Clostridium difficile Infections (CDI) Update, Q2 of 2018/19

December 2018

Summary Table

	Q2 2018/19	Previous quarter (Q1 2018/19)	Same quarter of previous year (Q2 2017/18)	Last 4 Quarters (Q3 2017/18 – Q2 2018/19
Total CDI cases identified	**479**	505	502	2,282
Number of new CDI cases associated with the reporting facility	**250**	242	227	1,119
Total inpatient days	**668,276**	722,161	647,063	3,058,126
Rate of CDI associated with the reporting facility per 10,000 inpatient days (95% CI)	**3.7(3.3-4.2)**	3.4(3.0-3.8)	3.5(3.1-4.0)	3.5(3.3-3.8)

Highlights for Q2 2018/19

- The provincial rate of CDI cases associated with the reporting facility in Q2 of 2018/19 was 3.7 per 10,000 inpatient days, which was higher than the previous quarter (3.4 per 10,000 inpatient days). However, the difference was not statistically significant.
- The CDI rate in Q2 of 2018/19 was also not significantly different from the same quarter of the previous year (3.5 per 10,000 inpatient days in Q2 2017/18).
- There is a significant downward trend in the provincial rates of CDI from Q1 of 2014/15 to Q2 of 2018/19.

What is *Clostridium difficile* infection (CDI)*?*

Clostridium difficile (C. difficile) is a bacterium that can live in the bowel without causing harm. For healthy people, *C. difficile* does not often pose a health risk. However, for people taking antibiotics or with weakened immune systems, e.g. patients who are elderly or undergoing chemotherapy, the normal balance of healthy bacteria in the digestive system may be upset, allowing *C. difficile* to grow to unusually high levels and produce toxins that can damage the bowel and cause diarrhea, fever, abdominal cramping, dehydration, and even death.

How is *Clostridium difficile* transmitted?

The bacteria and their spores are shed in feces. People can acquire the bacteria if they touch items or surfaces (e.g., toilets, commodes, bathing tubs, etc.) that are contaminated with feces, and then touch their mouth or mucous membranes without washing their hands thoroughly. *C. difficile* can live for long periods on surfaces and can spread very easily.

How can *Clostridium difficile* transmission be prevented?

The risk of acquiring CDI can be reduced by frequent hand washing with soap and water — particularly after toileting, before eating, and after touching any frequently touched surfaces (such as door handles, elevator buttons, shared keyboard/mouse, etc.) Other risk reduction methods include avoiding sharing personal items and using antibiotics cautiously. Staff in healthcare settings can significantly reduce the spread of *C. difficile* by strictly following infection control guidelines.

Why is CDI being monitored in BC hospitals?

Monitoring CDI in acute care facilities helps improve the quality of care and protect both patients and healthcare providers through the development of evidence based infection prevention and control guidelines. It also increases awareness and understanding of CDI among professionals and the public.

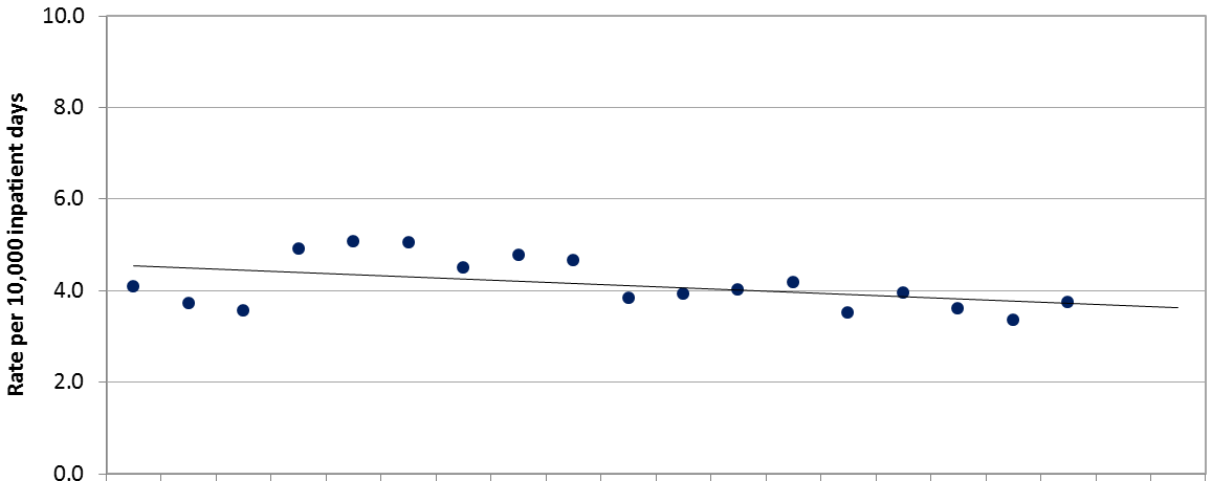
Where can I find information about CDI in BC?

