

Hospital-Acquired Clostridium difficile Infections

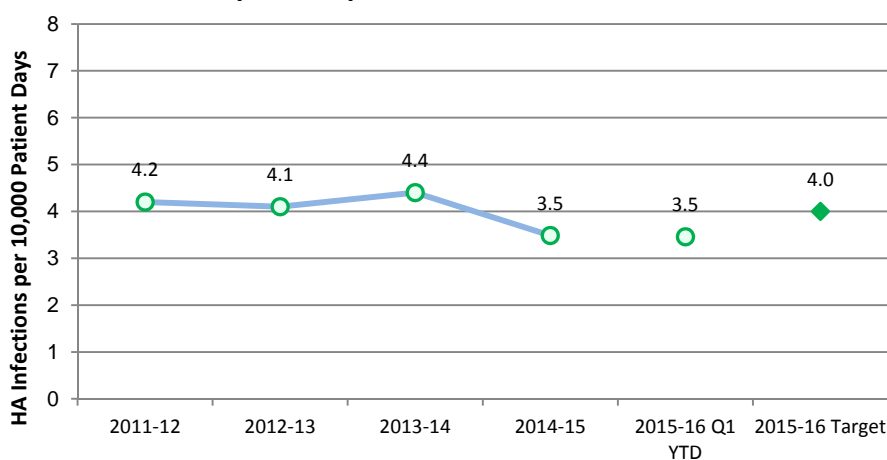
Measure Definition

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. AHS is performing better than the national average of 7.0. C-diff infection cases include patients with a new infection or re-infection while in hospital. Patients are considered to have a C-diff if they exhibit symptoms and confirmation by a laboratory test or colonoscopy.

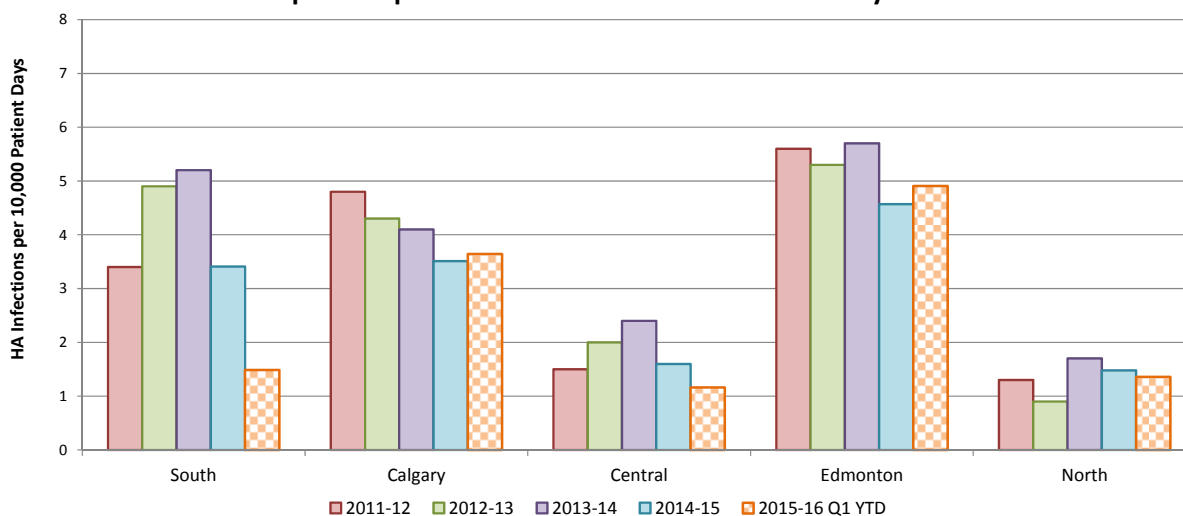
Understanding this Measure

Some individuals carry C-diff in their intestines while others may acquire it while in hospital. C-diff 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 C-diff trends provide important information about effectiveness of infection prevention and control strategies.

