

An Overview of Healthcare Associated Infections and Their Impact

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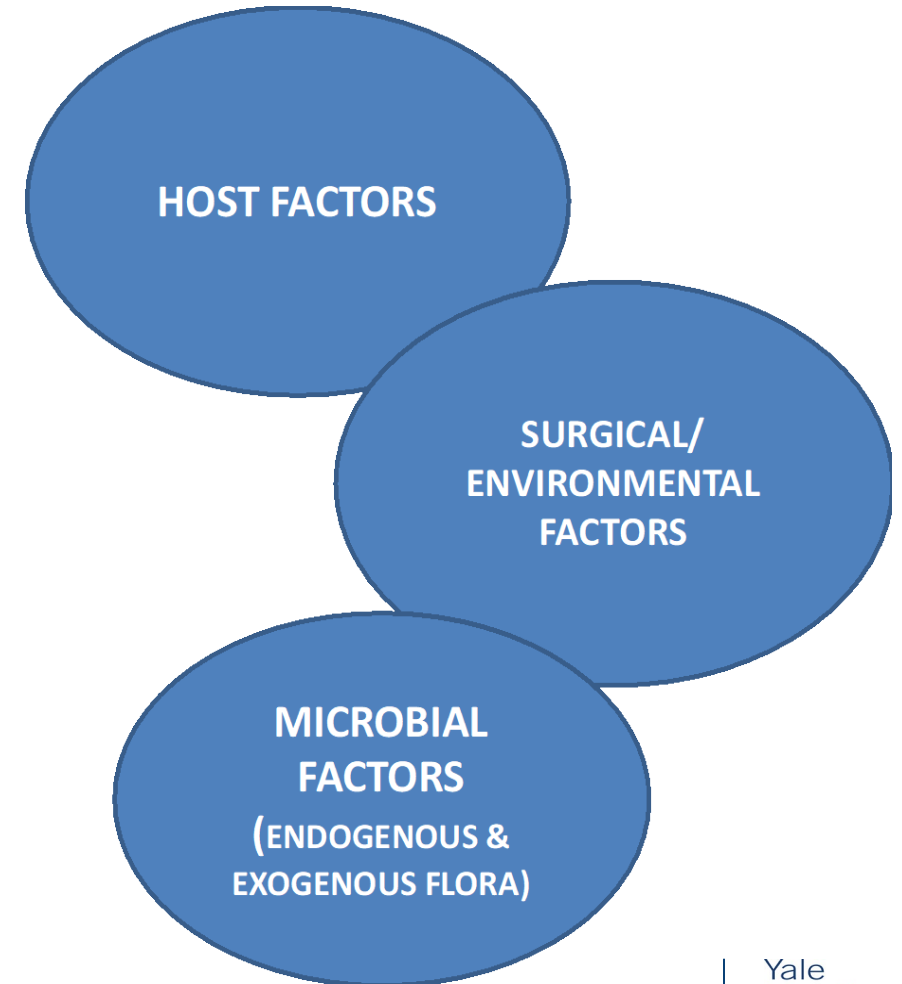
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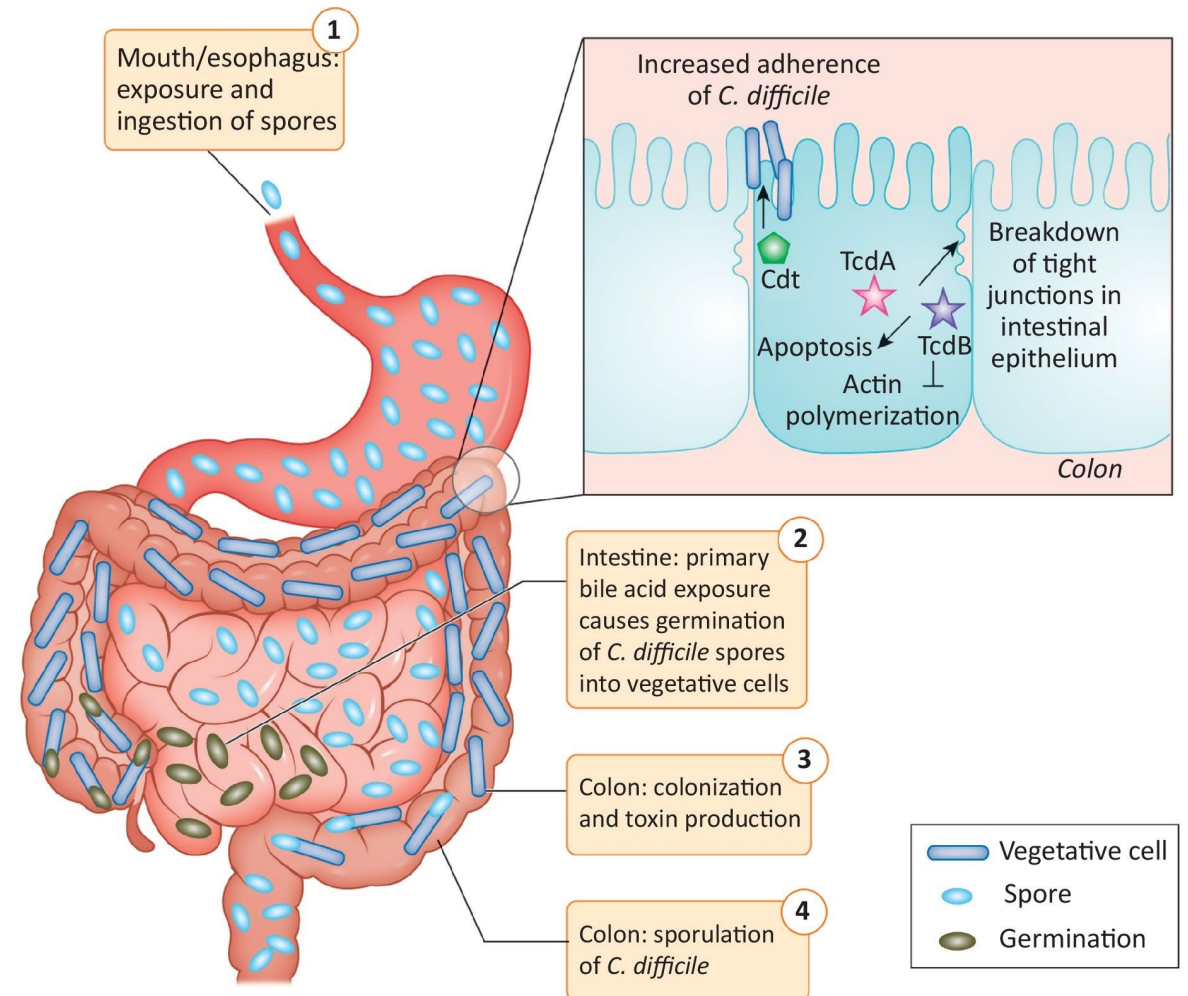
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- **Central line associated bloodstream infection (CLABSI)**



