Background. Patients undergoing treatment for hematologic malignancy are at a higher risk for developing *Clostridium difficile* infection (CDI). We sought to determine the epidemiology of toxigenic *C. difficile* (TCD) carriage and CDI incidence among patients undergoing with newly diagnosed or relapsed acute leukemia.

Methods. Serial stool samples were collected from 92 patients with new or relapsed acute leukemia admitted at Memorial Sloan Kettering Cancer Center between August 26, 2011 to January 22, 2013. Only the first hospitalization during this time period was included. Screening was performed by toxigenic culture and polymerase chain reaction for tcdB gene regardless of symptoms of diarrhea. Genotyping was done by Multi Locus Sequence Typing (MLST). Acquisition of TCD, development of CDI, and associated clinical variables were recorded.

Results. A total of 92 patients were enrolled in the study. The mean age was 54.3 (median 57.5, range 21–86), 51 were male (55%). The majority (86, 93%) had newly diagnosed acute leukemia and 7% had relapsed disease. 60 patients (65%) had recent healthcare-related exposure, among these were 35 (38%) patients newly referred another facility. The most common chemotherapy regimen was Daunorubicin + Cytarabine in 71 subjects (77%). Systemic antibiotics of any duration during the same hospitalization were used in 89 patients (97%). Median length of stay (LOS) was 30.5 days (range 6–140 days).

Among the 92 subjects, 17 developed CDI within 90 days (18%), 12 (71%) had CDI during the index admission. Five among these 12 had known TCD colonization, genotyping of colonizing and CDI strains from the same patients were identical for all patients. CDI in subsequent hospitalizations occurred in 5 patients, 4/5 were new acquisitions. One patient with TCD colonization never developed CDI.

53 subjects (58%) underwent stem cell transplant at a median time of 4 months (range 2–19 months), 8 (15%) developed CDI within 30 days of the transplant admission.

Conclusion. CDI is exceedingly common among patients with acute leukemia. Acquisition of TCD and CDI occurs early in the treatment course. Approximately half of infections occur in patients with known TCD colonization. Extended LOS and high antibiotic usage are contributors to the high burden of CDI among this population.

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

1279. Incidence of Pediatric Community Associated Clostridium Difficile Infection Following Common Antibotics

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Session: 149. HAI: C. difficile *Epidemiology, Impact, and Testing*
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Background. As rates of pediatric community-associated (CA) *Clostridium difficile* infection (CDI) increase, additional research is needed to address rates of infection following common antibiotics.

Methods. This study was a retrospective review of the electronic health records of all children with stool specimens sent for *C difficile* from January first 2012 – December 31st2016 at Kaiser Permanente Northern California. Children with clinical symptoms consistent with CDI, confirmatory laboratory testing, no other identified causes of diarrhea, and community associated disease were defined as cases. Using outpatient and ED antibiotic prescription records for children, incidence rates were calculated for subsequent CA CDI for the most commonly prescribed antibiotics.

Results. Of 507 primary CDI cases in our cohort, 327 had any antibiotic use 2012–2015. There were 205 primary CDI cases that were preceded by an antibiotic in the previous 1–365 days. Many of these patients had more than 1 antibiotic in the preceding year.

Of those, rates of CA CDI were uncommon following common antibiotics. (Table) The highest rate of CA CDI followed ceftriaxone, cefdinir, ciprofloxacin and augmentin. The lowest rates were seen following penicillin, doxycycline and azithromycin. Ninety-three percent of the antibiotic prescriptions were in outpatients, 7% in inpatients.

Table: Incidence rate of CA CDI following common antibiotics

Drug	# Rx	CA CDI cases with at least 1 prescription in last year	Rate	Rate per 100,000
Amoxicillin	86,180	38	0.0004	44
Augmentin	49,361	35	0.0007	71
Azithromycin	160,846	45	0.0003	28
Cefdinir	37,284	36	0.0010	97
Ceftriaxone	10,616	11	0.0010	104
Cefuroxime	852	1	0.0012	117
Cephalexin	124,293	55	0.0004	44
Ciprofloxacin	10,088	9	0.0009	89
Clindamycin	79,884	36	0.0005	45
Doxycycline	37,086	8	0.0002	22
Levofloxacin	687	1	0.0015	146
Penicillin	19,488	4	0.0002	21
Rifampin	486	0	0	0
Sulfamethoxazole TMP	49,918	34	0.0007	68
Tetracycline	6	0	0	0
Total	667,075	205	0.0003	31

Conclusion. As rates of CA CDI increase, clinicians should be aware of rates of infection following administration of common antibiotics. The most common antibiotics to cause CA CDI were third-generation cephalosporins (ceftriaxone and cefdinir) and ciprofloxacin.

