
- 3  Inhalation of aerosolized disinfectants without proper respiratory protection
- 4  Improper dilution — too weak = ineffective; too strong = toxic to staff and surfaces
- 5  Storing chemicals in unmarked or food containers — risk of accidental ingestion



EXPOSURE ALERT

Report chemical exposures to supervisor and Employee Health immediately — document the incident and agent involved per OSHA recordkeeping standards.

 SDS ON FILE REQUIRED

Why Use Bleach for *C. difficile*?

- *C. difficile* spores are difficult to kill and adhere to environmental surfaces for extended periods
- Use of a 1:10 dilution of bleach (500 ppm) for disinfection
 - Reduces surface contamination
 - Instrumental in outbreak control
- Alternatives to bleach are also available
 - Refer to EPA approved listing of *C. difficile* disinfectants

[EPA-approved disinfectants with label claims for killing *C. difficile* spores](http://www.epa.gov/pesticide-registration/list-k-epas-registered-antimicrobial-products-effective-against-clostridium)

(www.epa.gov/pesticide-registration/list-k-epas-registered-antimicrobial-products-effective-against-clostridium)

[Strategies to Prevent *Clostridioides difficile* Infection in Acute Care Facilities](http://www.cdc.gov/hai/prevent/cdi-prevention-strategies.html)

(www.cdc.gov/hai/prevent/cdi-prevention-strategies.html)

Know Your Disinfectant!

- Read the entire label
- Active ingredients
- Directions for use
- Contact time
- Cautions, warnings, danger
- Precautionary statements
- First aid if splash on skin, in eyes
- Storage and disposal

How to Read a Disinfectant Label

Read the entire label.
The label is the law!
Note: Below is an example of information that can be found on a disinfectant label

Active Ingredients:
What are the main disinfecting chemicals?

EPA Registration Number:
U.S. laws require that all disinfectants be registered with EPA.

Directions for Use (Instructions for Use):
Where should the disinfectant be used?

What germs does the disinfectant kill?

What types of surfaces can the disinfectant be used on?

How do I properly use the disinfectant?

Contact Time:
How long does the surface have to stay wet with the disinfectant to kill germs?

Active Ingredients:
Allyl (80% C14, 20% C16, 5% C12, 5% C18)
Dimethyl Benzyl Ammonium Chloride 10.0%
OTHER INGREDIENTS: 90.0%
TOTAL: 100.0%
EPA REG NO. 55555-55-55555

CAUTION

Directions for Use
INSTRUCTIONS FOR USE:
It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

For Disinfection of Healthcare Organisms:
Staphylococcus aureus,
Pseudomonas aeruginosa.

To Disinfect Hard, Nonporous Surfaces:
Pre-wash surface.
Mop or wipe with disinfectant solution.
Allow solution to stay wet on surface for at least 10 minutes.
Rinse well and air dry.

PRECAUTIONARY STATEMENTS:
Hazardous to humans and domestic animals. Wear gloves and eye protection.

CAUSES MODERATE EYE IRRITATION. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Avoid contact with foods.

FIRST AID: IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes.

POISON CONTROL: Call a Poison Control Center (1-866-366-5048) or doctor for treatment advice.

STORAGE AND DISPOSAL: Store this product in a cool, dry area away from direct sunlight and heat. When not in use keep center cap of lid closed to prevent moisture loss. Nonrefillable container. Do not reuse or refill this container.

Signal Words (Caution, Warning, Danger):
How risky is this disinfectant if it is swallowed, inhaled, or absorbed through the skin?

Precautionary Statements:
How do I use this disinfectant safely? Do I need PPE?

First Aid:
What should I do if I get the disinfectant in my eyes or mouth, on my skin, or if I breathe it in?

Storage & Disposal:
How should the disinfectant be stored? How should I dispose of expired disinfectant? What should I do with the container?

EXP MM-DD-YYYY
5 55555 55555 5

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

PROJECT FIRSTLINE

EPA
Environmental Protection Agency

WWW.CDC.GOV/PROJECTFIRSTLINE

Best Practices for Resident Room Cleaning

- Ensure cleaning equipment and supplies are clean
- Ensure proper use of cleaning and disinfecting products
- Ensure proper hand hygiene and use of gloves
- Focus on frequently touched surfaces



Best Practices for Resident Room Cleaning



PRIORITY TARGETS

- Ensure cleaning equipment and supplies are clean
- Ensure proper use of cleaning and disinfecting products
- Ensure proper hand hygiene and use of gloves
- Focus on frequently touched surfaces

Examples of High-touch surfaces



Resident Room

- Bed rails & call light button
- Overbed table surface & edges
- IV pole & pump touchpoints
- Light switches & doorknobs
- TV remote controls
- Chair armrests & tray tables



Bathroom

- Toilet seat, rim & flush handle
- Grab bars (all sides)
- Sink faucet handles & basin
- Soap & paper towel dispensers
- Door handle & lock
- Shower/tub controls & chair



