Oregon EIP *C. difficile* Surveillance

Center for Public Health Practice
Oregon Public Health Division

Surveillance Summary, Klamath and Deschutes County
January 2010 – April 2016

The Oregon Emerging Infections Program (EIP) conducts population-based surveillance for *Clostridium difficile* infections (CDI) among residents in Klamath and Deschutes County. Oregon is one of ten EIP sites participating in this surveillance project.

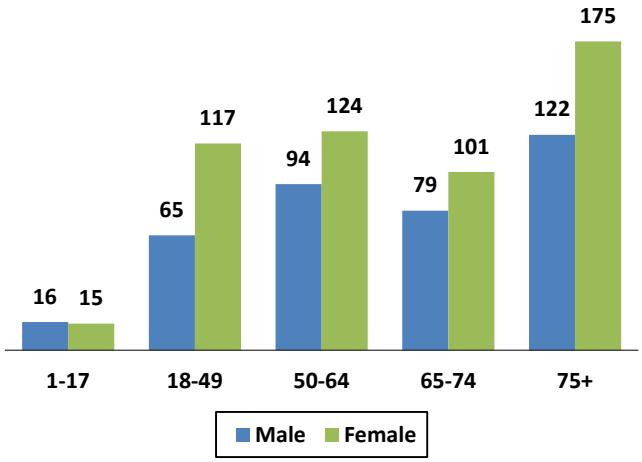
Project objectives are:

- Determine the population-based incidence of community– and healthcare–associated CDI among EIP sites
- Characterize *C. difficile* strains responsible for CDI with a focus on strains from community–associated cases
- Describe the epidemiology of community– and healthcare–associated CDI

Year	Incident Cases	Rate per 100,000 population
2010	57	86.0
2011	58	87.5
2012*	195	85.6
2013*‡	285	122.9
2014	137	209.3
2015	145	221.5
2016**	31	--
Total	908	--

*2012-2013: Addition of Deschutes County
‡ Change in lab practice
** Case counts to date and not complete for year

CDI case counts by Age Group and Sex, January 2010 – April 2016



About *C. difficile*:

Clostridium difficile is a toxin-producing bacterium that causes diarrhea and more serious intestinal conditions like colitis (bowel inflammation) and bowel perforation.

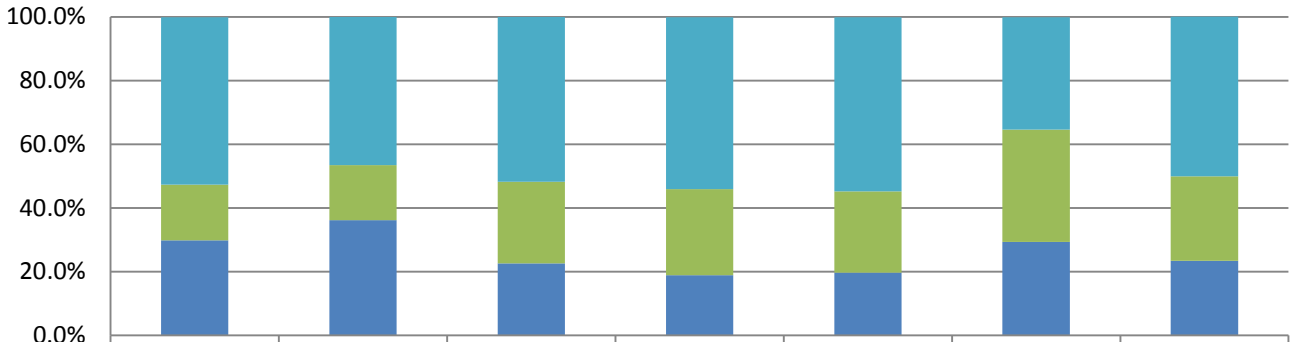
The organism is responsible for 337,000 infections and 14,000 deaths every year. *C. difficile* infections are often linked to medical care; people who take antibiotics and receive medical care are most at risk.

Spread of *C. difficile* infection is preventable by hand washing and appropriate antibiotics use.

Public health importance:

C. difficile infections are a leading cause of patient harm in the U.S. medical system. Data from this project will help inform future policy and prevention strategies.

Percentage of CDI cases in Klamath and Deschutes County by Year and Case Class, January 2010 - December 2015 (completed reviews only)



	2010	2011	2012	2013	2014	2015	All Years
CA	52.6%	46.6%	51.8%	54.0%	54.7%	35.3%	50.2%
CO-HCFA	17.5%	17.2%	25.6%	27.0%	25.5%	35.3%	26.5%
HCFO	29.8%	36.2%	22.6%	18.9%	19.7%	29.3%	23.4%

NOTE. CA: Community Associated; CO-HCFA: Community Onset – Healthcare Facility Associated; HCFO: Healthcare Facility Onset; 2012-2013 includes addition of Deschutes County; 2015 data reflects only completed chart reviews through December 2015.

Surveillance began in Klamath County in January 2010, with Deschutes County joining in 2012-2013. Eight hundred seventy seven incident cases have been identified. EIP surveillance officers have reviewed the medical records of 865 cases as of May 1, 2016.

Of these cases:

- **78%** received systemic antibiotics in the 12 weeks before their *C. difficile* infection
- **50%** are community associated, which means they were likely not exposed to a healthcare setting prior to their infection
- **23%** of infections occurred in a hospital or long term care facility
- **18%** experienced a recurrent episode
- **3%** died while hospitalized or within 30 days of *C. difficile* infection

Underlying medical conditions include diabetes (20%), chronic pulmonary disease (20%), and chronic kidney disease (13%).

Characteristics of *Clostridium difficile* infection in Klamath and Deschutes County January 2010 – December 2015 N = 865	
Female gender, N=908, n (%)	532 (58.6)
Race - White, n (%)	723 (83.6)
Severe CDI, n (%)	
▪ WBC ≥15,000/mm^3	163 (18.8)
▪ Albumin ≤ 2.5 g/dl *(2014-2015, n = 249)*	51 (20.5)
Severe complicated CDI, n (%)	
▪ Abnormal radiology	
○ Toxic megacolon	3 (0.3)
○ Ileus	6 (0.7)
○ Pseudomembranous colitis	8 (0.9)
▪ Known ICU admission	39 (4.5)
▪ Colectomy	3 (0.3)
▪ Death	27 (3.1)
Recurrent CDI, n (%)	156 (18.0)

Medications taken 12 weeks prior to initial stool collection date January 2010 – December 2015 N = 865	
Acid Suppression, n (%)	
▪ Proton pump inhibitor	401 (46.4)
▪ H2 blockers	119 (13.8)
Immunosuppressive Therapy, n (%)	
▪ Steroids	187 (21.6)
▪ Chemotherapy	42 (4.9)
▪ Other immunosuppressive agents	25 (2.9)
Antibiotic Use, n (%)	670 (77.5)

For more information about the EIP *C. difficile* surveillance project, please see http://www.cdc.gov/hai/eip/cdiff_techinfo.html or http://www.cdc.gov/hai/organisms/cdiff/cdiff_infect.html.