Blind Spots in Healthcare-Associated *C. diff* Prevention: What's still tripping us up?

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Learning Objectives

1. Illustrate the changing epidemiology of *C. diff*.
2. Identify common blind spots in healthcare-associated *C. diff* prevention.
3. Describe practical, evidence-informed strategies with a focus on environmental cleaning.

Introduction

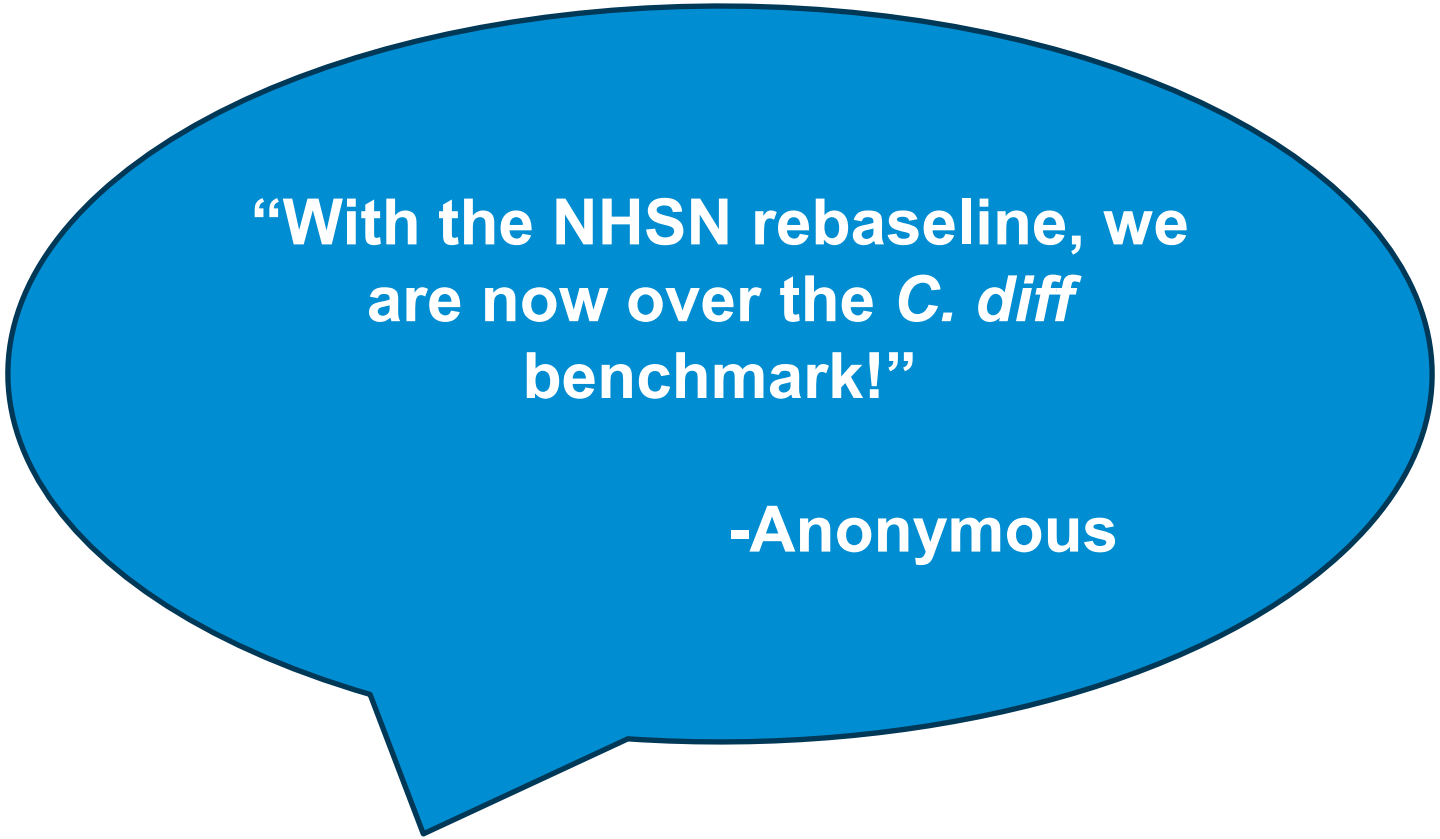
We got distracted…

Our attention has shifted from *C. difficile* to other HAIs (e.g., *Candida auris*, CLASBI, CAUTI).

However, ***C. diff* remains the most common HAI**.

Doing more of the same thing will not get us where we strive to be.

NHSN Baseline Reset



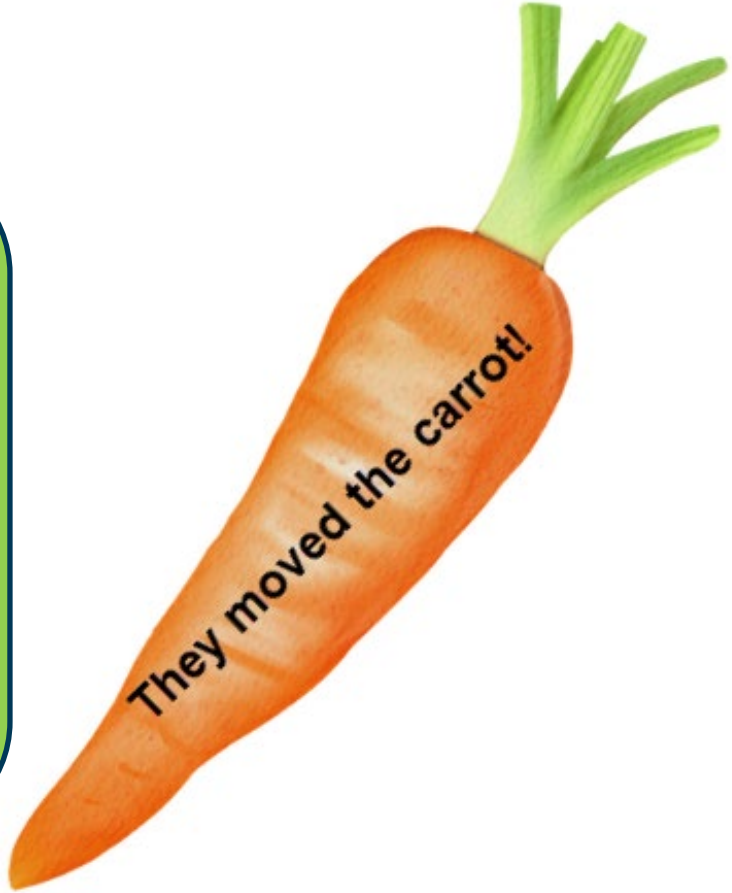
Reference:

They Moved the Carrot

As national CDI rates decline, the performance curve tightens.

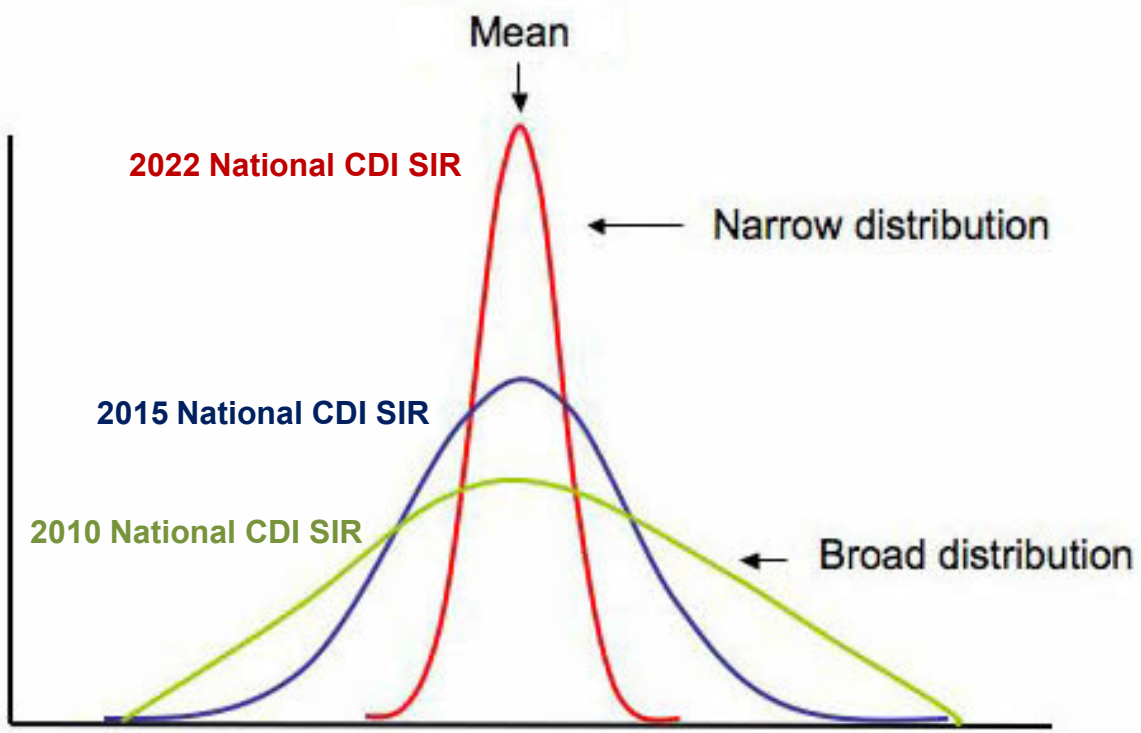
Small differences now have a BIG impact on the SIR!

****New baseline goes into effect Fall 2026****



Reference:

Narrowing of the performance curve



From Emergence to Endemic

General Overview: What is *C. diff*?

Gram positive, anaerobic spore-forming bacterium; not all strains product toxins.

Leading cause of antibiotic-associated diarrhea and colitis.

Transmission: Direct/Indirect Contact (environmental contamination and hands).

Survives on environment surfaces for months to years

References:
1) National Library of Medicine. StatPearls: Clostridioides difficile infection, 2024 [Internet]. [Cited 2026 Apr 6]. Available from NIH.
2) Centers for Disease Control & Prevention. About C. diff, Dec 2024 [Internet]. [cited 2026 Apr 7]. Available from CDC.

A bit (or is it “bite”?) more on transmission…

- Failure to assist patients with hand hygiene before they eat
- Contaminated thermometers (rectal or oral)
- Inoculation during oral care, oral suctioning, feeding tube management, and intubation

A nice way of saying “eating poop”

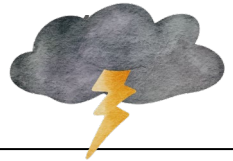
References:
1. National Library of Medicine. StatPearls: Clostridioides difficile infection, 2024 [Internet]. [Cited 2026 Apr 6]. Available from NIH
2. McDonald CL, Gerding DN, Johnson S, Bakken JS, Carroll KC, Coffin SE, et al. Clinical Practice Guidelines for Clostridium difficile Infection in Adults and Children: 2017 Update by the Infectious Disease Society of America (IDSA) and Society for Healthcare Epidemiologists of America (SHEA). Clin Infect Dis. 2018;19;66(7).