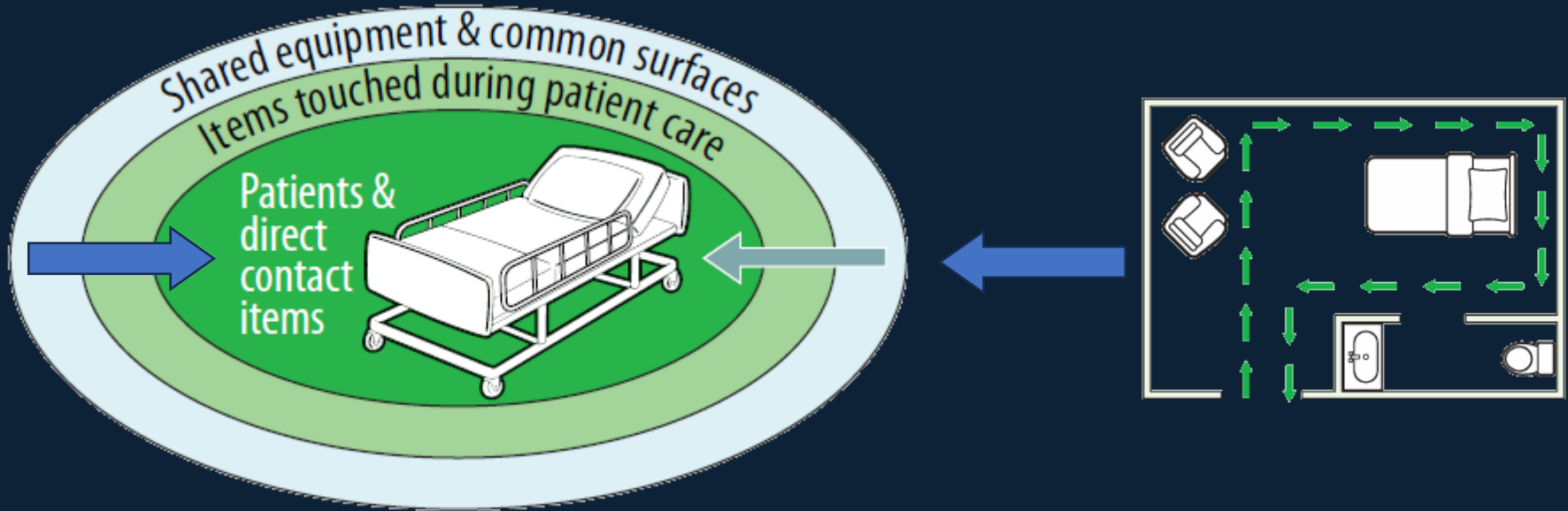
Shared / Clinical Areas

- Nursing station counters & surfaces
- Computer keyboards & mouse
- Medication cart handles & tops
- Glucometer & BP cuff surfaces
- Wheelchair armrests & push handles
- Handrails along corridors



High-touch surfaces must be cleaned and disinfected at least once daily and immediately when visibly soiled — these are the highest-risk vectors for pathogen transmission in your facility.

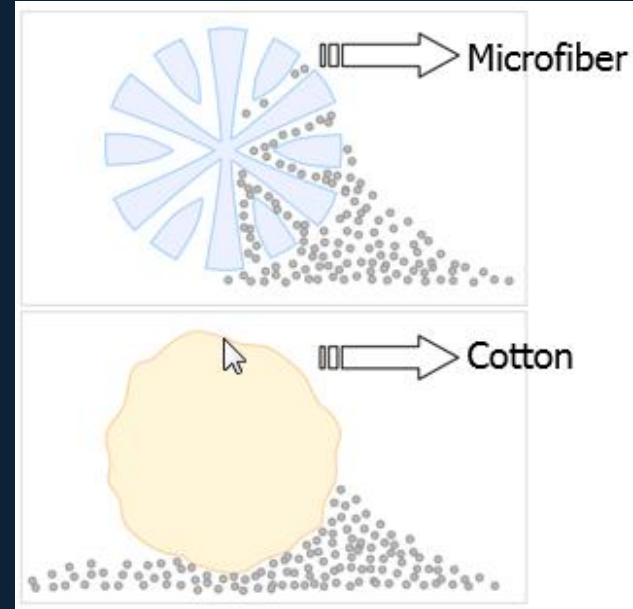
Working From Clean to Dirty



Microfiber vs. Cotton

Microfiber cleans 50% better than comparable cotton

- Attracts dust
 - Easier to use, lighter
 - Designed for repeat usage
- Microfiber was initially more expensive than cotton, but cleaned better, used less water and chemicals, and decreased labor costs.



