

# Daily Outbreak Prevention in Long-term Care: Moving Forward from COVID-19

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# Disclosure

Rebecca is employed by Diversey—A Solenis Company. The company pays her expenses to attend this meeting & create educational content (salary). The company has had no input into this presentation from a commercial interest.

# Acknowledgements

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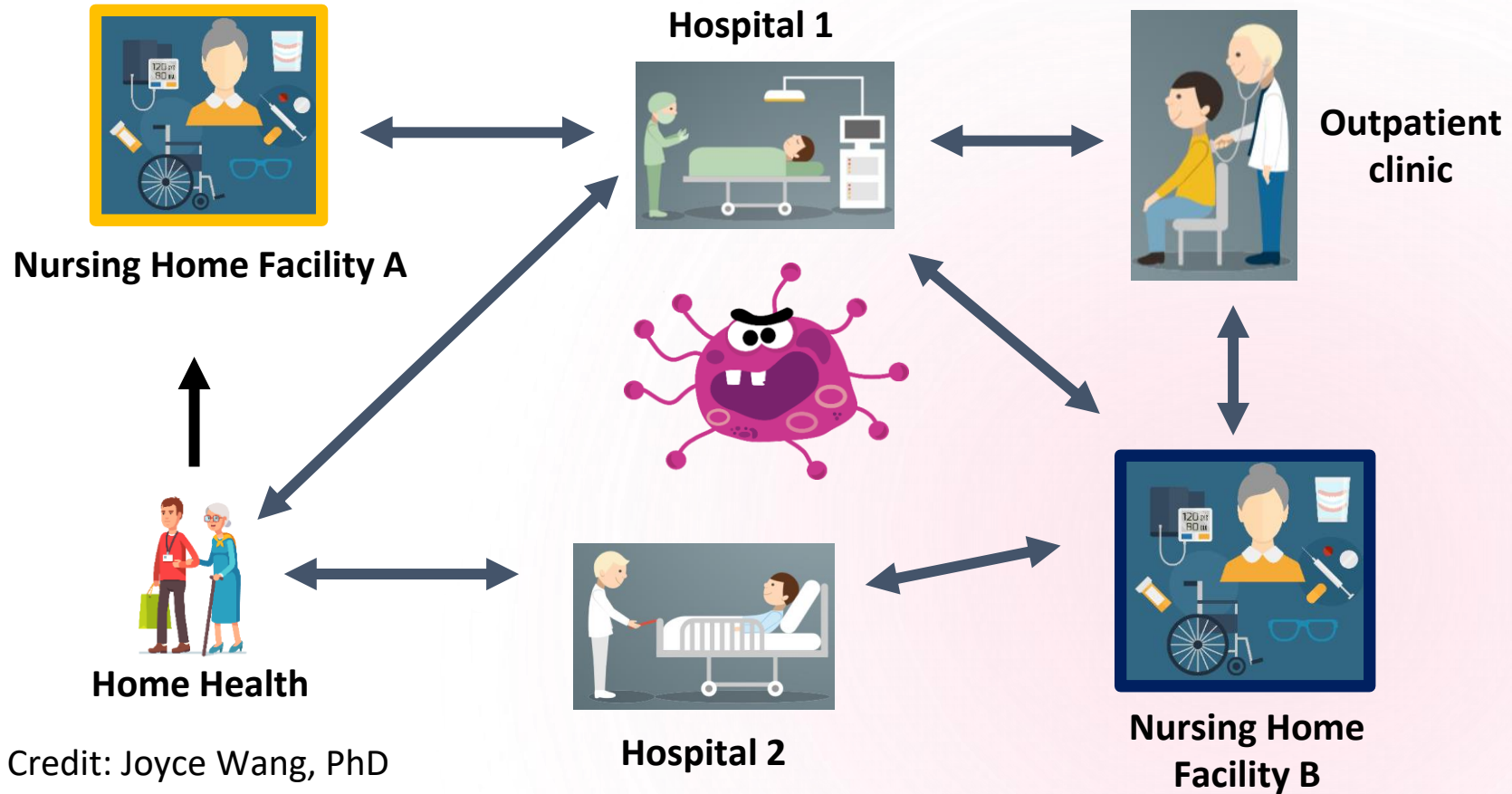
Special thanks to my dear friend & fellow Infection Preventionist Karen Jones, MPH, RN, CIC, FAPIC for sharing her long-term care research & several slides in this presentation.



# Objectives

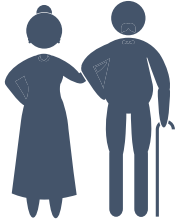
- Describe the potential risks of transmission for long term care residents
- Outline best practices for hand hygiene and cleaning & disinfection
- Identify the high-touch surfaces in the facility
- Discuss tools and resources to help prevent outbreaks in long term care

# Why Acute Care IPs Need to Partner with LTC IPs



Credit: Joyce Wang, PhD

# Infection Risk Factors in LTC



## Resident Level

- Effects of older age (immune system, mucous membrane & skin changes)
- Atypical symptoms of infection
- Residents may not verbalize s/s changes (APIC 2019)



## Environmental Level

- Many **shared spaces**
- **Highly interactive**, high-touch surfaces (e.g., PT/OT)



## Therapy Related

Antimicrobial overuse & rise in MDROs

# Potential Outbreak Risks in LTC



**Multidrug-resistant organisms (MDROs) & other environmentally significant pathogens (e.g., *Candida auris*)**



**Gastrointestinal Illnesses (norovirus, *C.difficile*, HAV, etc).**



**Bloodborne Pathogens (HBV, HCV, HIV)**



**Respiratory Illnesses (COVID-19, influenza, RSV, pneumococcus, etc.)**



**Waterborne-associated (Legionella, *Pseudomonas*, etc.)**

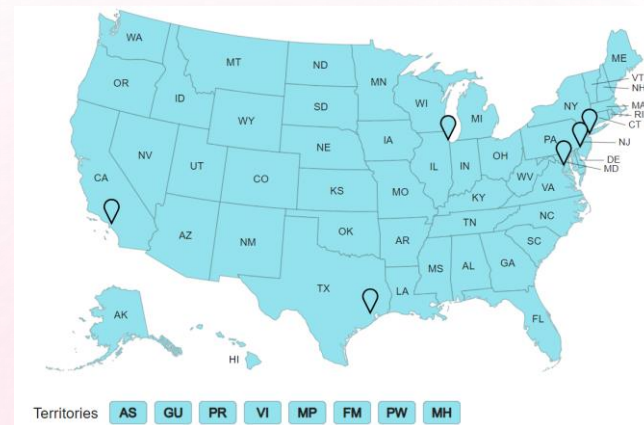
[https://www.cdc.gov/longtermcare/staff/report-publications.html#anchor\\_1591648451025](https://www.cdc.gov/longtermcare/staff/report-publications.html#anchor_1591648451025)

