

Hospital-Acquired *Clostridium difficile* Infections

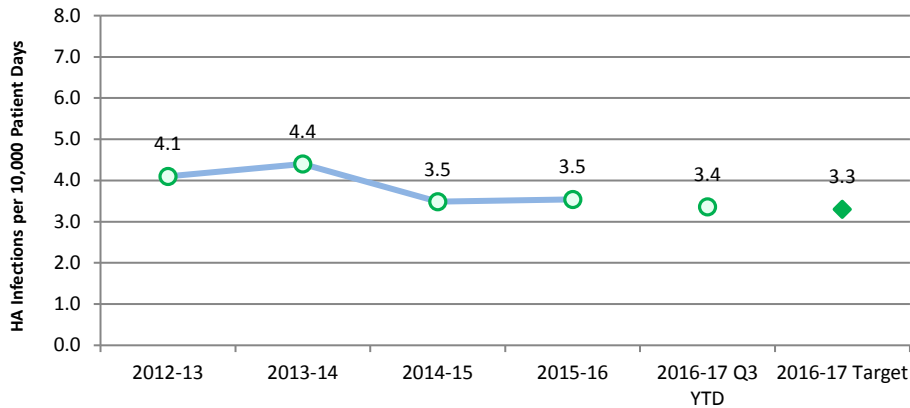
Measure Definition

The number of *Clostridium difficile* infections (CDI) acquired in hospital for every 10,000 patient days. A rate of 4.0 means approximately 100 patients per month acquire CDI infections in Alberta. CDI infection cases include patients with a new infection or re-infection while in hospital. Patients are considered to have a CDI if they exhibit symptoms and confirmation by a laboratory test or colonoscopy.

Understanding this Measure

Some individuals carry CDI in their intestines while others may acquire it while in hospital. CDI is the most frequently identified cause of hospital-acquired diarrhea. This infection complicates and prolongs hospital stays and impacts resources and costs in the healthcare system. Monitoring CDI trends provides important information about effectiveness of infection prevention and control strategies. Note: This measure is reported a quarter later due to the requirement to followup with patients after the end of the reporting quarter.

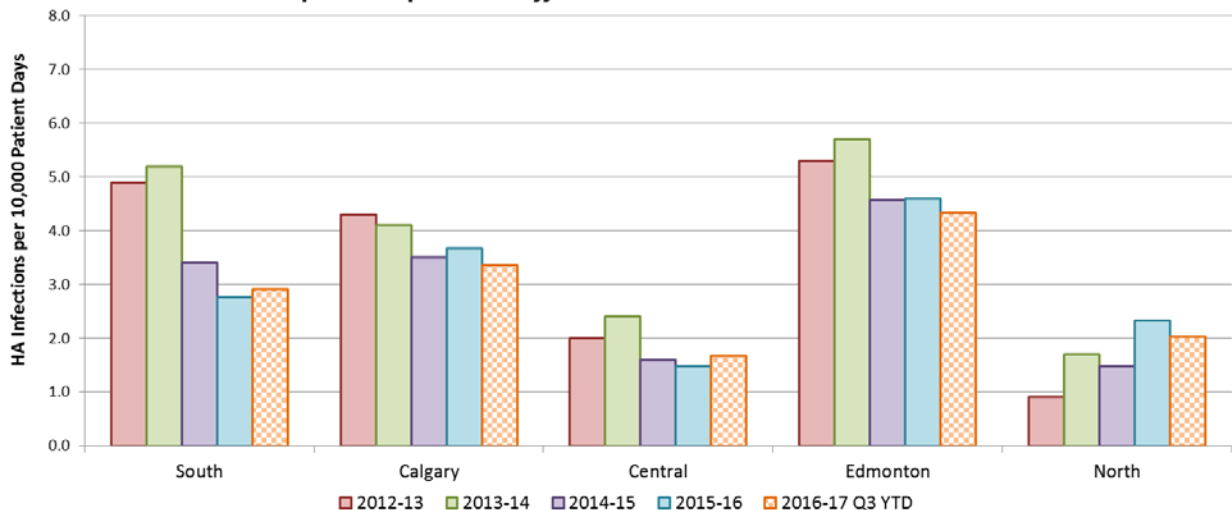
Hospital-Acquired *C-Difficile* Rate - Annual



How Do We Compare?

Alberta is performing better than the national average of 4.48 in 2015 based on surveillance data.

Hospital-Acquired *C-Difficile* Rate - Zone



Hospital-Acquired Infections

HIGHLIGHTS

AHS Infection Prevention and Control works collaboratively with physicians, staff and public health by providing *C. difficile* rates and assisting with intervention and control strategies.

Antimicrobial stewardship is the practice of minimizing the emergence of antimicrobial resistance by using antibiotics only when necessary and, if needed, by selecting the appropriate antibiotic at the right dose, frequency and duration to optimize outcomes while minimizing adverse effects. All zones continue to implement the antimicrobial stewardship strategy. Antimicrobial Stewardship committees continue to implement *Clostridium Difficile* Infection (CDI) toolkits. These include pre-printed care orders, environmental cleaning protocols, nursing checklist and a management flow map. Cases of CDI are reviewed by Infection, Prevention and Control and Pharmacy for proper treatment, order set use, precautions, cleaning, and appropriate antibiotic and proton pump inhibitor de-escalation to evaluate the use of the CDI toolkit components.

Overall, antimicrobial usage of the 16 sites for the 14 antimicrobials highly associated with CDI decreased in the last two years. This is due in part to AHS implementing targeted initiatives, such as education and awareness campaigns, aimed at reducing the use of antimicrobials highly associated with CDI.

