

## EXECUTIVE BRIEF

# The LTC Transfer Vector

# Closing the Highest Risk CDI Entry Point in Your Hospital

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A targeted \$33.6K investment to address \$140K–\$160K in avoidable cost exposure

### CFO Summary

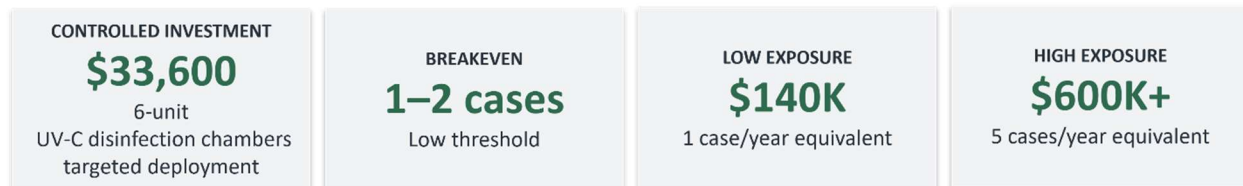
Long-term care transfer patients are a pathway for *Clostridioides difficile* (*C. diff*) colonization entering your hospital. This pathway is quantifiable and may be an unmitigated source of *Clostridioides difficile* infection-related (CDI) financial exposure entering through admissions, the ED, and high-acuity units. Clinical evidence shows meaningful colonization rates and conversion risk, while existing protocols do not address contamination carried on personal items — creating a persistent gap between clinical effort, and financial outcome.

A targeted AUVS deployment of UV-C disinfection chambers reframes this from an operational challenge to a risk containment decision: a one-time \$33.6K investment aligned to the highest-risk entry points, with breakeven at approximately 1–2 avoided CDI cases and a modeled 10-year cost exposure reduction of \$140K–\$600K+.

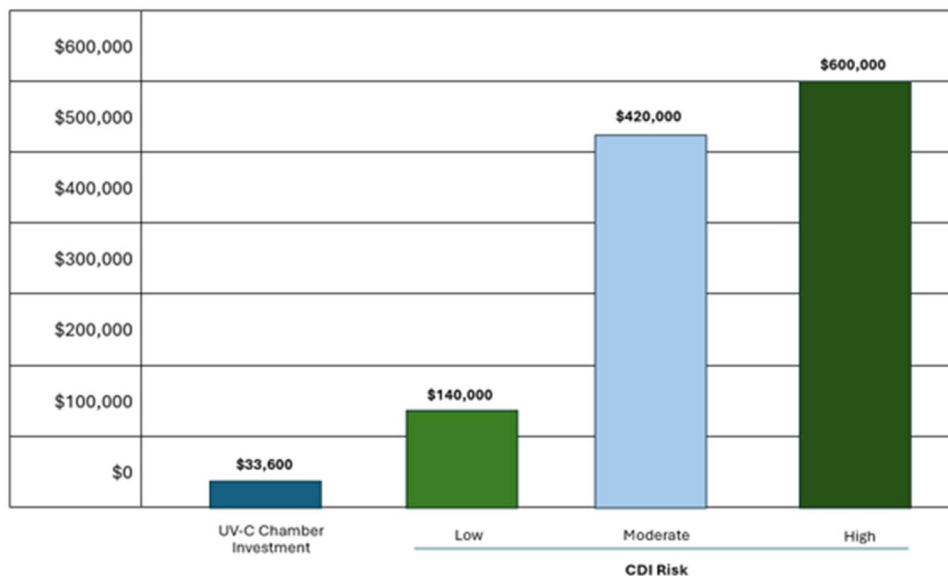
This is not an efficiency initiative, but a controlled intervention designed to reduce predictable, repeatable cost events.

### This is an uncontrolled, recurring cost driver entering the system.

Even a low CDI incidence creates immediate cost exposure — turning a clinical risk into a predictable, recurring cost profile.



10-Year Financial Position: Fixed AUVS Cost vs. CDI Exposure



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Financial model based on published attributable CDI cost per case (\$13.9K–\$30K) and representative 1–5 case-equivalent scenarios per year. Values are directional exposure ranges, not guaranteed savings; actual impact varies by facility. See sources for page 1 under citations..

