

Conclusion. Our analysis of the UIHC CDI cases shows significant spatio-temporal clustering in the observed CDI cluster graph. These results suggest that direct or environmental transmission may play a significant role in CDI acquisition at the UIHC.

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Disclosures.All authors: No reported disclosures.

510. First Environmental Investigation of Toxigenic *Clostridium difficile* Strains in Texas Hospitals

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Session: 59. Healthcare Epidemiology: Updates in *C. difficile*

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Background. *Clostridium difficile* is the most common cause of infectious diarrhea in hospitalized patients in the developed world and an emerging pathogen in developing countries due to increased use of broad-spectrum antibiotics worldwide. Spores of toxigenic *C. difficile* can survive and disseminate in any environs and act as sources for human colonization or infections. Although likely ubiquitous in any environs, the prevalence of *C. difficile* spores in the hospital environment of Texas hospitals is poorly understood. The objectives of the study are to isolate and characterize *C. difficile* from the hospital environs of three hospitals in three cities in Texas.

Methods. As part of a Texas hospital-wide surveillance effort, we collected shoe-bottom swabs samples from hospital employees, patients, and visitors inside three large hospital from three cities. Samples were analyzed for *C. difficile* using anaerobic enrichment culture and molecular methods. Suspected colonies from cycloserine cefoxitin fructose agar (CCFA) plates were identified by PCR (*tcdA*, *tcdB*, *cdtA*, *cdtB*, *tpi*) and genotyped using fluorescent PCR ribotyping.

Results. A total 229 of 1079 (21.2%) surface swab and 81 of 121 (66.9%) shoe swab samples were culture positive for toxigenic *C. difficile* (*tcdA* and *tcdB*). A total of 29 distinct ribotypes were identified from 166 *C. difficile* isolates tested. Predominant ribotypes were F106, F019, F014-020, F002, and F255. Interestingly, ribotype F027 was not a predominant strain among the swab samples. Each hospital had widely diverse strains. Shoes were the most contaminated item in all the hospitals.

Conclusion. We identified a high prevalence of toxigenic *C. difficile* with diverse ribotypes from hospital environmental shoe-bottom swabs and high touch surface swabs in hospitals in three cities of Texas. Our findings suggest that patients might be at higher risk for *C. difficile* colonization or infection in these hospitals.

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511. What Is the Current State of Patient Education after *Clostridium difficile* Infection?

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Background. *Clostridium difficile* infection (CDI) is a common healthcare-associated infection that often recurs after treatment and is associated with reduced quality of life. High-quality patient engagement and education could reduce the risk for transmission and reinfection.

Methods. We surveyed 18 institutions, including academic, Veterans Affairs, and community hospitals, to evaluate if they had CDI-specific patient education practices in place. For three of the institutions, we surveyed CDI patients immediately after

hospital discharge regarding the CDI education provided and assessed their knowledge of patient-based prevention measures.

Results. Of the 15 hospitals responding to the survey, 11 (73%) reported having standardized written educational materials regarding CDI. However, Infection Prevention personnel from four (27%) of these hospitals were not confident that the education was being implemented and five (33%) were not confident that the patients understood the education. Of 24 CDI patients surveyed, only 13 (54%) reported receiving any education about CDI from hospital personnel, and only three (12.5%) reported receiving written information. Seven of the 24 (29%) CDI patients reported looking up information online about CDI. Of the 24 (29%) CDI patients, three (12.5%) were not aware that soap and water should be used for hand hygiene, 7 (29%) were not aware that bleach should be used for cleaning their bathroom, and 13 (54%) did not choose taking antibiotics as the major risk for recurrence.

Conclusion. Although most hospitals reported having standardized educational materials for CDI patients, our survey of patients demonstrated substantial deficiencies in the education provided and in patients' knowledge of CDI prevention measures. Engagement of CDI patients in prevention efforts will require improvement in education practices.

Figure 1.

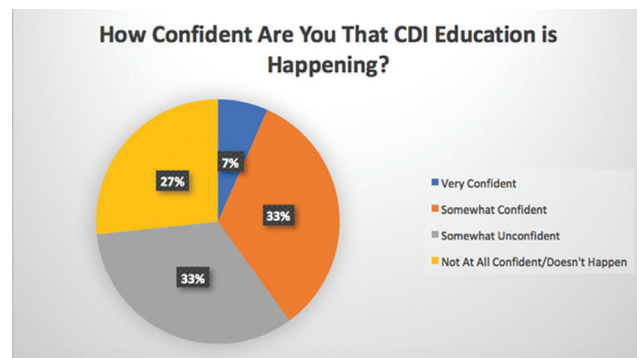
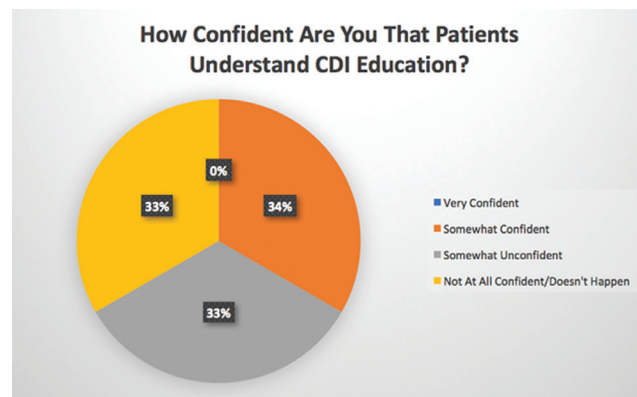


Figure 2.



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512. Tracking the Use of Soap and Sanitizer for Hand Hygiene After Caring for *Clostridium difficile* Patients

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Background. Soap and water is more effective than alcohol-based hand rub (ABHR) at removing *Clostridium difficile* spores from hands. Our institution mandates that healthcare workers (HCW) use soap and water after contact with the patient or their environment for any *C. difficile* infection (CDI); CDC and SHEA recommend this only in outbreak settings for three main reasons: lack of evidence that preferential soap and water use reduces CDI, concerns that inconsistent messaging may result in decreased hand hygiene overall, and that glove use obviates soap and water use. The objective of this study was to investigate hand hygiene practices after caring for CDI patients.

Methods. CDI cases from July 2016 to December 2017 residing in any of 4 units in the hospital (1 medical ICU, 1 stepdown, 2 med/surg) were identified. These units have an electronic hand hygiene (eHH) monitoring system. Using radio frequency identification badges worn by HCW and sensors on each dispenser, handwashing