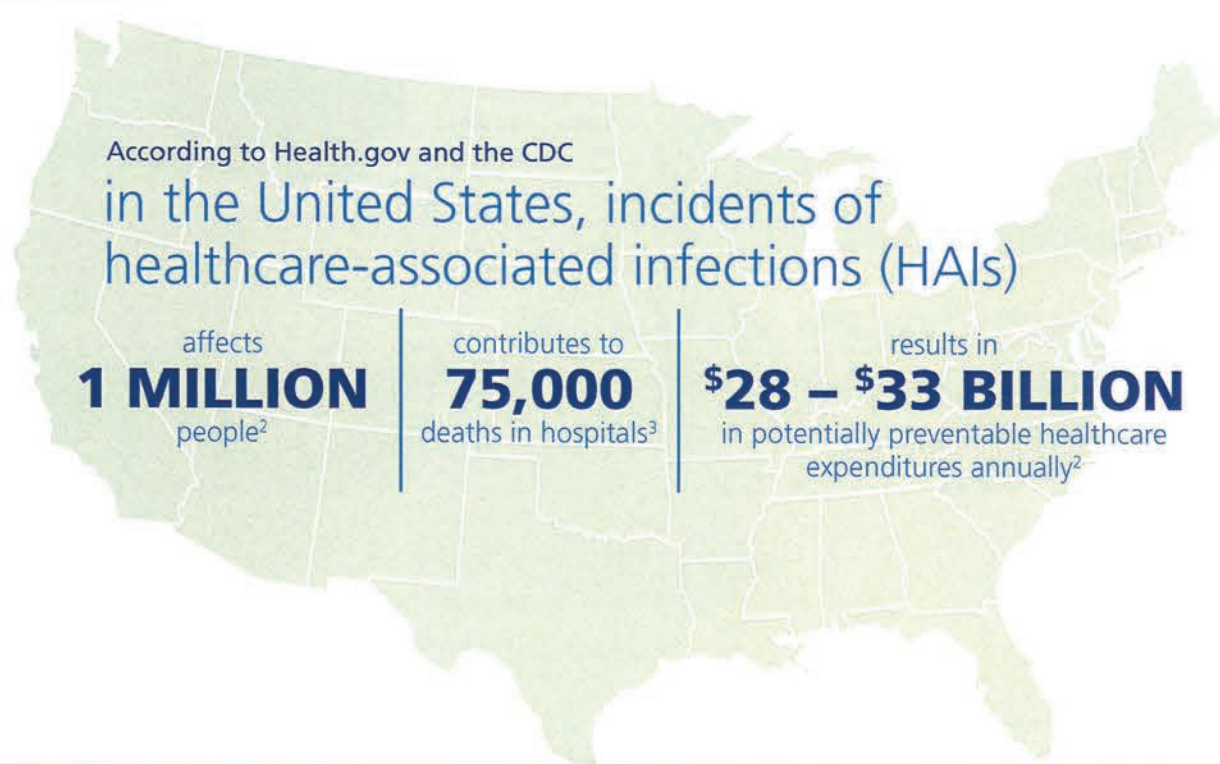


# Single-use vs Reusable Sharps Containers

## Proper disposal of sharps waste containers

is key to infection control in a clinical setting.

Research suggests that reprocessed, reusable medical and infectious waste containers are potential sources of microorganisms that can be harmful to patients with weakened immune systems<sup>1</sup>



## Concerns about reusable sharps collectors are not new!

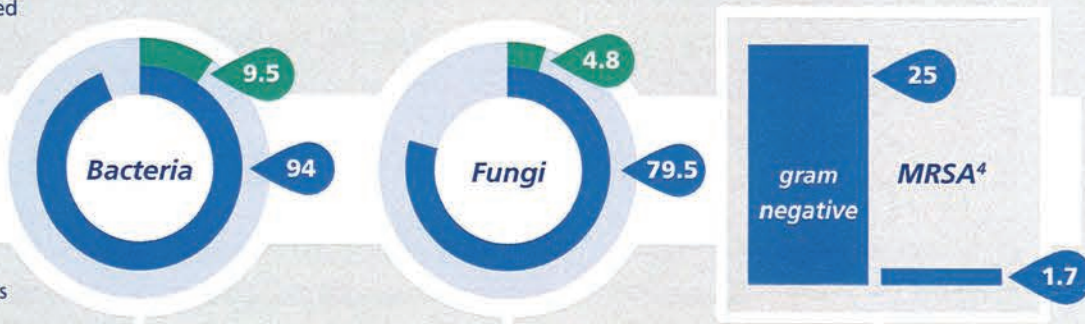
### Stoker, 2006

A Cincinnati, Ohio, hospital conducted a comparison study on reusable plastic vs single-use cardboard infectious waste containers after receiving soiled reusable containers<sup>4</sup>

**380** single-use and reusable infectious waste containers were swabbed monthly

● Reusable containers ● Single-use containers

#### Percentage that tested positive for...



### These startling results led to procedural changes

Reusable containers were **removed from operating rooms**, and spray disinfectants were used to clean all reusable containers upon arrival

Healthcare-associated infections were monitored for **2.5 years** to see if these procedural changes would bring positive results

Mean patient infection rate dropped from

**5.8 / 100 patients** to **3.2 / 100 patients**

The potential issues of an unclean reusable product are clear.

