

CLOSTRIDIODES DIFFICILE (C. DIFF) PREVENTION

Sometimes, taking an antibiotic to fight one kind of infection can put you at risk for a second kind of infection. *Clostridioides difficile*, formerly known as *Clostridium difficile*, and often called *C. diff*, is a germ (bacteria) that can cause mild to bad diarrhea (loose stool). Left untreated, infection with *C. diff* has been associated with dehydration and more serious health issues. It can affect the blood, large intestine, kidneys, or other organs. It may also lead to shock and even death.



Symptoms of *C. diff* may include diarrhea for several days, stomach cramps or tenderness, loss of appetite, nausea, and/or fever.

WHERE DOES C. DIFF COME FROM?



Most *C. diff* infections are linked to receiving healthcare services, for example, in a doctor's office, hospital, or nursing home. The germ is found in stool and spreads through person-to-person contact or by the hands of healthcare providers, visitors, or patients who have touched a contaminated surface. **Handwashing with soap and water is the best way to prevent the spread of germs, including *C. diff*.** Thus, patients should wash their hands before eating and after using the restroom. Healthcare professionals should also clean their hands and use disposable gloves when caring for a *C. diff* patient. Alcohol-based hand sanitizer will not stop the spread of *C. diff*.

C. diff infections have also been traced to individuals taking antibiotics for another illness. While fighting infections from bad germs, antibiotics can also kill good germs. This increases the chance of getting infected. An individual's risk for *C. diff* can last up to a few months after finishing an antibiotic prescription.



IMPACT OF C. DIFF IN VIRGINIA

The standardized infection ratio (SIR) measures how well a hospital is doing in preventing infections. If an SIR is less than 1.00, then the hospital is performing better than predicted. If an SIR is greater than 1.00, then the hospital is performing worse than predicted.

- The number of hospital-onset *C. diff* infections in Virginia decreased from 2,550 in 2015 to 1,783 in 2017 (Figure 1).
- In 2017, the overall hospital-onset *C. diff* SIR for Virginia hospitals was 0.76. This means that the number of *C. diff* infections in Virginia was 24% lower than predicted, based on national data from 2015.
- Collectively, hospitals in the Central Health Planning Region (Figure 2) had the highest number of *C. diff* infections and the highest SIR statewide (0.90).
- Hospitals in the Northern Health Planning Region (Figure 2) had the lowest number of *C. diff* infections and the lowest SIR statewide (0.51).

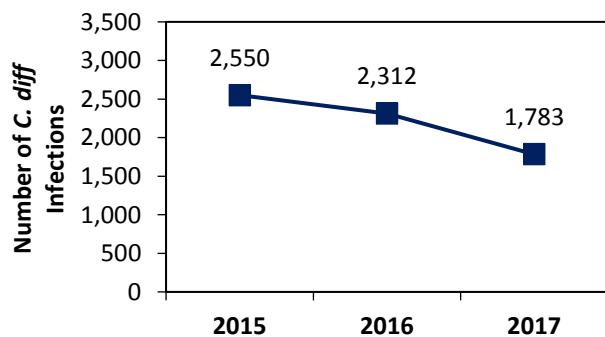


Figure 1. Number of Hospital-Onset Laboratory-Identified *C. diff* Infections, Virginia, 2015-2017.

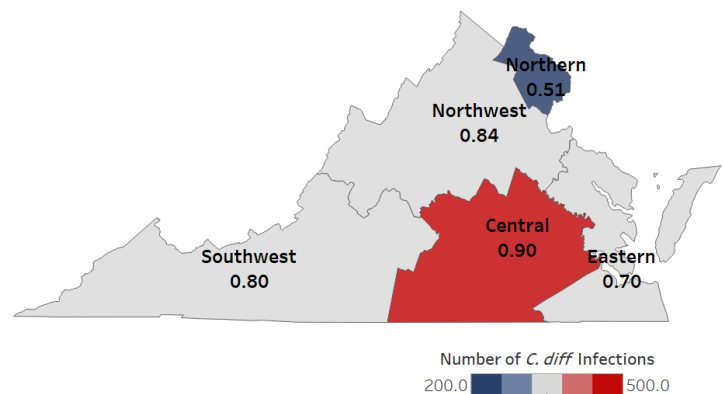


Figure 2. Number of Hospital-Onset Laboratory-Identified *C. diff* Infections and Standardized Infection Ratio (SIR) by Health Planning Region, Virginia, 2017.