APIC's 2019 *Infection Prevention Guide to Long-Term Care*, 2<sup>nd</sup> Edition

# What Is an Outbreak?

- The definition of a LTC outbreak may depend on the **disease** (e.g., COVID-19 vs norovirus) and/or federal/local/state definitions
  - CMS QSO-20-39-NH instructs LTC to initiated outbreak investigation when a single new case of C19 occurs among residents or staff
- Per CDC, an outbreak is “an increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area.” (APIC 2019)
- Always consult your local/state health department if an outbreak is suspected!
  - Public health epidemiology & ICAR representatives should be seen as consultative partners, not as outsiders who will “get you in trouble”

Find your state IP resources!  
HAI/AR Programs: Recipient  
Health Departments & Funding



[https://www.cdc.gov/hai/HAI-AR-Programs/recipients-funding.html#anchor\\_1677593691295](https://www.cdc.gov/hai/HAI-AR-Programs/recipients-funding.html#anchor_1677593691295)



# Hand Hygiene & LTC



# Traditional Hand Hygiene: Healthcare Providers

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- HCP to comply with WHO 5 moments
  - Typically, via covert/“secret” shoppers (btw, the IP is *not* a secret!), automated monitoring systems
- Education & direct feedback to staff
- Success requires all-hands-on-deck approach (from the frontline to the admin office)

slido



**Are you currently monitoring  
resident hand hygiene  
compliance?**

① Start presenting to display the poll results on this slide.

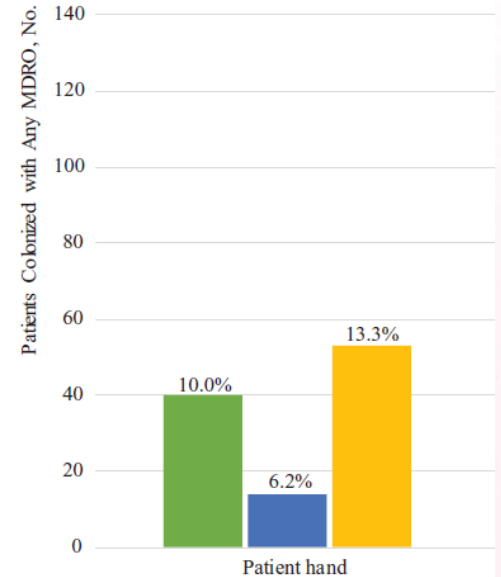
# What's on residents' hands?

- Cao et al (2016) swabbed palms, fingers & around nails at admission, then monthly up to 180 days or until discharged
- Isolated MRSA, VRE & resistant gram negs
- **24.1% had at least one MDRO on hands admission; 34.2% during follow up visit.**



# MDRO Contamination of Hospitalized Patients

- MDRO contamination of hands occurring if acute care hospitals, too.
- Same researchers swabbed 399 hospital patients at admission, and at follow up intervals, looking for MRSA, VRE or resistant gram-negative bacilli (RGNB) (Mody et al 2019)
- 10% positive at admission, 6.2% acquired a new MDRO at follow up
- Focusing *only* on HCP hand hygiene ignores significant risk factors



Baseline (n = 399)	40/399 (10.0%)
New acquisition* (n = 225 with at least one follow-up visit)	14/225 (6.2%)
Anytime during hospital stay (n = 399)	53/399 (13.3%)

# Resident Hand Hygiene

- Often missed in traditional compliance measures
- Not (yet) required by regulatory/accreditation agencies

## Key Questions!

- Does the resident **know** that the product is there and what it is and when to use it?
- Can the resident **perform** their own hand hygiene?
- Do existing shift assessments **identify** those requiring assistance?
- Are products **available** when needed most (before eating, after self care, etc)?



<https://apic.org/patient-hand-hygiene-toolkit/>

# The LTC Environment

# MDRO Colonization in NHs: An “Iceberg Effect”

- McKinnell et al (2020) performed point prevalence sampling of residents & the environment in 28 NHs in Southern California.
- In >50% of NHs, **>50% of residents were colonized with MDROs** (MRSA, VRE, ESBL and/or CRE)
- 74% of resident rooms w/ MDRO contamination!
- 93% of common areas contaminated!
- One of several key studies leading to recommendations for Enhanced Barrier Precautions in LTC



**Known to be  
colonized w/ an  
MDRO**

**Unidentified  
MDRO carriers  
&  
environmental  
contamination!**



# Enhanced Barrier Precautions (EBP) – 2019


- EBP may be confusing to acute care-based IPs who are accustomed to limited patient movement, adherence to standard precautions & shorter lengths of stay
- Targeted to prevent MDRO transmission
- Gowns & gloves for high-contact resident care activities
- Resident inclusion:
  - Has an indwelling medical device
  - Has a wound
  - Infection or colonization of MDRO (not otherwise covered by Contact Precautions)
- Recommended, but not yet required by CMS


**STOP** **ENHANCED BARRIER PRECAUTIONS** **STOP**

**EVERYONE MUST:**


 Clean their hands, including before entering and when leaving the room.

**PROVIDERS AND STAFF MUST ALSO:**

 **Wear gloves and a gown for the following High-Contact Resident Care Activities.**

 Dressing  
Bathing/Showering  
Transferring  
Changing Linens  
Providing Hygiene  
Changing briefs or assisting with toileting  
Device care or use:  
    central line, urinary catheter, feeding tube,  
    tracheostomy  
Wound Care: any skin opening requiring a dressing

**Do not wear the same gown and gloves for the care of more than one person.**

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

CDC 2009-14

# LTC presents unique challenges to environmental hygiene

- Less turnover of resident population
- Leveraging “home-like” with increasing concerns of pathogen transmission
- What in this resident room photo **cannot** be effectively disinfected?