C. diff Timeline

1935: First identified as colonizer in neonates.

1962: First documented occurrence of CDI.

1977: Toxin identified.



Early 2000s: Fluoroquinolone-resistance coincides with emergence of hypervirulent strain.

2011: A paradigm shift: *C. diff* surpasses *Staph* as most prevalent HAI.

2013: CDC declares *C. diff* an Urgent Threat.
2019: Threat level retained by CDC.

Today: *C. diff* remains the most common HAI.

1930 1940 1950 1960 1970 1990 2000 2010 2020 2030

References:

1. Tickler IA, Goering RV, Tenover FC. History and Evolution of the Hypervirulent *Clostidioides difficile* Ribotype 027 Lineage. Microorganisms. 2025;13(10), 2376.
2. Di Bella S, Sanson G, Monticelli J, Zerbato V, Principe L, Giuffrè M, Pipitone G, Luzzati R. *Clostridioides difficile* infection: history, epidemiology, risk factors, prevention, clinical manifestations, treatment, and future options. Clinical microbiology reviews. 2024; *37*(2), e0013523. https://doi.org/10.1128/cmr.00135-23.

Who is at Risk for Acquiring *C. diff*?

50% of hospitalized patients receive antibiotics during their stay.[2]

Recent (e.g., **within the last 3 months**) stay in healthcare settings, such as hospitals or nursing homes, also increases their risk.

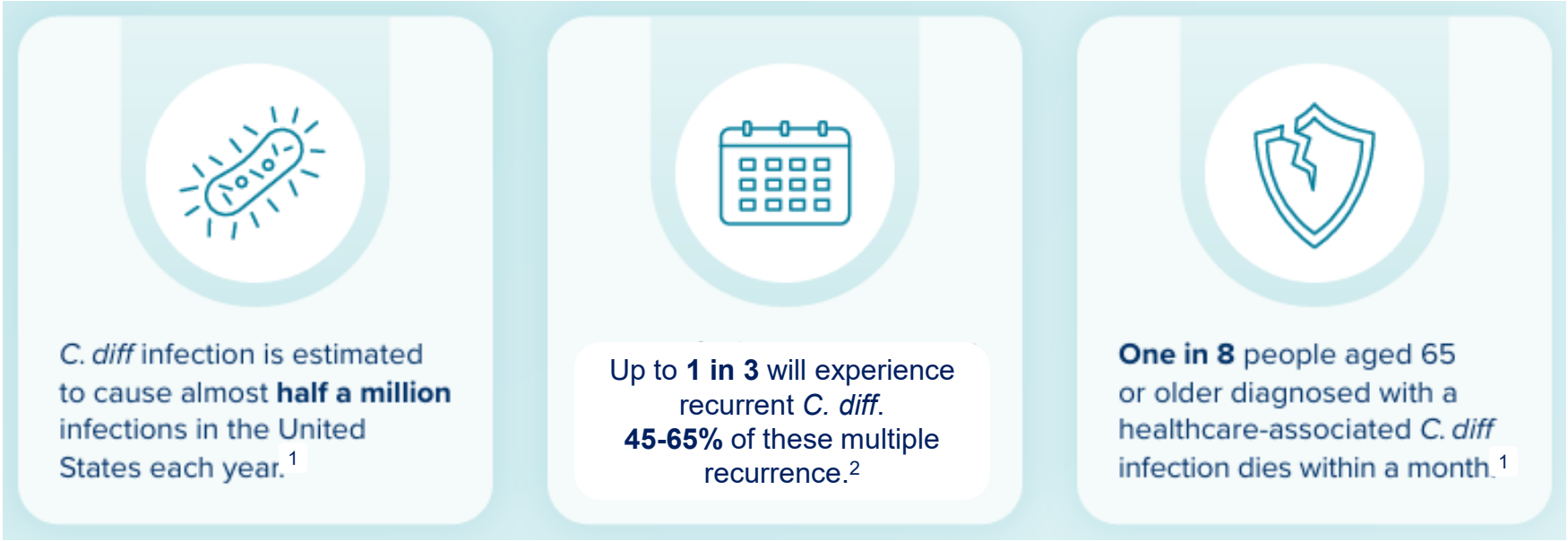
65+

More than 70% of deaths in patients with *C. diff* infection occur in people aged 65 or older.[2]

Reference:

1. Centers for Disease Control & Prevention. Clostridioides difficile for Healthcare Professionals, nd [Internet].[cited 2026 Apr 8]. Available from CDC.
2. Centers for Disease Control & Prevention. Antibiotic Use and Stewardship in the US, 2025 Update: Progress and Opportunities, Feb 2026 [Internet].[cited 2026 Apr 21]. Available from CDC.

The Impact of *C. diff* Infections (CDI)



References:
1. Centers for Disease Control & Prevention. Clostridioides difficile for Healthcare Professionals, nd [Internet].[cited 2026 Apr 8]. Available from CDC.
2. Soon JH, Sun Kim Y. Recurrent C. diff Infection: Risk Factors, Treatment, and Prevention. Gut Liver. 2018;13(1):16-24. doi: 10:5009/gnl18071

Current Status

CDC 2024 HAI Progress Report Raw Data for Acute Care Hospitals		
HAI Type	**# of Events in 2024**	**% decrease 2023 to 2024**
C. difficile	31,595	11%
Ventilator-associated Events (VAE)	26,509	2%
CLABSI	18,165	9%
CAUTI	15,347	10%
MRSA blood stream	7,605	7%

2011 National *C. diff* SIR = **0.93** → **60% decrease** → **2024** National *C. diff* SIR = **0.38**

SIR=Standardized Infection Ratio

Reference: CDC. 2024 HAI Progress Report, Jan 29, 2026 [Internet]. [cited 2026 Feb 11]. Available from CDC.

Epidemiological Importance of *C. diff*

C. diff remains the **most common** HAI in the US!

- High morbidity & mortality
- Extended LOS
- High cost (average $46,000*/patient)

*Inflation-adjusted to 2026 dollars

References:
1. Centers for Disease Control & Prevention. C. diff: Facts for Clinicians, Mar 2024 [Internet]. [cited 2026 Apr 7]. Available from CDC.
2. Zhang, et al. Cost of hospital management of *Clostridium difficile* infection in United States—a meta-analysis and modelling study. *BMC Infect Dis* **16**, 447 (2016). https://doi.org/10.1186/s12879-016-1786-6

C. diff: An Urgent Threat

References:
1. Centers for Disease Control & Prevention. 2013 AR Threats Report [Internet]. [cited 2026 Apr 8]. Available from CDC.
2. Centers for Disease Control & Prevention. 2019 AR Threats Report [Internet]. [cited 2026 Feb 12]. Available from CDC.

Evolving Epidemiology

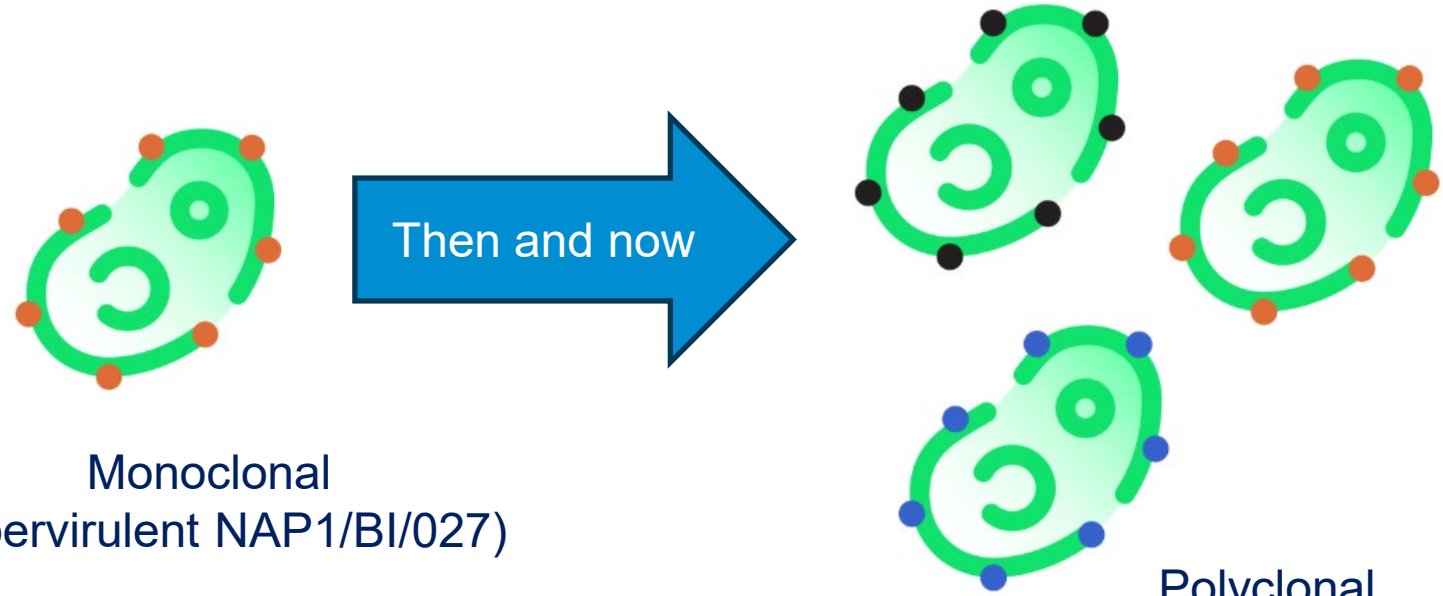
2011: A paradigm shift: *C. diff* surpasses *Staph* as most prevalent HAI.

1970 1980 1990 2000 2010 2020

Early 2000s:
- Emergence of NAP1 hypervirulent strain
- Fluoroquinolone-resistance

References:
1. Tickler IA, Goering RV, Tenover FC. History and Evolution of the Hypervirulent *Clostidioides difficile* Ribotype 027 Lineage. Microorganisms. 2025;13(10), 2376.
2. Di Bella S, Sanson G, Monticelli J, Zerbato V, Principe L, Giuffrè M, Pipitone G, Luzzati R. *Clostridioides difficile* infection: history, epidemiology, risk factors, prevention, clinical manifestations, treatment, and future options. Clinical microbiology reviews. 2024; *37*(2), e0013523. https://doi.org/10.1128/cmr.00135-23.

