

Hospital-Acquired *Clostridium difficile* Infections

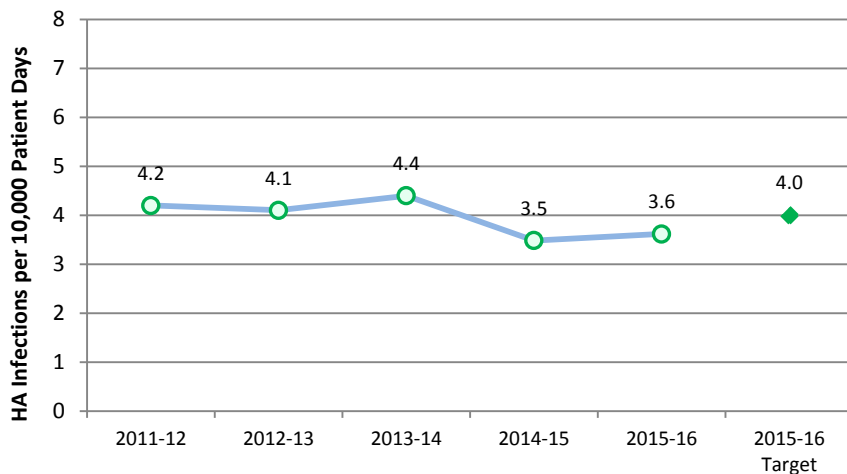
Measure Definition

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. AHS is performing better than the national average of 7.0. 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. This measures safety.

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 health care system. Monitoring CDI trends provide important information about effectiveness of infection prevention and control strategies. NOTE: This measure is reported a quarter later due to the requirement to follow up with patients after the end of the reporting quarter.

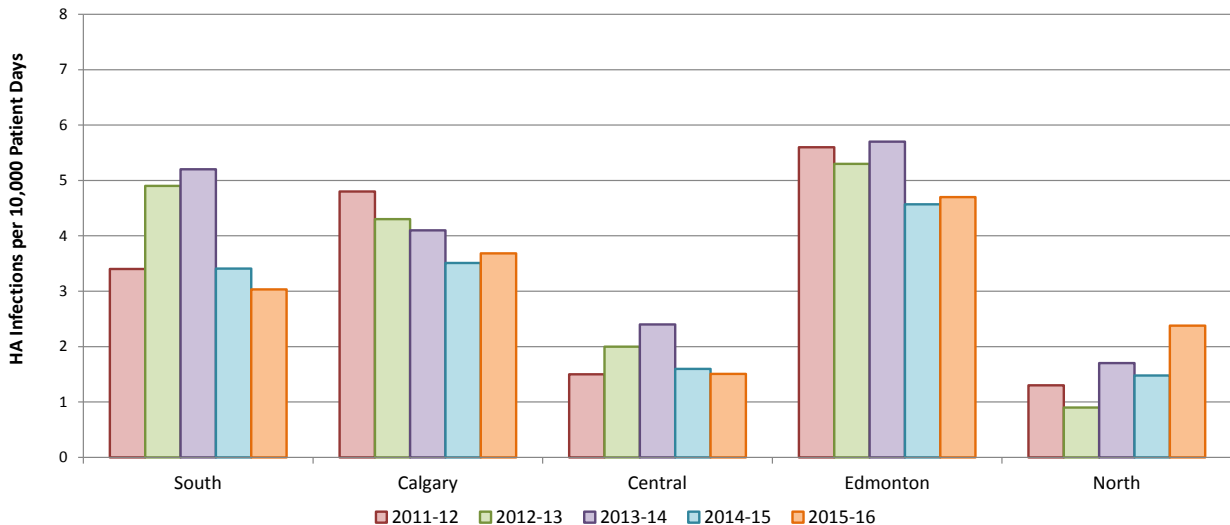
Hospital-Acquired C-Difficile Rate - Annual



How Do We Compare?

According to the Canadian Nosocomial Infection Surveillance Program based on 60 participating Canadian hospitals, the Western region which includes Alberta has a lower rate of infections than the country overall.

Hospital-Acquired *Clostridium difficile* Infections - By Zone



Hospital-Acquired Infections

ACTIONS

Phase 1 Implementation of Patient Clinical Equipment Program at nine sites (Royal Alexandra Hospital, Glenrose Rehabilitation Hospital, University of Alberta Hospital, Sturgeon Community Hospital, Medicine Hat Regional Hospital, Chinook Regional Hospital, QEII Hospital, Northern Lights Regional Hospital, and Red Deer Regional Hospital).

All zones continue to implement the antimicrobial stewardship strategy. Zone Antimicrobial Stewardship working groups will review the defined daily dose/100 patient days for select antibiotics.

South Zone is implementing the *Clostridium difficile* infections (CDI) toolkit.