# Are nursing home common areas reservoirs for MDROs?

Study: Prevalence & transmission in shared spaces

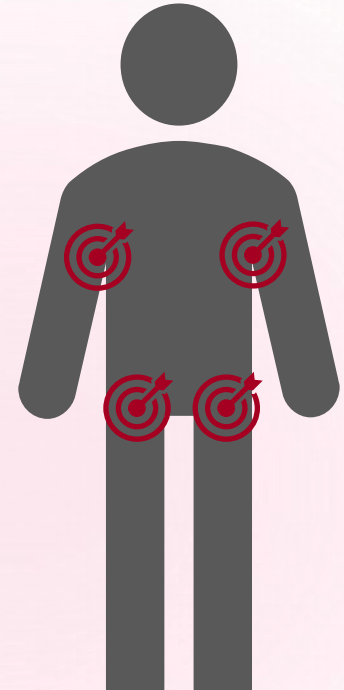
	MRSA+ (%)	VRE+ (%)	RGNB+ (%)	Any MDRO+ (%)
<b>ALL Patient-Used Common Area Specimens (N=796)</b>	<b>43 (5.4%)</b>	<b>61 (7.7%)</b>	<b>52 (6.5%)</b>	<b>143 (18.0%)</b>
Shower Room (n=156)	7 (4.5%)	20 (12.8%)	19 (12.2%)	40 (25.6%)
Rehabilitation Gym (n=178)	14 (7.9%)	20 (11.2%)	10 (5.6%)	38 (21.4%)
Hallway Handrails (n=179)	14 (7.8%)	10 (5.6%)	13 (7.3%)	37 (20.7%)
Living Room (n=117)	2 (1.7%)	5 (4.3%)	6 (5.1%)	13 (11.1%)
Dining Room (n=166)	6 (3.6%)	6 (3.6%)	4 (2.4%)	15 (9.0%)

# Positive Correlation between *Candida auris* Skin Colonization Burden and Environmental Contamination in Ventilator-Capable Skilled Nursing Facility (vSNF) in Chicago, Illinois

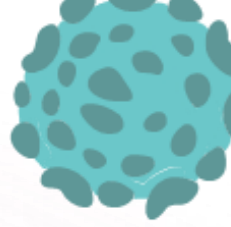
(Sexton et al 2021)

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- 70-bed facility in Chicago Illinois
  - First CA case was identified by point prevalence in March 2017
  - **In 18 months (Sept 2018), CA colonization climbed to 71%!**
- Study sampled bilateral axillary/inguinal swabs on all residents

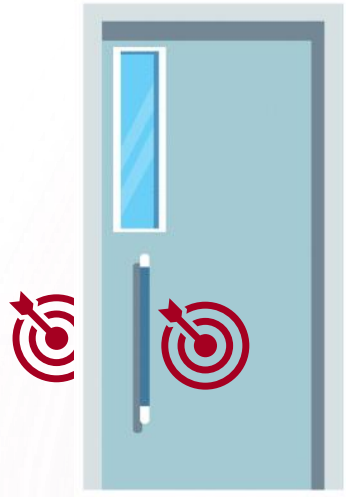


# Study Findings vSNF Chicago: *Candida auris* Positive Environmental Cultures



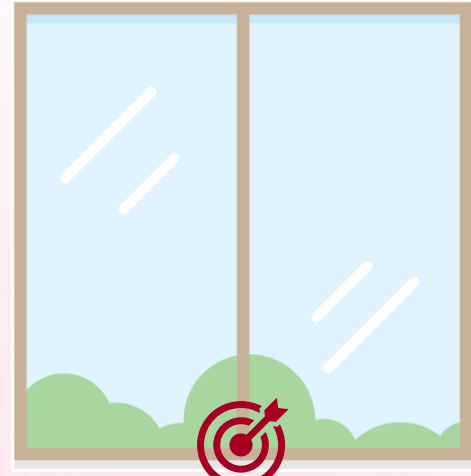
Bedrails

Left	Right
<b>81%</b>	<b>78%</b>



Door handles

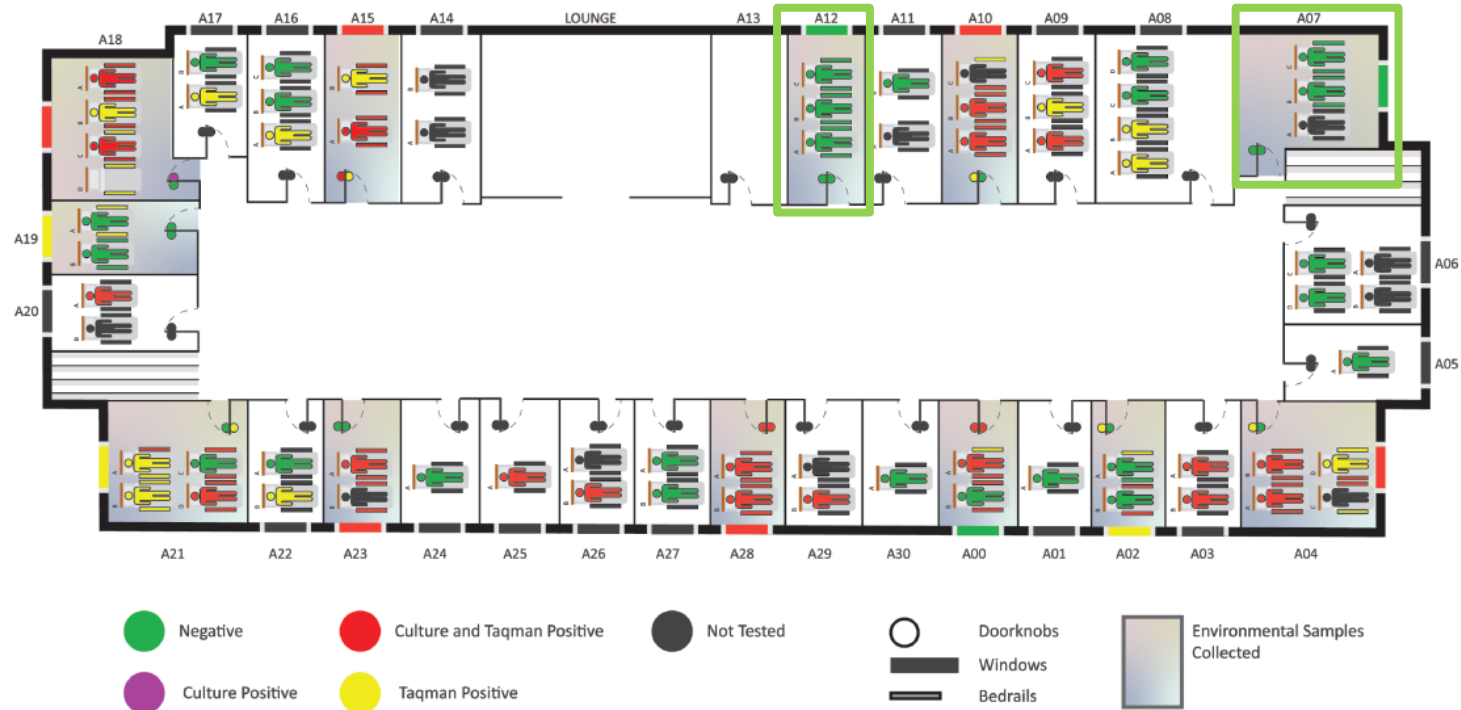
Inner	Outer
<b>58%</b>	<b>25%</b>



Windowsills

**75%**

# Resident & Environmental Culture Heatmap!



**Figure 1.** Facility map with culture-based and qPCR results for residents and associated environmental surfaces. The specific organization of beds within a room may differ from the image.