Linen

Best practices for laundering soiled linen

- Follow instructions from the washer/dryer manufacturer.
- Use hot water (70–80°C X 10 min) [158–176°F]) and an approved laundry detergent.
 - Disinfectant are generally not needed when soiling is at low levels.
 - Use disinfectant on a case by case basis, depending on the origin of the soiled linen (e.g., linens from an area on contact precautions).
- Dry linens completely in a commercial dryer

Bedside Curtains, Fabrics, Floors and Carpets

Bedside Curtains

- Bacteria and fungi can survive on polyester, cotton, wool, and other fabrics
- Privacy curtains are considered high-touch surfaces and can become rapidly contaminated especially when used in transmission-based precautions isolation rooms
- Hands can become contaminated after handling curtains

Upholstery fabrics

- Upholstered chairs are difficult to clean, consider reupholstering with wipeable material such as vinyl

Non-carpeted floors

- Floor disinfection offers no advantage over regular detergent and water cleaning
- Soap and water is acceptable for floors and is less expensive

Carpets

- Evidence linking carpets to HAI rates is limited
- Vacuuming and steam cleaning temporarily reduces the number of organisms
- Difficult to clean with blood/body fluid spills

CDC Infection Control Guidelines
(www.cdc.gov/infectioncontrol/guidelines/)

Monitoring Cleaning Thoroughness

How Do You Know a Resident Room is Clean?

- Appears **visually** clean or finger-swipe clean
 - Fast and inexpensive, but lacks objectivity
- Confirmed via **technology**
 - Increasingly becoming the community standard
 - ▶ **Fluorescence:** Environmentally stable marker is visible to UV light if still present after cleaning (“Glo-Germ”)
 - ▶ **Adenosine Triphosphate (ATP)** monitoring: Measures residual organic matter left on a surface after cleaning

[Optimizing Cleaning in Healthcare 2016](#)

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7126731/>)

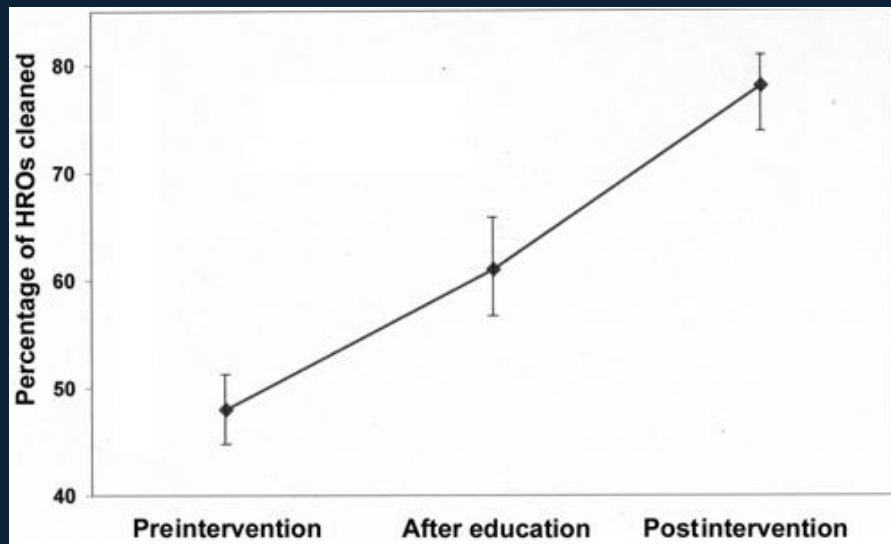
Comparison of Methods of Monitoring Cleaning

Method	Visual	Fluorescence	ATP
5. How are results presented?	pass/fail	pass/fail	Numeric value Requires standard indicating pass or fail
6. Is software needed for the monitoring process?	No	Can be used, but not required	Yes
7. How well can it be used for a training tool?	Results immediate with visual cues	Results immediate with visual cues	Results delayed No visual cues available from surface
8. How affordable is the method?	No monetary investment	Materials inexpensive; if formal program including staff education purchased, expenses will be higher	Cost of machine and swabs is substantial

Method	Visual	Fluorescence	ATP
1. What is measured?	Impression of cleanliness (“looks clean”)	If fluorescent residual has been removed, or not	Measure biological matter remaining on surface after cleaning
2. Can it be used by persons of differing skill levels?	No technical training required	Minimal technical training needed	Technical training required
3. How objective is the method? (Can results be changed to appear cleaner than it truly is?)	Can be subjective	Objective, but marks could have been removed prior to reading, or staff may view placement of markings before cleaning	Very objective, more likely to be a true finding of removal, or insufficient removal, of material
4. Can the amount of time spent on monitoring be minimized?	Yes, but potential to not observe any missed areas	Room must be pre-marked in the absence of the cleaning staff, and read after cleaning	Yes, but requires technical expertise for accurate results

Does Monitoring Improve Cleaning?

- In 36 hospitals, mean percentage of high-risk objects cleaned was
 - **48%** prior to intervention
 - **78%** after intervention



[Methods for assessing the adequacy of practice and improving room disinfection - American Journal of Infection Control \(ajicjournal.org\)](http://www.ajicjournal.org/article/S0196-6553(13)00056-4/fulltext)

([www.ajicjournal.org/article/S0196-6553\(13\)00056-4/fulltext](http://www.ajicjournal.org/article/S0196-6553(13)00056-4/fulltext))

[Improving daily patient room cleaning: an observational study using a human factors and systems engineering approach - PMC \(nih.gov\)](http://pmc.ncbi.nlm.nih.gov/articles/PMC3811111/)

Monitor Adherence

- Monitoring staff while room cleaning gives feedback to the staff member as soon as breaches are discovered
- Adherence reports improves adherence to standards and helps staff focus on gaps
- CDPH HAI Program developed a tool to monitor adherence of cleaning practices (2016)



Healthcare-Associated Infections Program Adherence Monitoring
Environmental Cleaning and Disinfection

Assessment completed by: _____
Date: _____
Unit: _____

Regular monitoring with feedback of results to staff can maintain or improve adherence to environmental cleaning practices. Use this tool to identify gaps and opportunities for improvement. Monitoring may be performed in any type of patient care location.

