



HEALTH QUALITY INNOVATORS

Affinity Group: Cleaning and Disinfection Do's, Don'ts and Dangers

3/12/24

Polling Question

If you attended the Affinity session on auditing and monitoring, did you monitor something in the past month?

1. Yes
2. No

Discussion: How did it go?

- Did you do it or delegate it to a staff member?



Objectives

- Engage assisting living and adult day care center facilities in common issue discussion and problem solving by peers
- Address differences in cleaning practices
- Identify potential risks of improper cleaning/improper mixing of products
- Develop simple evaluation strategies to verify cleaning practices



The Battleground

Influenza viruses can survive on hard surfaces such as stainless steel and plastic for up to 48 hours



- Some viruses can travel on droplets through the air
- E. coli, salmonella and other bacteria can live up to two hours on surfaces like doorknobs, counters and keyboards



Bacteria **DOUBLES** every 20 minutes.

5 bacteria in a sandwich at 12 p.m. will total over 10 million by 7 p.m.

After 3 days, with no bacteria dying, **there would be enough to COVER THE EARTH.**

- Norovirus can last from **a few days to a FEW WEEKS** on surfaces!
- MRSA can live on surfaces – particularly fabrics – for **WEEKS**
- Cold virus can live on surfaces for **weeks** and it is **extremely contagious** on surfaces and hands

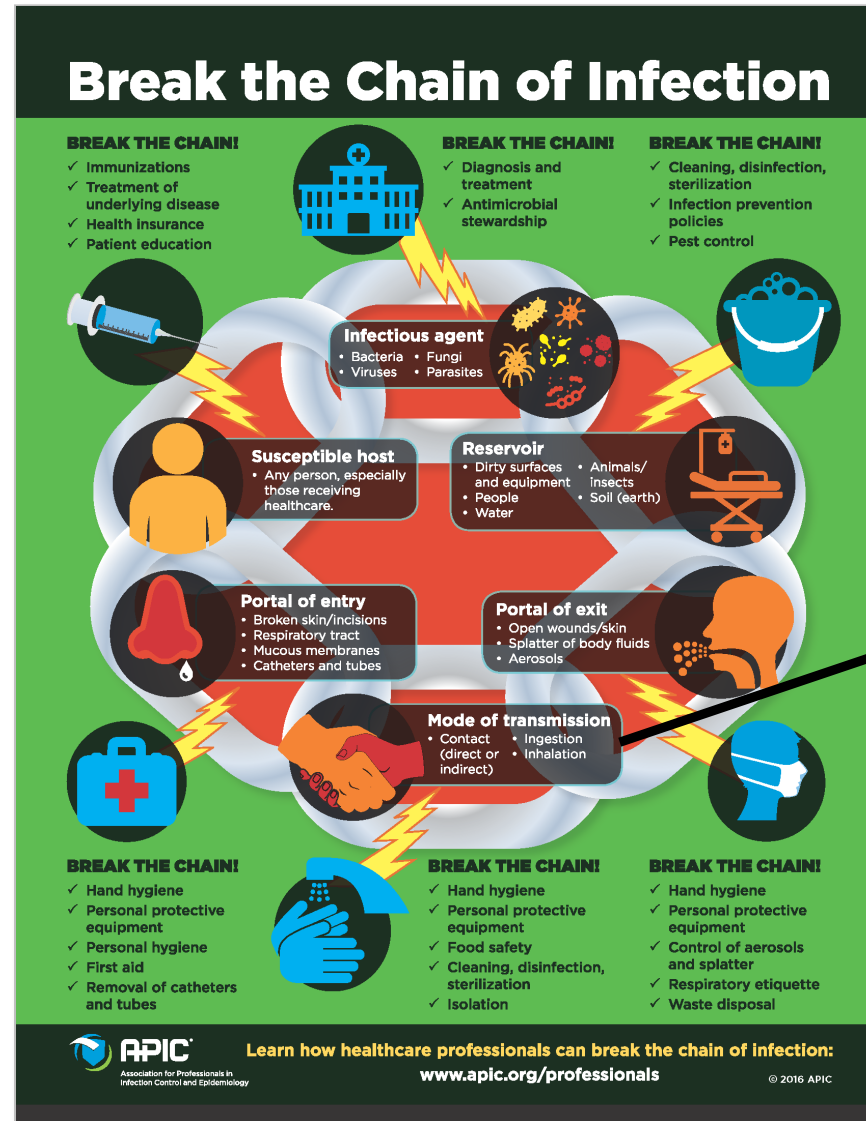
Transmission Video



[Chain of Transmission with Clostridioides Difficile | VCU](#)

Which is Your "Link"?