# Study Findings vSNF Chicago



- Colonized residents can have **high CA burden on their skin**, which was positively related with **contamination** of their surrounding healthcare **environment**.
- **3 negative patients had positive bedrails!**
- These findings underscore the importance of:
  - Hand hygiene
  - Transmission-based precautions
  - **Environmental disinfection with EPA List P disinfectants, *not* QACs (ineffective against *C. auris*)**

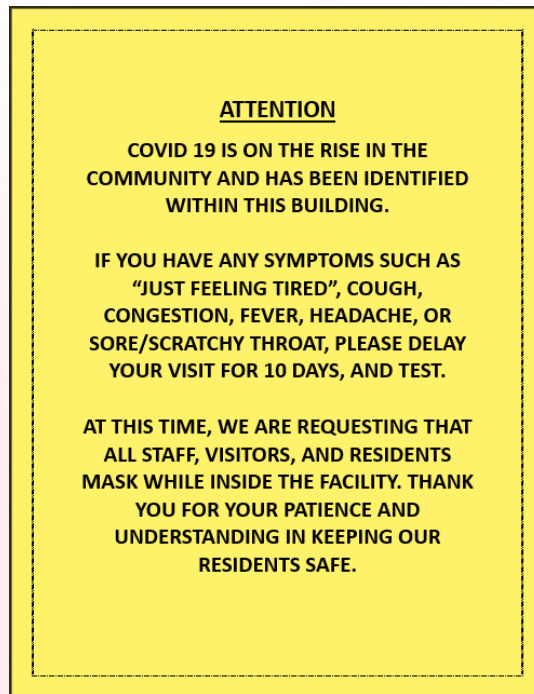
# **Strategies to Mitigate Outbreak Risks**



# Passive Health Screening – Visitors & Family

Per CMS [Nursing Homes Visitation – COVID-19 \(REVISED\) QSO-20-39-NH](#):

- Facilities should provide guidance (e.g., posted signs at entrances) about recommended actions for visitors with positive C19 test, symptoms of C19, or recent exposure
- Defer visitation non-urgent visits if symptomatic or after exposure
- **Tailor signage to facility-specific needs**



As shared on [AHCH/NCAL Community](#) by Anna Curcio, Carmel Hills Care Center



## Know the **INFECTIOUS SYMPTOMS**

Please delay your visit if you are experiencing any of the following symptoms:

- Fever
- Chills
- Diarrhea
- Cough
- Body aches
- Congestion
- Sore throat
- Headache
- Runny Nose
- Shortness of breath
- Vomiting
- Loss of Taste/Smell

Also, please reschedule if you:

- Have been in close contact with someone who has tested positive for a respiratory illness like COVID-19 in the past 10 days
- Have tested positive for COVID-19, RSV or Flu in the past 10 days.

MASKS ARE NOT REQUIRED AT THIS FACILITY,  
BUT FOR YOUR PROTECTION AND THE  
PROTECTION OF THOSE AROUND YOU, YOU ARE  
WELCOME TO WEAR A MASK. THESE ARE  
PROVIDED AT THE FRONT DESK.



## Need sign templates?

- Go to [www.canva.com](https://www.canva.com) to customize your own signage based for free!
- Search the [AHCA/NCAL Online Member Community Library!](#)
- [APIC IP Talk](#) community is also helpful for signs, forms & templates.

<https://www.canva.com/templates/EAD3hYSSNsM-blue-and-green-symptoms-coronavirus-poster/>

# Passive Health Screening – Visitors & Family

## Infection Control for Respiratory Viruses

Use the following infection control measures to prevent and slow the spread of respiratory infections in your facility.



**Use of well-fitting masks or respirators, that cover a person's mouth and nose**, can prevent the spread of germs when people are breathing, talking, sneezing, or coughing.



**Encourage everyone in your facility to get recommended vaccinations.** Vaccination is a safe and effective strategy for reducing disease spread and staff absenteeism.



**Practice physical distancing, particularly in shared spaces such as waiting rooms, and implement screening and triage procedures.** Use signs as visual reminders for patients, implement rapid screening, and separate symptomatic patients as soon as possible.



**Practice respiratory hygiene and cough etiquette and encourage others to do the same.** Provide masks, tissues, and no-touch receptacles for tissue disposal at facility entrances, triage areas, and waiting rooms.



**Clean your hands regularly with an alcohol-based hand sanitizer or soap and water.** Share key messages and reminders within your facility by using CDC's [Clean Hands Count](#) resources.



**Clean and disinfect regularly.** Lobby areas, cafeterias, and waiting rooms are all high-traffic spaces where germs can spread. It's also important to disinfect reusable devices and not reuse disposable items.



**Check that the air handling in your facility is functioning as it should.** Make sure air vents aren't blocked, and consult with facilities management to ensure the heating, ventilation, and air conditioning, or HVAC, system is working efficiently for proper ventilation.

For more information on infection control recommendations for healthcare settings, visit <https://bit.ly/3O1UXhM>

[www.cdc.gov/ProjectFirstline](https://www.cdc.gov/ProjectFirstline)

WE HAVE THE POWER  
TO STOP INFECTIONS.  
TOGETHER.



<https://www.cdc.gov/infectioncontrol/pdf/projectfirstline/IPC-Respiratory-Viruses-508.pdf>

# Occupational Health & Staff Illnesses

- Sick policies should **encourage self-monitoring** & reporting of infectious illnesses without punitive repercussions
- Educate staff to report s/s of infection, including fever, diarrhea, cough, sore throat & skin lesions to IP/OH/manager
- Remember that staff see each other outside of work!
- Review staffing contingency plans!
- Include outbreaks in emergency preparedness exercises!

TABLE 8.2: CDC WORK RESTRICTIONS FOR HEALTHCARE PERSONNEL

Summary of suggested work restrictions for healthcare personnel exposed to or infected with infectious diseases of importance in healthcare settings, in the absence of state and local regulations.