The PICNet website (www.picnet.ca) provides provincial guidance, toolkits, and related resources about CDI prevention and control, as well as the surveillance protocol and reports on CDI in BC. If you have questions or suspect that you have CDI, please contact your doctor or healthcare provider.

This quarterly update presents the latest data on incidence and trends of new CDI that were healthcare-associated (HCA) with the reporting facility among inpatients in the last five years. In the following graphs,

1) Relapses of CDI and new cases that were associated with another healthcare facility, community-associated, or of unknown origin were not included.
2) The data were aggregated by fiscal quarter for each health authority except Provincial Health Services Authority (PHSA), which aggregated the data by calendar quarter.
3) The time frame of each fiscal quarter varied by fiscal year and there were more days in the fourth quarter (Q4) than in the other three quarters (Q1, Q2, and Q3) of each fiscal year.
4) The line in each graph represents the overall linear trend over time.
5) Direct comparison of the number of cases or the rate between health authorities is not recommended due to variations in laboratory testing for confirmation of CDI diagnosis and in the application of CDI case definition.

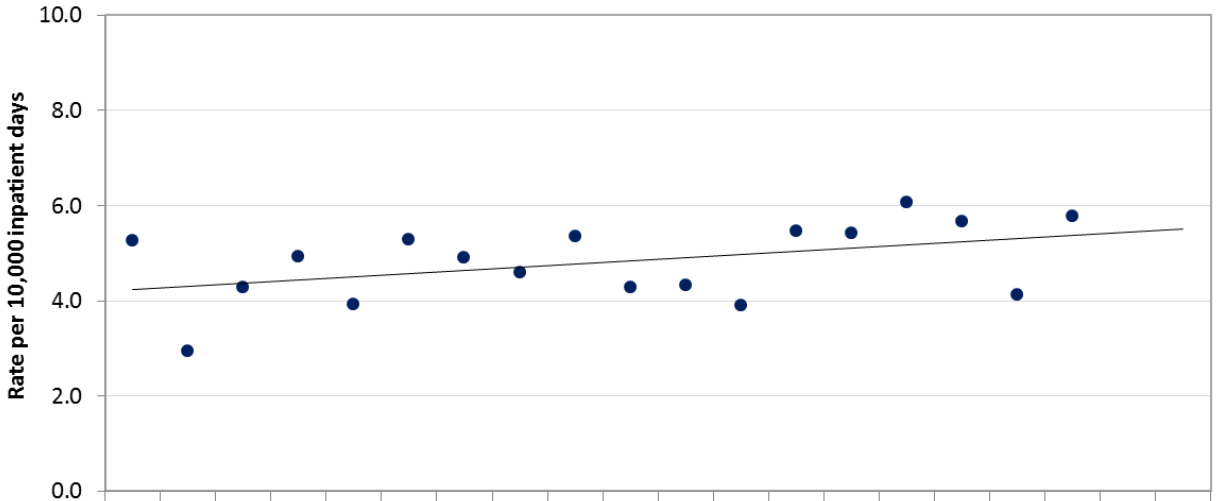
Figure 1. Provincial rate and number of new cases of CDI associated with the reporting facility, by fiscal year and quarter, 2014/15 - 2018/19, British Columbia



	2014/15				2015/16				2016/17				2017/18				2018/19			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Rate per 10,000 inpatient days	4.1	3.7	3.6	4.9	5.1	5.1	4.5	4.8	4.7	3.8	3.9	4.0	4.2	3.5	4.0	3.6	3.4	3.7		
Number of new HCA cases	259	242	240	465	318	329	311	465	285	248	263	394	250	227	268	358	242	250		