Hospital-Acquired C-Difficile Rate - Annual



Hospital-Acquired Clostridium difficile Infections - By Zone



Hospital-Acquired Infections – Actions

Provincial/ Strategic Clinical Network (SCN)	<ul style="list-style-type: none"> • Zone-based <i>Clostridium difficile</i> Infection (CDI or <i>C. difficile</i>) working groups established. • Zone CDI clinical management guidelines and algorithms are being implemented in all zones. • Environmental Services standards and protocols for clean patient environment established.
South	<ul style="list-style-type: none"> • Implemented new surgical site infection report with physician engagement. • Ongoing collaboration with public health programs, and infection, prevention and control to further integrate surveillance processes. • Surgical pre-op antibiotic prophylaxis (PPO's) was compared to AHS surgical prophylaxis. Taking steps to have the non-compliant PPO's changed. • Initiated work on antimicrobial stewardship including development of a committee, communications plan and holding education sessions. • Review and optimization of prophylactic antibiotic use in the surgical patient population which is an important intervention in preventing surgical site infections. The Surgical Site Infections - Getting Started Kit was endorsed by the Canadian Patient Safety Institute and will guide the team involved.
Calgary	<ul style="list-style-type: none"> • Under direction of the Antimicrobial Stewardship Committee, antibiotic utilization data was obtained and reported for the 15 units with the highest <i>C. difficile</i> infection rates. • Electronic patient care system medical logic order sets for the management of CDI were built, evaluated and implemented. An "app" is available to Calgary Zone physicians. • The Microbial Health clinic at Foothills Medical Centre provides novel treatment options for patients with recurrent <i>C. difficile</i>. • Updates pertaining to Hospital Acquired Infections are featured in the monthly newsletter.
Central	<ul style="list-style-type: none"> • Rollout and implementation of CDI tool kit continues in rural facilities. • Monitoring of surveillance reports and new <i>C. difficile</i> cases continues (i.e. investigations and interventions when an increase in cases is identified). • Quarterly monitoring of top 14 antibiotics usage associated with CDI. • Antimicrobial stewardship and urinary tract infection management education complete and interim analysis initiated.
Edmonton	<ul style="list-style-type: none"> • Antibiotic utilization data was reported for top 15 <i>C. difficile</i> infection units. • Work underway to create a response process / bundle for facilities with high <i>C. difficile</i> infection rates. • Pre-printed patient care orders implemented. The form will be placed on the chart when the patient presents with, or develops diarrhea. • Assessing the use of antibiotics and acid blocking agents in patients before and after <i>C. difficile</i> infection diagnosis. • Work underway to identify current practice related to asymptomatic bacteriuria.
North	<ul style="list-style-type: none"> • Roll-out of CDI pre-print orders continues throughout the zone with roll-out targets being met. • Surgical Site infection surveillance audits being completed.

IN SUMMARY

The Q1 provincial results have shown improvement. Provincially and four zones are at or above 2015-16 target.

There is a new strain of CDI that has come into Alberta in the past couple years, and that has led to a gradual increase in the amount of CDI in some facilities.

Several factors affect hospital rates of CDI including the size, physical layout and nature of services provided, type of population served and use of antibiotics.

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.

DID YOU KNOW

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.

Hospital-Acquired Infections – Zone and Site Details

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 Infections	2012-13	2013-14	2014-15	Q1 YTD		Trend *	2015-16 Target
				2014-15 Last Year	2015-16 Current		
Provincial	4.1	4.4	3.5	3.8	3.5	↑	4.0
South Zone Total	4.9	5.2	3.4	3.8	1.5	↑	4.4
Chinook Regional Hospital	7.9	7.5	5.4	5.7	2.3	↑	6.9
Medicine Hat Regional Hospital	1.3	2.8	1.7	1.8	1.2	↑	1.3
All Other Hospitals	4.2	4.3	2.0	3.0	0.0	↑	4.0
Calgary Zone Total	4.3	4.1	3.5	3.5	3.6	↓	4.1
Alberta Children's Hospital	2.4	3.5	1.4	0.0	3.9	↓	2.4
Foothills Medical Centre	6.5	5.4	5.2	5.3	4.8	↑	6.1
Peter Lougheed Centre	2.1	3.4	2.8	3.7	3.3	↑	2.1
Rockyview General Hospital	3.5	4.0	3.2	2.3	3.2	↓	3.4
South Health Campus	N/A	2.2	2.3	2.6	3.1	↓	4.1
All Other Hospitals	2.4	1.5	0.9	0.5	1.0	↓	2.3
Central Zone Total	2.0	2.4	1.6	1.3	1.2	↑	1.9
Red Deer Regional Hospital Centre	3.1	3.3	3.1	2.5	1.3	↑	2.8
All Other Hospitals	1.6	2.0	1.0	0.8	1.1	↓	1.5
Edmonton Zone Total	5.3	5.7	4.6	5.7	4.9	↑	4.9
Grey Nuns Community Hospital	5.7	5.9	3.5	2.9	3.7	↓	5.4
Misericordia Community Hospital	6.9	6.3	3.9	5.2	3.2	↑	6.4
Royal Alexandra Hospital	6.5	7.3	6.7	10.7	7.4	↑	6.1
Stollery Children's Hospital	2.1	3.1	4.0	5.7	6.0	↓	2.0
Sturgeon Community Hospital	5.6	9.3	6.0	5.8	13.5	↓	5.3
University of Alberta Hospital	8.7	8.6	7.1	8.1	5.2	↑	7.8
All Other Hospitals	1.6	1.9	1.4	1.1	2.2	↓	1.6
North Zone Total	0.9	1.7	1.5	1.0	1.4	↓	0.8
Northern Lights Regional Health Centre	1.0	0.7	2.0	0.0	1.3	↓	1.0
Queen Elizabeth II Hospital	1.1	3.0	1.2	2.5	2.6	↓	1.0
All Other Hospitals	0.8	1.5	1.5	0.7	1.0	↓	0.8

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

* Trend: ↑ Improvement → Stability ↓ Area requires additional focus

Number of Cases	2012-13	2013-14	2014-15	Q1 YTD	
				2014-15 Last Year	2015-16 Current
Provincial	1,166	1,265	1,065	289	254
South Zone	91	101	69	19	7
Calgary Zone	378	374	353	85	89
Central Zone	83	100	68	14	12
Edmonton Zone	594	650	539	165	138
North Zone	20	40	36	6	8