Disease/Problem	Work Restriction	Duration	Category
<b>Conjunctivitis</b>	Restrict from patient contact and contact with the patient's environment	Until discharge ceases	II
<b>Cytomegalovirus infections</b>	No restriction		II
<b>Diarrheal diseases:</b>			
Acute stage (diarrhea with other symptoms)	Restrict from patient contact, contact with the patient's environment, or food handling	Until symptoms resolve	IB
Convalescent stage, <i>Salmonella</i> spp.	Restrict from care of high-risk patients	Until symptoms resolve; consult with local and state health authorities regarding need for negative stool cultures	IB
<b>Enteroviral infections</b>	Restrict from care of infants, neonates, and immunocompromised patients and their environments	Until symptoms resolve	II
<b>Hepatitis A</b>	Restrict from patient contact, contact with patient's environment, and food handling	Until 7 days after onset of jaundice	IB
<b>Hepatitis B:</b>			
Personnel with acute or chronic hepatitis B surface antigenemia who do not perform exposure-prone procedures	No restriction*; refer to state regulations; standard precautions should always be observed		II
Personnel with acute or chronic hepatitis B e antigenemia who perform exposure-prone procedures	Do not perform exposure-prone invasive procedures until counsel from an expert review panel has been sought; panel should review and recommend procedures the worker can perform, taking into account specific procedure as well as skill and technique of worker; refer to state regulations	Until hepatitis B e antigen is negative	II
<b>Hepatitis C</b>	No recommendation		
<b>Herpes simplex:</b>			
Genital	No restriction		II
Hands (herpetic whitlow)	Restrict from patient contact and contact with the patient's environment	Until lesions heal	IA
Orofacial	Evaluate for need to restrict from care of high-risk patients		II

**TABLE 8.2: CDC WORK RESTRICTIONS FOR HEALTHCARE PERSONNEL, APIC IP Guide to LTC, 2<sup>nd</sup> Edition, 2019**

# Active Health Screening of Residents

- The **nursing assessment** is the cornerstone of resident care and critical to infection prevention efforts, including outbreak management (APIC 2019)
- Recognize there are more CNAs than RNs in LTC
- **Fever is absent** in more than half of LTC facility residents with a serious infection, making evaluation challenging when infection is suspected (APIC 2019)
- Educate staff on criteria to exclude/delay potentially infectious residents from group activities & isolate per protocols!

FIGURE 6.1: BRI SCALE

**Infection Risk Scale**

PLEASE COMPLETE THIS ASSESSMENT

- On Admission
- With MDS Schedule (where applicable)
- For any significant change in resident condition

**RESIDENT INFORMATION:**

	Date	Date	Date	Date
First name: _____	___/___/___	___/___/___	___/___/___	___/___/___
Last name: _____	___/___/___	___/___/___	___/___/___	___/___/___
Birthdate/ID: _____	___/___/___	___/___/___	___/___/___	___/___/___
<b>ENTER SCORE: 0 = NO 1 = YES</b>				
Current Active Infection, Ventilator, Dialysis, Immune System Compromise (HIV, Splenectomy, Chemotherapy, Chronic steroid use) (Automatic High Risk 18)				
History of infection/antibiotic use during the last 6 months				
History of hospitalization during the last 6 months				
History of colonization/past infection with MDR O (MRSA, VRE, C-diff)				
MRSA nasal colonization				
Dependent for Personal Care				
Significant, Unplanned Wt. Loss (5%)				
PEG tube/3 tube, surgical implant past 12 months				
Swallowing Issues/Aspiration Risk				
Diagnosis of Diabetes				
Diagnosis of Urinary Retention				
Diagnosis of Neuropathy				
Diagnosis of Peripheral Vascular Disease				
Open Wounds				
Oxygen/Nebulizer Use				
Vascular Access (PICC, Port, Peripheral IV)				
Urinary Catheter				
Male Gender (MRSA Colonization)				
Refuses Immunization				
<b>TOTAL (MAXIMUM 18)</b>				
✓ Low risk (L) = 0-4 ✓ Moderate risk (M) = 5-9 ✓ High risk (H) = 10-18	} Care suggestions on page 2			
ADDRESSED ON CARE PLAN AND WITH CARE TEAM				
INITIALS				

**BRI Scale for Assessing Infection Risk in LTC,**  
*APIC IP Guide to LTC, 2<sup>nd</sup> Edition, 2019*

# Outbreak Prevention: Vaccination

- Promote vaccination among vulnerable populations like LTC residents AND the HCP who care for them!
- CMS requires skilled nursing facilities to screen and offer influenza, pneumococcal & C19 vaccination for all new resident admissions (APIC 2019)
- Ensure state-based historic, electronic vaccination records interfaces with electronic health records (EHRs) whenever possible
- Check for proper vaccine storage when rounding (very specific requirements)

**Table 1** Recommended Adult Immunization Schedule by Age Group, United States, 2024

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
COVID-19	1 or more doses of updated (2023–2024 Formula) vaccine (See Notes)			
Influenza inactivated (IIV4) or Influenza recombinant (RIV4)	1 dose annually			
Influenza live, attenuated (LAIV4)	1 dose annually			
Respiratory Syncytial Virus (RSV)	Seasonal administration during pregnancy. See Notes.			≥60 years
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)			
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			For healthcare personnel, see notes
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (see notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PPSV23)				See Notes
Hepatitis A (HepA)	2, 3, or 4 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	19 through 23 years	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations		
Haemophilus influenzae type b (Hib)	1 or 3 doses depending on indication			
Mpox				

  Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of immunity
   Recommended vaccination for adults with an additional risk factor or another indication
   Recommended vaccination based on shared clinical decision-making
   No recommendation/Not applicable

<https://www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf>

# MDRO Reduction: Antimicrobial Stewardship



## Antibiotic Stewardship in Nursing Homes



CDC recommends **7 CORE ELEMENTS** for antibiotic stewardship in nursing homes

- Leadership Commitment
- Accountability
- Drug Expertise
- Action
- Tracking
- Reporting
- Education


This block contains seven circular icons: a person in a suit, a person in a lab coat, a pill bottle, a person with glasses, a clipboard, a virus, and a stethoscope. Each icon is accompanied by a small green circle, representing the 7 core elements.



# MDRO Reduction: Antimicrobial Stewardship

- IPC cannot achieve overarching MDRO outbreak prevention goals without addressing antimicrobial stewardship
- If *C. diff* is an issue, IPs must assess & address appropriate testing (dx stewardship) during HO-CDI root cause analyses (RCA).
- Per CDC (2021), clinicians should:
  - Consider noninfectious causes of diarrhea
  - DC laxatives, wait 48 hours before CD testing
  - Do not test for cure (tests remain + for  $\geq 6$  weeks)

## Nursing Home Antimicrobial Stewardship Guide



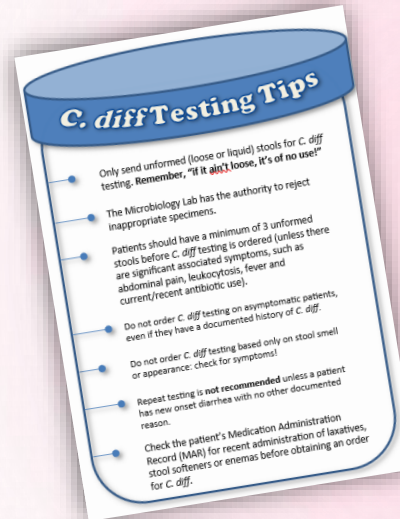
**Overview of the Guide**  
The Nursing Home Antimicrobial Stewardship Guide provides toolkits to help nursing homes optimize their use of antibiotics.