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

1280. Increasing Economic Burden of Inpatient *Clostridium difficile* Infection in the United States: National Trends in Epidemiology, Outcomes, and Cost of Care from 2000 to 2014

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Session: 149. HAI: C. difficile *Epidemiology, Impact, and Testing*
Friday, October 6, 2017: 12:30 PM

Background. There is limited data addressing the epidemiology, costs, and outcomes of *Clostridium difficile* infection (CD) in hospitalized patients in the United States (U.S.). This study aims to estimate the characteristics, outcomes, and economic burden of patients hospitalized for CD in the US.

Methods. The Nationwide Inpatient Sample (NIS) database was used to obtain data from 2000–2014. The NIS contains data from over 7 million hospitalizations in the US per year, generalizable to the American population. The NIS was queried for ICD-9 codes for either a primary or secondary diagnosis of CD (008.45). Information for demographic data, length of stay (LOS), mortality, and hospital charges was evaluated.

Results. There were 1,256,783 total discharges from 2000–2014 with CD as the primary diagnosis and 4,204,338 total discharges during the same period with CD listed as any diagnosis. The number of hospitalizations with CD as primary diagnosis increased from 31,782 in 2000 to 107,760 in 2014. The number of hospitalizations with CD listed as any diagnosis increased from 134,518 to 361,945. Mean LOS decreased from 6.8 to 5.8 days and mean charges per hospitalization increased from $15,810 to $35,898 during the same time period. Aggregate charges increased from $0.51 billion to $3.87 billion annually. Inpatient mortality of CD hospitalizations decreased from a 4.03% in 2005 to 1.67% in 2014. Approximately 42% of those admitted for CD were male and 58% were female.

Conclusion. This study demonstrates that the number of hospitalizations for CD has increased by 339% from 2000 to 2014. Inpatient mortality of CD has decreased, likely from earlier recognition and treatment of CD. The direct cost of admissions with CD as primary diagnosis is nearly $4 billion per year. Our findings affirm that CD infection is an epidemic that remains a significant source of morbidity and mortality with substantial hospitalization and cost burden. This data can be used to support a return on investment for intervention strategies to prevent CD transmission and for new therapies.

Table 1. Epidemiological and Economic Data for CD, NIS, Q3 years

	2014	2011	2008	2005	2002	2000
Sample size, n	35,358,818	36,962,415	38,210,889	37,843,039	36,523,831	35,300,425
CD, primary or secondary diagnosis	361,945	360,245	325,786	286,338	186,493	134,518
Total charges (billion $)	3.87	4.19	3.62	1.96	0.93	0.51

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

1281. Declining Rates of *Clostridium difficile* infections (CDI) in Veterans Affairs (VA) Long-term Care Facilities (LTCF)

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Session: 149. HAI: C. difficile *Epidemiology, Impact, and Testing*
Friday, October 6, 2017: 12:30 PM

Background. Clinically-confirmed hospital-onset CDI rates declined 15% in VA acute care facilities after implementation of a CDI Prevention Initiative in July 2012. A similar initiative was launched in VA LTCFs in February 2014. The Initiative featured a four-part bundle emphasizing 1) environmental management, 2) hand hygiene, 3) contact precautions for suspected or documented CDI cases, and 4) and institutional culture change where infection control becomes everyone's business. This is a report of subsequent CDI rates in VA LTCFs.

Methods. Multidrug Resistant Organism prevention coordinators at each of the 132 VA reporting sites entered monthly CDI case data from February 2014 to December 2016 into a central database. A clinically-confirmed (CC) LTCF-onset CDI case was defined as a resident with clinical evidence of illness (i.e. diarrhea or histopathologic or colonoscopic evidence of pseudomembranous colitis) and a non-duplicate, non-recurrent positive diagnostic laboratory test collected ≥48h after admission. Quarterly CDI case rate trends were evaluated using negative binomial regression