Instructions: Observe at least two different environmental services (EVS) staff members. Observe each practice and check a box if adherent, Yes or No. In the column on the right, record the total number of "Yes" for adherent practices observed and the total number of observations ("Yes" + "No"). Calculate adherence percentage in the last row.

Environmental Cleaning Practices		EVS Staff 1		EVS Staff 2		EVS Staff 3		Adherence by Task	
								# Yes	# Observed
ES1.	Detergent/disinfectant solution is mixed according to manufacturer's instructions.	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No		
ES2.	Solution remains in wet contact with surfaces according to manufacturer's instructions.	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No		
ES3.	A new clean, saturated cloth is used in each room. The cloth is also changed when visibly soiled and after cleaning the bathroom.	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No		
ES4.	Environmental Services staff use appropriate personal protective equipment (e.g. Gowns and gloves are used for patients/residents on contact precautions upon entry to the contact precautions room.)	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No		
ESS.	Objects and environmental surfaces in patient/resident care areas that Are touched frequently* are cleaned and then disinfected when visibly contaminated or at least daily with an EPA-registered disinfectant.	☐ Yes	☐ No	☐ Yes	☐ No	☐ Yes	☐ No		

***Examples of high touch surfaces:**

Bed rails	Chair	Room inner door knob/handle	PPE container(s)	Toilet bedpan cleaner
Tray table	Room sink	Bathroom door knob/handle	Bathroom sink	In-room medical carts
IV pole ("grab area")	Room light switch	Bathroom light switch	Toilet seat	In-room cabinets
Call button	TV remote	Bathroom handrails	Toilet flush handle	In-room computers/keyboards
Bedside table handle				

of Correct Practice Observed ("# Yes"): _____

Total # Environmental Services Observations ("# Observed"): _____
(Up to 15 Total)

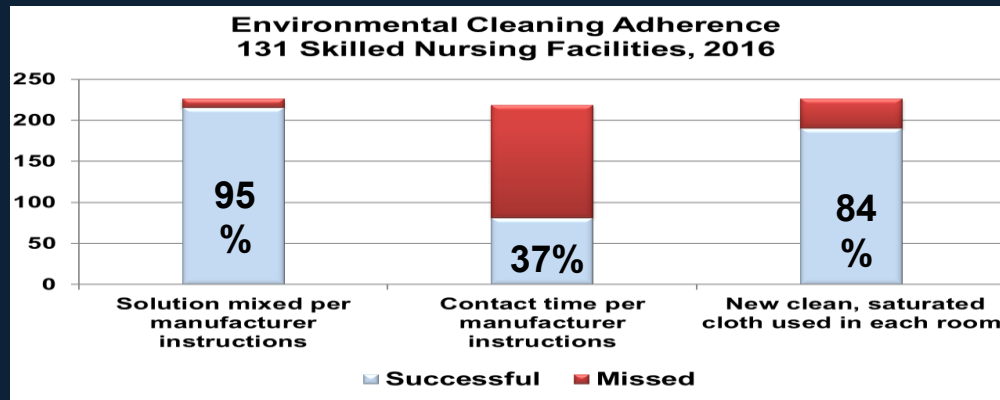
Adherence _____%
(Total "# Yes" ÷ Total "# Observed" x 100)

If practice could not be observed (i.e. cell is blank), do not count in total # Observed.

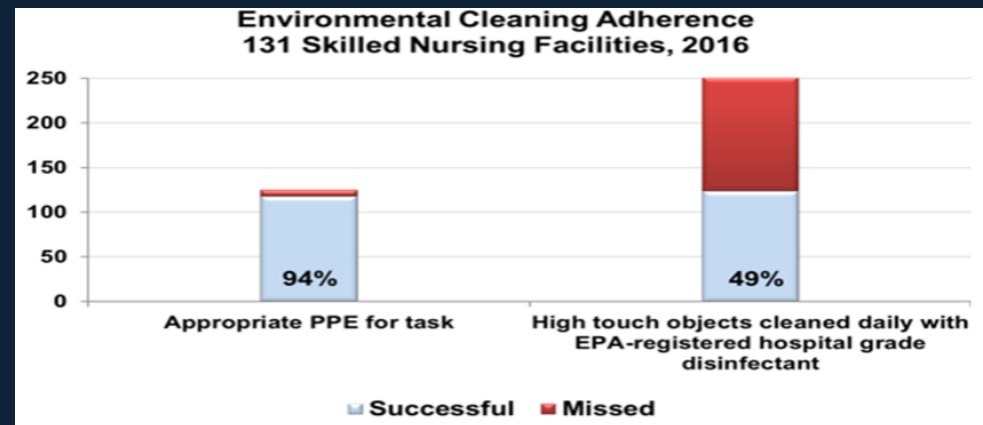
Adherence Monitoring and Reporting in EVS