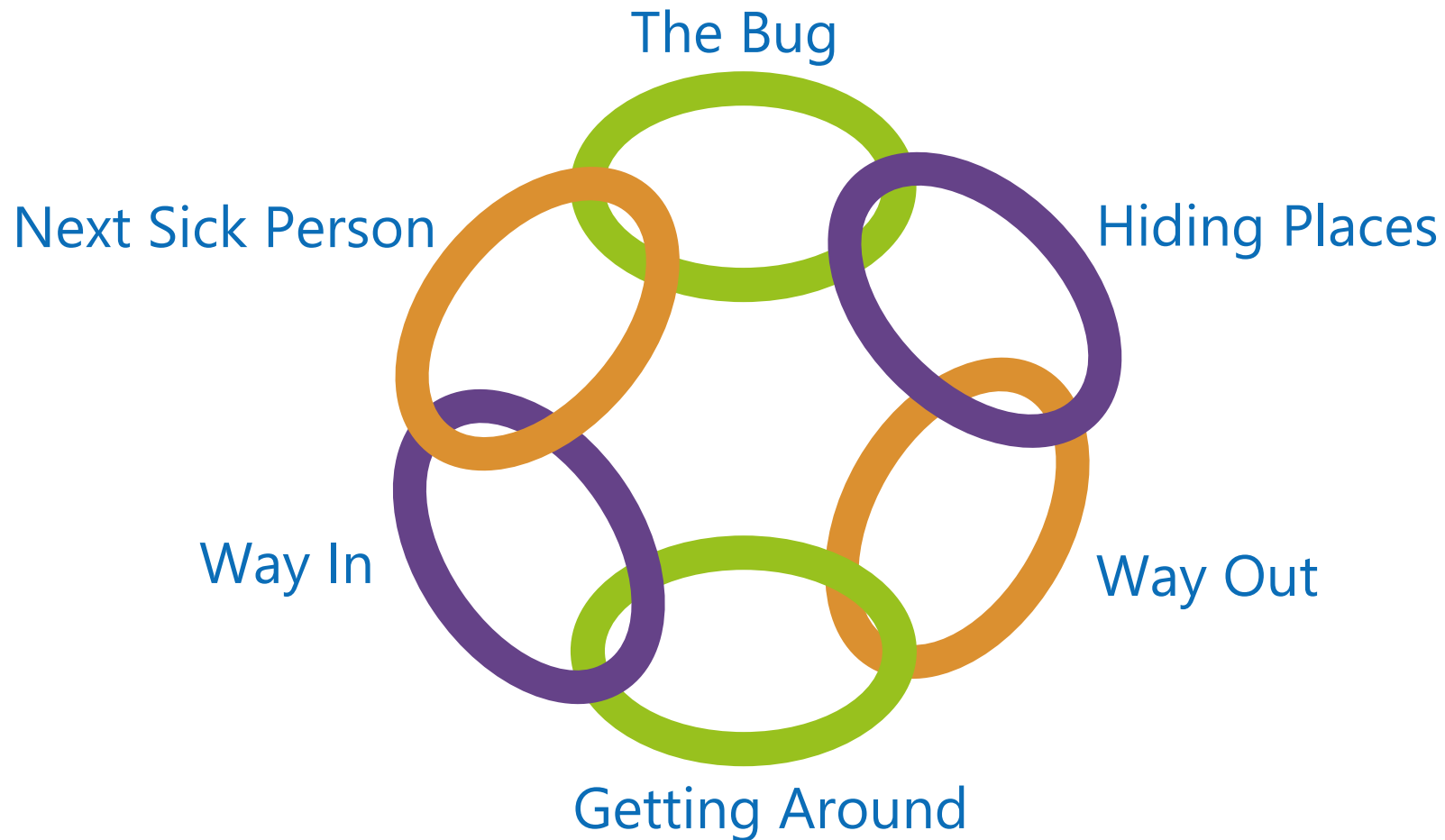
Break the Chain of Infection |
APIC



You are here

Breaking it Down Even More

The Chain of Infection



Breakout Session

Group think

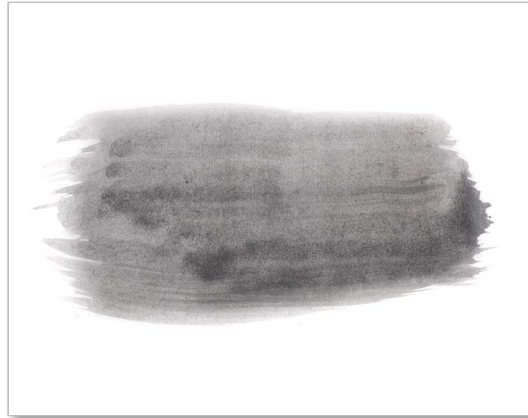
1. Introduce yourself to your group and state your practice area.
2. At your facility, what areas may be the hardest “link” to break as far as mode of transmission? If you are a non-facility person and have visited a facility, what areas did you see that might fit this description?
3. Do you have any concerns about the products you are currently using?