Note: Data reported from 78 acute care hospitals were downloaded from the National Healthcare Safety Network (NHSN) on July 3, 2018.

Although the number of *C. diff* infections represents only a small fraction of the total number of hospital discharges in Virginia, having *C. diff* can significantly impact a patient's quality of health in the hospital. In 2017, the average stay for patients with *C. diff* was 10 days, which was twice as long as the average stay for all other patients. *C. diff* can be costly to treat. In 2017, the average cost of an ER visit for patients diagnosed with *C. diff* was \$2,350, more than double the average cost for all other patients (Figure 3).

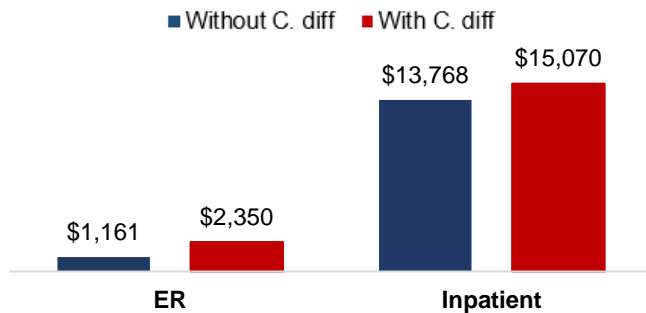


Figure 3. Average Emergency Room (ER) and Hospital Inpatient Costs, Virginia, 2017.

Additionally, *C. diff* has a major impact on patient mortality and readmission to a hospital. In 2017, hospitalized Virginia patients with a diagnosis of *C. diff* were over three times more likely to die than if *C. diff* was not present. Patients were also two times as likely to be readmitted to a hospital within 30 days if they had *C. diff* (Figure 4).

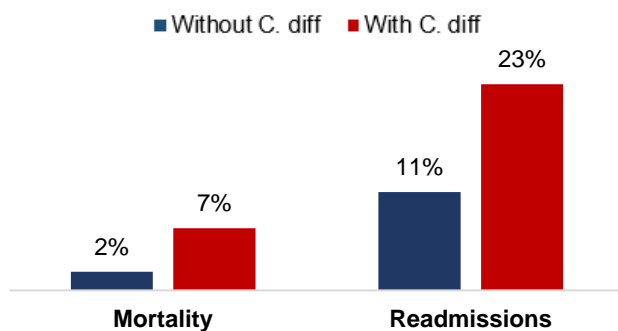


Figure 4. Mortality and Readmission Rates, Virginia, 2017.

Note: Cost data are from the Virginia All Payer Claims Database (APCD), administered by VHI. Discharge data from acute care hospitals are from the VHI Patient-Level Hospital Discharge Data.

NHSN data in Figures 1 and 2 are based on hospital address. APCD data in Figure 3 are based on patient address. Discharge data in Figure 4 are based on hospital address. For Figures 3 and 4, infections were defined as any discharge having a primary or secondary diagnosis code of A04.7, A04.71, or A04.72.

WHAT CAN YOU DO?

- If you are taking an antibiotic, talk to your doctor to make sure it is the best treatment for your illness.
- Be responsible by only taking antibiotics meant for you. Finish the prescribed amount even if you feel better.
- Tell your doctor if you experience diarrhea within a few months of being on an antibiotic.
- Wash your hands with soap and water before eating meals and after using the restroom. Have others around you wash their hands as well.
- *C. diff* can remain on items and surfaces for a long time and can be very difficult to remove from the environment. Talk to your doctor about the best way to clean your home.

FOR MORE INFORMATION

- Virginia Health Information (VHI) Patient-Level Hospital Discharge Data: www.vhi.org
- Virginia All Payer Claims Database: www.vhi.org/APCD
- Virginia Department of Health *C. difficile* Fact Sheet: <http://www.vdh.virginia.gov/epidemiology/epidemiology-fact-sheets/clostridiodes-difficile/>
- Virginia Department of Health 2017 Healthcare-Associated Infections Report: <http://www.vdh.virginia.gov/surveillance-and-investigation/hai/reporting/?tab=1>
- Centers for Disease Control and Prevention *C. difficile* Website: <https://www.cdc.gov/cdiff/index.html>

