

## Hospital-Acquired *Clostridium difficile* Infections

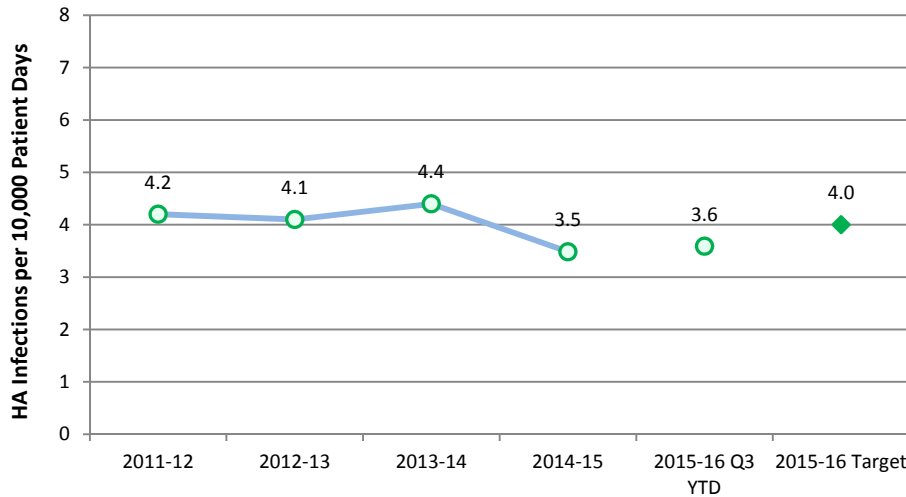
### Measure Definition

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. NOTE: This measure relies on patient follow up after a patient's original discharge date for a period up to 90 days. Therefore reporting results reflect patients discharged in an earlier time period (i.e., Q3 YTD).

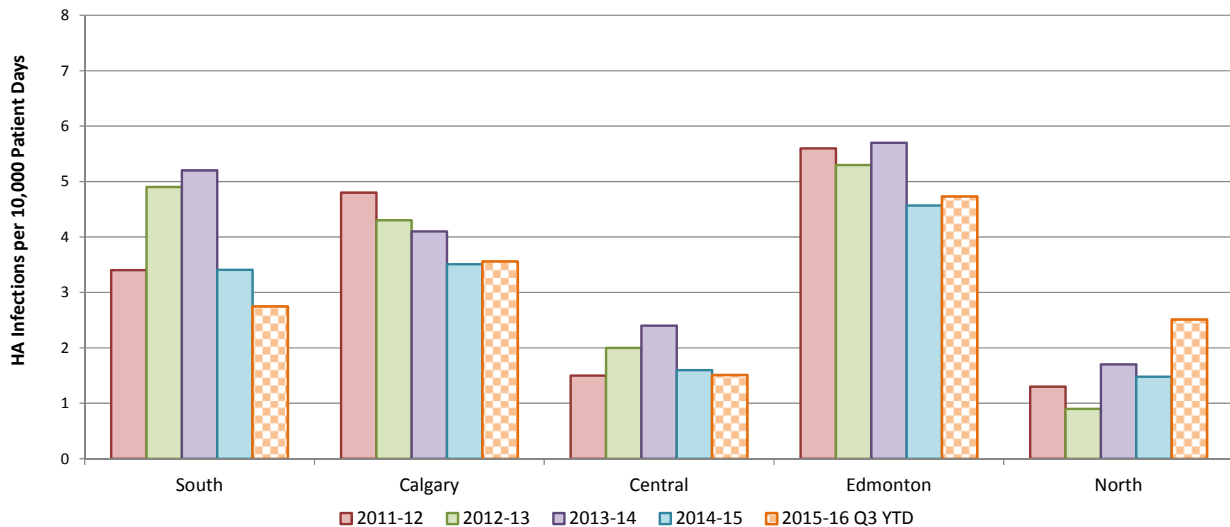
Hospital-Acquired C-Difficile Rate - Annual