Define "Clean"

NO dust



NO smudges



NO spots



NO smells



= CLEAN?

CDC Reservoirs

Four Reservoirs for Germs

The Centers for Disease Control and Prevention (CDC) has identified four reservoirs for infections in the healthcare environment

Water and Wet Surfaces

Dry Surfaces

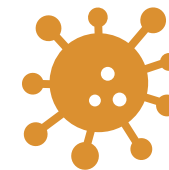
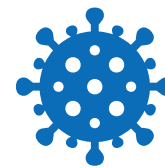
Dirt and Dust

Devices

One Big Difference Between Sanitizers and Disinfectants

- Sanitizers kill 99.99% of pathogens
- If we start with 1,000,000 pathogens on a surface, and we were satisfied with 99.99% kill, there would still be **10,000** pathogens on the surface when we finished

- Disinfectants must kill 99.9999% of pathogens
- If we kill 99.9999% of the pathogens, only **100** would remain when we finished



Difference Between Sanitizers and Disinfectants

- **Sanitizers** are generally used on food preparation surfaces where disinfectants would require a second step of rinsing a surface that has air-dried
- Rinsing is necessary so that the preparation of food on that surface wouldn't pick up toxic chemicals that might be ingested by humans
- Rinsing is required on surfaces where participants might touch the surface and place their hands in their mouth and ingest the toxic chemical



Difference Between Sanitizers and Disinfectants, cont.

- **Disinfectants** are not USUALLY sporicidal, but some are (i.e., they kill *C. diff* spores)
- Disinfectants are usually a chemical agent (but sometimes a physical agent) that destroys disease-causing pathogens or other harmful microorganisms but might not kill bacterial spores
- They are applied to inanimate surfaces
- The EPA groups disinfectants by product label claims of “limited,” “general” or “hospital” disinfection



Disinfecting Surfaces

Disinfecting:

- Kills viruses and bacteria on surfaces using chemicals
- Regulated by the EPA

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?

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?

ACTIVE INGREDIENTS:
Allyl 100% C14, 30% C18, 5% C12, 5% C1610.0%
Dimethyl Benzyl Ammonium Chloride90.0%
OTHER INGREDIENTS:100.0%
TOTAL:100.0%

EPA REG NO. 55555-65-55555

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 at 1-800-368-5648 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.

EXPIRES DD-YYYY

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

PROJECT FIRST LINE

EPA
United States
Environmental Protection
Agency

WWW.CDC.GOV/PROJECTFIRSTLINE

Important to Know

What does the disinfectant kill?

What type of surface?

How long does the surface have to stay wet?

Do you have to do anything after application?

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?

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

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EXP MM-DD-YYYY
5 55555 55555 5

Right Product, Right Task

6 Steps for Safe & Effective Disinfectant Use



Step 1: Check that your product is EPA-approved
Find the EPA registration number on the product. Then, check to see if it is on EPA's list of approved disinfectants at: [epa.gov/listn](https://www.epa.gov/listn)



Step 2: Read the directions
Follow the product's directions. Check "use sites" and "surface types" to see where you can use the product. Read the "precautionary statements."



Step 3: Pre-clean the surface
Make sure to wash the surface with soap and water if the directions mention pre-cleaning or if the surface is visibly dirty.



Step 4: Follow the contact time
You can find the contact time in the directions. The surface should remain wet the whole time to ensure the product is effective.



Step 5: Wear gloves and wash your hands
For disposable gloves, discard them after each cleaning. For reusable gloves, dedicate a pair to disinfecting COVID-19. Wash your hands after removing the gloves.



Step 6: Lock it up
Keep lids tightly closed and store out of reach of children.



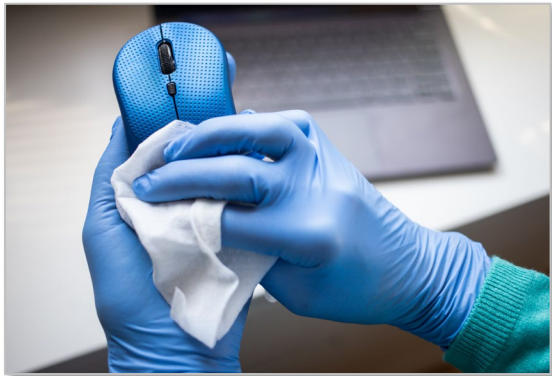
[coronavirus.gov](https://www.coronavirus.gov)

