pump inhibitors within 7 days prior to CDI treatment (OR 3.59, 95% CI 2.01–6.42), nutrition deficiency (OR 2.62, 95% CI 1.28–5.38) and age (OR 1.04, 95% CI 1.02–1.07).

Conclusion. Increasing age, proton pump inhibitors, previous antibiotic exposure, and underlying comorbidities were important predictors of death among those with first recurrence of CDI. Our data is among the first to investigate predictors of morality in patients with first recurrence, and these data may assist healthcare providers in optimizing patient care.

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1302. Genotypic Correlation between Cases of *Clostridium difficile* (CDI) with Community-Onset Diagnosis after Recent Hospital Discharge and Their Prior Unit-Based Contacts

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Background. The incubation period of *C. difficile* infection (CDI) is highly variable. Infections may be diagnosed weeks after initial acquisition of bacterial spores. Such cases of CDI have onset in the community after a recent hospitalization, or upon readmission, and are characterized as community-onset healthcare-facility associated (CO-HCFA) by current surveillance methods.

Aim: With the application of multi-locus sequence typing (MLST), our study seeks to characterize genetic concordance between CO-HCFA cases and prior unit-based contacts (donors) sharing the same strain type (ST).

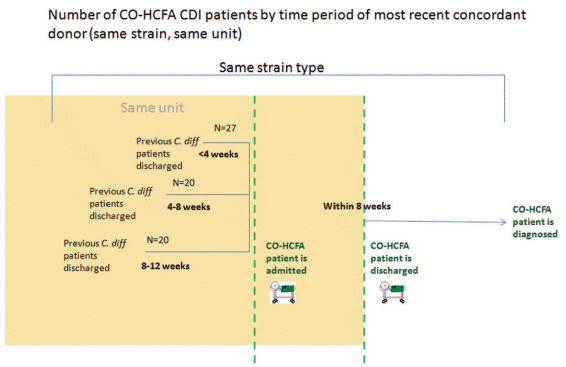
Methods. For all laboratory-identified cases of CDI from January 1, 2015, through December 31, 2016, patients with CDI onset within 8 weeks of hospital discharge were included in the study. Infection control database was queried to identify putative donors using the following criteria: previous unit occupants with CDI who had been discharged from the same unit less than 4 weeks, 4–8 weeks, and 8–12 weeks before admission of CO-HCFA cases. Intensity of exposure was further characterized by same room or same unit occupancy. Analysis was restricted to endemic strains at our institution (ST 1, 2, 3, 8, 11 and 42).

Results. During the two year period, 1330 cases were diagnosed with a new CDI episode, 425 community-onset (32%), 440 hospital-onset (33%) and 465 CO-HCFA (35%) cases. Among the 314 unique CO-HCFA patients due to endemic strains, there were a total of 92 same unit contacts with a concordant strain type, and 1035 same unit contacts with a discordant strain type. The proportion of concordant same unit occupants did not differ by time between cases ($P = 0.8120$).

	Cases‡	Concordant Same Unit Contacts (%)	Discordant Same Unit Contacts (%)	Total Same Unit Contacts (%)	
Time					$P = 0.8120$
<4 weeks	218	30 (32.6)	347 (33.5)	377 (33.5)	
4–8 weeks	196	32 (34.8)	327 (31.6)	359 (31.9)	
8–12 weeks	214	30 (32.6)	361 (34.9)	391 (34.7)	
Total		92	1035	1127	

‡ Time not mutually exclusive

Conclusion. CO-HCFA cases account for a third of all new cases of CDI. Genotypic concordance as potential donors was observed among 8% of all indirect unit based CDI contacts of CO-HCFA cases. This association did not vary significantly as the interval between potential exposure and CDI onset in CO-HCFA cases increased.



Disclosures. **All authors:** No reported disclosures.