**Browse Antimicrobial Stewardship Toolkits**  
Toolkits on four topic areas are available.

**Implement, Monitor, and Sustain a Program**  
Two toolkits help nursing homes start and maintain antimicrobial stewardship programs.

[Back to Top](#)

<https://www.ahrq.gov/nhguide/index.html>



### C. diff Testing Tips

- Only send unformed (loose or liquid) stools for *C. diff* testing. Remember, "if it ain't loose, it's of no use!"
- The Microbiology Lab has the authority to reject inappropriate specimens.
- Patients should have a minimum of 3 unformed stools before *C. diff* testing is ordered (unless there are significant associated symptoms, such as abdominal pain, leukocytosis, fever and current/recent antibiotic use).
- Do not order *C. diff* testing on asymptomatic patients, even if they have a documented history of *C. diff*.
- Do not order *C. diff* testing based only on stool smell or appearance: check for symptoms!
- Repeat testing is **not recommended** unless a patient has new onset diarrhea with no other documented reason.
- Check the patient's Medication Administration Record (MAR) for recent administration of laxatives, stool softeners or enemas before obtaining an order for *C. diff*.



### C. diff Testing Tips

**Inappropriate *C. diff* testing increases:**

- Inappropriate antibiotic use
- Likelihood of multidrug resistant organisms
- Chance of false-positive results
- Financial penalties from the federal government
- Length of stay

**Healthcare costs:**

- Nurse/PCT time to collect & send specimens
- Lab technician time to prep & run tests
- Treatment-associated costs
- Unnecessary contact isolation & personal protective equipment (PPE) use

**Questions? Call 800-458-5231**

*C. Diff* Testing Tip HCP pocket cards, developed by presenter



# **Improving Environmental Hygiene: A Practical Guide to Implementation**

# Common **EVS** Disinfection Challenges



## **UNACHIEVABLE CONTACT TIMES**

If using a 10-minute product, observe cleaning & watch for reapplication to keep surfaces wet. (It's *not* happening!)



## **QUAT BINDING RISKS**

Cotton & some microfibers are incompatible with QACs  
*Boyce 2016*



## **SPRAYING & IMMEDIATELY WIPING DRY**

In-progress cleaning & disinfection multi-center study



## **CONTAMINATED CLEANING CLOTHS & DOUBLE DIPPING**

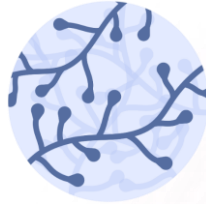
Look where & how rags & mops are stored, not only in EVS but also on the carts & in closets!  
*Sifuentes 2013*

# Common **EVS** Disinfection Challenges



## **IMPROPER DILUTION**

Dispensers require maintenance (Boyce 2016). EVS techs may also manually mix chemicals if dispensers are malfunctioning.



## **EMERGING PATHOGEN CLAIMS**

Quaternary ammonium compounds (QACs) are the most used EVS disinfectants (Han 2021), but do not have *Candida auris* efficacy.



## **INEFFECTIVE CLEANING TOOLS**

Cotton string mops are bulky, more work intensive & contribute to cross contamination  
*EPA 2002*



## **CONSISTENT ROOM CLEANING**

Only 49% of high-touch surfaces cleaned in LTC; shared rooms had lower compliance, more difficult to clean  
*McKinley et al 2023*

# EVS EXPECTATIONS SURVEY RESULTS

	Leader	Tech
Toilet bowl	+	+
Toilet bedpan cleaner	×	+
Toilet seat	+	+
Sink/faucet	+	+
Toilet flush handle	+	+
Toilet handrails	+	+
Bathroom sink/faucet	+	+
Overbed table	+	+
Door knobs	+	+
Light switches	+	+

	Leader	Tech
Telephone	+	×
Bedside table	+	×
Cabinets*	+	×

	Leader	Tech
Computer	×	×
Bed rails	×	×
Bed controls	×	×
Call button	×	×
Chair	×	×
IV pump & pole	×	×
Commode	×	×
Barcode scanner*	×	×
Thermometer*	×	×



**IP: Who disinfects what EVS doesn't?**

You can do the same survey at your facility! So easy!






\*Not currently on CDC list. Site surveys analyzed individually. Results reflect 4 completed surveys.

**1** First, **collaborate with EVS** & determine the agreed upon **disinfectant and cleaner portfolio**, factoring in **faster/achievable contact times, broader pathogen coverage, safety, ease of use** & how a disinfectant manufacturer can help achieve the facility's goals.

**2** Next, **clarify cleaning & disinfection roles & responsibilities** and implement a **(re)training and communication program to improve cleaning compliance of high touch surfaces AND portable medical equipment**, including any **new product implementation**.

**3** Lastly, **validate the efficacy** of your program using visual audits, ATP, fluorescent marking or a combination of all three. Consider **adjunct disinfection**, like UV-C, to offset any variability in manual cleaning & disinfection.

# How to Evaluate Current Disinfectant Portfolio

	CONSIDERATION	QUESTIONS TO ASK
	<b>Kill Claims</b>	Does the product kill relevant pathogens that cause HAIs, cause outbreaks & viral threats?
	<b>Kill Times &amp; Wet Contact Time</b>	How quickly does the product kill prevalent healthcare pathogens? Have you tested contact times internally? Does the product dry too quickly?
	<b>Safety</b>	Does the product have an acceptable toxicity & flammability rating? What PPE is required? Have you ever worked directly with the product?
	<b>Ease of Use</b>	Odor acceptable, pleasant for the user shelf-life, in convenient forms (wipes, spray) water soluble, works in organic matter, one-step (cleans/disinfects)
	<b>Other Factors</b>	Supplier offers comprehensive training/education, 24-7 customer support, overall cost acceptable (product capabilities, cost per compliant use, help standardize disinfectant in facility/system)