[6 Steps for Safe & Effective Disinfectant Use | EPA](https://www.epa.gov/6-steps-for-safe-effective-disinfectant-use)



Cost, Convenience & Compatibility

Use the product **CORRECTLY**



- ✓ 1- or 2-step
- ✓ Surface coverage
- ✓ Contact (wet) time

Special item cleaning, for surfaces that are not compatible with quaternary ammonium
CONTAINS A MIXTURE OF 70% ISOPROPYL ALCOHOL AND 30% WATER

USE ON, FOR EXAMPLE:

- BP cuffs
- Most point-of-care testing devices
- Computer keyboards, mice, monitors, telephones
- AED exterior



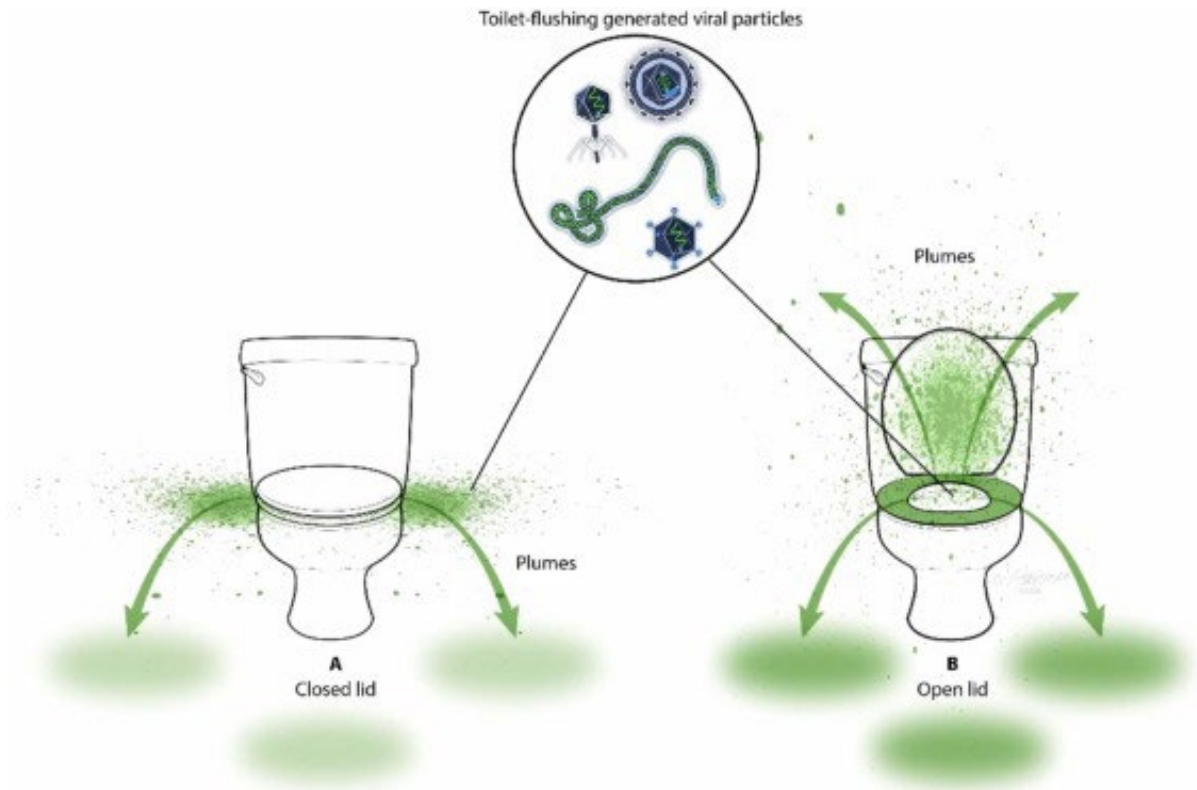
Water and Wet Contamination



[Staying Safe in the Splash Zone | VCU](#)

Another Splash Zone to Consider

AJIC: Impacts of lid closure during toilet flushing and of toilet bowl cleaning



Minimizing Contamination While Cleaning & Disinfecting

According to the CDC:

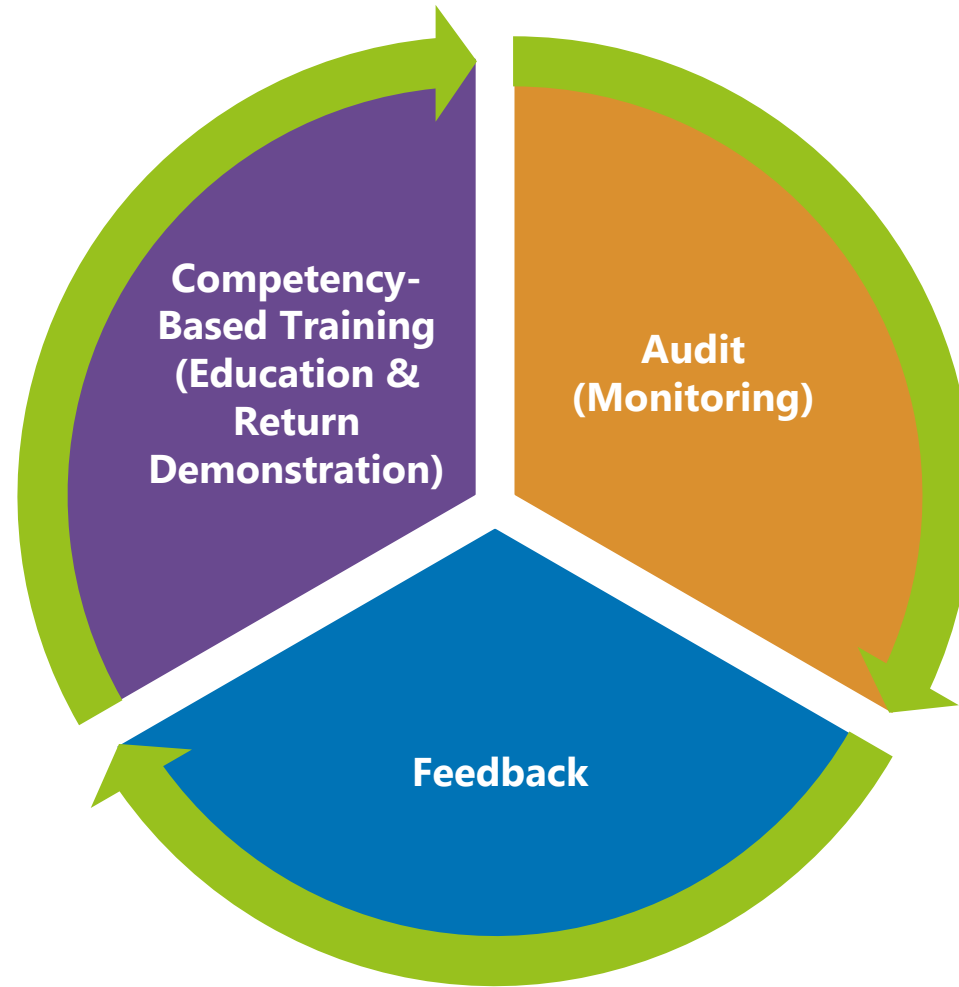
- Minimize contamination of cleaning solutions
- Bucket solutions become contaminated almost immediately if you use the method of returning soiled wipers or mops to the clean solution
- The preferred method of using mops and wipers in a bucket solution is to set up the bucket with properly mixed disinfectant or cleaning solution and placing clean wipers or mops in the solution
 - Withdraw wiper or mops and apply the solution to the surface
- When finished with wiper or mop, place the soiled material in a bag for laundering
- **Never** return a soiled wiper or mop to the clean solution

Minimizing Contamination While Cleaning & Disinfecting

- Another source of contamination in the cleaning process is the cleaning cloth or mop head, especially if left soaking in dirty cleaning solutions
- Laundering of cloths and mop heads after use and allowing them to dry before re-use can help to minimize the degree of contamination
- After laundering and drying, make sure DRY cloths and mop heads are placed in clean plastic liners to prevent contamination



Competency-Based Training



Tools to Set Expectations

CLEANING AND DISINFECTION

CLEANING

The physical removal of dust, soil, blood and secretions with water and detergents using mechanical action/friction. Cleaning does not kill microorganisms.

DISINFECTION

Chemical process for inactivating microorganisms on inanimate surfaces and objects.

CONTACT TIME

The time that a disinfectant must be in contact with a surface to ensure that disinfection has occurred. For most disinfectants, the surface should remain wet for the required contact time.

Determine cleaning frequency by the level of patient/resident contact and degree of soiling.

See chart below.

SURFACE	LOW-TOUCH SURFACE	HIGH-TOUCH SURFACE
DESCRIPTION	Surfaces that are minimally touched	Surfaces that are frequently touched
EXAMPLE	Walls, ceilings, floors	Bedrails, overbed table, doorknobs, handwashing sinks
CLEANING FREQUENCY	At least weekly and when visibly soiled	At least once daily

This material was prepared by Health Quality Innovators (HQI), a Quality Innovation Network-Quality Improvement Organization (QIN-QIO) under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services (HHS). Views expressed in this material do not necessarily reflect the official views or policy of CMS or HHS, and any reference to a specific product or entity herein does not constitute endorsement of that product or entity by CMS or HHS. 1250W/HQI/QIN-QIO-0359-11/15/22

LIST YOUR FACILITY'S PRODUCT BELOW:

DISINFECTANT PRODUCT	CONTACT/WET/KILL TIME
	minutes
	minutes
	minutes

Include multi-use electronic equipment in the cleaning and disinfection schedule, especially those items that are used during delivery of care and mobile devices that are moved in and out of patient/resident rooms frequently (e.g., daily). These items must be cleaned before use on another patient/resident.