With the incorporation of the Pharmacy Good Catch program into AHS' Reporting and Learning System, the process for entering and reviewing parenteral nutrition-related events has become more intuitive and accessible for both frontlines and administrators. These changes improve patient safety and meet Health Quality Council of Alberta recommendations.

In AHS, there are established protocols for the cleaning of patient care areas which include increased cleaning for isolation rooms and focused attention on cleaning of shared patient equipment. Current initiatives in environmental services include: cleanliness audits with real-time reporting to support best practice in cleaning, introduction of designated equipment cleaners with accountability for cleaning of shared patient equipment such as wheelchairs, stretchers, IV poles, vital sign monitors, etc., and a pilot project using room disinfection technology. AHS implemented the standardized clinical equipment cleaning program at four Edmonton Zone sites: Royal Alexandra Hospital, Glenrose Rehabilitation Hospital, University of Alberta Hospital, and Sturgeon Community Hospital; remaining AHS sites will be completed in 2017-18.

SUMMARY OF RESULTS

The most recent data for this measure is a quarter behind. This analysis is based on Q3 YTD 2016-17.

Calgary and Edmonton Zones, as well as several sites achieved target for Q3 YTD. Provincial and North Zone showed improvement from the same period as last year. South and Central Zones, as well as a few sites deteriorated from the same period as last year. Variation in rural hospitals is due to lower patient days that may result in one or two cases causing an increase in rates.

A deeper analysis of data (not shown) finds that South Zone has noted improvement quarter over quarter (Q1 = 3.5, Q2 = 3.1 and met the target in Q3 = 2.1). Central Zone has noted improvement quarter over quarter (Q1 = 2.2, Q2 = 1.5 and met the target in Q3 = 1.3).

The AHS Antimicrobial Stewardship Working Group supported the roll-out of the standardized toolkit across the province, given the impact of CDI on patient outcomes; the availability of evidence-based guidelines for CDI and the evidence that a standardized approach to CDI treatment reduces mortality and infection recurrences.

Hospital-Acquired Infections

The number of *Clostridium difficile* infections (C-diff) acquired in hospital for every 10,000 patient days. A rate of 4.0 means approximately 100 patients per month acquire C-diff infections in Alberta.

Hospital Acquired <i>C-Difficile</i> Infections	2013-14	2014-15	2015-16	Q3 YTD		Trend	2016-17 Target
				2015-16 Last Year	2016-17 Current		
Trend: ★ Target Achieved; ✓ Improving; ⇔ Stable; ✖ Performance not improving							
Provincial	4.4	3.5	3.5	3.5	3.4	✓	3.3
South Zone Total	5.2	3.4	2.8	2.5	2.9	✖	2.8
Chinook Regional Hospital	7.5	5.4	4.4	4.4	4.7	✖	4.4
Medicine Hat Regional Hospital	2.8	1.7	1.3	0.8	0.9	★	1.3
All Other Hospitals	4.3	2.0	1.9	1.3	2.6	✖	1.9
Calgary Zone Total	4.1	3.5	3.7	3.5	3.4	★	3.4
Alberta Children's Hospital	3.5	1.4	4.1	3.4	0.9	★	3.5
Foothills Medical Centre	5.4	5.2	4.6	4.6	5.2	✖	4.8
Peter Lougheed Centre	3.4	2.8	3.7	3.6	2.3	★	2.7
Rockyview General Hospital	4.0	3.2	3.4	3.4	3.1	✓	3.0
South Health Campus	N/A	2.3	2.6	2.2	2.4	✖	2.2
All Other Hospitals	1.5	0.9	1.2	0.9	0.9	★	1.8
Central Zone Total	2.4	1.6	1.5	1.5	1.7	✖	1.5
Red Deer Regional Hospital Centre	3.3	3.1	2.5	2.6	2.4	★	2.8
All Other Hospitals	2.0	1.0	1.0	1.0	1.3	✖	1.0
Edmonton Zone Total	5.7	4.6	4.6	4.7	4.3	★	4.3
Grey Nuns Community Hospital	5.9	3.5	3.5	3.6	2.9	★	3.4
Misericordia Community Hospital	6.3	3.9	4.1	3.5	8.4	✖	3.5
Royal Alexandra Hospital	7.3	6.7	6.8	6.6	5.2	★	6.1
Stollery Children's Hospital	3.1	4.0	5.9	6.2	4.1	✓	4.0
Sturgeon Community Hospital	9.3	6.0	7.4	8.1	4.5	★	5.3
University of Alberta Hospital	8.6	7.1	5.9	6.5	6.2	★	6.9
All Other Hospitals	1.9	1.4	1.8	1.9	1.5	✓	1.3
North Zone Total	1.7	1.5	2.3	2.5	2.0	✓	1.4
Northern Lights Regional Health Centre	0.7	2.0	0.7	0.9	1.1	✖	1.0
Queen Elizabeth II Hospital	3.0	1.2	2.6	3.0	0.5	★	1.7
All Other Hospitals	1.5	1.5	2.5	2.6	2.7	✖	1.4

N/A: No results available. South Health Campus opened February 2013.

North Zone results have been impacted by the temporary closure of Northern Lights Regional Hospital and displacement in Fort McMurray due to the wildfires in Q1.

* "Stable" trend indicates when current period performance is ≤ 3% from the same time period as last year.

Number of Cases	2013-14	2014-15	2015-16	Q3 YTD	
				2015-16 Last Year	2016-17 Current
Provincial	1,265	1,065	1,082	800	765
South Zone	101	69	59	39	45
Calgary Zone	374	353	368	265	252
Central Zone	100	68	63	47	53
Edmonton Zone	650	539	535	404	379
North Zone	40	36	57	45	36

North Zone results have been impacted by the temporary closure of Northern Lights Regional Hospital and displacement in Fort McMurray due to the wildfires in Q1.