# Ready-to-Use Wipes vs. Dilutable Disinfectants?

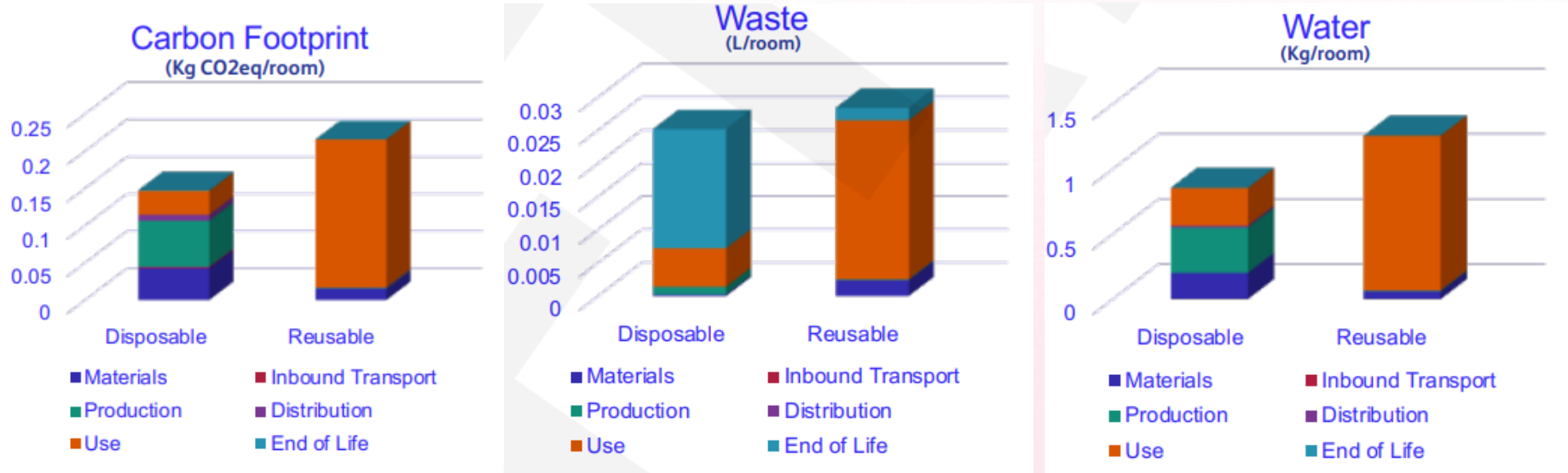


- Wipes can be **cost effective** (Wiemkin 2014) & **sustainable** (Daggett 2017).
- No mixing, no errors.
- Grab & go!
- Proven efficiency & accessibility among our clinical teams, why not EVS?



- Ensure **dispensing equipment** is working properly (EVS)
- **Label** ALL secondary containers (mop & rag buckets, bottles, etc)!
- Containers should be **cleaned, rinsed & allowed to dry daily** (not happening!)
- No **topping off** or **double dips**!

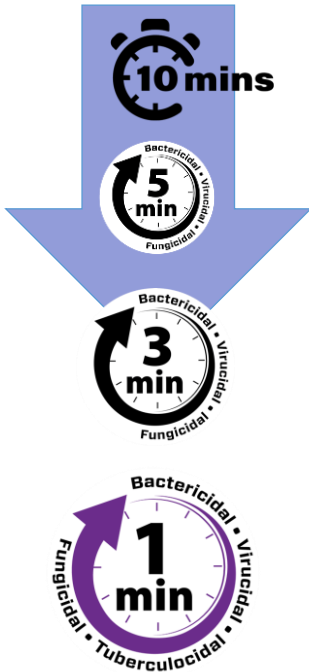
# Wipe Life Cycle Assessment: It's More than Where the Wipe Ends Up!





# Reduce Variability, Maximize Simplicity

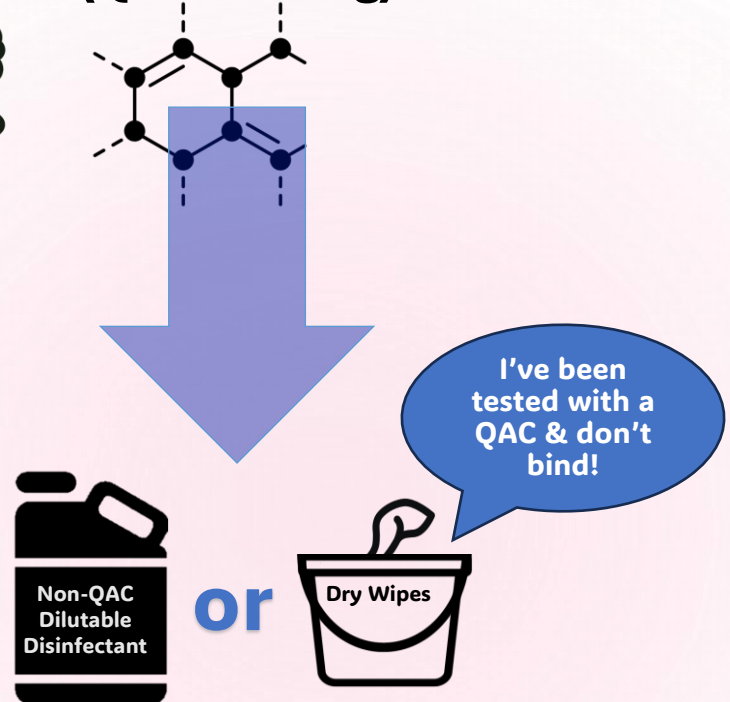
## Contact Times



## Cleaning Tools



## Compatibility (Quat Binding)



# WE MUST REMOVE VISIBLE DIRT BEFORE SANITIZING OR DISINFECTING!



**WIPE 1**

First pass shows  
significant dirt removal

**WIPE 2**

Less soil released at  
second wipe

**WIPE 3**

Barely any soil on third  
wipe

**WIPE 4**

Surface disinfected, 1-  
minute wet time



# Soft Surface Sanitizing

- Recent study (Gibson 2022) in 6 NHs, 40% of residents' privacy curtains were contaminated with an MDRO
- “Soft surface” claims are limited, by the EPA, to “sanitizer.”
  - The sanitization for non-food contact surfaces is generally accepted as 99.9% (a **3-log reduction**).
  - The sanitizer claim is based on laboratory testing of **only two bacteria**, *not* viruses or fungi.
- EPA recently published soft surface disinfectant (6-log reduction) testing methods, so we can expect to see more products with these claims soon.

# Robotic companion “pets” can be effectively cleaned & reprocessed

- Often used on memory care units, decrease anxiety & depression
- Include fur, soft & hard plastic components
- Cleaned with disinfectant wipes; sprayed w/ sanitizer & brushed; all parts “vigorously wiped” per instructions for use (IFUs)
- Results: process effectively removes high number of bacterial pathogens

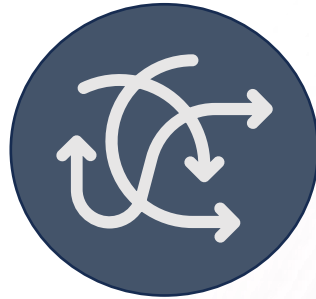


# Common **Clinical** Disinfectant Challenges



## **POINT-OF-CARE DEVICE DISINFECTION**

Finding visible blood & body fluids on shared portable medical equipment (PME) is a risk not only for **pathogen transmission**, but also **BBP outbreaks**.



## **UNCLEAR ROLES & RESPONSIBILITIES**

Who is responsible for cleaning & disinfectant what, when & with which products? EVS is **not responsible** for everything!