Use EPA-registered disinfectants that have microbiocidal (i.e., killing) activity against the pathogens most likely to contaminate the patient/resident-care environment.

Check with equipment/surface manufacturer for cleaning product compatibility.

WEAR PERSONAL PROTECTIVE EQUIPMENT

Wear personal protective equipment (PPE) (e.g., gloves, gown) when handling items that are visibly soiled or may have been in contact with blood or body fluids and per the cleaning/disinfectant product recommendation.

To avoid spreading dirt and microorganisms, clean from cleaner to dirtier areas and top to bottom.



Selected EPA Registered Disinfectants | EPA



[Cleaning and Disinfection Pocket Card | HQIN](#)



Room Cleaning General Directions

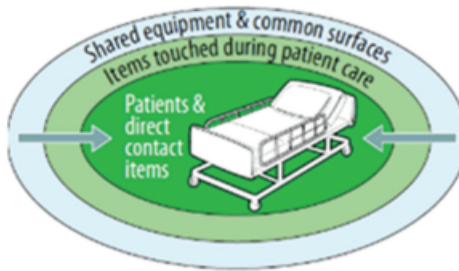
STEPS IN DAILY ROOM CLEANING 1

1. Assemble supplies
2. Know your cleaning solution
 - Is it properly mixed?
 - What is the contact time to disinfect?
 - Check back of product for contact time

If you don't know, find out!

GENERAL PRINCIPLES

1. Proceed from cleaner to dirtier
 - a. Start with shared equipment and common surfaces, then surfaces and items touched during resident care, then surfaces and items directly touched by resident
 - b. Clean resident areas before bathroom and toilet
2. Proceed from high to low (top to bottom):
 - a. Examples: clean bed rails before bed legs, clean environmental surfaces before cleaning floors
3. Clean non-isolation rooms before isolation rooms



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STEPS IN DAILY ROOM CLEANING 2

GENERAL PROCESS

1. Remove any dirty laundry (if this is a laundry day for resident); remove garbage
2. Perform hand hygiene and put on a clean pair of gloves
3. Completely soak fresh cleaning cloth in cleaning solution. You may choose to have the cleaning solution already containing clean cloths soaking in solution
4. Fold cleaning cloth in half and in half again until it is about the size of your hand
5. Use some muscle! Mechanical removal of germs occurs when you do more than just lightly wipe an area—clean like you mean it and make sure the surface stays wet for the correct contact time to fully disinfect the area
6. Regularly rotate and unfold the cleaning cloth to use all the sides
7. When all the sides of the cloth have been used or it is no longer saturated with solution, store for reprocessing or disposal, whichever is your facility process
 - a. NO DOUBLE DIPPING—only soak clean cloths in the cleaning solution or it may become contaminated, and you will be spreading, not killing, germs
8. Save the bathroom for last and don't forget high-touch surfaces
9. Clean floor
10. Remove gloves, perform hand hygiene and put on a clean pair of gloves prior to starting to clean the next resident area

DON'T FORGET THESE HIGH-TOUCH ROOM SURFACES

- Bed rails/bed controls
- Tray table and handle
- Telephone
- Light switches: room light switch, bathroom light switch
- Doorknobs: room inner doorknob, bathroom inner doorknob
- Bathroom handrails by toilet
- Toilet seat, flush handle and bedpan cleaner
- Sinks: bathroom and room sink (if present)