## Executive Overview

Long-term care (LTC) resident transfers represent a concentrated and measurable CDI entry risk. Published data shows meaningful rates of asymptomatic *C. diff* colonization in this population, meaning patients can enter the hospital carrying spores without clinical detection at intake. Because spores persist on surfaces and high-touch belongings, this risk is not limited to the patient alone — it can be introduced through personal items such as mobile devices, bags, and footwear at the point of transfer.

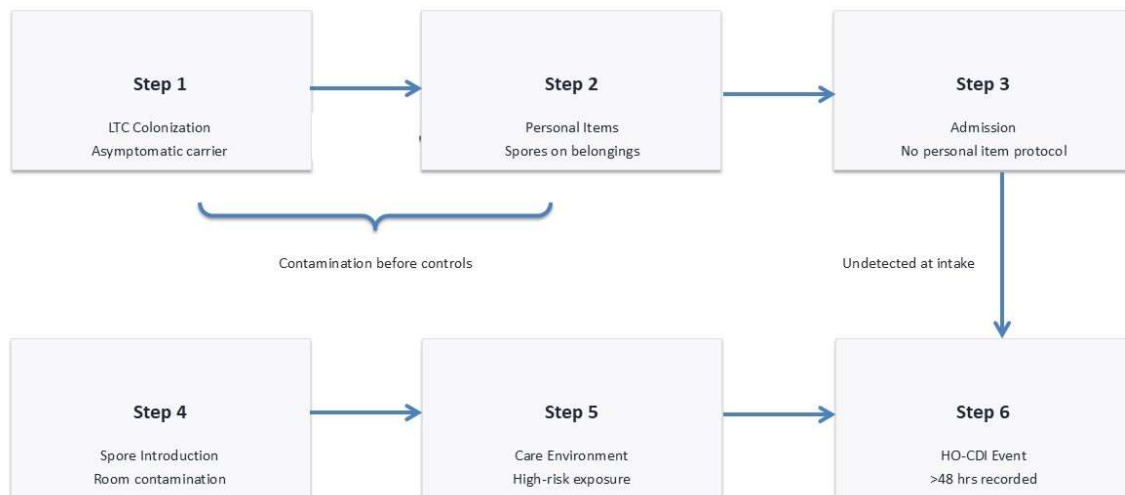
Existing infection prevention protocols are designed to manage hands, rooms, and known infections, but they do not consistently address contamination entering with LTC patients and their belongings during admission. As a result, risk can move from patient → objects → care environments before standard controls are applied.

Each CDI case creates a multi-layer cost extending length of stay, increasing isolation expenses, driving readmissions, and exposing the hospital to performance-based penalties and CMS reimbursement risk. This is not a random or isolated event profile; it is a recurring pathway where upstream exposure can translate into downstream financial consequences.

## How LTC Transfers Become CDI Risks Inside Your Hospital

Stepwise pathway from colonization to hospital-onset CDI

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**This is a recurring exposure pathway where contamination enters, spreads, and converts into hospital-onset CDI.**

## Clinical Evidence Supporting LTC Transfer CDI Risk

Each step in the pathway is supported by published clinical evidence

LTC populations represent a documented reservoir for C. diff colonization. Unlike symptomatic infection, colonization is often not detected at admission, allowing risk to enter and propagate within acute-care environments.

### LTC Colonization

More than 14.8% pooled asymptomatic carriage.  
Higher ranges reported in LTC settings.

Source: [PMC4338134](#)

### Transmission Potential

Asymptomatic carriers contribute to the spread.  
Genomic overlap between colonization and infection.

Source: [PMID 29848392](#)

### Conversion to CDI

Subset of colonized patients convert post-admission  
Progression documented within weeks

Source: [PMC28693636](#)

### Environmental Persistence

Spores persist for up to 5 months on surfaces.  
Movement documented via items + environment.

Source: [PMC5781798](#)

### Clinical Fact

Colonization not detected  
Transmission without symptoms  
Spores persist up to 5 months  
Conversion to CDI

### Operational Implications

Risk enters before controls  
Spreading without isolation trigger  
Environmental movement  
Clinical + financial impact

**This is a documented, recurring exposure pathway—not a theoretical risk.**

**Each step is supported by clinical evidence linking  
LTC colonization to hospital-onset CDI.**

## The Operational Gap — Where Current Protocol Scope Does Not Address Intake Risk

*Evidence-informed interpretation aligned with CDC / SHEA guidance*

Current infection prevention protocols are designed to manage **identified infections and environmental contamination within patient-care areas**. However, **colonization present at admission—particularly from LTC transfer populations—may not trigger enhanced control measures at intake**, allowing potential contamination pathways to enter the facility before escalation.