Evolving Epidemiology



Monoclonal
(hypervirulent NAP1/BI/027)

Polyclonal
(including community strains)

References:
1. Turner NA, Grambow SC, Woods CW, Fowler VG, Moehring RW, Anderson DJ, et al. Epidemiologic Trends in *Clostridioides difficile* Infections in a Regional Community Hospital Network. *JAMA Netw Open*, 2019; 2(10):e1914149
2. 2. Gupta A, Khanna S. Community-acquired *Clostridium difficile* infection: an increasing public health threat. *Infect Drug Resist*. 2014 Mar 17; 7:63-72. Doi: 10.2147/IDR.S46780

Evolving Epidemiology

Emerging Infections Program
Healthcare-Associated Infections–Community Interface Report
Clostridioides difficile Infection Surveillance, 2023

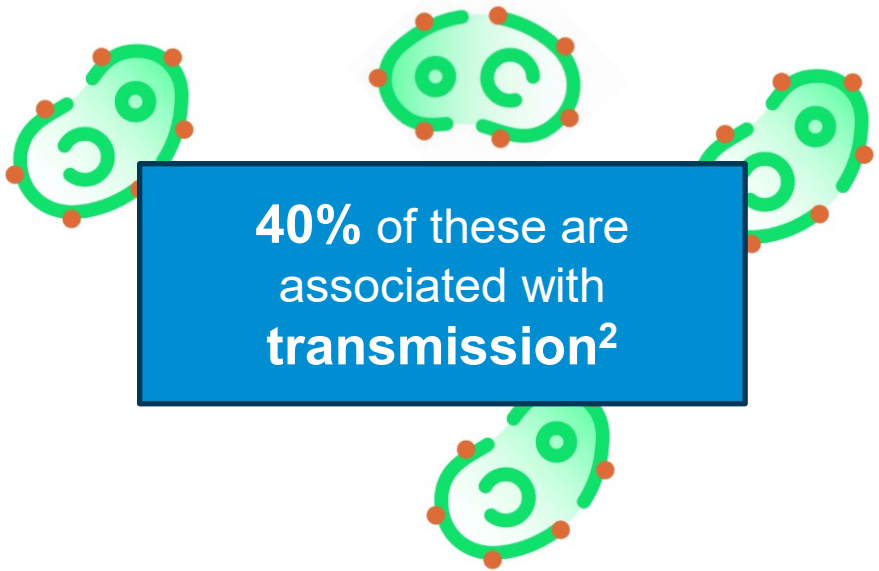
Summary

Surveillance data from 2023 represent the thirteenth year of population-based surveillance for CDI conducted in 10 Emerging Infections Program sites. The crude overall incidence rate of CDI in 2023 was 117.2 cases per 100,000 persons, similar to the overall incidence rate of 116.1 cases per 100,000 persons in 2022. These estimates do not account for potential changes in diagnostic testing practices over time. The incidence of community-associated CDI cases (62.3 cases per 100,000 persons) was higher compared with healthcare-associated cases (54.9 cases per 100,000 persons). The incidence rate of CDI increased with age and was higher in women than in men and highest in persons who were Native Hawaiian/Other Pacific Islander or White, compared to persons of other racial/ethnic groups.

Reference:
1. Centers for Disease Control & Prevention. EID Program Healthcare-Associated Infections-Community Interface Report: *Clostridioides difficile* Infection Surveillance 2023 [Internet]. [cited 2026 Mar 18]. Available from CDC

Asymptomatic Carriage and Transmission Incidence

7-18% of hospitalized patients are **asymptomatic carriers**[1]



40% of these are associated with **transmission**[2]

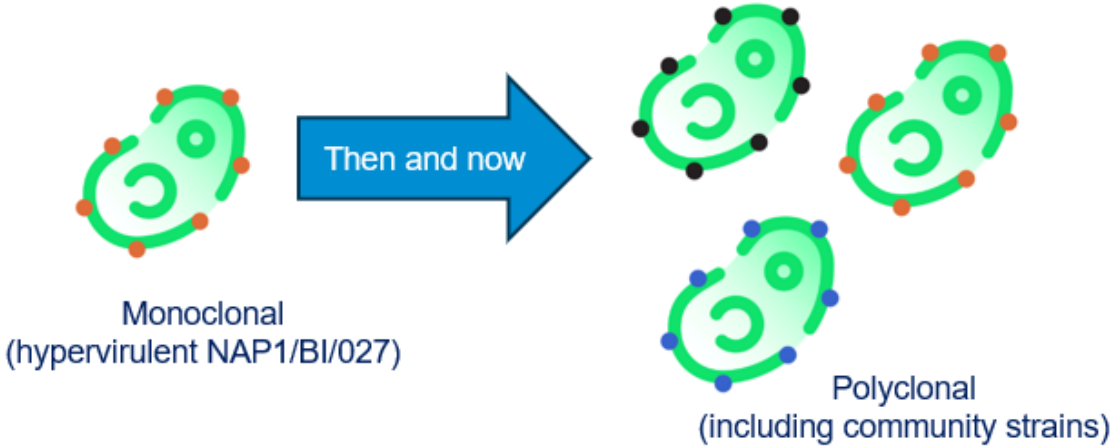
References:

1. Guh AY. *Clostridioides difficile: Epidemiologic Risks and Decolonization Strategies.* FDA/CDC Public Workshop, 2022
2. Baker SJC, Maciejewski J, Usuanlele MT, Gilchrist J, Sharma DR, Bulir D, et al. Investigating in-hospital transmission of *Clostridioides difficile* from asymptomatic patients. *J Assoc Med Microbiol* Infect Dis Can. 2025 Jul 17;10(3):228-238

Epidemiology Matters

Key Takeaways

- Many strains make it harder to control.
- The data becomes "noisier."
- Rates ≠ IP failure



References:
1. Turner NA, Grambow SC, Woods CW, Fowler VG, Moehring RW, Anderson DJ, et al. Epidemiologic Trends in *Clostridioides difficile* Infections in a Regional Community Hospital Network. *JAMA Netw Open*, 2019; 2(10):e1914149
2. 2. Gupta A, Khanna S. Community-acquired *Clostridium difficile* infection: an increasing public health threat. *Infect Drug Resist*. 2014 Mar 17; 7:63-72. Doi: 10.2147/IDR.S46780

What about screening at admission?

Open Forum Infect Dis. 2025 Jan 29;12(Suppl 1):ofae631.429.

P-225. Effect of isolating *Clostridioides difficile* asymptomatic carriers on the incidence of healthcare-associated *C. difficile* infections: a systematic review and meta-analysis

Veronica Zanichelli [1], Jacqueline Wong [2], Zahra Sohani [3], Nick Daneman [4], Charles Frenette [5], Todd C Lee [6], Dominik Mertz [7], Emily McDonald [8], Kevin Brown [9], Jennifer M Grant [10], Louis-Patrick Haraoui [11], Jennie Johnstone [12], Kevin Katz [13], Robyn S Lee [14], Jerome A Leis [15], Beate Sander [16], Titus Wong [17], Vivian Loo [18], Yves Longtin [19,1,2,3]

Screening and isolating *C. difficile* carriers resulted in a **72% decrease in HO-CDI incidence** in adult patients

Consider using a **sporicidal disinfectant for *all* discharge cleans**.

Reference: Zanichelli V, Wong J, Sohani Z, Daneman N, Frenette C, Lee TC, et al. P-225. Effect of isolating *Clostridioides difficile* asymptomatic carriers on the incidence of healthcare-associated *C. difficile* infections: a systematic review and meta-analysis. *Open Forum Infect Dis*. 2025 Jan 29;12(Suppl 1):ofae631.429. doi: 10.1093/ofid/ofae631.429. PMCID: PMC11776551.

Universal Controls

Antimicrobial Stewardship

Rigorous Hand Hygiene Practices

Sporicidal Cleaning & Disinfection

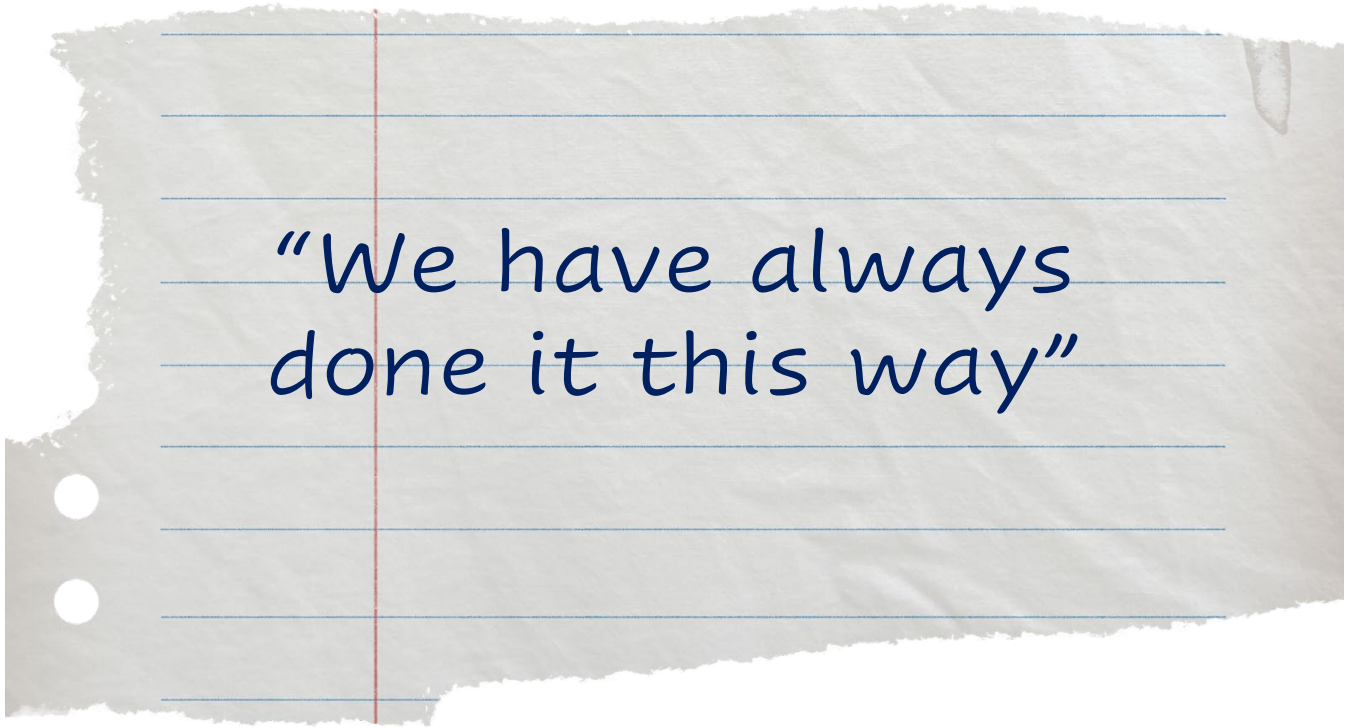
Reference: Kociolek LK, Gerding DN, Carrico R, Carling P, Donskey CJ, Dumyati G. Strategies to prevent *Clostridioides difficile* infections in acute-care hospitals: 2022 Update. *ICHE*. 2023; 44, 527-549.

Are we ready to “C. diff-erently”?

