

2013 Annual Report for the Emerging Infections Program for *Clostridium difficile* Infection

In 2013, a total of 16,379 cases of *C. difficile* infection (CDI) were reported to the Emerging Infections Program (EIP) in 36 counties in 10 US states (California, Colorado, Connecticut, Georgia, Maryland, Minnesota, New Mexico, New York, Oregon, and Tennessee).

The overall distribution of EIP CDI cases and crude incidence by selected demographic factors and epidemiologic classification are presented in Table 1. Data in this report are not intended to be directly compared to annual reports from other years, and should not be used to determine annual changes in EIP CDI incidence rates because single year calculations do not account for changes in testing practices by reporting facilities.

Table 1. Reported Number of CDI Cases and Crude Incidence by Sex, Age Group, Race, and Epidemiologic Classification Among the 10 EIP Sites^a

Demographic Characteristic	Population ≥1 Year of Age	Community Associated CDI ^b		Healthcare Associated CDI ^b		All CDI	
		No.	Incidence ^c	No.	Incidence ^c	No.	Incidence ^c
Sex							
Male	5663849	2401	42.39	4308	76.06	6709	118.45
Female	5889106	4040	68.60	5630	95.60	9670	164.20
Age group							
1-17 years	2546460	494	19.40	193	7.58	687	26.98
18-44 years	4549306	1592	34.99	983	21.61	2575	56.60
45-64 years	3040854	2063	67.84	2546	83.73	4609	151.57
≥65 years	1416335	2292	161.83	6216	438.88	8508	600.71
Race							
White	8033940	5255	65.41	7611	94.74	12866	160.15
Non-white	3519015	1186	33.70	2327	66.13	3513	99.83
Total	11552955	6441	55.75	9938	86.02	16379	141.77

^a The epidemiologic classification was statistically imputed for 0.6% of the observed CDI cases, and race was statistically imputed for 21.8% of the observed CDI cases. The weighted frequency of cases in Colorado and Georgia were based on 33% random sampling.

^b A CDI case was classified as community-associated if the *C. difficile*-positive stool specimen was collected on an outpatient basis or within 3 days after hospital admission in a person with no documented overnight stay in a healthcare facility in the preceding 12 weeks. All CDI cases that do not meet the aforementioned criteria were classified as healthcare-associated.

^c Cases per 100,000 persons.

Laboratory Characterization of *C. difficile* Isolates

In 2013, a total of 1,228 *C. difficile* isolates were submitted to CDC for further analysis. The total number of isolates received from each site ranged from 49 to 274, with a median of 94.5. The majority of the isolates (95%) were collected in metropolitan areas.

Among all available isolates, 146 distinct ribotypes were detected. Ribotypes 027, 106, 020, 002 and 014 were the most common observed in both community- and healthcare-associated *C. difficile* isolates (Tables 2 and 3). A significant decrease in ribotype 027 occurred from 17% in 2012 to 12% in 2013 among community-associated *C. difficile* isolates.



Twenty-nine percent of the isolates harbored a deletion in *tcdC*. Twenty-nine percent of the isolates were binary toxin-positive, and among these, ribotypes 027, 078 and 019 predominated.

Table 2. Frequency of Ribotypes Among Community-Associated *C. difficile* Isolates, 2013 (n=689)

Ribotype	No of isolates	% isolates
027	82	12%
106	65	9%
020	54	8%
002	52	8%
014	33	5%
078	23	3%
076	21	3%
015	21	3%
001_072	19	3%
056	18	3%
Others	301	44%

Table 3. Frequency of Ribotypes Among Healthcare-Associated *C. difficile* Isolates, 2013 (n=539)

Ribotype	No of isolates	% isolates
027	128	24%
106	43	8%
014	37	7%
002	29	5%
020	29	5%
017	15	3%
005	14	3%
056	14	3%
001_072	14	3%
078	11	2%
Others	205	38%