### What Current Protocols Address

- Hand hygiene
- Environmental cleaning & disinfection
- Contact precautions for CDI
- Isolation once infection is identified<sup>1</sup>

Enhanced measures typically begin after diagnosis.

### What Is Not Consistently Standardized

No standardized intake disinfection

- Personal belongings (phones, bags, textiles)
- Asymptomatic carriers at admission
- Contamination pathways before patient room placement<sup>2</sup>

**Not a primary focus of guideline controls.**

**Colonization may enter at admission, while enhanced controls are triggered later after infection is identified.**

**This creates an operational gap between intake and control activation.**

### Why This Gap Matters

- Contamination before isolation
- Variability across departments
- Manual, inconsistent mitigation
- Aligns with transmission evidence
- Leads to downstream CDI cases
- Drives recurring cost exposure

**This is not a failure of protocol—it is a gap in scope. Current systems manage identified infection but do not consistently address contamination risk introduced at intake.**

Aligned with CDC and SHEA/IDSA guidelines. Evidence-informed operational interpretation.

#### 1 Sources:

CDC: Guideline for Isolation Precautions  
SHEA/IDSA: Clinical Practice Guidelines for CDI  
CDC: C. difficile Infection resources for healthcare professionals

#### 2 Supporting Context:

CDC CDI resources (focus on symptomatic infection & environment)  
SHEA/IDSA guidelines (focus on diagnosed infection management)  
Literature: asymptomatic carriage & environmental persistence

### Controlled Solution — Closing The Intake Gap

A targeted, controlled disinfection checkpoint at intake

AUVS disinfection chambers establish a controlled intake disinfection checkpoint—addressing contamination at the point it enters the system, before standard infection control measures are triggered

**The Solution System**

**The UV Box**  
Enclosed UV-C disinfection chamber for personal items (phones, wallets, small devices).



**The UV Cube**  
Fast-cycle, repeatable process for larger personal item hygiene.



**Point Of Deployment**

- ED triage/intake
- ED bay /waiting
- Admission processing
- Acuity Unit Entries
- Staff locker rooms

Introduces a control point at entry, where contamination risk begins to translate into downstream cost exposure.

### Control The Risk or Continue Absorbing It

\$33.6K fixed investment vs \$140K–\$600K+ exposure

Uncontrolled Risk	Investment	Breakeven	Material Exposure
1. Undetected colonization at entry	3 UV Boxes + 3 UV Cubes  \$33,600 (one-time)	1–2 CDI cases avoided	\$140K–\$600K+ Exposure (10-year)
2. No standardized protocol			
3. Recurring exposure pathway			

**WHAT THIS CHANGES**

- Standardized intake control step
- Reduced variability in manual mitigation
- Addresses asymptomatic contamination risk
- Complements existing protocols
- Repeatable, measurable workflow
- Defined control point at intake

This is a targeted system that closes a defined operational gap at intake. It is an adjunct to existing prevention protocols.

**Unit Pricing & 10-Year Ownership**

3 UV Boxes + 3 UV Cubes deployment

**Deployment Costs**

The UV Box	3	\$2,200		<b>\$6,600</b>
The UV Cube	3	\$9,000		<b>\$27,000</b>
<b>Total Investment</b>			<b>Total Investment</b>	<b>\$33,600</b>

**Operating & Maintenance**

- Lamp replacement: ~\$252 per 2 lamps
- Rated lifespan: ~9,000 – 12,000 hours
- Maintenance: minimal (no complex servicing)

**10-Year Ownership (Estimated)****Capital: \$33,600****Estimated bulb replacement: ~\$4,000**-----  
**Total: \$37K – \$40K**

## Citations

Page 1: **Sources:** Attributable cost per CDI case based on AHRQ estimates and peer-reviewed meta-analyses (≈\$13.9K–\$30K per case). Exposure ranges represent scenario modeling using 1–5 case-equivalent CDI events per year. Breakeven reflects cases required to offset a \$33.6K one-time deployment. Values are directional and will vary by facility.