- Findings from adherence monitoring should be reported to EVS (housekeeping) department supervisor/director, presented to committees that oversee
 - Quality, resident safety, regulatory
 - Infection control committee
 - Internal EVS department
- Feedback should be provided to EVS staff

Observations



Observations



Effective Cleaning and Disinfection Programs – Policy

Cleaning Policy Considerations

A healthcare facility's cleaning policy should include

- The surfaces and equipment that can reasonably be expected to be contaminated by bacteria (high touch surfaces)
 - Bedrail
 - Call light
 - Light switches
 - Doorknobs
 - TV remote
 - IV pump
 - IV poles
 - Computer keyboard
 - Telephone
 - Over bed table
 - Respiratory and other bedside equipment
 - Chairs
 - Toilet, commode chair
- Responsibility and frequency for cleaning and disinfecting resident care equipment and surfaces

Cleaning Responsibility

- **All personnel are responsible** for cleaning the environment
 - Environmental services staff
 - Nursing service staff – CNAs, LVNs, RNs, dietary aides
 - Physical, occupational, and speech therapists
 - Respiratory therapists
 - Radiology technicians, facilities/maintenance
- **All personnel must be oriented** to proper cleaning methods
 - Safety is a must! Accidental slips, needlesticks, and exposure to chemicals are a few of many safety concerns

[Maintaining a Healthy Workplace](#)

(ecampusontario.pressbooks.pub/introductiontoipcp/chapter/maintaining-a-healthy-workplace-environment/)

Cleaning Responsibility (continued)

- Put individual responsibilities into **policy**
- Assign responsibilities with **checklist**



Healthcare-Associated Infections Program
Environmental Cleaning and Disinfection – Responsibility Assessment

Everyone is responsible for the cleanliness of the care environment. It is recommended to keep an updated checklist of *who cleans what* in your policy. The following items may be used to develop a checklist for assigning cleaning responsibilities among staff. This tool may also be used as an assessment or teaching tool to identify gaps and opportunities for improvement.

Instructions: Ask at least four (4) staff with different titles to list who cleans each item. Compare responses to your facility's policy. Look for areas where it is unclear who cleans certain items or if there is a mismatch among respondents. Use the results from this exercise to remind and reeducate staff on the importance of environmental cleaning. Example respondents include: infection preventionists, EVS managers, nurses, respiratory therapists, EVS workers.

Who is responsible for cleaning:	Respondent #1 Title:	Respondent #2 Title:	Respondent #3 Title:	Respondent #4 Title:
ABHR dispenser				
Bathroom				
Bedrail				
Blood pressure machine				
Call button				
Charting area				
Floor				
Floor, with large spill				
Glucometer				
In-room computer/keyboard				
IV pole				

[Responsibility checklist CDPH](#)

(www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/AdherenceMonitoringEVS_ResponsibilityAssessment.pdf)

How Much Time Should it Take to Clean?

Create an individualized benchmark time for the facility based on time needed to complete a checklist of items to be cleaned and disinfected

1. Input from front line staff is essential
2. Consider room size, amount of equipment, furniture and clutter that need to be cleaned or cleaned around

Disseminate information to all nursing units

- General understanding of how important room cleaning is, and how taking shortcuts may harm residents

Proper cleaning requires adequate time

- Daily cleaning can take 20-25 minutes per room
- Terminal cleaning will take 40-45 minutes

[Room Turnover Times: 'Trash-and-Dash' Approach Jeopardizes Patient Outcomes | Infection Control](#)

[Today](#)

[Environmental cleaning and disinfection of patient areas - International Journal of Infectious Diseases](#)

New Technologies: Whole-Room Disinfection

“Touchless” or non-manual techniques

Types include

- Hydrogen peroxide fogging (dry mist or vapor)
- Ultraviolet light (continuous emitting or pulsed xenon-UV)

Not enough studies to support their use

Require thorough manual cleaning before use – may add to room turnover time

[From luxury to necessity: Progress of touchless interaction technology](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC9595506/)
(www.ncbi.nlm.nih.gov/pmc/articles/PMC9595506/)

Caveats to Whole-Room Disinfection Technologies

- Whole room disinfection technologies cannot substitute for
 - Good physical cleaning practices
 - High level compliance to hand hygiene
 - Avoidance of cross-contamination
 - Staff education and competencies
- Temporary relocation of residents may be needed when disinfecting rooms
 - Need to assess cleaning procedures, chemicals used, safety issues

Reprocessing Reusable Medical Devices

Cleaning Medical Instruments and Devices

- Disinfection or sterilization cannot be achieved without cleaning first
 - Organic material dilutes or inactivates disinfectants
 - Bioburden must be reduced for processes to be effective
- Clean all medical equipment, instruments and devices by
 - Removing visible soil at point of use
 - Disconnecting or separating instrument parts
 - Checking the IFU for specific instruments to avoid damage
 - Avoid organic material drying on equipment, by rinsing or soaking in an enzymatic solution per IFU
 - Guidance on reuse of single use items, link below