Source: Canva

Uncovering IPC Blind Spots and Closing the Gaps

The most dangerous sentence to IPs



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Hand Hygiene

Hand Hygiene: Cognitive Prompt

Temporary vinyl floor signage at threshold of *C. diff* isolation room

Blind Spot: Patient Hand Hygiene

A nice way of saying “eating poop”

References:
1. National Library of Medicine. StatPearls: Clostridioides difficile infection, 2024 [Internet]. [Cited 2026 Apr 6]. Available from NIH
2. McDonald CL, Gerding DN, Johnson S, Bakken JS, Carroll KC, Coffin SE, et al. Clinical Practice Guidelines for Clostridium difficile Infection in Adults and Children: 2017 Update by the Infectious Disease Society of America (IDSA) and Society for Healthcare Epidemiologists of America (SHEA). Clin Infect Dis. 2018;19;66(7).

Rapid Identification & Isolation

Rapid Identification & Isolation: Considerations

- ☑ Isolate at **1st unexplained loose stool**
- ☑ Collect on **3rd unexplained loose stool** in a 24hr period

Pro Tip: Loose stools do not need to be consecutive!

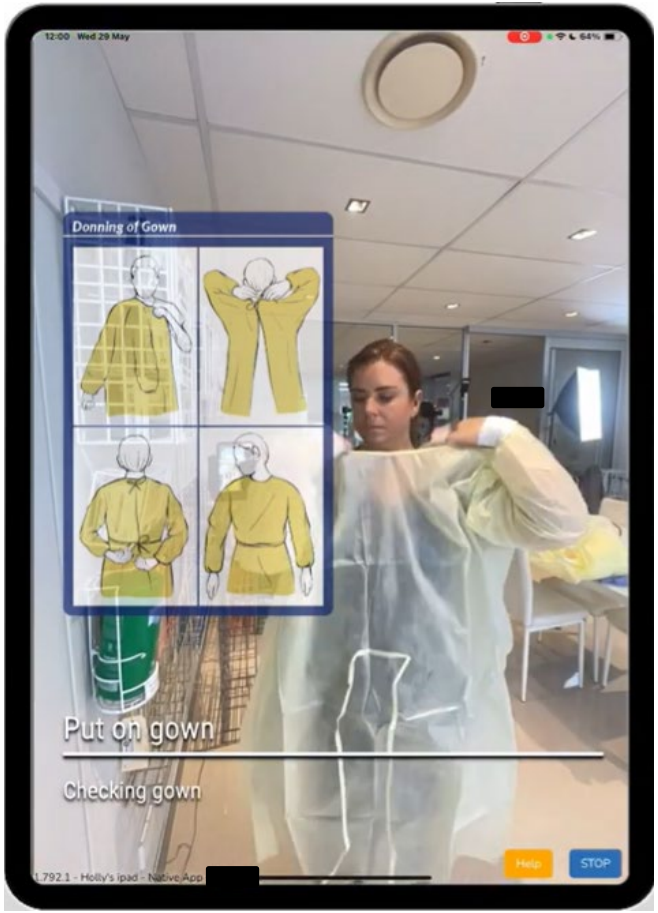
- ☑ Ensure **PPE** is donned/doffed properly
- ☑ **Limit transport** to medical necessity
- ☑ Isolate for **duration of stay**

Pro Tip: Do not perform test-of-cure

- ☑ **Develop workflows** for various disciplines entering *C. diff* patient rooms

References:
1. Gilboa M, Houri-Levi E, Cohen C, Tal I, Rubin C, Feld-Simon O. Environmental shedding of toxigenic *Clostridioides difficile* by asymptomatic carriers: a prospective observational study. *Clin Microb and Infect*. 2020; 26, 1052-1057
2. Cohen SH, Gerding DN, Johnson S, Kelly CP, Loo VG, McDonald LC, et al. Clinical Practice Guidelines for Clostridium difficile Infection in Adults: 2010 Update by the Society for Healthcare Epidemiology of America (SHEA) and the Infectious Diseases Society of America (IDSA). *ICHE*. 2010; 31(5), 431-455.

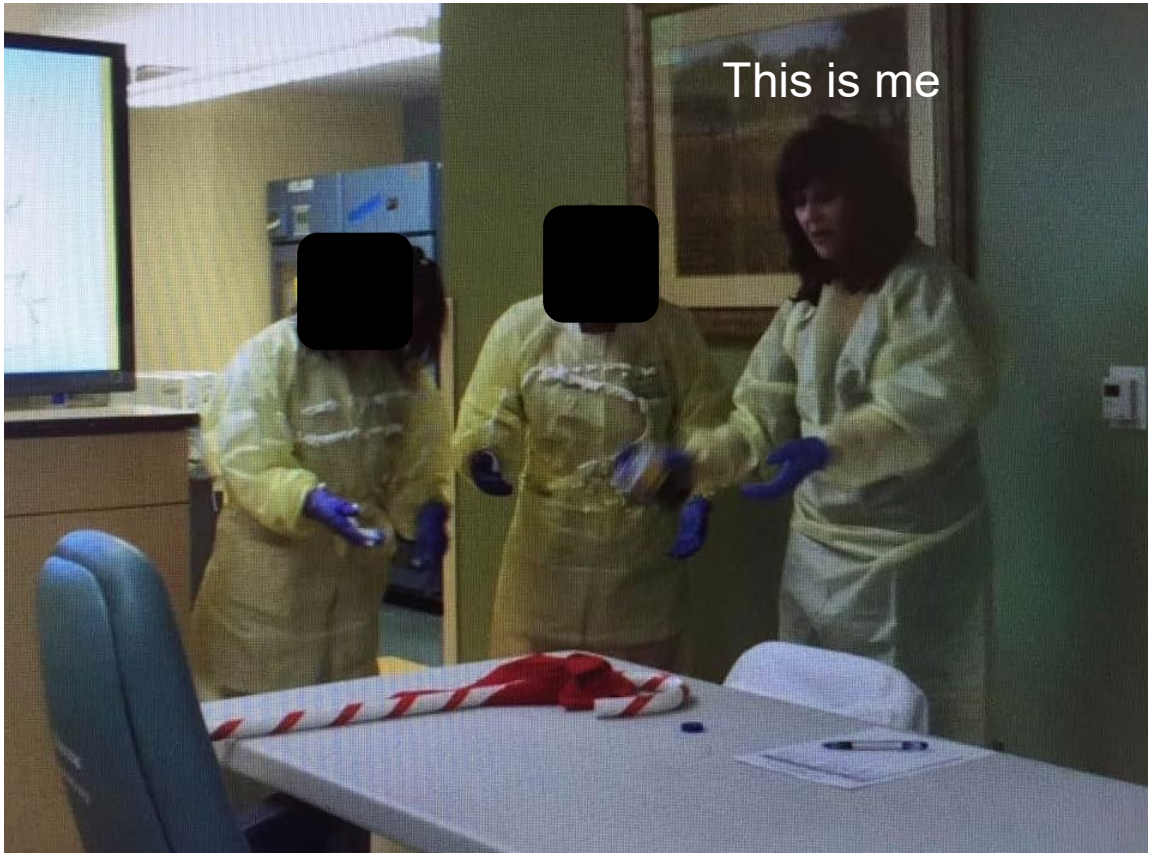
Proper PPE Donning/Doffing: Leveraging AI

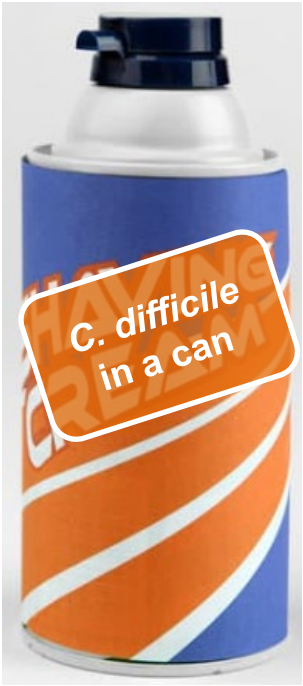


AI “mirror” on a portable tablet

Source: Blue Mirror

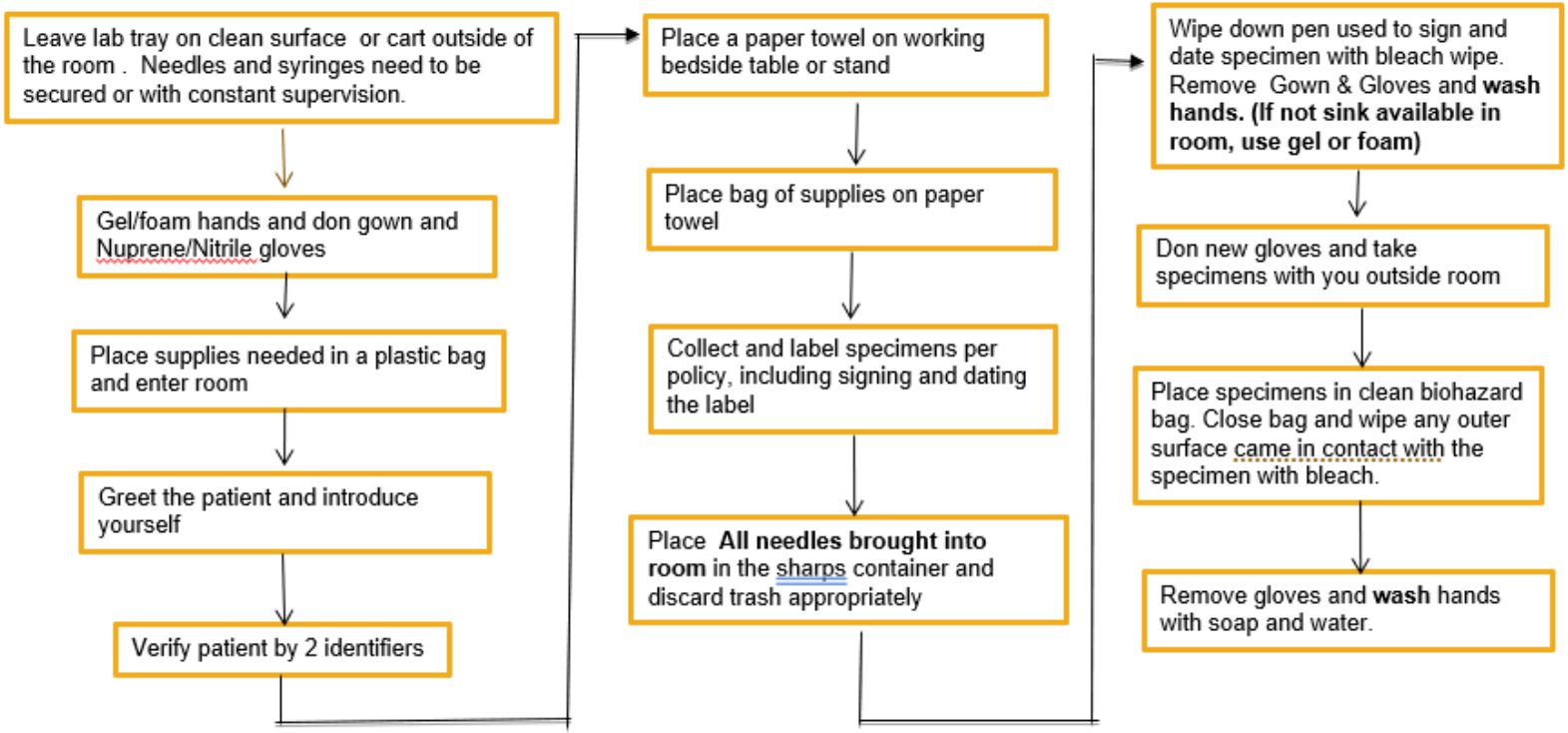
Pro Tip: PPE Donning/Doffing Training





Pro Tip: *C. diff* Workflows

Lab Draws for Enhanced Contact Precaution Rooms



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Diagnostic Stewardship

Diagnostic Stewardship: A Decision Algorithm

STOP!