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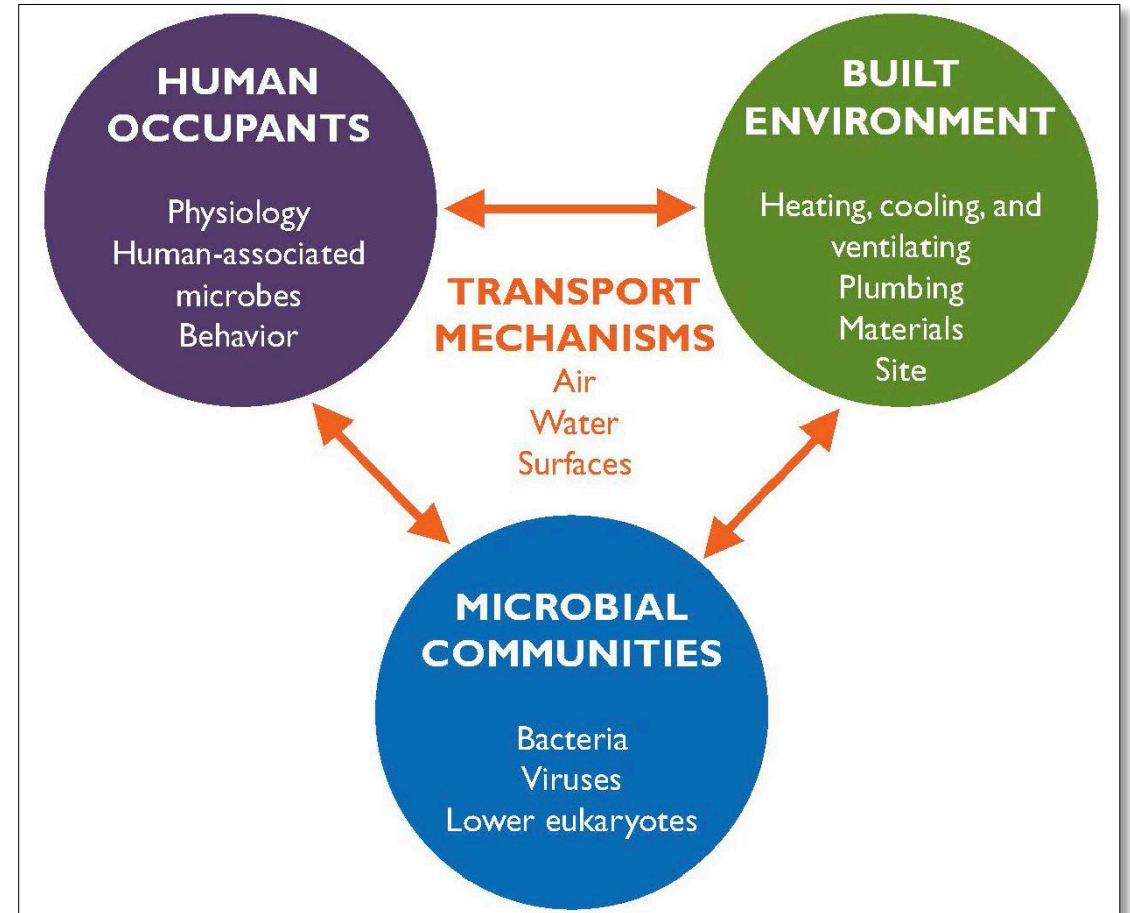
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- **Catheter associated urinary tract infection (CAUTI)**



