



# SOTERIA<sup>®</sup>

## BED BARRIER

Re-engineering **CLEAN** for Patient Surfaces

# CLINICAL EVIDENCE

### INDIANA HOSPITAL

**48%  
REDUCTION  
IN C. DIFF  
INFECTIONS**

Introduced Soteria Bed Barrier hospital wide in two long term, acute care hospitals (74 and 30 beds respectively) 71,000 patient day, pre-post study using barriers, changed at patient discharge, study controlled for patient age, acuity, hand washing & length of stay. 95% CI (47.1-48.6%).

Decreasing Clostridium difficile health care -associated infections through use of a launderable mattress cover October 20, 2015, DOI: <https://doi.org/10.1016/j.ajic.2015.07.002>

### 2019 NATIONAL APIC CONFERENCE SURVEY RESULTS

**52%  
HOSPITALS  
HAD BLOOD & BODY  
FLUIDS LEAK OUT  
OF MATTRESSES**

Demonstrated the prevalence of mattress failures resulting in stakeholder exposure. As well as the overwhelming use on one step disinfection processes and lack of MIFU compliance.

[https://www.ajicjournal.org/article/S0196-6553\(21\)00511-3/fulltext](https://www.ajicjournal.org/article/S0196-6553(21)00511-3/fulltext)

### KENTUCKY HOSPITAL

**43%  
REDUCTION  
IN C.DIFF  
INFECTIONS**

Introduced Soteria Bed Barrier hospital wide, 107,000 patient day, pre-post study using barriers changed at patient discharge; study controlled for patient age, acuity, hand washing and length of stay.

Use of a Launderable Bed Barrier and Antibiotic Stewardship to Decrease Hospital Onset Clostridioides difficile Infections in an Acute Care Hospital: A Retrospective Pre-Post Case Study. JHEOR.2019;6(3):196-2002 [jheor.org/article/11149-use-of-a-launderable-bed-barrier-and-antibiotic-stewardship-to-decrease-hospital-onset-clostridioides-difficile-infections-in-an-acute-care-hospital](https://doi.org/10.1149-use-of-a-launderable-bed-barrier-and-antibiotic-stewardship-to-decrease-hospital-onset-clostridioides-difficile-infections-in-an-acute-care-hospital)

### MIDWESTERN HOSPITALS

**72%  
OF MATTRESSES  
DAMAGED**

Five hospital audit resulted in 340 mattress covers, and an additional 183 mattresses being replaced, 174 had widespread staining in the mattress core.

Infection Control & Hospital Epidemiology (2021), 1-3 doi:10.1017/ice.2021.486 <https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/abs/hospital-mattress-failures-hidden-patient-danger/984706051765F38C3CCAC0167637926>

### INDIANA HOSPITAL

**DISINFECTANTS ARE  
INEFFECTIVE  
ON MATTRESSES**

Randomized controlled, sixty-six bed study in Indiana hospital demonstrates less than 1 log reduction achieved in terminal cleaning process. Bed deck was more contaminated after terminal cleaning. Mattresses & bed deck under barrier did not become contaminated after removal at patient discharge.

A randomized trial to evaluate a launderable bed protection system for hospital beds; Antimicrobial Resistance and Infection Control 2012;1:27 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3441859/>

### LAUNDRY PROCESS VALIDATION

**>99.9999%  
REDUCTION  
OF BACTERIA  
& SPORES**

Barriers laundered using Soteria laundry process in heavy soils; blood & urine removed Clostridioides difficile (C. diff) spores, Mycobacterium terrae (M terrae, methicillin-resistant Staphylococcus aureus (MRSA), Pseudomonas aeruginosa (P aeruginosa), Klebsiella pneumoniae (K pneumoniae).

Successful Removal of Clostridioides difficile Spores and Pathogenic Bacteria From A Launderable Barrier Using a Commercial Laundry Process; <https://journals.sagepub.com/doi/10.1177/1178633720923657>

### VIRGINIA HOSPITAL

**NO  
INCREASE  
IN SKIN INJURIES**

Demonstrated decrease in C. diff infections, wound infections and no increase in pressure related injuries, a viable, safe solution for infection control and patient safety.