Fiscal year and quarter

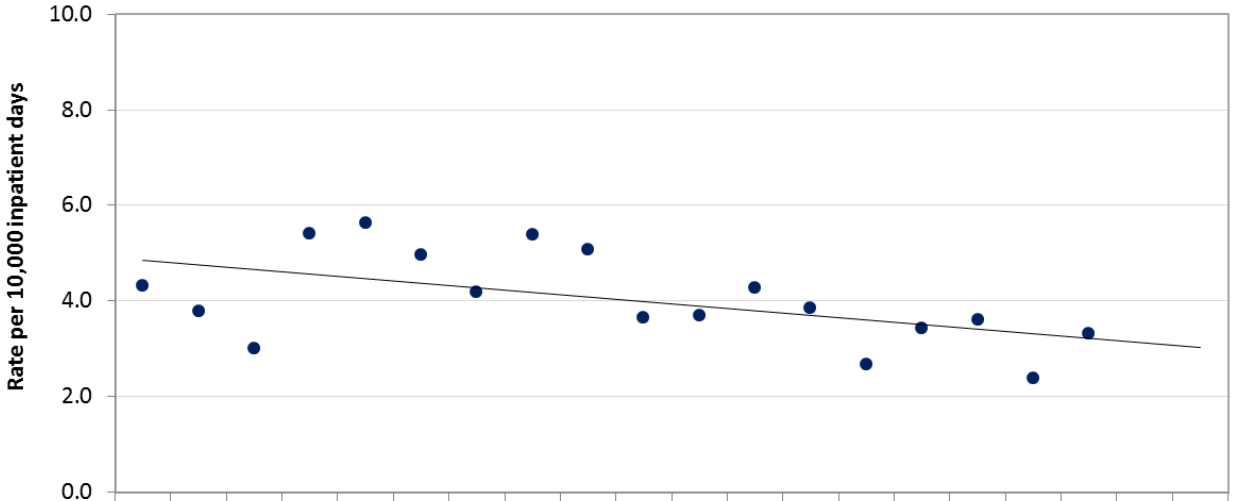
Figure 2. Rate and number of new cases of CDI associated with the reporting facility, by fiscal year and quarter, 2014/15 - 2018/19, Interior Health



	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	2014/15				2015/16				2016/17				2017/18				2018/19			
● Rate per 10,000 inpatient days	5.3	3.0	4.3	4.9	3.9	5.3	4.9	4.6	5.4	4.3	4.3	3.9	5.5	5.4	6.1	5.7	4.1	5.8		
Number of new HCA cases	52	30	45	75	37	53	49	71	49	41	45	63	50	53	62	86	46	57		

Fiscal year and quarter

Figure 3. Rate and number of new cases of CDI associated with the reporting facility, by fiscal year and quarter, 2014/15 - 2018/19, Fraser Health[1]

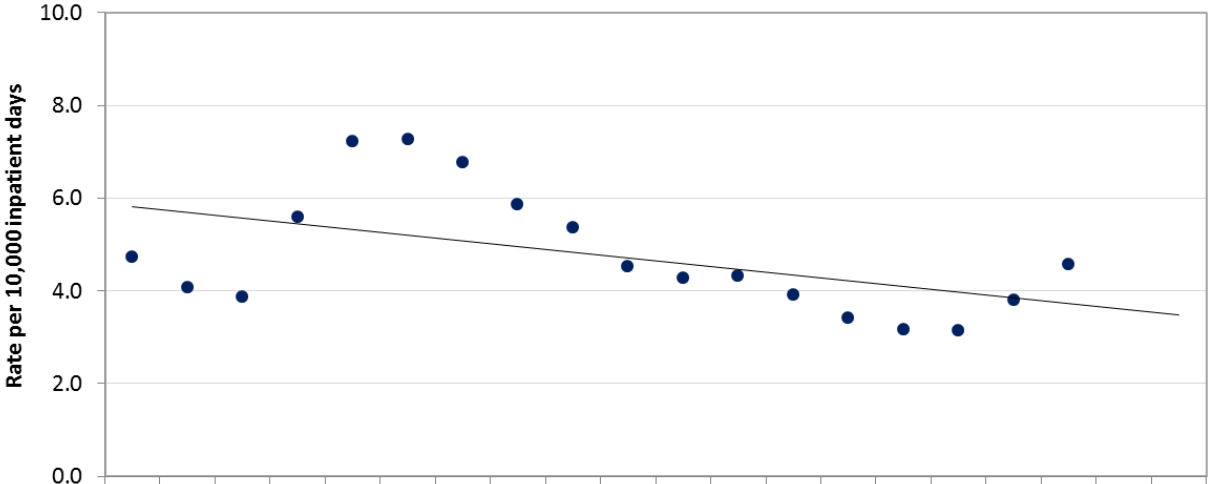


	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	2014/15				2015/16				2016/17				2017/18				2018/19			
● Rate per 10,000 inpatient days	4.3	3.8	3.0	5.4	5.6	5.0	4.2	5.4	5.1	3.7	3.7	4.3	3.9	2.7	3.4	3.6	2.4	3.3		
Number of new HCA cases	99	89	73	185	128	118	110	189	110	83	87	146	80	61	80	125	59	76		