Explained loose stool
(Do not test!)

In the prior 24hr did the patient have:

- Colon or small bowel surgery
- New tube feed start
- Bowel prep
- Enema
- Laxative
- Stool softeners
- Cation exchange resins (e.g., kaexalte, etc)
- Gastrografin

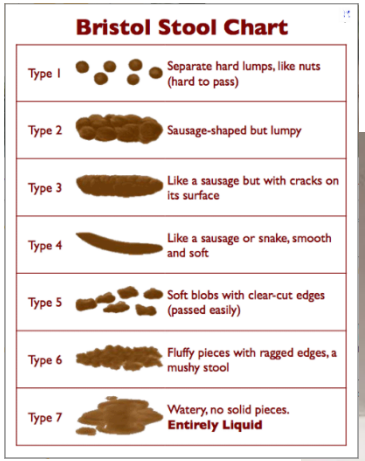
PROCEED

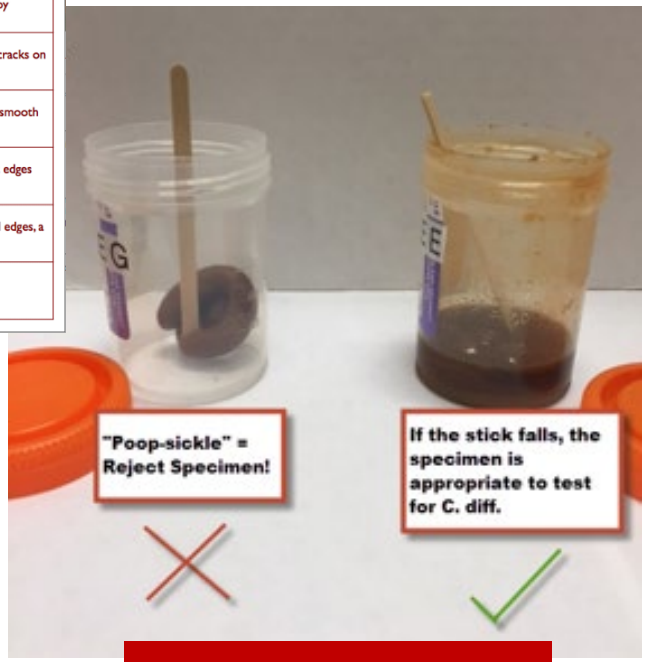
Unexplained loose stool
(isolate on 1st loose, collect on 3rd)

Many medications and conditions can cause loose stools, but the following would be considered unexplained loose stools:

- Administration of antibiotics
- Crohn's Disease
- Diverticulitis
- Irritable bowel syndrome
- Presence of colostomy
- GI Bleed
- >24hr since any of the explained loose stool conditions.

Diagnostic Stewardship: Diarrhea Defined





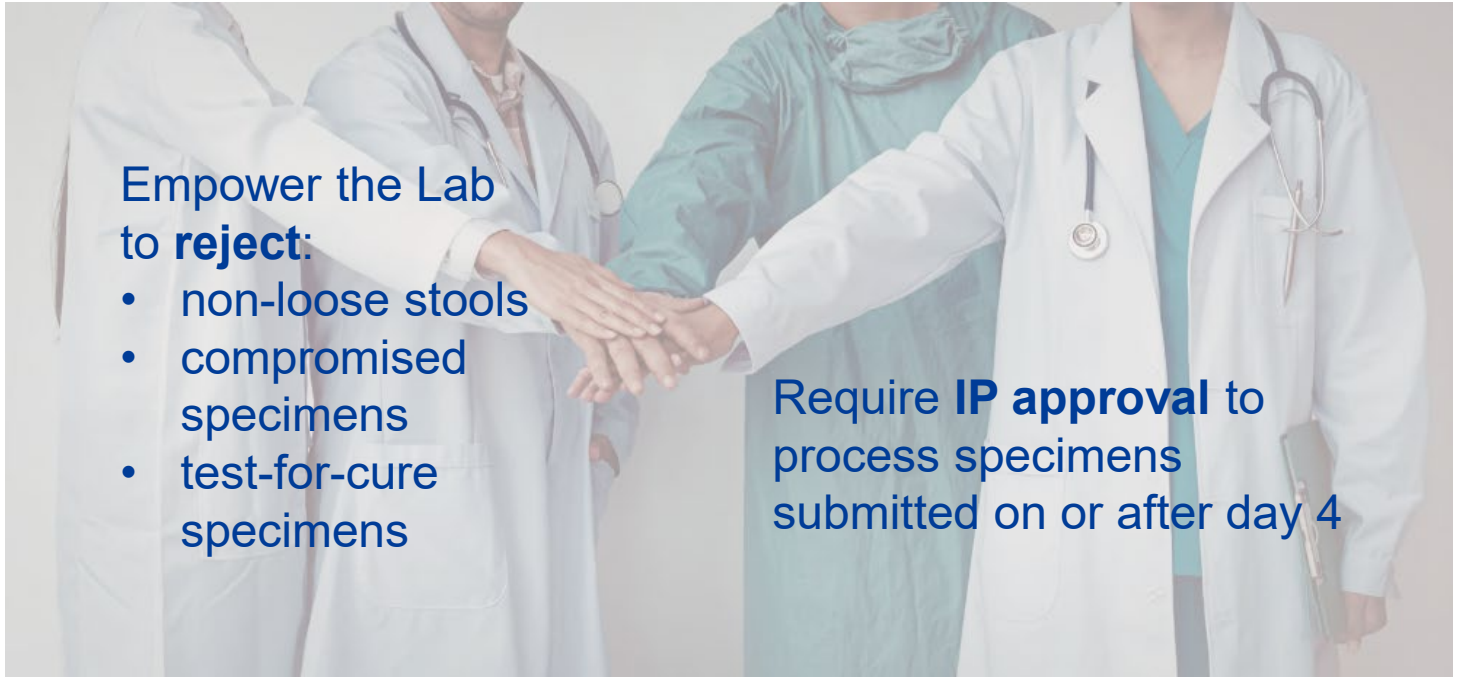
No “poopsicles”!

- Takes the shape of the container.
- “Poopsicle Test”: Does the stick stand or fall?
- No “fishing: specimen from toilet: specimen should not be mixed with urine.

Diagnostic Stewardship: Toxin Degradation

- Get specimen to the lab ASAP!
- **Toxin degrades** at room temp to undetectable **within 2hr** of collection.

Diagnostic Stewardship: Engage the Lab



Empower the Lab to **reject**:

- non-loose stools
- compromised specimens
- test-for-cure specimens

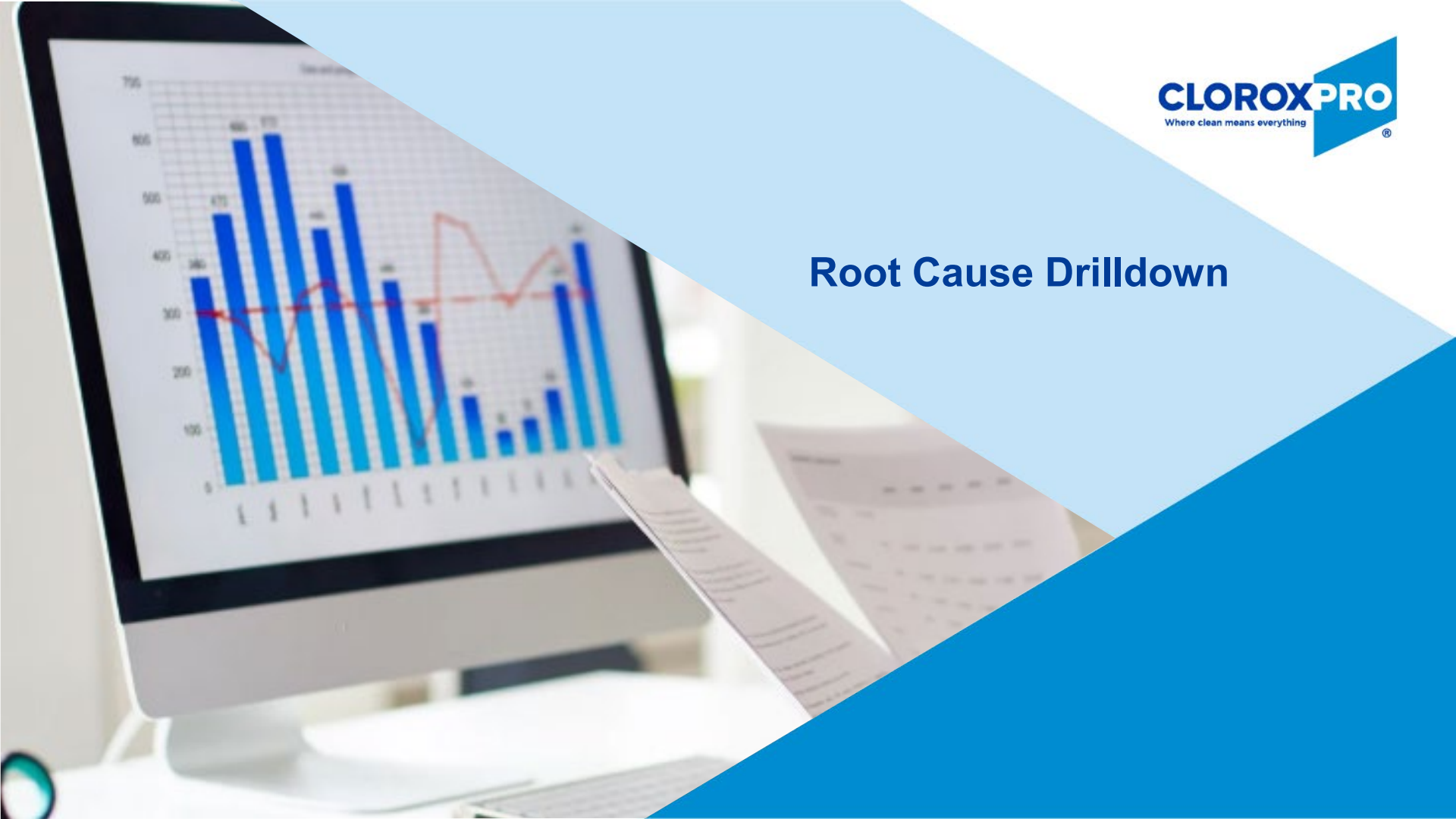
Require **IP approval** to process specimens submitted on or after day 4

Diagnostic Stewardship: 2-Step Testing

2-Step Testing Results Interpretation		
***C. diff* Antigen (GDH) or Toxin Gene (NAAT PCR)**	***C. diff* Toxin**	**Interpretation**
+	+	*C. diff* positive
-	-	*C. diff* negative
+	-	Indeterminant result (may be colonization)
-	+	Indeterminant result (true CDI unlikely)

References:

1. Di Bella S, Sanson G, Monticelli J, Zerbato V, Principe L, Giuffrè M, Pipitone G, Luzzati R. *Clostridioides difficile* infection: history, epidemiology, risk factors, prevention, clinical manifestations, treatment, and future options. Clinical microbiology reviews. 2024; *37*(2), e0013523. https://doi.org/10.1128/cmr.**00135-23**.
2. IDSA/SHEA. Clostridium difficile Infection in Adults and Children, updated Feb 2026 [Internet]. [cited 2026 Apr 13]. Available from GuidelineCentral.



