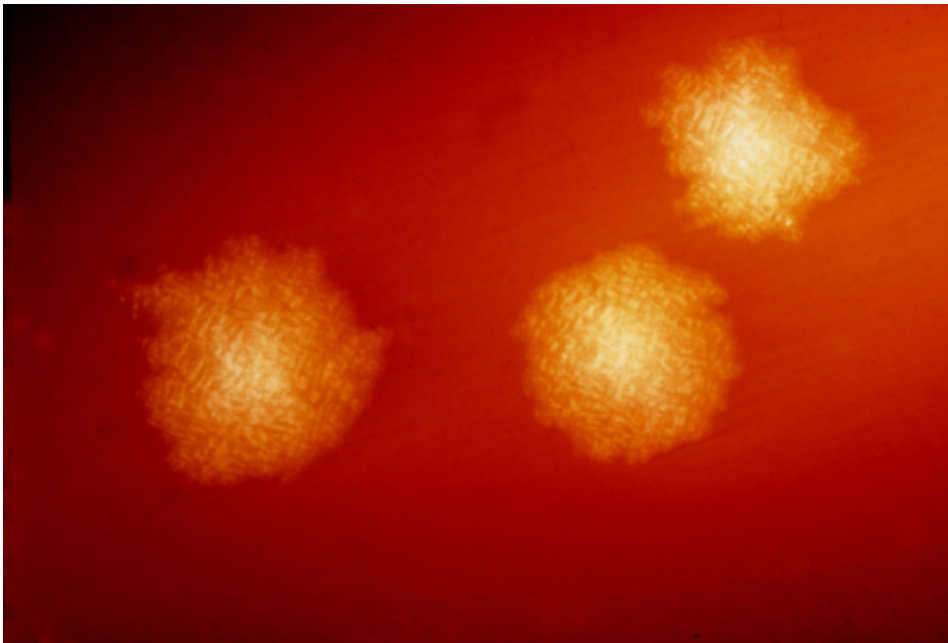


# Clostridium difficile infections have decreased 36 percent in Canadian hospitals

June 25 2018

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This photograph depicts *Clostridium difficile* colonies after 48hrs growth on a blood agar plate; Magnified 4.8X. *C. difficile*, an anaerobic gram-positive rod, is the most frequently identified cause of antibiotic-associated diarrhea (AAD). It accounts for approximately 15–25% of all episodes of AAD. Credit: CDC

Rates of *C. difficile* infections have decreased 36% in hospitals across Canada, although the virulent NAP1 strain associated with severe illness and deaths is the most common strain, according to research published in *CMAJ* (*Canadian Medical Association Journal*)

*Clostridium difficile* is the most common infectious cause of diarrhea in hospitalized patients in developed countries, causing severe illness and occasionally death. Seniors and people on antibiotic treatment are most vulnerable to [infection](#). However, the NAP1 strain of *C. difficile*, which is most virulent and can be resistant to treatment with fluoroquinolone antibiotics, has emerged in healthy people and in the community, spreading after several epidemics in the early 2000s.

A pan-Canadian team of researchers from the Canadian Nosocomial Infection Surveillance Program looked at data from 42-53 acute care hospitals over 7 years (2009-2015) to understand patterns of NAP1 strain and effect of infection on patient outcomes. A total 20 623 cases of hospital-acquired *C. difficile* occurred, mostly in hospitals with more than 200 beds. Infection rates decreased 35.8% across Canada by 2015, although the number of younger patients with the disease increased.

Improvements in infection-control measures (such as improved testing, more judicious use of antibiotics, frequent handwashing, and better and more frequent cleaning of facilities) begun after outbreaks 10-15 years ago may have contributed to the decrease in [infection rates](#).

The large study found an association between the NAP1 strain and death in patients aged 18 and older, not detected by earlier single-centre or provincial-level studies.

"Our findings suggest that, as the proportion of NAP1 strain isolates decreases in relation to all circulating [strains](#), both the rate of health care-associated *C. difficile* infection and the number of severe cases can be expected to decrease relative to a peer [hospital](#) with a higher proportion of NAP1 circulating isolates," says Dr. Kevin Katz, North York General Hospital, Toronto, Ontario.

The authors recommend continued vigilance to better contain infection.

"Infection prevention and control practices, antimicrobial stewardship and environmental cleaning should continue to be strengthened at the local level, as these areas positively affect institutional rates of health care-associated C. difficile infection, regardless of circulating strain types."

**More information:** "The evolving epidemiology of Clostridium difficile infection in Canadian hospitals during a postepidemic period (2009-2015)" is published June 25, 2018.

[www.cmaj.ca/lookup/doi/10.1503/cmaj.180013](http://www.cmaj.ca/lookup/doi/10.1503/cmaj.180013)

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