### 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

<b>Provincial/ Strategic Clinical Network (SCN)</b>	<ul style="list-style-type: none"> <li>• Zone-based <i>Clostridium difficile</i> Infection (CDI or <i>C. difficile</i>) working groups established.</li> <li>• Zone CDI clinical management guidelines and algorithms are being implemented in all zones.</li> <li>• Environmental Services standards and protocols for clean patient environment established.</li> <li>• Bugs &amp; Drugs: An Antimicrobial/Infectious Diseases Reference is available on the AHS internal website for staff and physicians. This reference is also available via print, iPhone and Android apps.</li> <li>• AHS supported over 40 separate antimicrobial stewardship initiatives to improve antibiotic use and launched the "Reduce your Antibiotic Footprint" campaign.</li> <li>• Revised admission screening guidelines for patients at risk for antibiotic resistant organisms was implemented provincewide.</li> </ul>
<b>South</b>	<ul style="list-style-type: none"> <li>• Ongoing collaboration with public health programs, and Infection, Prevention and Control (IPC) to further integrate surveillance processes.</li> <li>• Developed interdisciplinary antimicrobial stewardship committee to monitor top 14 antibiotics associated with CDI.</li> </ul>
<b>Calgary</b>	<ul style="list-style-type: none"> <li>• Obtained and reported antibiotic utilization data for the 15 units with the highest <i>C. difficile</i> infection rates.</li> <li>• Electronic patient care system medical logic order sets for the management of CDI was implemented. An “app” is available to physicians.</li> <li>• The Microbial Health Clinic at Foothills Medical Centre provides novel treatment options for patients with recurrent <i>C. difficile</i>.</li> <li>• South Health Campus and IPC launched a pilot project to test an overcapacity patient checklist that screens patients who are not appropriate for an overcapacity space due to an increased infection transmission risk.</li> </ul>
<b>Central</b>	<ul style="list-style-type: none"> <li>• Rolled out CDI toolkit to all facilities. Audit and feedback evaluation of CDI toolkit framework completed and developed.</li> <li>• Monitored surveillance reports and new cases including investigations and interventions when an increase in cases was identified.</li> <li>• Top 15 antibiotics use monitored at Red Deer Regional Hospital Centre.</li> <li>• Tools provided to staff in continuing care sites to assist with identification and treatment of urinary tract infections in residents.</li> </ul>
<b>Edmonton</b>	<ul style="list-style-type: none"> <li>• Reported antibiotic utilization data for top 15 CDI units.</li> <li>• Created a response process for facilities with high CDI rates.</li> <li>• Implemented pre-printed patient care orders which are placed on the chart when the patient presents with, or develops, diarrhea in acute care.</li> <li>• Assessing the use of antibiotics and acid blocking agents in patients before and after <i>C. difficile</i> infection diagnosis.</li> <li>• Developed workplan for asymptomatic bacteriuria.</li> <li>• Human waste management system change with installation of macerators on medical units.</li> </ul>
<b>North</b>	<ul style="list-style-type: none"> <li>• Established CDI working group with quality consultants to identify actions to address recent increase in CDI cases.</li> <li>• Continued implementation of preprinted patient care order.</li> <li>• CDI presentations delivered to staff.</li> </ul>

### IN SUMMARY

The Q3 provincial results have shown deterioration from last year. However, provincially and four zones are at or above the 2015-16 target.

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	Q3 YTD		Trend *	2015-16 Target
				2014-15 Last Year	2015-16 Current		
<b>Provincial</b>	<b>4.1</b>	<b>4.4</b>	<b>3.5</b>	<b>3.5</b>	<b>3.6</b>	↓	<b>4.0</b>
<b>South Zone Total</b>	<b>4.9</b>	<b>5.2</b>	<b>3.4</b>	<b>3.9</b>	<b>2.8</b>	↑	<b>4.4</b>
Chinook Regional Hospital	7.9	7.5	5.4	6.2	4.7	↑	6.9
Medicine Hat Regional Hospital	1.3	2.8	1.7	1.9	1.0	↑	1.3
All Other Hospitals	4.2	4.3	2.0	2.3	1.5	↑	4.0
<b>Calgary Zone Total</b>	<b>4.3</b>	<b>4.1</b>	<b>3.5</b>	<b>3.6</b>	<b>3.6</b>	→	<b>4.1</b>
Alberta Children's Hospital	2.4	3.5	1.4	0.9	3.5	↓	<b>2.4</b>
Foothills Medical Centre	6.5	5.4	5.2	5.5	4.7	↑	6.1
Peter Lougheed Centre	2.1	3.4	2.8	3.2	3.6	↓	2.1
Rockyview General Hospital	3.5	4.0	3.2	2.9	3.4	↓	3.4
South Health Campus	N/A	2.2	2.3	2.3	2.1	↑	4.1
All Other Hospitals	2.4	1.5	0.9	1.2	1.0	↑	2.3
<b>Central Zone Total</b>	<b>2.0</b>	<b>2.4</b>	<b>1.6</b>	<b>1.4</b>	<b>1.5</b>	↓	<b>1.9</b>
Red Deer Regional Hospital Centre	3.1	3.3	3.1	3.0	2.7	↑	2.8
All Other Hospitals	1.6	2.0	1.0	0.8	1.0	↓	1.5
<b>Edmonton Zone Total</b>	<b>5.3</b>	<b>5.7</b>	<b>4.6</b>	<b>4.6</b>	<b>4.7</b>	↓	<b>4.9</b>
Grey Nuns Community Hospital	5.7	5.9	3.5	3.4	3.7	↓	5.4
Misericordia Community Hospital	6.9	6.3	3.9	4.2	3.6	↑	6.4
Royal Alexandra Hospital	6.5	7.3	6.7	6.6	6.6	→	6.1
Stollery Children's Hospital	2.1	3.1	4.0	4.2	5.7	↓	2.0
Sturgeon Community Hospital	5.6	9.3	6.0	4.9	8.1	↓	5.3
University of Alberta Hospital	8.7	8.6	7.1	7.8	6.6	↑	7.8
All Other Hospitals	1.6	1.9	1.4	1.0	2.0	↓	1.6
<b>North Zone Total</b>	<b>0.9</b>	<b>1.7</b>	<b>1.5</b>	<b>1.7</b>	<b>2.5</b>	↓	<b>0.8</b>
Northern Lights Regional Health Centre	1.0	0.7	2.0	2.6	0.9	↑	1.0
Queen Elizabeth II Hospital	1.1	3.0	1.2	1.6	3.4	↓	1.0
All Other Hospitals	0.8	1.5	1.5	1.5	2.6	↓	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	Q3 YTD	
				2014-15 Last Year	2015-16 Current
<b>Provincial</b>	<b>1,166</b>	<b>1,265</b>	<b>1,065</b>	<b>809</b>	<b>796</b>
South Zone	91	101	69	59	39
Calgary Zone	378	374	353	272	263
Central Zone	83	100	68	45	47
Edmonton Zone	594	650	539	403	403
North Zone	20	40	36	30	44