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Exploring Community Associated Clostridium Difficile

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Exploring community associated *Clostridium difficile*

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Introduction

Clostridium difficile (*C. difficile*) is a life threatening bacteria spread in spore form through diarrhea. *C. difficile* effects approximately 500,000 people annually (CDC, 2016). From 2009-2016, the incidence rate of *C. difficile* in Minnesota* has increased from 50 to 227/1000,000 persons, with 58% of cases considered community associated** (CA), 17% healthcare facility onset (HCFO), and 25% community onset-HCFO (MDH, 2016). MDH 2016 data indicates *C. difficile* is being transmitted within healthcare and community settings and among patients primarily greater than 65 years of age, with 54% of CA cases using antibiotics during the 12 weeks prior to positive specimen (2016).

Research Problem/ Question

What are the commonalities and differences among the CA *C. difficile* cases admitted to SCH in 2017?

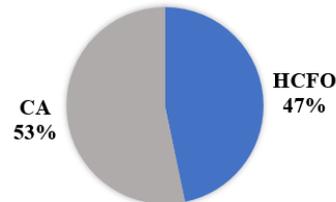
References

Centers for Disease Control and Prevention. (2016). *Clostridium difficile* infection. Retrieved from https://www.cdc.gov/HAI/organisms/cdiff/Cdiff_infect.html
Gerding, D. N., Johnson, S., Kelly, C. P., Loo, V. G., McDonald, L. C., Pepin, J., Wilcox, M. H., Cohen, S. H. (2010). 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 and Hosp Epidemiol*, 31(5), 431-55.
Minnesota Department of Health. (2016). *Clostridium difficile* statistics. Retrieved from <http://www.health.state.mn.us/divs/idepc/diseases/cdiff/statistics.html>

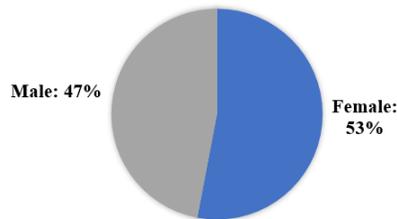
Analysis/Results

Analysis of CA *C. difficile* cases of patients admitted to St. Cloud Hospital in 2017

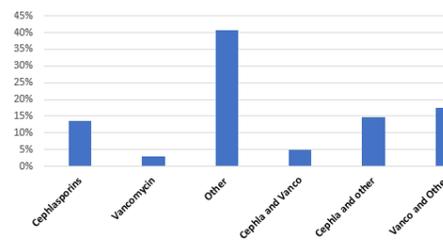
CA vs HCFO: 2017 Cumulative Data



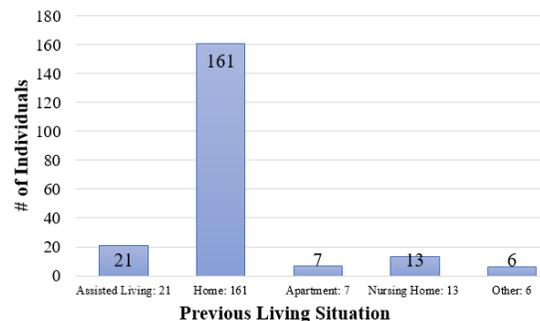
CA Gender Comparison



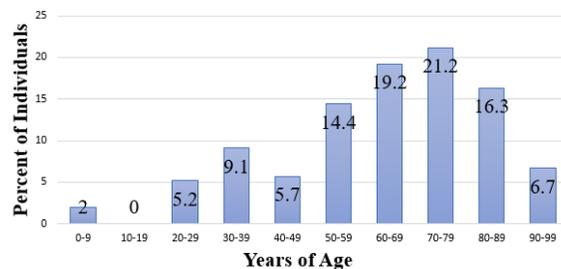
Type of Antibiotic(s)



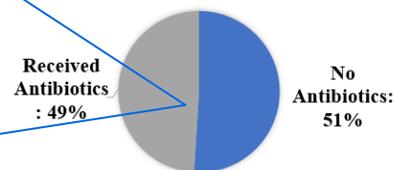
CA Previous Living Situation



CA Age Comparison



Antibiotic use during 12 weeks prior to positive CA screening



Methodology

- Retrospective study to examine the CA *C. difficile* cases for 2017
- Separated CA and HCFO positive *C. difficile* cases admitted to SCH. (CA defined as no stay in hospital during 12 weeks prior to positive specimen, HCFO defined as collected >3 days after hospital admission.)
- Reviewed prior 30 day history of CA cases to assess patient living situation and previous healthcare encounter(s) within CentraCare Health.
- Analyzed antibiotic use during the 12 weeks prior to disease onset for CA patients

Conclusions/Implications

- 50% or 105 of the 208 patients with CA *C. difficile*, had a previous outpatient visit
- Of the 105 individuals with a previous outpatient visit, there was a total of 232 outpatient visits between 104 outpatient locations
- Most common outpatient locations visited: SCH ETC, SCH Outpatient Services, CCH St. Cloud Home Care, CCH Adult Pediatric Urology, CCH Plaza Family Medicine, and CCH Urgency Center.
- No correlation between CA *C. difficile* and previous living situations with recent outpatient visits
- 49% of patients used antibiotic(s)** during 12 weeks prior to positive screening with greater use of a combination of antibiotics or use of other antibiotic(s) than vancomycin and cephalosporins independently
- Recommend continued community education about *C. difficile* and antibiotic use and partnering with outpatient healthcare facilities to decrease risk of transmission

*data from Benton, Morrison, Olmsted, Stearns, and Todd Counties **data limited to information available in CentraCare Health electronic medical record dumonceauxp@centracare.com; Dana.Schmidt@centracare.com.