Fiscal year and quarter

[1] Fraser Health expanded provincial surveillance program for CDI to a new acute care site during Q4 2017/18

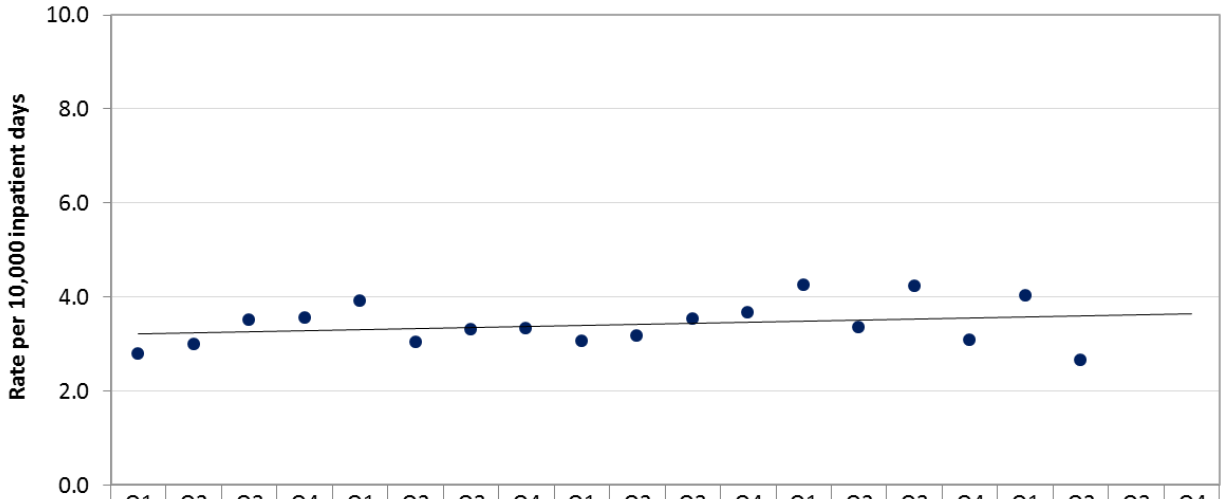
Figure 4. Rate and number of new cases of CDI associated with the reporting facility, by fiscal year and quarter, 2014/15 - 2018/19, Vancouver Coastal Health[2]



	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	2014/15				2015/16				2016/17				2017/18				2018/19			
● Rate per 10,000 inpatient days	4.7	4.1	3.9	5.6	7.2	7.3	6.8	5.9	5.4	4.5	4.3	4.3	3.9	3.4	3.2	3.1	3.8	4.6		
Number of new HCA cases	68	60	59	119	102	105	102	127	74	66	64	94	52	48	46	68	59	66		

Fiscal year and quarter

Figure 5. Rate and number of new cases of CDI associated with the reporting facility, by fiscal year and quarter, 2014/15 - 2018/19, Island Health[3]



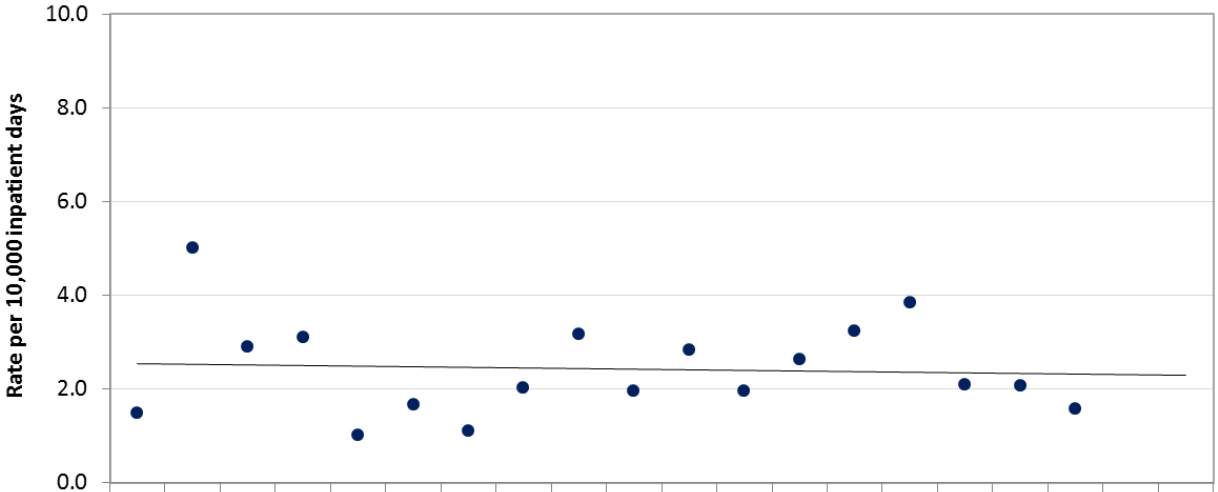
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	2014/15				2015/16				2016/17				2017/18				2018/19			
● Rate per 10,000 inpatient days	2.8	3.0	3.5	3.5	3.9	3.0	3.3	3.3	3.1	3.2	3.5	3.7	4.3	3.3	4.2	3.1	4.0	2.6		
Number of new HCA cases	30	33	41	59	44	35	40	58	34	38	43	67	48	41	56	59	57	35		