Root Cause Drilldown

C. diff Drill Down Tool

DEMOGRAPHICS
ATTRIBUTATION MONTH (IF PREVIOUS ADMISSION, THIS DATE IS DISCHARGE DATE OF MOST RECENT ADMISSION WITHIN 4 WEEKS)
PATIENTS PHOTO HERE
MRN
LAST NAME
FIRST NAME
AGE
SEX
ADMITTING DIAGNOSIS
DATE/TIME ADMIT
PRIOR ADMISSION DATES IN P
DIAGNOSIS FOR THAT HOSPIT/
DISCHARGE DISPOSITION FOR STAY

INFECTION PREVENTION REVIEW
1. DATE/TIME OF C DIFF (+)
2. NHSN UNIT OF ATTRIBUTION FOR PUBLI REPORTING *(SEE CRITERIA AT BOTTOM OF THIS TOOL)*
3. UNIT OF C. DIFF ACQUISITION (ACCOUNTABLE UNIT) (UNIT PATIENT WAS ON 72HR PRIOR TO DIARRHEA ONSET - BACK FROM 1ST UNEXPLAINED LOOSE STOOL – SEE #3 ABOV *(SEE CRITERIA AT BOTTOM OF THIS TOOL)*
4. IF COLLECTED BEFORE STOOL #3 WAS IT BECAUSE PT C/O LOOSE STOOLS AT HOM PRIOR TO ADMISSION?
5. DATE/TIME OF 1ST *UNEXPLAINED* LOOSE STOOL
6. DATE/TIME OF 2ND *UNEXPLAINED* LOOSE STOOL
7. DATE/TIME OF 3RD *UNEXPLAINED* LOOSE STOOL *(Any loose or liquid stool documented within 1 hour of the specimen being sent will be considered the third stool)*
8. DATE/TIME OF C. DIFF AG/TOXIN ASSAY

NURSING REVIEW **Ensure that responses reflec
40. NHSN UNIT OF ATTRIBUTION FOR PUBLIC REPORTING *(SEE CRITERIA AT BOTTOM OF THIS TOOL)*
41. UNIT OF C. DIFF ACQUISITION (ACCOUNTABLE UNIT) (UNIT PT ON 72HR PRIOR TO DIARRHEA ONSET - COUNT BACK FROM 1ST UNEXPLAINED LOOSE STOOL – SEE #3 ABOVE) *(SEE CRITERIA AT BOTTOM OF THIS TOOL)*
42. DATE/TIME OF (+) C. DIFF RESULT
43. **ANSWER YES OR NO:** IS THE CASE H ACQUIRED: WAS THE POSITIVE C. D RESULT ON OR AFTER **CALENDAR** D ADMISSION? IF YES, THE CASE IS HC ACQUIRED.
44. ANSWER EXPLAINED OR UNEXPLAI THE STOOL UNEXPLAINED BASED C DIFF ALGORITHM. **(NOTE: IF NONE OF THE CRITERIA II STOP SIGN BELOW MET, THAN THE DIARRHEA IS CONSIDERED UNEXPL**

PHARMACY REVIEW
69. WAS THE PT PUT ON ANTI-DIARRHEAL MED DURING THIS ENCOUNTER (Y/N)?
70. DID PT RECEIVE ORAL OR IV ANTIBIOTICS WITHIN 30 DAYS PRIOR TO POSITIVE C DIFF?
71. IF YES, PLEASE LIST ALL ANTIBIOTICS GIVEN BEFORE C. DIFF DX (DRUG, DOSE, DATES GIVEN, INDICATION)
72. FOR EACH INDICATION, WAS THERE A MATCHING CULTURE (TO HELP DRIVE ANTIBIOTIC SELECTION)?
73. WAS THE ANTIBIOTIC SELECTION(S)

C. diff Drilldown Spreadsheet

			Nursing Process			EVS Process	
Month Identified	Attributable Unit	Hospital or Community Onset	Explained or unexplained loose stool	Isolated on 1st loose stool?	Collected on 3rd loose stool	Sporicidal used	Average ATP score pass rate for the month (target ≥90%)
Jan	ICU	HO-CDI	Unexplained	Yes	Yes	Yes	92%
Feb	Med-Surg	HO-CDI	Explained	Yes	Yes	No	72%
Feb	Med-Surg	HO-CDI	Explained	No	No	No	76%
Feb	Med-Surg	HO-CDI	Unexplained	No	No	Yes	74%
Mar	Tele	CO-CDI	Unexplained	Yes	Yes	Yes	95%

Table is over-simplified for illustrative purposes

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C. diff Drilldown Spreadsheet

			Nursing Process			EVS Process	
Month Identified	Attributable Unit	Hospital or Community Onset	Explained or unexplained loose stool	Isolated on 1st loose stool	Collected on 3rd loose stool	Sporicidal used	Average ATP score pass rate for the month (target ≥90%)
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Feb	Med-Surg	HO-CDI	Explained	No	No	No	76%
Feb	Med-Surg	HO-CDI	Unexplained	No	No	Yes	74%
Mar	Tele	CO-CDI	Unexplained	Yes	Yes	Yes	95%

Table is over-simplified for illustrative purposes

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Where clean means everything

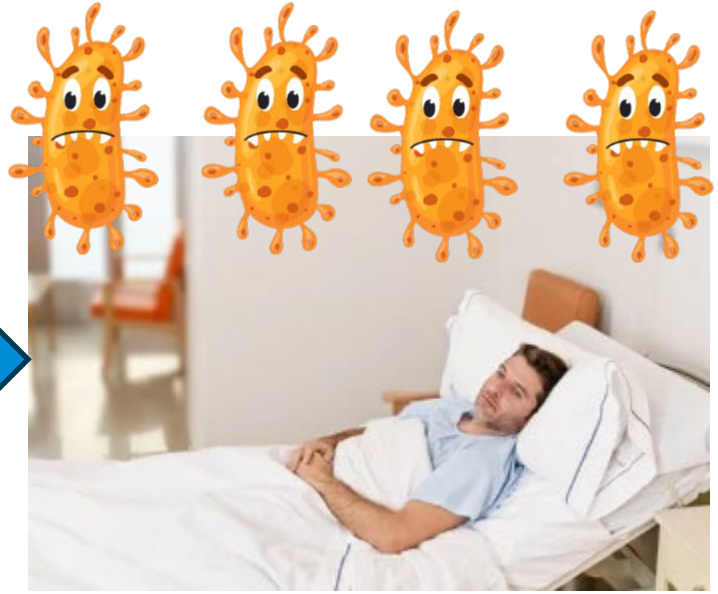
A Focus on Cleaning & Disinfection

Blind Spots in Disinfectant Selection

- Use a sporicidal disinfectant from EPAs List K.
- Isolation signage should state which disinfectant to use.
- Include contact time on isolation signage.
- Stock sporicidal disinfecting wipes in isolation carts.
- Audit isolation rooms (right wipe on the wall).
- Nursing should not remove the isolation sign at discharge.

Blind Spot: The Risk to the Next Patient

4-fold CDI risk for next patient



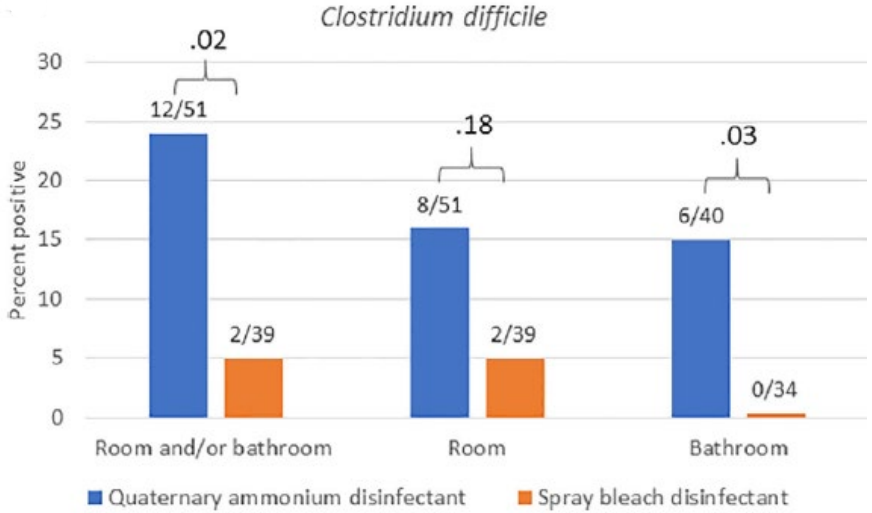
C. diff patient

Next patient to occupy the room

Reference: Mitchell B, McDonagh J, Dancer S, Ford S, Sim J, Sultanmuhammed BT. Risk of organism acquisition from prior room occupants: An updated systematic review. Infect Dis Health. 2023 Nov;28(4):290-297.

Impact of bleach disinfectant for all discharge cleans

C. diff from surfaces in non-*C. diff* rooms was **reduced from 24% to 5%** when **bleach** was used for <u>all</u> discharge cleans.