[CDC Oral Health](https://www.cdc.gov/oralhealth/infectioncontrol/faqs/single-use-devices.html)

(www.cdc.gov/oralhealth/infectioncontrol/faqs/single-use-devices.html)

[FDA Reprocessing and Reuse of Single Use Devices](https://www.fda.gov/regulatory-information/search-fda-guidance-documents/reprocessing-medical-devices-health-care-settings-validation-methods-and-labeling)

(www.fda.gov/regulatory-information/search-fda-guidance-documents/reprocessing-medical-devices-health-care-settings-validation-methods-and-labeling)

Reprocessing Terminology

- Health care devices and equipment are designated (Spaulding's Classification System)
 - Non-critical: touches intact skin
 - Semi-critical: touches mucous membranes - except dental
 - Critical: enters sterile tissue or vascular system
- Categories determine level of reprocessing required

[CDC: Spaulding's classification system](https://www.cdc.gov/infectioncontrol/guidelines/disinfection/rational-approach.html)

(www.cdc.gov/infectioncontrol/guidelines/disinfection/rational-approach.html)

Spaulding Classification: Matching Items to Process Level



RISK LEVEL: HIGHEST

Critical Items

DEFINITION

Enter **sterile tissue** or the **vascular system** — any breach carries direct infection risk.

EXAMPLES

- Surgical instruments & implants
- Vascular & urinary catheters
- Cardiac & biopsy devices
- Implants

REQUIRED PROCESS



STERILIZATION

Example: Steam sterilizer, EtO gas



RISK LEVEL: MODERATE–HIGH

Semi-Critical Items

DEFINITION

Contact **mucous membranes** or **non-intact skin** — pathogens can colonize without full sterility barrier.

EXAMPLES

- Bronchoscope
- GI endoscopes
- Vaginal ultrasound probes
- Respiratory therapy equipment
- Anesthesia equipment

REQUIRED PROCESS



HIGH-LEVEL DISINFECTION (min.)

Example: High-level disinfectants (OPA)



RISK LEVEL: LOWER

Non-Critical Items

DEFINITION

Contact **intact skin only** — skin acts as an effective barrier against most pathogens.

EXAMPLES

- Blood pressure cuffs & stethoscopes
- Bed rails & overbed tables
- Bedpans & wheelchairs

REQUIRED PROCESS



LOW- TO INTERMEDIATE-LEVEL DISINFECTION

Examples: Disinfection wipes

↑ **Clinical Guidance:** When in doubt, escalate to the next level of reprocessing — choosing a higher standard is always the safer clinical decision.

Non-Critical Item Disinfection in the SNF

LLD

Low-Level Disinfection



TARGET ITEMS

Bed Rails

Blood Pressure Cuffs

Stethoscopes

Wheelchairs

Overbed Tables

APPROVED AGENTS

Quaternary Ammonium

Dilute Bleach

AHP

PROCESS

- 1 Clean surface to remove visible soil and debris
- 2 Apply EPA-registered product per manufacturer label
- 3 Allow full contact time — do not wipe prematurely
- 4 Wipe dry or allow to air dry per product instructions



Frequency: Daily and whenever visibly soiled

ILD

Intermediate-Level Disinfection



TARGET ITEMS

Thermometers

Glucometers

Shared Equipment w/ Blood Contact

APPROVED AGENTS

70% Isopropyl Alcohol

Sodium Hypochlorite

PROCESS

- 1 Clean item first — remove organic material thoroughly
- 2 Apply appropriate intermediate-level disinfectant
- 3 Maintain contact time per manufacturer IFU
- 4 Allow to dry completely before returning to use



Required when: Blood or body fluid contamination is possible

**Dedicated equipment for isolation residents** — do not share between patients without full reprocessing at the appropriate level.

High-Level Disinfection (HLD): Requirements & Process

INDICATION & PREPARATION



Indication: Items contacting mucous membranes or non-intact skin — e.g., laryngoscope blades, vaginal probes, respiratory therapy equipment



Clean first, always: Thoroughly clean item before HLD — biofilm and organic soil prevent chemical penetration and render disinfection ineffective



Select HLD agent: Glutaraldehyde, peracetic acid, OPA (ortho-phthalaldehyde), or accelerated H_2O_2 — matched to device and manufacturer IFU



Verify concentration: Use MEC test strip before each use — document lot number, result, and time; discard solution if below minimum effective concentration

IMMERSION, RINSING & STORAGE



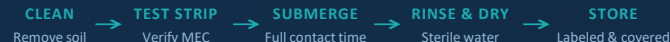
Full submersion required: Maintain contact time per manufacturer IFU — typically **20–45 minutes**; do NOT interrupt cycle prematurely



Rinse & dry thoroughly: Flush all channels with sterile or filtered water; dry completely with forced air — residual chemical causes mucosal injury



Store correctly: Place in clean, covered, labeled container — include date processed and disinfection lot number; never store damp or uncovered