Fiscal year and quarter

[2] The data include acute care facilities of Providence Health Care (PHC)

[3] The data include two new hospitals opened during Q3 of 2017/18 and historical data from two closed hospitals. A new and more sensitive multiplex testing for *C. difficile* was introduced during Q3 of 2017/18 and onwards.

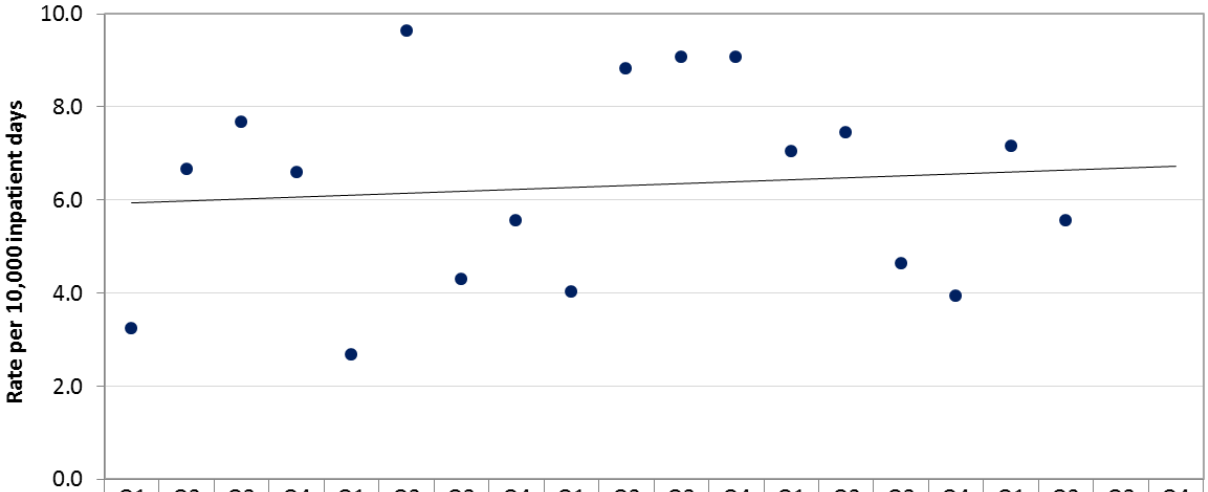
Figure 6. Rate and number of new cases of CDI associated with the reporting facility, by fiscal year and quarter, 2013/14 - 2018/19, Northern Health



	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	2014/15				2015/16				2016/17				2017/18				2018/19			
● Rate per 10,000 inpatient days	1.5	5.0	2.9	3.1	1.0	1.7	1.1	2.0	3.2	2.0	2.8	1.9	2.6	3.2	3.8	2.1	2.1	1.6		
Number of new HCA cases	6	22	13	19	4	7	5	13	13	9	13	13	11	15	19	15	11	8		

Fiscal year and quarter

Figure 7. Rate and number of new cases of CDI associated with the reporting facility, by fiscal year and calendar quarter, 2013/14 - 2018/19, Provincial Health Services Authority[4]



	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	2014/15				2015/16				2016/17				2017/18				2018/19			
● Rate per 10,000 inpatient days	3.2	6.6	7.7	6.6	2.7	9.6	4.3	5.6	4.0	8.8	9.1	9.1	7.0	7.4	4.6	3.9	7.1	5.6		
Number of new HCA cases	4	8	9	8	3	11	5	7	5	11	11	11	9	9	6	5	10	8		

Fiscal year and calendar quarter

[4] CDI surveillance data in BC Cancer Agency were included from Q1 of 2018/19

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