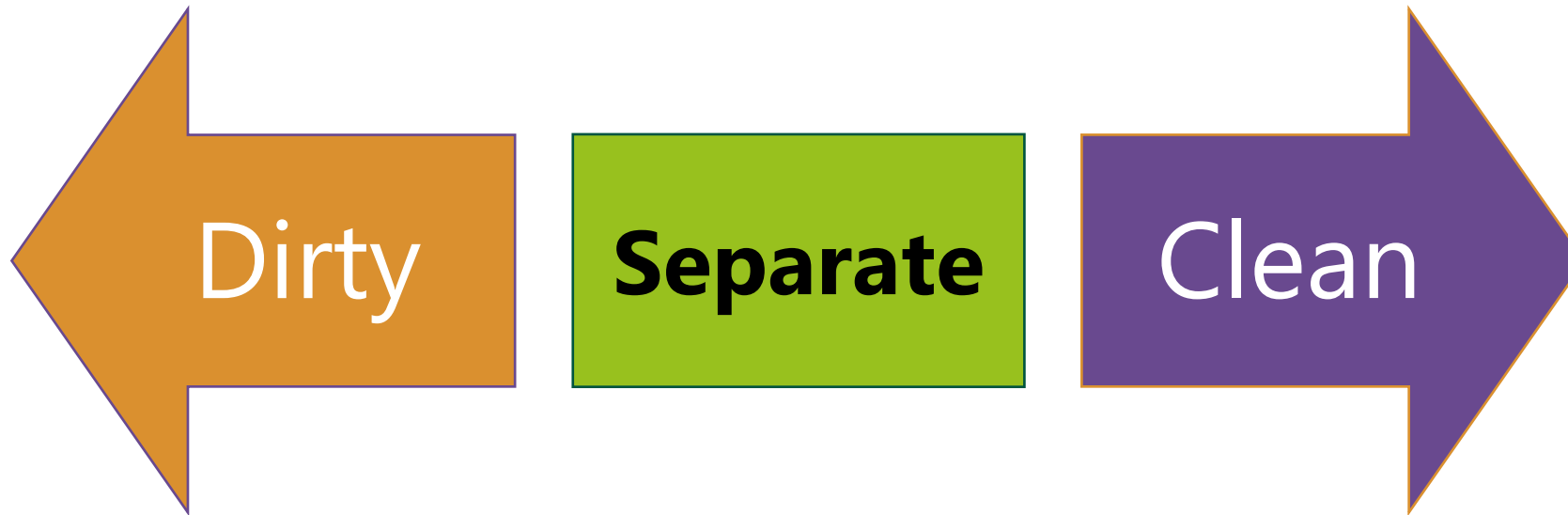
Environmental
Cleaning
Procedures |
CDC.gov



[Steps in Daily Room Cleaning Pocket Card | HQIN](#)



Planning a Process for Separation of Clean and Dirty



What supplies need to be stored?

What is needed to store supplies (shelving, containers, wall hooks, etc.)?

What areas can be used for storage?

Make sure that dirty is not stored above clean (housekeeping cart)

Separation of Dirty and Clean

The first thing to remember is that you cannot store clean and dirty items together!
This will cause cross-contamination.

You cannot transport clean and dirty items together.

- Carts used to transport clean supplies should be cleaned and disinfected daily or as needed if contamination occurs
- Carts used to transport dirty items should be cleaned and disinfected after each use

Do not store items under a sink or next to a sink.

Areas where supplies or clean linen are stored should be kept clean and dust free.

Sterile or clean supplies and linen stored on wire racks should have a solid bottom – usually created by a hard plastic insert

Sterile or clean supplies that go into a resident room should be used for that resident or discarded

Project Firstline Interactive Resource

In the Chat – Review this picture and identify four problems that need to be fixed to reduce the spread of germs:



How do you know it's clean?

What works for you?

1. **Visual assessment:** not considered a reliable indicator of surface cleanliness.
2. **Direct observation:** measures individual's adherence to processes. Audits tools included in Resources.
3. **Fluorescent marker:** determines if a particular area was wiped (Glo Germ).
4. **ATP bioluminescence:** measures microorganisms via adenosine triphosphate (ATP)

Single Room Audit

DAILY CLEANING INSPECTION FORM

Place a "Y" for all areas that meet the inspection standard.
Comment on areas that do not meet the standard.

Date Completed _____
Completed by _____

PATIENT ROOM # _____	If Yes = Y If No = N and comment	COMMENT
Hand wash sink clean		
Soap, alcohol rinse dispensers are clean/stocked/not expired		
Ceiling tiles, air vents, sprinklers clean		
Sharps container checked, garbage cans emptied		
Equipment- i.e., IV and/or tube feeding pole and base, clean		
Computer keyboard and mouse		
Cabinet handles and surfaces clean and free of tape and hand prints		
TV, front and back wiped clean		
Bedside table surface and pulls clean		
Ceiling lift is clean and dust free		
Over bed table surface clean, track for slider clean, base clean		
Floors clean, not sticky, free of dust		
Telephone, hand set clean		
Remote control clean		
Room fan on countertop dust-free		
Sleeper couch/chair- clean		
Room chair arm rests, back, side, head rest, and seat clean		
Windows are clean on inside and ledges are dust free		
Countertops, desk area, and chair are clean		
Closet looks and smells clean		
BED		
All side rails are free of tape, and clean, including both sides of rails, crevices around controls, bottoms of rails		
Frame is dust free		
Controls at foot of bed are clean and dust free if applicable		
Call light and cord are clean		
BATHROOM		
Sink and counters free of water spots and clean		
Soap dispensers are clean and stocked		
Lights are dust free, mirror clean, light switches clean		
Toilet is clean, floor around and behind toilet is clean		
Pipes around toilet are free of water build up and clean		
Pull cords are clean and hang free of railings		
Bathroom smells clean, no odors noted		
Bathroom door is clean and free of handprints, handles are clean		
TOTAL ITEMS MET PER ROOM	/32	