**Decreased infection rate suggests that the contaminated containers may contribute to the rate of infection<sup>4</sup>**

### Runner, 2007

Evaluation of 130-bed community New England area hospital

A pilot study conducted by Jack C. Runner was a single-center, prospective, hospital-based, microbiologic evaluation of reusable sharps disposal containers returned to the hospital from a reprocessing company<sup>1</sup>

These findings call into question the efficacy of the emptying and decontamination process of reusable sharp containers<sup>1</sup>

Reusable sharps containers could aid in the **transmission of viruses** from the container to immunocompromised patients and/or patients and healthcare workers with exposed skin<sup>1</sup>

**30** newly processed, reusable sharps disposal containers were swabbed upon arrival for the presence of bacteria and viruses



**90%** tested positive for **BACTERIA**

This was not unexpected because of normal skin and environmental factors

Though **10%** of the recovered isolates contained gram-negative rods

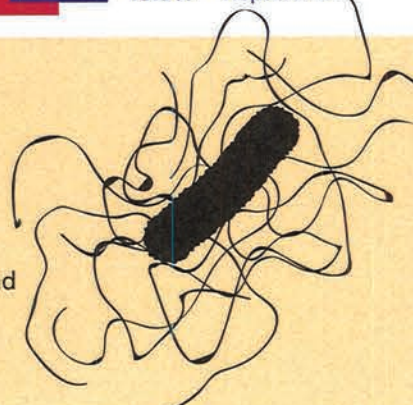
**30%** tested positive for **VIRUSES** for **BLOOD BORNE PATHOGENS**

**10%** HIV  
**6.7%** Hepatitis A  
**6.7%** Hepatitis B  
**13.3%** Hepatitis C

## Clostridium difficile

*C. diff* is an anaerobic, gram-positive, spore-forming bacillus

- *C. diff* is the primary cause of pseudomembranous colitis<sup>5</sup>
- Produces life threatening diarrhea and other serious intestinal conditions<sup>5</sup>



### Transmission

- *C. diff* can live on hard surfaces for as long as **5 months**<sup>7</sup>
- *C. diff* proliferates in a patient who has been exposed to antibiotics<sup>5</sup>
- Evidence indicates patients remain at elevated risk for 3 or more months after they have stopped antibiotic treatment<sup>8</sup>

### Impact

Annually in the U.S. *C. diff* causes

**500,000** infections<sup>9</sup>

**29,000** deaths<sup>10</sup>

**\$3 BILLION<sup>11</sup>** more than estimated annual cost burden for the healthcare system

### BD, 2015

BD conducted an internal statistical analysis of **817** hospitals and found:

REUSABLE customers have **21% GREATER RATES** of *C. diff* than single-use customers<sup>12</sup>

Two leading single-use collector brands were compared

**NO** STATISTICAL DIFFERENCE WAS FOUND<sup>12</sup>

Statistical difference  
**A TYPICAL 300-BED HOSPITAL** can see approximately

**\$100,000** annual impact on savings to treat *C. diff* when using single-use containers<sup>13</sup>

Want to know more?

The story continues... **June 2015**



Helping all people live healthy lives

**References:**  
1. Runner J. Bacterial and viral contamination of reusable sharps containers in a community hospital setting. *Am J Infect Control*. 2007;35(8):527-530. 2. Office of Disease Prevention and Health Promotion. *National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination*. Rockville, MD: US Department of Health and Human Services; April 2013. Available at <http://www.health.gov/hca/pdfs/hai-action-plan-executive-summary.pdf>. Accessed June 8, 2015. 3. Centers for Disease Control and Prevention (CDC). *Healthcare-associated Infections (HAIs): Data and Statistics*. Atlanta: CDC; Jan 2015. Available at <http://www.cdc.gov/HAI/surveillance/#prevalence>. Accessed June 9, 2015. 4. Stoker R. Don't You Have Enough to Worry About Already? Single-Use vs. Reusable Sharps Disposal Containers. *Managing Infection Control*. Nov. 2006. 5. Fordtran JS. Colitis due to *Clostridium difficile* toxins: underdiagnosed, highly virulent, and nosocomial. *Proc (Bayl Univ Med Cent Proc)*. 2006;19(1):3-12. 6. Owens RC. *Clostridium difficile*-Associated Disease: An Emerging Threat to Patient Safety: Insights from the Society of Infectious Diseases Pharmacists. *Pharmacotherapy*. 2006;26(3):299-311. 7. Gerding DN, Muto CA, Owens RC. Measures to Control and Prevent *Clostridium difficile* Infection. *Clin Infect Dis*. 2008;46(Suppl 1):S43-S49. Available at [http://cid.oxfordjournals.org/content/46/Supplement\\_1/S43.full](http://cid.oxfordjournals.org/content/46/Supplement_1/S43.full). Accessed April 21, 2015. 8. Cohen SH, Gerding DN, Johnson S, 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). *Infect Control Hosp Epidemiol*. 010;31(5):431-455. 9. Elixhauser A, Jhung MA. *Clostridium difficile*-Associated Disease in U.S. Hospitals, 1993-2005. HCUP Statistical Brief #50. Rockville, MD: Agency for Healthcare Research and Quality; 2008. Available at <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb50.pdf>. Accessed April 21, 2015. 10. Center for Disease Control and Prevention (CDC). *Healthcare-associated Infections (HAIs): Clostridium difficile Infection*. Atlanta: CDC; Feb 2015. Available at [http://www.cdc.gov/HAI/organisms/cdiff/Cdiff\\_infect.html](http://www.cdc.gov/HAI/organisms/cdiff/Cdiff_infect.html). Accessed April 21, 2015. 11. Walsh N. *C. difficile* Inpatient Stays Long, Costly. *MedPage Today*. December 8, 2012. Available at <http://www.medpagetoday.com/MeetingCoverage/ASHP/36339>. Accessed June 12, 2015. 12. BD internal memo. Feasibility Data Analysis Sharps Infection. April 2015. Data on file at BD. 13. BD internal memo. Sharps *C. diff* HEOR Analysis. February 2015. Data on file at BD.