## **POINT-OF-CARE DISINFECTANT AVAILABILITY**

Are disinfectant wipes available to reprocess shared portable medical equipment? Are disinfectants “hidden” due to safety concerns? Staff will *not* go searching!



## **COMPATIBILITY VS. IFUs**

IFUs can be challenging for IP teams to navigate. Does a wipe damage the equipment, or has it simply not been tested?

# Whose job is it, anyway? EVS, clinical user or central processing?



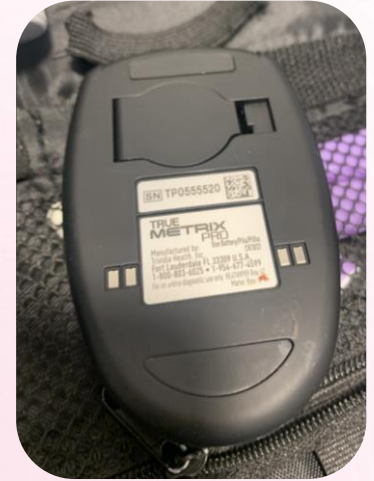
**Bedside commode**



**IV Pump controls**



**Bedrails**



**Glucometer**

**FIGURE 9.2: ENVIRONMENTAL SERVICES CHECKLIST  
FOR DAILY CLEANING OF RESIDENT ROOM<sup>22,23</sup>**

DATE: \_\_\_/\_\_\_/\_\_\_ UNIT: \_\_\_\_\_ ROOM: \_\_\_\_\_ INITIAL OF EVS STAFF (OPTIONAL) \_\_\_\_\_

Evaluate the following priority sites for each resident room

Cleaning Task	Cleaned	Not Cleaned	Not present in room
<b>High dusting performed:</b>			
Use high duster/mop head: wipe ledges (shoulder high and above)			
Vents			
Lights (do not high dust over the resident)			
Dust TV: rotate and dust screen and wires			
<b>Damp dust: Cloths and spray bottle of disinfectant for damp wipe:</b>			
Ledges (shoulder high)			
Door handles			
Room furniture (bureaus, chairs, etc.)			
Bedside table: disinfect surface			
Equipment per policy			
Glass surfaces			
<b>Bathroom: All surfaces:</b>			
Toilet			
Ledges in bathroom			
Door handles			
Sink (especially faucet handles)			
Shower stall			

**Waste basket:**

- Liner bags: close before removing
- Clean and disinfect if can is visibly soiled

**Sharps container:**

- Check level of sharps (remove if 3/4 full)
- Take to soiled utility room after securely closing

**Clean and disinfect high-touch surfaces near resident:**

- Siderails
- Call light
- Remote control unit
- Telephone
- IV pole and controls
- Bedside table handle

**Floor cleaning and disinfection:**

- Sweep floor before wet mopping
- With wet mop, start farthest from door; half of room first then the other half
- Bathroom shower floor
- Bathroom floor

**Tailor EVS checklist  
appropriate to  
design & needs of  
facility!**

# But do NOT forget clinical portable medical equipment!

**New Equipment Cleaning Labels**


Please be advised of the **new cleaning labels** on select medical equipment to assist with proper device cleaning practices:

Sticker **SHAPE** provides who is responsible for cleaning the device:

- = Central Sterile Services (CSS)
- = Device User
- = Environmental Services (EVS)

Sticker **COLOR** provides what cleaner to use:

- Orange = Bleach Wipes
- Purple = Purple Top Wipes



**All equipment used in Special Contact rooms should be cleaned with bleach, regardless of the sticker.**

"After pt use" defined as: when the device is to be used on a new patient. Please contact Infection Control (x6437) with any questions!

#APIC2022

## Selected Equipment for Labeling

Equipment or Item	Group Responsible	Manufacturer Recommended
IV pump	CSS	Bleach
SCD Pump	EVS	Bleach
Vital Sign Machines	User	Bleach
Wall Mounted Vital Sign Machines	EVS	Bleach
EKG Machine	User	Bleach
PCA	CSS	Bleach
Feeding Pump	EVS	Bleach
Defibrillator on Code Cart	CSS	Quaternary Ammonium
Wall Mounted Patient Monitor/Leads/Pulse Ox/Cuff	EVS	Quaternary Ammonium
Bladder Scanner	User	Quaternary Ammonium
Telemetry Pack	User	Quaternary Ammonium

Dabkowski M. 2022. **Improving Cleaning Compliance of Noncritical Equipment with Labels and Auditing.** APIC 2022 oral abstract. Accessed securely online as conference attendee at

<https://c53ac34983397363b9e2-fa85729df59db74d0fed9dc21ffea231.ssl.cf1.rackcdn.com//1884872-1491675-004.pdf>.



# Increase Accessibility to Clinical Disinfectants

Review Safety Rating

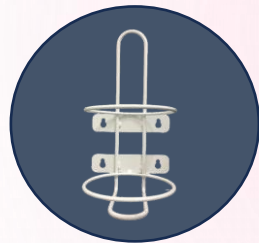
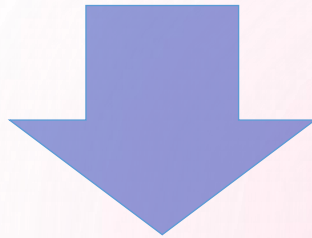


EPA Category II

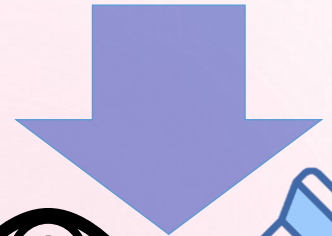


EPA Category IV

Increase Accessibility & Compliance



Include PME in Validation



# Validating the LTC Environmental Hygiene Program\*



Easy to perform, cost effective, engages staff

Difficult to standardize, may be seen as punitive w/o team engagement, Hawthorne effect, IP resources



Encourages resident participation, including family & visitors, quantitative measurement

Subjectivity, **emphasizes visible cleanliness only, not true disinfection**, no benchmarking



May be useful during an outbreak or research project, quantitative

Not recommended by CDC as routine measure, **high cost**, long turn around times, results may not correspond to the outbreak



Easy to use & train others, immediate feedback, can be helpful when evaluating new/novel cleaning methods

Detection of organic matter (bioburden) is **not reliable predictor** of infection risk, **high cost of equipment & supplies**, storage of swabs



Very inexpensive, easy to perform, immediate results

Does not identify pathogens, only detects cleaned/not cleaned, may be seen as punitive w/o team engagement

# In summary

- LTC settings house vulnerable populations where hand hygiene & environmental disinfection are uniquely challenging
- Multiple studies have demonstrated high levels of MDRO contamination not only on residents' hands, but also their rooms & common areas.
- Select cleaning, sanitizing/disinfectant products based on facility needs & risk assessment.
- Effective LTC outbreak prevention requires adherence to **all** IPC fundamentals!



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