Human microbiome & built environment

- Persons entering new environments acquire new microbes into their microbiome, contaminate their environment with their microbiome
- Patients entering the hospital environment acquire and share their fecal flora with the environment
- Can acquire potentially pathogenic bacteria
 - May be resistant to antibiotics
 - May exchange less virulent for more virulent organisms



<http://nas-sites.org/builtmicrobiome/>

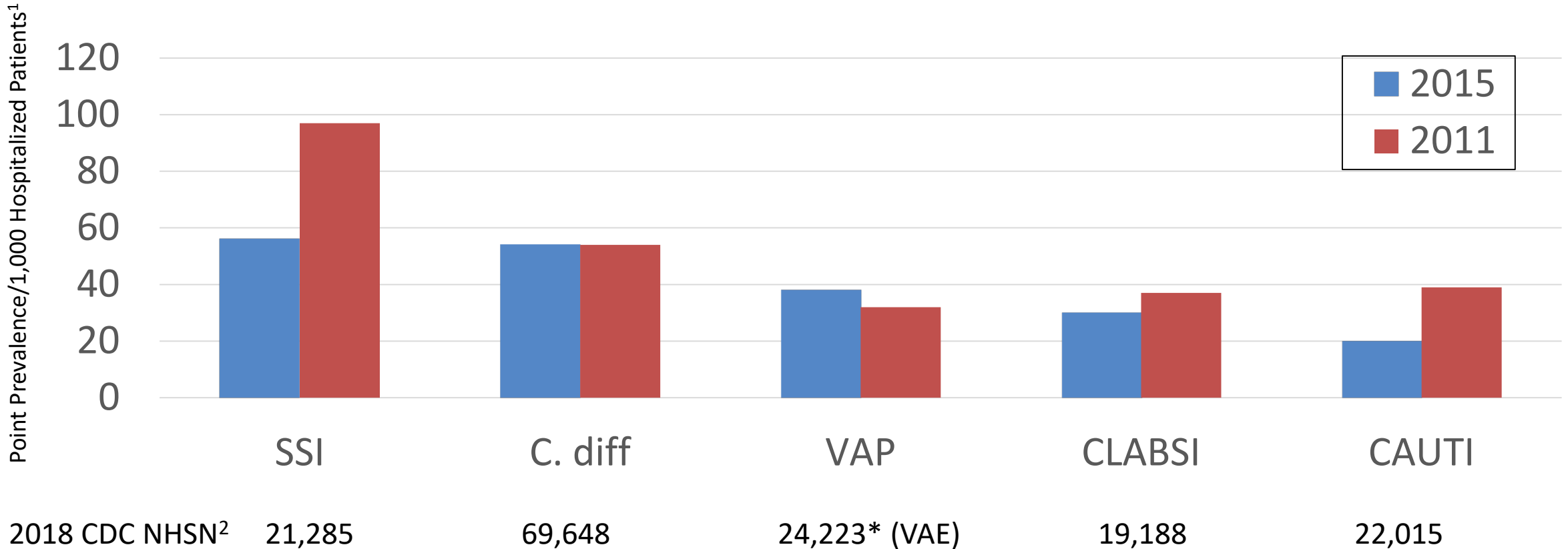
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Brooks B, et al. *Nature Communications* 2017;18:1814.

National Academy of Sciences. *Microbiomes of the Built Environment*. 2017

Impact of Healthcare Associated Infections



1. Magill SS, et al. *N Engl J Med* 2018;379:1732-44.

2. CDC National Healthcare Safety Network 2018 National and State HAI Progress Report

https://www.cdc.gov/hai/data/portal/progress-report.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fhai%2Fsurveillance%2Fprogress-report%2Findex.html

Con

- Healthcare-associated infections have substantial economic burden and the cost of healthcare
- Multiple factors determine whether a patient may acquire an associated infection
- The control of microbial contamination of the healthcare environment, hand hygiene and other factors can prevent most healthcare associated infections

The Threat of Antibiotic Resistance in the United States

Antibiotic resistance—when germs (bacteria, fungi) develop the ability to defeat the antibiotics designed to kill them—is one of the greatest global health challenges of modern time.

New National Estimate*

Each year, antibiotic-resistant bacteria and fungi cause at least an estimated:

 **2,868,700** infections

 **35,900** deaths



Clostridioides difficile is related to antibiotic use and antibiotic resistance:

 **223,900** cases

 **12,800** deaths

New Antibiotic Resistance Threats List

Updated urgent, serious, and concerning threats—totaling 18

5 urgent threats

2 new threats

NEW: Watch List with **3** threats



Antibiotic resistance remains a significant One Health problem, affecting humans, animals, and the environment. Data show infection prevention and control is saving lives—especially in hospitals—but threats may undermine this progress without continued aggressive action now.

Learn more: www.cdc.gov/DrugResistance/Biggest-Threats



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

*National burden reflects de-duplicated infection and death estimates.