Reference: Wong YKN, Alhmidi H, Mana TSC, Cadnum, JL, Jencson AL, Donskey, CJ. Impact of routine use of a spray formulation of bleach on Clostridium difficile spore contamination in non-C difficile infection rooms. AJIC. 2019 Jul;47(7):843-845

Blind Spot: Dilutable Disinfectants

107 automated dispensers tested		80 in-use disinfectants tested	
			
49% had correct dilution	51% had too high or too low dilution, or no disinfectant	61% had correct dilution	39% had too low dilution, no disinfectant, or the wrong disinfectant

Takeaways

- Dispensing machines need oversight and consistent checks for accuracy.
- Consider **ready-to-use disinfectants** as a less error-prone alternative.

Key Findings

- None of the hospitals reported routine monitoring of disinfectant dispensers
- 9 of 10 hospitals had 1 or more systems dispensing lower-than-expected disinfectant concentrations
- 8 hospitals had dispensers that delivered product with no detectable disinfectant
- Approximately 27% of all automated dispensers delivered product with lower-than expected disinfectant concentrations
- 14% of all dilution systems contained no detectable disinfectant

Reference: Donskey CJ, Cadnum JL, Kaple C, Saade EA, Ray AJ, Zabarsky TF, et al. Dilution dysfunction: evaluation of automated disinfectant dispenser systems in 10 hospitals demonstrates a need for improved monitoring to ensure that correct disinfectant concentrations are delivered. *ICHE*. 2024;45(11):1362-1365. doi:10.1017/ice.2024.148

Blind Spots: *Cleaning Process*

- ☑ Is a **2-step cleaning and disinfection process** in place?[1]
- ☑ Are isolation rooms being cleaned **twice daily**?[2]
- ☑ Is **EVS cleaning equipment being disinfected** (e.g., mop handles, etc) before returned to the EVS cart?
- ☑ Are **clinical staff** using the correct (e.g., sporicidal) disinfecting wipe?
- ☑ Is **mobile/portable medical equipment** being *consistently* cleaned between patients?
- ☑ Are **cleaning responsibilities** outlined?

Common high-touch surfaces around the bed space

References:
1. EPA. Methods and Guidance for Testing the Efficacy of Antimicrobial Products Against Spores of C. diff on Hard Non-Porous Surfaces, Sept 2022 [Internet]. [Cited 2026 Apr 14]. Available from EPA.
2. CDC. HAIs: Environmental Cleaning Procedures, Table 25 [Internet]. [cited 2026 Apr 14]. Available from CDC.

Pro Tip: Cleaning Responsibility Grids

CLEANING RESPONSIBILITY GRID

"Because if it's everyone's responsibility, it's no one's responsibility"

DEPT: _____

WHAT	WHEN	WHO	HOW	
ITEM	**CLEANING FREQUENCY**	**RESPONSIBLE DISCIPLINE**	**APPROVED DISINFECTANT (& CONTACT TIME)**	**EQUIPMENT MANUFACTURERS IFU'S**
Mobile vital signs machine	After each patient, when visibly soiled, any time in doubt	Nursing assistant	Product X at 1 min	Cleaning instructions.docx
IV Pump	At discharge	EVS	Product Y at 2 min	Cleaning instructions.docx

Dept Manager: _____ Date: _____

EVS Manager: _____ Date: _____

Blind Spot: Mobile/Portable Medical Equipment

Clinical staff also have cleaning responsibilities!

- Only **16%** of mobile equipment was cleaned between patients.
- **36%** of the time, this equipment moved *directly* into another patient room.

"You touch it or move it, you clean it!"

Reference: Donskey, C. Lessons learned during collaborations between infection prevention and EVS, Oct 14, 2025. Available from CloroxPro.

Blind Spot: Not Enough Focus on Ancillary Areas

Ancillary Depts

- Do they have PPE?
- Is PPE donned/doffed correctly?
- Do they have sporicidal disinfecting wipes readily available?
- Do staff know/adhere to the contact time?
- Do staff know to wash hands with soap and water?
- Where is the nearest sink?
- *directly* into another patient room.

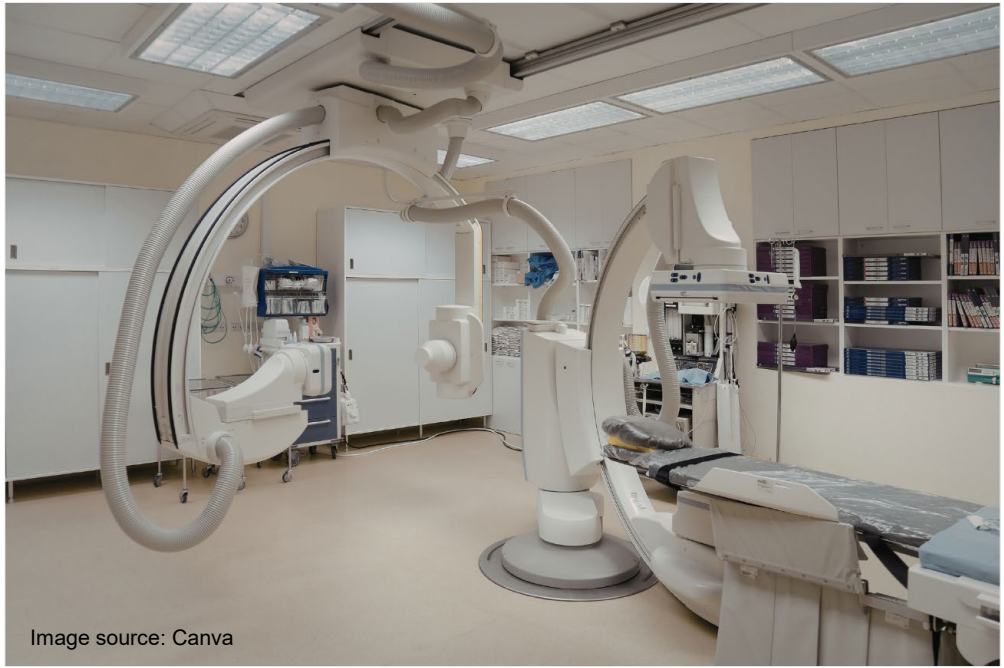


Image source: Canva

What About Walls in *C. diff* Rooms?

There is **no requirement or reco** beyond the minimum:

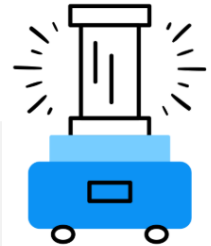
- Spot clean as needed
- Clean walls per a set schedule (e.g., weekly, monthly).

Rationale:

- Walls are a **low-touch surface** – low risk for soiling/contamination
- No epi links to walls in the literature.

Source: CDC. HAIs: Environmental Cleaning Procedures, Mar 19, 2024 [Internet]. [cited 2026 Feb 12]. Available from CDC.

What about UV as an adjunct?



Study Findings

UV-C and PX-UV did not significantly reduce *C. diff* contamination after bleach cleaning

CFUs showed no sig
Floors and chair arm ed the most contaminated sites

Key Takeaways

UV d rove outcomes when ricidal bleach

Shadowing and room layout likely limit UV reach in real-world settings.

Adding **UV was no better** than bleach alone at reducing *C. diff* contamination

Reference: Fourman N, Houri-Levi E, Meltzer E. *et al.* Efficacy of UV-C devices in *Clostridioides difficile* environmental decontamination in a hospital setting: a before-after study. *BMC Infect Dis. 2026; (***26)** 295. https://doi.org/10.1186/s12879-025-12415-y

Blind Spot: Standardized Cleaning Process

EVS PROTOCOL & CHECKLIST	
Check (√)	**Preparing the Room for Cleaning:**
	1. Take any patient belongings that may have been left behind to Nurses station.
	2. Place "Room Closed for Cleaning" sign in entry way (to keep others from entering during cleaning).
	3. Perform hand hygiene and put on PPE (gloves and gown).
	4. Discard non-cleanable items per facility protocol. Examples: a. Disposable pillows (including those in the closet) b. Unused Nursing supplies (e.g., dressings, EKG pads, etc.) c. Paper products (e.g., toilet paper, paper towels, toilet seat covers, etc.) d. Opened boxes of gloves e. Dry erase marker and eraser
	5. Place linens (soiled or clean) and privacy curtain in the linen hamper.
	6. Remove trash, red bag waste and linens from room. Clean and disinfect the receptacles.
	7. Remove gloves and wash hands with soap and water. Put on new gloves.
	8. Reline trash/linen hamper with new bags.
Cleaning & Disinfecting Steps: Two steps are required to clean a *C. diff* room (even if using a 1-step cleaner disinfectant). **Step 1 (cleaning):** Use a detergent or any EPA-registered healthcare-grade cleaner disinfectant. **Step 2 (disinfection):** Use a sporicidal disinfectant (such as bleach). For both steps, clean in a methodical manner. **Best Practices:** ▶ Clean in a clockwise or counter-clockwise fashion around the room ▶ Clean from high to low ▶ Move from cleaner to dirtier surfaces	
	9. Complete high dusting using a dampened microfiber cloth or ready-to-use disinfecting wipes.
	10. Vertical spaces: a. Clean/Disinfect all items located on the walls (light switches, TV, etc.). b. Spot clean walls, baseboards, doors, windows and ceilings as needed.
	11. Clean/Disinfect all furniture and horizontal surfaces. Examples: chairs, bedside tables, computers on wheels, window sills, etc.
	12. Clean/Disinfect bed area, mattress (top and bottom), bed rails x 4, head and foot board, frame, over-bed table, nurse call device/cords, telephone and cords.
	13. Clean/Disinfect patient equipment to remain in the room, including thermometer, IV pole, IV pump, walker and pulse ox probe.
	14. Clean/Disinfect all cords and monitor wires. Coil neatly to keep off floor.

Check (√)	**Restroom:**
	15. Discard any remaining paper products (toilet paper, paper towels, tissue, toilet seat covers).
	16. Clean/Disinfect high-touch surfaces, including lights, soap dispenser, paper towel dispenser, toilet seat cover dispenser, toilet paper roll cover, etc.
	17. Clean/Disinfect all surfaces, including sink, fixtures, storage cubby, grab bars, pull cord, toilet handle, bedpan sprayer arm, shower walls and faucet handles.
	18. Clean/Disinfect commode chair/bucket.
	19. Clean/Disinfect toilet bowl and under rim with toilet brush. Discard toilet brush upon completion.
	20. Mop shower floor.
	21. To prevent *Legionella* growth, allow hand-held shower head and wand to hang in a downward position to drain any standing water.
	22. Clean mirror with glass cleaner.
	23. Remove all PPE and wash hands with soap and water. Put on new PPE.
Check (√)	**Complete Room Preparation:**
	24. Refill soap and hand sanitizer dispensers; replace paper products, bath linens and boxes of gloves.
	25. Hang new privacy and shower curtain.
	26. Make bed.
Check (√)	**Floor Care:**
	27. Dust/Mop floor.
	28. Post "Wet Floor" sign.
	29. Mop floor using microfiber mop beginning at far corner of the room, under bed and then moving toward the bathroom and the door.
Check (√)	**Finishing Steps:**
	30. Clean/Disinfect reusable EVS equipment that will be brought out of room (mop handle, ladder, etc.).
	31. Remove PPE and wash hands with soap and water before exiting room.
	32. Discard bucket of disinfectant and mop water. Replace mop head.
	33. Perform quality monitoring (e.g., ATP, etc.) per facility policy.
	34. Perform adjunct disinfection (e.g., UV or electrostatic disinfection) per facility policy.