⚠ HLD does NOT sterilize — do not use HLD-processed items in sterile tissue or for critical-item procedures requiring sterilization

Levels of Disinfection

	Low-Level	Intermediate-Level	High-Level
Applies to	Non-critical devices & equipment that contact intact skin	Non-critical devices & equipment contacting nonintact skin or mucous membranes briefly (e.g., respiratory therapy & anesthesia equipment, some endoscopes, laryngoscope blades, esophageal manometer probes)	Semi-critical devices & equipment
EPA-approved products	Quaternary ammonium compounds (QUATS); Phenolic compounds; Iodophors	Alcohols; Aldehydes; Chlorine compounds; Hydrogen peroxide; Phenolics; Iodophors	Glutaraldehyde; Ortho-phthalaldehyde (OPA); Peracetic acid; Peracetic acid/hydrogen peroxide; Hydrogen peroxide
Key requirements	Ensure dilution and contact or “wet” time requirements are met	Ensure dilution and contact or “wet” time requirements are met	Test product prior to each use; change per test & IFU; maintain test log; Ensure staff competency

[CDC Guideline for Disinfection and Sterilization in Healthcare Facilities, 2017](http://www.cdc.gov/infectioncontrol/guidelines/disinfection/updates.html) (www.cdc.gov/infectioncontrol/guidelines/disinfection/updates.html)
[Glutaraldehyde \(NIOSH\)](http://www.cdc.gov/niosh/topics/glutaraldehyde/default.html) (www.cdc.gov/niosh/topics/glutaraldehyde/default.html)

Sterilization and SNFs

Rarely will a SNF sterilize instruments, however:

- Facility's responsibility is to make sure anyone bringing instruments in from dental, wound care, or podiatry clinics, e.g.:
 - Instruments stay in original wrap until used
 - A new, wrapped instrument is used for EVERY resident
 - Podiatry instruments used on multiple residents can lead to spread of organisms, including MDROs
 - Instruments returned are in a transport carrier that prevents leaking of any substances, that could contaminate the environment

Storage of Sterile Items

- Protect sterility of stored instruments until ready to use
 - Store to protect packages from dust, moisture, falling
 - Handle to protect package integrity
 - Do not stack, crush packaging or rubber-band sterile packages together
 - Wrap sharp points with tip protectors before packaging and sterilizing
- Rotate sterile items: first in, first out (FIFO)

For more information on sterilization see [CDC Guideline for Disinfection and Sterilization in Healthcare Facilities \(Feb 2017\)](https://www.cdc.gov/infectioncontrol/guidelines/disinfection/updates.html)
(www.cdc.gov/infectioncontrol/guidelines/disinfection/updates.html)

Important Things to Remember



Standard Precautions

APPLY TO ALL RESIDENTS · REGARDLESS OF DIAGNOSIS

✓ Baseline

CORE ELEMENTS

- Hand Hygiene — before and after every resident contact
- PPE for anticipated contact with blood/body fluids
- Safe Injection Practices — one needle, one syringe, one time
- Respiratory Hygiene / cough etiquette for all persons

ENVIRONMENTAL CLEANING PROTOCOL

- Routine daily cleaning of all resident rooms and shared spaces
- Discharge cleaning per standard protocol upon resident transfer
- EPA-registered disinfectant on all high-touch surfaces each shift



Transmission-Based Precautions

LAYERED ON TOP OF STANDARD · PATHOGEN-SPECIFIC

↑ Escalated

PRECAUTION TYPES & PATHOGENS

- CONTACT** MRSA · VRE · C. difficile · Scabies
- DROPLET** Influenza · COVID-19 · RSV
- AIRBORNE** Tuberculosis · Measles · Varicella

ENVIRONMENTAL CLEANING ESCALATION

- Dedicated equipment for each isolation resident — no sharing
- Increased disinfection frequency — high-touch surfaces every 2–4 hrs
- Sporidical agents mandatory for all C. diff isolation rooms
- Terminal clean required on every discharge or transfer

PRECAUTION TYPE	DISINFECTANT REQUIREMENT	FREQUENCY MODIFICATION	TERMINAL CLEAN
Standard	EPA-registered disinfectant	Daily + when visibly soiled	Standard discharge protocol
Contact (C. diff)	Sporicidal (1:10 bleach / EPA-listed)	Every 2–4 hrs + after each use	Full terminal + sporicidal throughout
Droplet / Airborne	Broad-spectrum EPA-registered	Increased; post-aerosol-generating procedures	Full terminal; allow air exchange before re-entry

Cleaning Shared Environments for Resident Safety



Dining Room

Clean tables & chairs **between meals**; sanitize food-contact surfaces with food-safe agents. Sweep and mop after *each* meal service. Disinfect high-touch surfaces including chair arms and condiment holders.



Activity Room

Disinfect **all high-touch surfaces** and shared equipment daily. Wipe down game pieces, craft supplies, and shared devices between sessions. Pay attention to door handles and light switches.



Hallways & Corridors

Damp mop floors **daily**; disinfect handrails, light switches, and door push plates every shift. High-traffic zones cleaned more frequently. Use wet floor signage to prevent resident falls.