1303. Association of Acid Suppression and Antimicrobial Use with *Clostridium difficile* Infection in Children

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Background. *Clostridium difficile*infections (CDIs) can cause severe diarrhea and be potentially life-threatening, especially in children. Possible risk factors include age, being immunocompromised, prior antibiotic exposure, the use of antacids, and diseases that alter intestinal microbiota. Data in adults are vast while limited data is available in children. The objectives of this study are to identify pediatric risk factors and determine if an association between acid suppression and CDI's in children exists.

Methods. A retrospective study was conducted between November 1, 2013 and October 31, 2016 at Arkansas Children's Hospital. Children ages 1 – 18 years with a positive *C. diff* PCR test and ≥3 loose stools documented were included. Cases were excluded if previous positive PCR was within 60 days. Data collection included age, sex, encounter type (inpatient or outpatient), acid suppressing agents, previous antimicrobials within last 90 days and comorbidities including transplant, chronic pulmonary, hematology/oncology, and GI tract diseases. Statistical methods included descriptive analyses, χ^2test, and Kruskal–Wallis test.

Results. A total of 139 cases of CDI among 123 patients were evaluated. Of these cases, the median (IQR) age is 8 years (3–13) with 77 (55.4%) being male and 86 (61.9%) of CDI cases identified inpatient of which 75 came from outpatient. Pediatric risk factors identified in C. diff cases included exposure to acid suppressing agents [61 (43.9%)] and antimicrobials [98 (70.5%)] with 90 (64.7%) having ≥1 comorbidities. Cases having ≥1 comorbidities were found to be associated with previous antacid exposure ($P < 0.0005$) while antimicrobial(s) use was associated with CDI hospitalization ($P = 0.001$). Similarly, exposure to either antacid suppression or antimicrobials or both with comorbidities were found to have a significant association ($P < 0.0005$) and associated with CDI hospitalization ($P = 0.001$).

Conclusion. Exposure to acid suppression in patients with comorbidities was associated with increased risk of CDI. Antimicrobial usage was associated with increased risk for hospitalization due to CDI. As pediatric outpatient antimicrobial stewardship evolves, improving CDI rates can center on improving antimicrobial and acid suppressive agents usage.

Disclosures. **All authors:** No reported disclosures.

1304. Association Between Hospital-Onset *Clostridium difficile* infection and Admission to a Multi-Bed Room: A Case–control Study

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Background. Few studies have directly examined the link between assignment to a multi-bed vs. single-bed room and the risk for hospital onset *C. difficile*infection (HO-CDI). Therefore, in this case–control study, we investigated whether assignment to a single-bed room reduced the risk of HO-CDI in adult inpatients on medical/surgical floors.

Methods. Consecutive cases of HO-CDI, defined as adult patients admitted to San Francisco General Hospital with a new positive *C. difficile* stool test >72 hours after admission, were identified for the period between January 1, 2010 to December 31, 2015. Patients who first tested positive for *C. difficile*in the ICU or who had a history of CDI within the last 12 months were excluded. Controls were selected from the general medical/surgical inpatient population using incidence density sampling and matched to cases on the basis of admission unit and length of admission. A multi-bed room was defined as any room with one or more roommates. A multivariate cox proportional hazard model was used to estimate the relationship between room assignment (single vs. multi-bed) and development of HO-CDI. Variables included in the model, on the basis of a directed acyclic graph, were length of admission, HIV infection, and age.

Results. 184 cases and 373 controls were identified during the study period. The median ages of cases and controls were 60 years and 56 years, and mean Charlson comorbidity scores were 3.8 and 3.7, respectively. The hazard ratio for the development HO-CDI associated with multi-bed room exposure was 2.32 (P = 0.03) with a 95% CI for the hazard ratio of 1.05 to 5.17.

Conclusion. In this study, assignment of patients to multi-bed rooms on general medical and surgical wards was associated with an increased hazard for the development of HO-CDI. This finding, especially if confirmed in other institutions, could have implications for patient room assignment and hospital design.

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