Available at CloroxPro.com

Additional Resources

C. diff Resource List

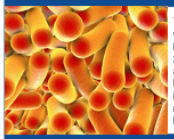
- Strategies to prevent CDI in acute-care hospitals: 2022 Update [SHEA/IDSA/Joint Commission]
- Clinical Guidance for *C. diff* Infection Prevention in Acute Care Facilities [CDC]
- CDI Implementation Guide: Links to Resources [CDC].
- *C. diff* Toolkit for Long-Term Care Facilities, 2024 [Minnesota Dept of Health]
- APIC Text: *Clostridioides difficile* and Pseudomembranous Colitis [APIC – with subscription]

Pathogen Education Sheet

Clostridioides difficile

Pathogen Education Sheet

Overview



The *Clostridioides difficile* ("*C. diff*") bacterium is the leading cause of antibiotic-associated diarrhea or *C. diff* infection (CDI), which can be life-threatening.[1] CDI is associated with increased length of hospital stay, costs, morbidity, and mortality.[2] Each year in the US, *C. diff* causes >450,000 infections and 12,000–30,000 deaths.[2] Attributable costs of inpatient CDI in 2025 dollars are estimated to be as high as $23,632[3] per episode.[1] Persons at highest risk for CDI are those exposed to antibiotics, had a lengthy healthcare stay, are elderly, or have underlying serious illness.[1] While it is the most common healthcare-associated infection (HAI), it is increasingly diagnosed within community settings.[1,2] Early identification and implementation of infection prevention and control measures are crucial for containment.[1] Contaminated surfaces and medical equipment in healthcare facilities can be reservoirs for *C. diff* spores which can survive for extended periods.[1] Robust cleaning and disinfection using a sporicidal disinfectant from EPA's List K is critical to reduce transmission.[1]

About the Pathogen & Infection Control Measures

Infectious Agent (Pathogen)[1]	**Agent Type:** Bacteria **Synonym(s):** *C. diff* **Characteristics:** Gram-positive toxin-producing spore-forming bacterium; obligate anaerobic bacillus.	**Taxonomy:** ▶ **Family:** *Peptostreptococcaceae* ▶ **Genus:** *Clostridioides* ▶ **Species:** *difficile* ▶ **Hypervirulent Strain:** NAPI/027
Infectious Characteristics Definitions: ▶ **Infectious dose**—number of organisms necessary to cause disease. ▶ **Incubation period**—the time from exposure to infection w/symptoms. ▶ **Period of communicability**—time when a pathogen can be transmitted from one person to another ▶ **Mortality rate**—the number of deaths due to a disease divided by the total population.	**Risk factors:**	Antibiotic exposure, gastrointestinal surgery/manipulation, long healthcare stays, serious underlying illness, immunocompromising conditions, advanced age.[4]
	Infectious dose:	Considered to be very low, potentially less than 10 spores.[5]
	Incubation period:	Not clearly defined.
	Communicable period:	Until 48hr after diarrhea resolves.[6]
	Signs & symptoms:	Watery diarrhea (≥3 loose stools a day for several days), fever, nausea, loss of appetite, and abdominal pain or tenderness.[4]
	Duration of illness:	Varies. Initial symptoms often improve within days of starting appropriate antibiotic treatment. Complete clearance can take 1–2 weeks. Recurrence is common.[4]
	Severity of illness and Mortality Rate:	Ranges from asymptomatic (colonization) to diarrhea and colitis to life-threatening illness.[1] 30-day mortality rates for hospitalized patients range from 6% to 11%.[7]
Reservoir: where a pathogen normally lives and grows (e.g., humans, water, etc)	*C. diff* is a human pathogen shed in the feces of colonized or infected persons. Any surface, device or material that becomes contaminated with feces could serve as a reservoir for the *C. diff* spores.[8]	
Mode(s) of Transmission How the Infection Spreads	Oral-fecal route, meaning people get infected by ingesting the bacteria or its spores after touching contaminated surfaces or objects. *C. diff* spores can be transmitted by unclean hands of healthcare workers.[4]	
Survival Time on Surfaces	*C. diff* spores can survive on surfaces for prolonged periods (up to 5 months).[8]	
Immunization/Prophylaxis/ Treatment	There is no vaccine for *C. diff*, although multiple vaccine candidates are in development. Treatment is typically a 10-day course of appropriate antibiotics (e.g., oral vancomycin or fidaxomicin). For persistent CDI, fecal microbial transplantation (FMT) may be recommended.[4,9]	
Infection Control Measures for Healthcare Settings[10]	▶ **Isolation Precautions:** Contact Precautions, single patient room (ok to cohort CDI patients together), dedicated toilet/patient care equipment. Continue precautions until 48hr after diarrhea has resolved (alternatively, continue for duration of stay). ▶ **PPE:** Gown and gloves ▶ **Hand Hygiene:** Gel in, wash out	▶ **Patient Transport:** Limit to only medically necessary. Clean cover gown on patient. Notify the receiving dept or facility. ▶ **Linen:** Handle per routine; Standard Precautions. ▶ **Waste management:** per routine ▶ **Other:** Bathe patient daily
Cleaning & Disinfection	For all cleaning and disinfection opportunities, follow a 2-step process using an intermediate-level sporicidal disinfectant (EPA List K). Perform occupied room cleaning and disinfection of Contact Precautions rooms twice daily with special attention to high-touch surfaces. Clean and disinfect all shared equipment before use on another patient. Clean and disinfect other areas visited by the patient like radiology, ED, and physical therapy.[10,11]	

Available at CloroxPro.com

Other C. diff Tools

- ❑ Drilldown tool
- ❑ Line list
- ❑ C. diff Workflows
- ❑ Cleaning Responsibility Grid
- ❑ C. diff room cleaning protocol/checklist

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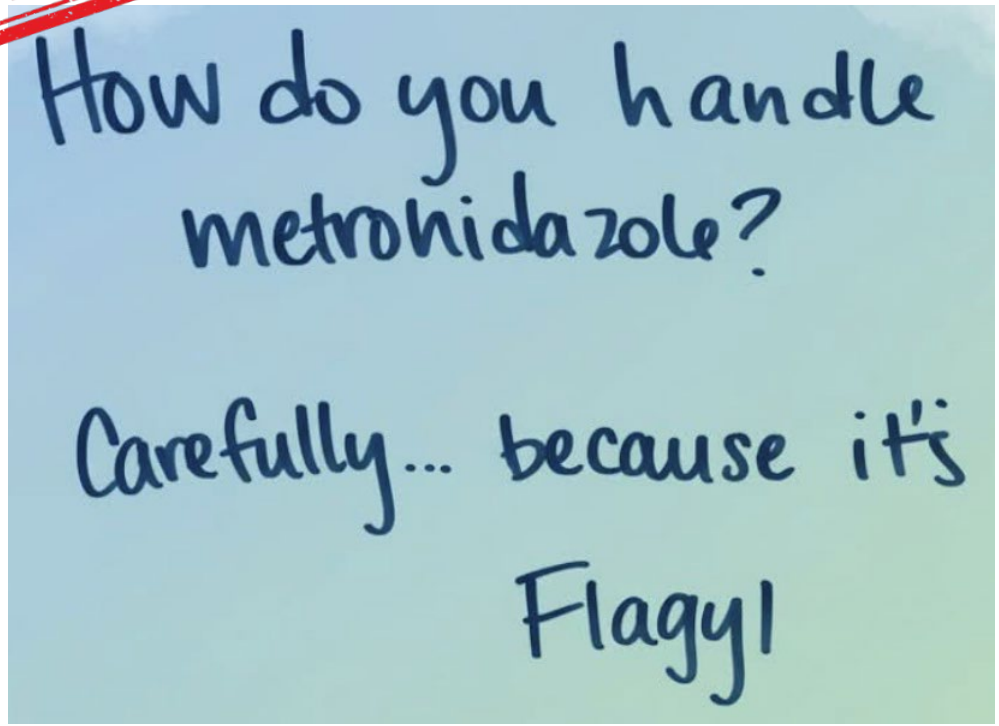
Closing

Key Takeaways

- The epidemiology of *C. diff* has changed.
- Small operational delays create big transmission risks.
- Environmental cleaning excellence matters.
- Practical tools were shared to close the gap.

Questions?



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Speaker Bio

Doe Kley, RN, MPH, T-CHEST, LTC-CIP, CIC

Infection Prevention Fellow
Clinical and Scientific Affairs, Clorox Healthcare

Doe Kley is an Infection Prevention Fellow within Clorox Healthcare's Clinical and Scientific Affairs team and is passionate about proving practical infection prevention solutions for healthcare professionals. Her role focuses on providing consultative services and developing practice tools using her 25 years of clinical expertise in acute care infection prevention from working in large healthcare systems, including Intermountain Healthcare in Utah and Kaiser Permanente in California.

Doe Kley is a registered nurse with an undergraduate degree in Microbiology, and a Master of Public Health from the University of Nevada . She taught an infection control course for the Ohio State University (OSU) from 2019-2022, and she recently was awarded "Community Educator of the Year" through Sigma Theta Tau international nursing honor society. Doe is dual-board certified in infection prevention and epidemiology in both acute and long-term care. She is also certified to train EVS through Association for the Healthcare Environment (AHE). Doe is an active member of AHE, the Association for Professionals in Infection Control & Epidemiology (APIC), the Association of periOperative Registered Nurses (AORN), and the Society for Healthcare Epidemiology of America (SHEA). She served on the Certification Board of Infection Control and Epidemiology (CBIC) from 2020-2024 and is an active member of the Advisory Council for the Pearce Foundation Environmental Services Optimization Playbook (EvSOP).

Session Description

Despite sustained focus and decades of guidance, *Clostridioides difficile* remains the most common healthcare-associated infection and an ongoing challenge for hospitals. Many organizations have achieved meaningful reductions, yet “breakthrough” transmission persists - often driven not by lack of effort, but by overlooked operational blind spots.

This session examines where *C. diff* prevention programs may still be faltering and why doing more of the same may no longer be enough. Drawing on evolving epidemiology, frontline workflow realities, and real-world IPC–EVS intersections, this webinar will highlight prevention gaps that have surfaced outside traditional playbooks. While environmental cleaning and disinfection will be explored in depth, the discussion will also address complementary blind spots, including but not limited to delayed identification and isolation, communication failures, diagnostic stewardship, and care transitions.

Participants will leave with practical, actionable strategies that emphasize universal controls, early interventions, and reliable execution across care transitions - closing gaps that matter for reducing hospital-onset *C. diff* infections.