[APIC Daily Cleaning Inspection Audit | HQIN](#)



Glo Germ



Training Manual

Training Procedures For:

- Hand Washing
- Isolation Techniques
- Aseptic Techniques
- General Infection Control
- Airborne Bacteria Simulation



"Germs" that you can see

Use Glo Germ Powder to show Cross Contamination

You can use Glo Germ Powder in a number of ways to show how germs spread.

You will need:

1. Glo Germ Powder
2. Glo Germ Hand-held UV Light
3. Miscellaneous Non-Porous items



To show how you can come into contact with germs from various surfaces, do the following:

Step One

Apply Glo Germ Powder to a non-porous surface (i.e. pen, door knob, ball, etc)

Step Two

As the surface is touched, the artificial germs will spread with each person that comes into contact with the surface.

Step Three

Use the UV light to demonstrate how far germs of all kinds are transferred. The artificial germs will glow bright blue under UV light (if you are using the Original Glo Germ Powder, if you use Yellow Powder, it will glow Yellow, Orange Powder will glow Orange).

To show how germs on a person's hands spread, do the following demonstration:

Step One

Shake a small amount of Glo Germ Powder into the palm of your hand.

Step Two

Shake hands with several people, or shake hands with one person and then have them shake hands with the next person, and so on, to create a line of contacts. The artificial germ contamination down the line of contacts can be detected up to ten people.

Step Three

Use the UV light to demonstrate how far germs of all kinds are transferred. The artificial germs will glow bright blue under UV light (if you are using the Original Glo Germ Powder, if you use Yellow Powder, it will glow Yellow, Orange Powder will glow Orange).

To use Glo Germ Powder in a kitchen setting to show cross contamination, we recommend the following demonstration:

You will need:

1. Glo Germ Powder
2. Glo Germ Hand-held UV Light
3. Knife and Cutting Board
4. Iceberg lettuce and other salad ingredients

Step One

Sprinkle Glo Germ Powder onto a head of iceberg lettuce (we recommend you do this out of sight of the trainees).

Step Two

Using a knife, cut the lettuce up as you would for a salad. Set lettuce aside.

Step Three

Using the same knife and cutting board, cut up other items for a salad (i.e. cucumbers, carrots, etc.).

Step Four

Use items prepared to make a salad. Shine the UV light over all the ingredients and utensils used to prepare the salad. All the artificial germs will glow under the light and will demonstrate how one contaminated item can contaminate everything that it comes in contact with.

Wash utensils with soap and hot water after demonstration. All food items used should be thrown away and not consumed. While Glo Germ products are non-toxic it is not recommended to ingest them.

Cleaning Challenge

After today's Affinity:

Will you do anything differently?

Can you use any of these resources to help reinforce diligent cleaning and disinfection practices with your staff?

Resources

- [Environmental Evaluation Working Group | CDC](#)
- [How To Read a Label | EPA](#)
- [Selected EPA-Registered Disinfectants | US EPA](#)
- [Disinfection & Sterilization Guidelines | Guidelines Library | Infection Control | CDC](#)
- [Environmental Cleaning | CDC](#)
- [Environmental Cleaning and Disinfection | virginia.gov](#)
- [Steps in Daily Room Cleaning Pocket Card | HQIN](#)
- [Cleaning and Disinfecting Pocket Card | HQIN](#)
- [Episode 16: Cleaning? Disinfection? What is the Difference? | YouTube: CDC](#)
- [What's the difference between products that disinfect, sanitize, and clean surfaces? | US EPA](#)
- [When and How to Clean and Disinfect Your Home | CDC](#)
- [Survey Readiness Toolkit: Splash Zone Checklist | HQIN](#)
- [Survey Readiness Toolkit: Cleaning Checklist | HQIN](#)



There is Still Time for Participation in Onsite Assessments!



Benefits:

- Establish relationship with personable and knowledgeable infection preventionist
- Obtain resources to assist with building a robust infection prevention program
- Glo-germ demonstration to elevate hand hygiene campaign
- Fit testing (on-site)

For more information, contact:

IPCTeam@dss.virginia.gov

Mary Locklin: mlocklin@hqi.solutions

Looking Ahead

Next Affinity Session: Personal Protective Equipment (PPE) Solutions

April 9 10:00 am

Register



[Webinar Recording - Affinity Group Session One: Auditing is Awesome for Keeping an Eye on the Big Picture](#)