Calgary Zone is increasing the use of CDI order set including the use of the CDI smartphone application by physicians to guide physicians when ordering antibiotics. Alberta Children's Hospital, is developing and implementing guidelines for antibiotic use in several conditions (e.g. pneumonia, meningitis).

Central Zone is evaluating the use of CDI toolkit components across acute care facilities. They are also using tools to reduce CDI with a focus on equipment cleaning Personal Protective Equipment and waste management.

Edmonton Zone is targeting units at the Stollery Children's Hospital with high infection rates with antimicrobial stewardship education. The zone is piloting a compact portable disinfection system at Royal Alexandra Hospital to help mitigate physical barriers to improving CDI. Also, conducting a trial of enhanced room disinfection on the burn unit.

North Zone will roll out the CDI patient orders and care map across the zone.

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.

SUMMARY

The most recent data for this measure is a quarter behind so, based on Q4 YTD 2015-16 data:

The 2015-16 targets were met for the province and four zones. South and Central Zones demonstrated improvement from the same period as last year.

North Zone performance deteriorated due to a new strain of CDI (NAP1) which has created challenges in slowing the spread of CDI.

Pediatric CDI cases are strongly influenced by antibiotic use at Alberta Children's Hospital and Stollery Children's Hospital. While their CDI rates are high, this is largely due to the type of patients cared for at Children's Hospitals – e.g., children with cancer, cardiac conditions, and other chronic diseases are very susceptible to CDI given the antibiotic use required.

DID YOU KNOW

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.

Current Canadian Standards for construction of healthcare facilities advocate for the use of **single-patient rooms** and new acute care facilities in Alberta are being designed in alignment with these standards. However, in our existing healthcare facilities there are predominately multi-patient rooms, with four patients sharing a single bathroom. Clean patient care environments are so important.

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	2012-13	2013-14	2014-15	Q4 YTD		Trend	2015-16 Target
				2014-15 Last Year	2015-16 Current		
Trend: ★ Achieved Target, ✓ Stable or better than prior period, ✗ Area requires additional focus							
Provincial	4.1	4.4	3.5	3.5	3.6	★	4.0
South Zone Total	4.9	5.2	3.4	3.4	3.0	★	4.4
Chinook Regional Hospital	7.9	7.5	5.4	5.4	4.7	★	6.9
Medicine Hat Regional Hospital	1.3	2.8	1.7	1.7	1.3	★	1.3
All Other Hospitals	4.2	4.3	2.0	2.0	2.1	★	4.0
Calgary Zone Total	4.3	4.1	3.5	3.5	3.7	★	4.1
Alberta Children's Hospital	2.4	3.5	1.4	1.4	4.2	✗	2.4
Foothills Medical Centre	6.5	5.4	5.2	5.2	4.7	★	6.1
Peter Lougheed Centre	2.1	3.4	2.8	2.8	3.6	✗	2.1
Rockyview General Hospital	3.5	4.0	3.2	3.2	3.4	★	3.4
South Health Campus	N/A	2.2	2.3	2.3	2.7	★	4.1
All Other Hospitals	2.4	1.5	0.9	0.9	1.0	★	2.3
Central Zone Total	2.0	2.4	1.6	1.6	1.5	★	1.9
Red Deer Regional Hospital Centre	3.1	3.3	3.1	3.1	2.6	★	2.8
All Other Hospitals	1.6	2.0	1.0	1.0	1.1	★	1.5
Edmonton Zone Total	5.3	5.7	4.6	4.6	4.7	★	4.9
Grey Nuns Community Hospital	5.7	5.9	3.5	3.5	3.7	★	5.4
Misericordia Community Hospital	6.9	6.3	3.9	3.9	4.1	★	6.4
Royal Alexandra Hospital	6.5	7.3	6.7	6.7	6.8	✗	6.1
Stollery Children's Hospital	2.1	3.1	4.0	4.0	5.5	✗	2.0
Sturgeon Community Hospital	5.6	9.3	6.0	6.0	7.4	✗	5.3
University of Alberta Hospital	8.7	8.6	7.1	7.1	6.2	★	7.8
All Other Hospitals	1.6	1.9	1.4	1.4	1.9	✗	1.6
North Zone Total	0.9	1.7	1.5	1.5	2.4	✗	0.8
Northern Lights Regional Health Centre	1.0	0.7	2.0	2.0	0.7	★	1.0
Queen Elizabeth II Hospital	1.1	3.0	1.2	1.2	3.0	✗	1.0
All Other Hospitals	0.8	1.5	1.5	1.5	2.5	✗	0.8

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

Number of Cases	2012-13	2013-14	2014-15	Q4 YTD	
				2014-15 Last Year	2015-16 Current
Provincial	1,166	1,265	1,065	1,065	1,075
South Zone	91	101	69	69	58
Calgary Zone	378	374	353	353	364
Central Zone	83	100	68	68	63
Edmonton Zone	594	650	539	539	534
North Zone	20	40	36	36	56