Innovation in the Village: Wounds, Clostridium difficile and a Mattress Cover, WOCN-2018 Conference Poster Presentation: Dr. Dea Kent [https://trinityguardian.com/wp-content/uploads/2018/06/WOCN\\_Poster.jpg](https://trinityguardian.com/wp-content/uploads/2018/06/WOCN_Poster.jpg)

### VALUE ANALYSIS & UTILIZATION MANAGEMENT

**WHAT VALUE  
ANALYSIS LEADERS  
NEED TO  
KNOW  
ABOUT MATTRESS  
CONTAMINATION**

Article reviews current state of mattress re-processing and costs associated for commonly used process, MIFU compliance, & the resulting impact on hospital budgets, and patient outcomes. A 40 bed ICU can save \$125k through use of Soteria Bed Barrier.

<https://valueanalysismag.com/what-value-analysis-leaders-need-to-know-about-mattress-contamination>

### VIRGINIA PATIENT SAFETY SUMMIT PRESENTATION

**71%  
REDUCTION  
IN HOCDD; BEDS  
WERE THE SOURCE.**

After trying multiple interventions to reduce HOCDD, hospital replaced bed frames resulting in significant reduction in infection rates. Bed barrier implemented driving further improvement and sustained results.

2018 Virginia Patient Safety Summit Poster Presentation <https://trinityguardian.com/wp-content/uploads/2023/01/UVA-C.diff-Poster-Presentation.pptx>

### INDIANA HOSPITAL

**34%  
REDUCTION  
IN PSEUDOMONAS  
INFECTIONS**

Dakins is used exclusively to treat pseudomonas infections and the prescriptions written for Dakins was down by 34% or 7.85 units / 1000 patient days to 5.25 / 1000 patient day during the study.

[https://trinityguardian.com/wp-content/uploads/2023/01/TrinityGuardian\\_Launderable\\_Bed\\_Protection\\_System\\_Poster\\_7-17-20148.pdf](https://trinityguardian.com/wp-content/uploads/2023/01/TrinityGuardian_Launderable_Bed_Protection_System_Poster_7-17-20148.pdf)



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## OTHER PRESENTATIONS

### 2019 NATIONAL APIC CONFERENCE PRESENTATION

#### **MATTRESSES AS A SOURCE OF HEALTHCARE ACQUIRED INFECTIONS: CURRENT RECOMMENDATIONS FOR DISINFECTION & FUTURE DIRECTIONS**

Drs. Tara Beuscher & Edmond Hooker's presentation at the 2019 APIC Conference reviews in detail the issues with mattress processing, consequences, & efficacy of currently used cleaning & disinfection processes.

<https://trinityguardion.com/wp-content/uploads/2023/01/APIC-Talk-2019.pdf>

### SHEA POSTER PRESENTATION

#### **BEDS ARE A SOURCE OF HOCDI**

60% greater chance of getting HOCDI if previous patient in same bed had CDI

SHEA Spring 2022 Poster Presentation: Impact of exposure to potentially contaminated hospital beds on risk of hospital onset C.difficile infection [https://trinityguardion.com/wp-content/uploads/2023/01/impact\\_of\\_exposure\\_to\\_potentially\\_contaminated\\_hospital\\_beds\\_on\\_risk\\_of\\_hospitalonset\\_c\\_difficile\\_infection.pdf](https://trinityguardion.com/wp-content/uploads/2023/01/impact_of_exposure_to_potentially_contaminated_hospital_beds_on_risk_of_hospitalonset_c_difficile_infection.pdf)

## SAFETY ADVISORY

### ECRI TOP TEN HEALTH TECHNOLOGY HAZARDS

#### **MATTRESSES #2 ON ECRI 2019 TOP TEN HEALTH TECHNOLOGY HAZARDS**

Clean Mattresses Can Ooze Body Fluids onto Patients, blood and other body fluids that remain on or within mattresses or mattress covers after cleaning can contact subsequent patients, posing infection risk.

### FDA 2017 SAFETY ADVISORY: COVER FOR HOSPITAL BED MATTRESSES: HOW TO KEEP THEM SAFE

#### **FDA SAFETY ADVISORY ON MATTRESS SAFETY**

FDA encourages hospitals to develop an inspection plan, S/B inspect, & remove/replace, damaged surfaces, & maintain according to manufacturer's instructions for use

<https://www.fda.gov/medical-devices/hospital-beds/covers-hospital-bed-mattresses-learn-how-keep-them-safe>