Therapy Gym

Disinfect all equipment **between residents** — mats, resistance bands, weights, and parallel bars cleaned daily. Use intermediate-level disinfectant for blood-contact surfaces. Allow full contact time before re-use.



Reception & Waiting Areas

Disinfect seating, tables, and shared magazines or devices **daily**. Visitor sign-in surfaces cleaned after each use. Consider removing magazines during outbreaks; use digital alternatives where possible.



Elevators

Disinfect buttons, handrails, and interior walls **daily**; increase to every 2–4 hours during active outbreaks. Buttons are among the highest-touch surfaces in any facility — prioritize accordingly.

SPORICIDAL AGENTS REQUIRED

Clostridioides difficile — Special Cleaning Considerations



FACT 01

Spores Survive for Months

C. diff produces hardy spores that persist on surfaces for **months** and are resistant to standard alcohol-based hand rubs and many common disinfectants.



FACT 02

Only Sporicidal Agents Work

Use **EPA-registered 1:10 bleach (5,000 ppm)** or products with a C. diff kill claim. Standard quats and AHP are **NOT** effective against spores.



FACT 03

Contact Precautions + Dedicated Equipment

All C. diff residents require **Contact Precautions**. Assign dedicated equipment (thermometer, BP cuff, commode) — do not share between residents without reprocessing.



FACT 04 — CRITICAL

Soap & Water Only — No ABHR

Alcohol-based hand rub **does NOT kill C. diff spores**. Hand hygiene must be performed with **soap and water** before and after all resident contact and glove removal.



FACT 05

Daily AND Terminal Sporicidal Cleaning

Clean ALL high-touch surfaces, bathroom, and equipment with a sporicidal agent **every day**. Complete a full terminal clean with sporicidal product upon discharge or transfer.



FACT 06

Maintain Enhanced Cleaning for 72 Hours

Do **NOT** revert to routine cleaning prematurely. Continue all enhanced protocols and sporicidal disinfection for **72 hours after the last loose stool** is documented.



MANDATORY PROTOCOL

Alcohol-based hand sanitizers are **NOT effective against C. diff** — Soap and water hand hygiene is mandatory for all staff entering and exiting C. diff rooms.

Documentation: **Your Proof of Compliance**

**Daily Room Cleaning Log**

01

Record date, time, initials, and type of clean (routine vs. terminal) for each resident room

**High-Touch Surface Audit Log**

02

Document completion of high-touch disinfection each shift across all care areas

**Disinfectant Lot & Concentration Log**

03

Record product name, lot number, and test strip result for each HLD batch prepared

**Sterilization Load Record**

04

Load number, cycle parameters, chemical & biological indicator results, quarantine status

**Equipment Reprocessing Log**

05

Item, cleaning method, agent used, operator initials, and date of each reprocessing event

**Temperature Log**

06

Refrigerator and freezer checks with corrective actions documented (target $\leq 41^{\circ}\text{F}$)**Outbreak Enhanced Cleaning Log**

07

Frequency, agent used, and rooms disinfected during an active outbreak — maintained until 72 hrs after last case

**Retention Requirement:** All logs must be retained per facility policy and made available to surveyors on request — if it isn't documented, it didn't happen.

Building a Culture of Cleaning Excellence



Initial Orientation

All new EVS and clinical staff complete cleaning and disinfection training before independent practice



Annual Competency

Skills validation performed annually; include return demonstration of terminal clean and PPE technique



Just-in-Time Training

Provide targeted refresher at outbreak onset or following audit failure



Competency Documentation

Maintain signed training records in employee file; available for survey review



Audit Feedback Loop

Share individual and unit audit results; celebrate wins, address gaps non-punitively



Empowerment

All staff empowered to report missed cleans or supply shortages without fear of retaliation



Leadership Rounding

Supervisor/IP rounds weekly to observe cleaning practices and coach staff



Recognition Programs

Reward sustained compliance to reinforce positive behaviors and build team morale





COURSE COMPLETE

Cleaning, Disinfection & Reprocessing in SNFs

Infection prevention is everyone's responsibility.

*Your commitment to cleaning excellence
saves lives.*

IP TRAINING

What You Must Take From This Training



A properly cleaned care environment is essential to prevent or contain HAIs



Environmental services staff must be competent to ensure infection prevention and resident safety



Always follow **manufacturer IFU** for contact time, dilution, and application



Engage with directors of environmental services, sterile processing, operating room, endoscope services, facilities management



Audit results drive improvement — Use a standardized tool to monitor environmental cleaning and device reprocessing using CDPH adherence monitoring tools or others



Clean first — disinfection and sterilization cannot overcome inadequate cleaning



PPE protects you — wear it correctly, every single time, without exception



Adherence to policies and procedures for cleaning, disinfection, sterilization, and instrument handling, should be part of a facility's Infection Prevention Program



You are the last line of defense for your residents — your actions matter



Infection prevention is everyone's responsibility. Your commitment to cleaning excellence — every room, every shift, every resident — **saves lives.**