PICNet PROVINCIAL INFECTION CONTROL NETWORK OF BRITISH COLUMBIA

Clostridium difficile Infection (CDI) Surveillance Annual Report

April 1st, 2009 – March 31st, 2010

Prepared by: Provincial Infection Control Network
September 2010

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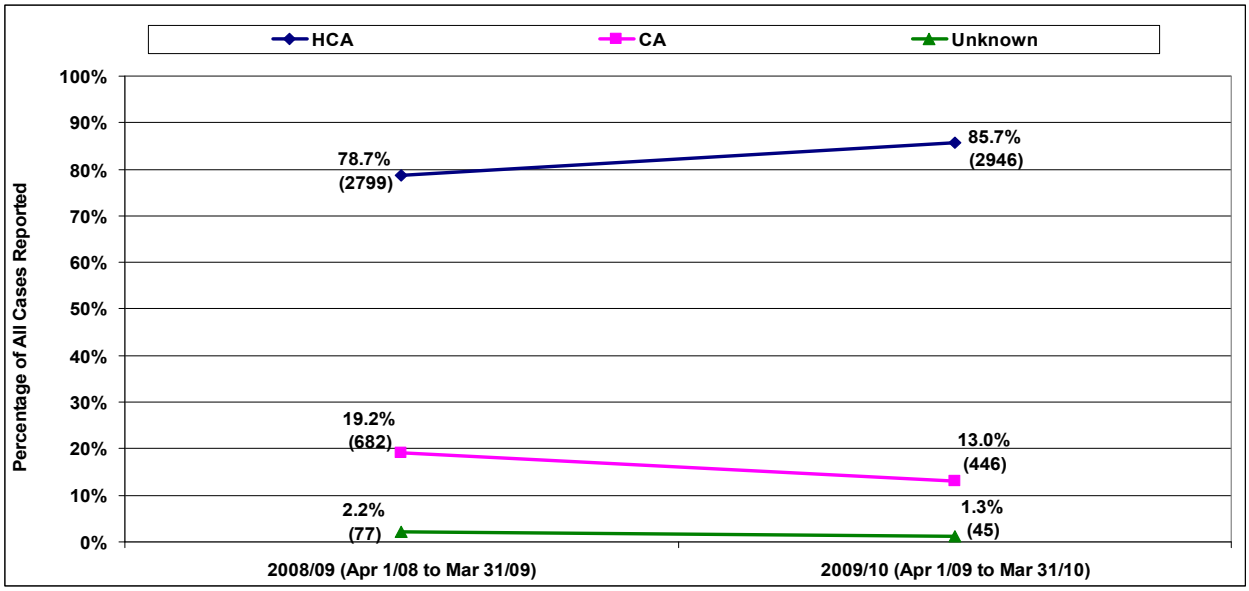
Cases by Reported Association

From April 1, 2009 to March 31, 2010 (fiscal year 2009/10) there were a total of 3437[1] reported cases of CDI among patients admitted to 82 acute care facilities across BC. As illustrated in Figure 1, the majority of cases reported in 2008/09 and 2009/10 are healthcare associated (HCA); less than 25% were community associated (CA) and cases of unknown origin.

Figure 1. Percentage of Cases of CDI in BC Acute Care Facilities by Reported Association

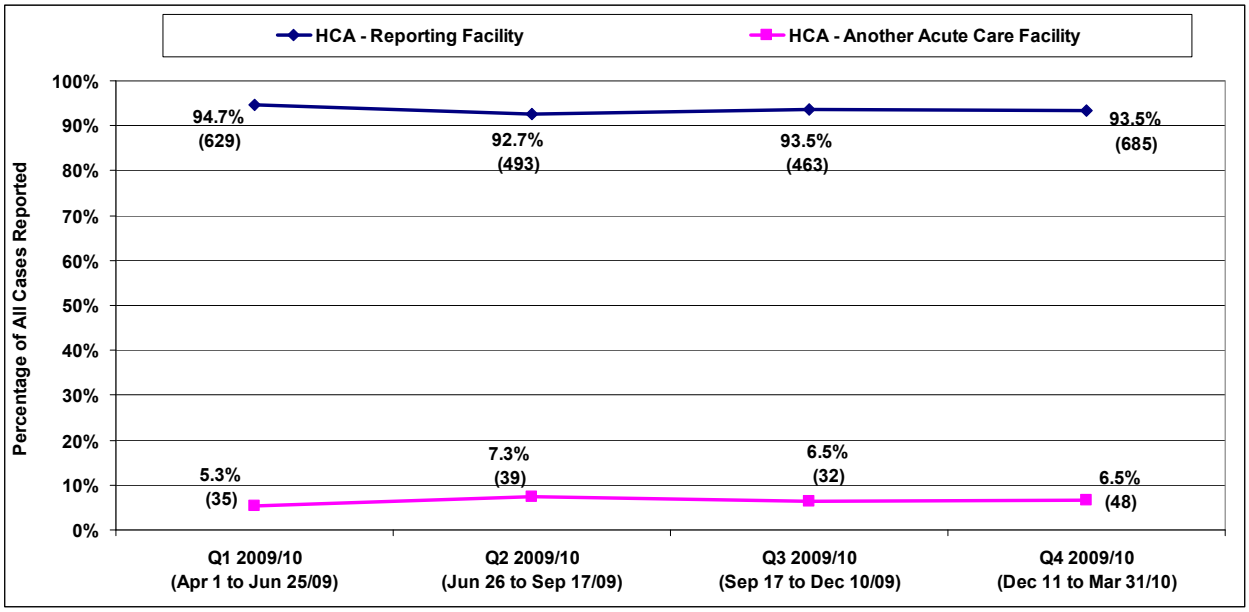


Examining the distribution of cases by fiscal year, the data shows that there was a 7% increase in HCA cases in 2009/10 compared to 2008/09. This increase was found to be statistically significant by Chi-square test ($p < 0.001$). Conversely, there was a statistically significant reduction (6.2%) in the number of CA cases ($p < 0.001$).

[1] The total includes both new infections and relapses.

Of all HCA new infection cases (2424) reported in 2009/10, 93.6% (2270) were new infections that were associated with the reporting facility and are therefore considered to be nosocomial. Nosocomial infections compared to HCA infections that were associated with an acute care facility other than the reporting facility by Fiscal Quarter (FQ) are shown in Figure 2.

Figure 2. Percentage of Nosocomial CDI Infections vs. HCA CDI Infections – Another Acute Care Facility



Cases by Hospital Size

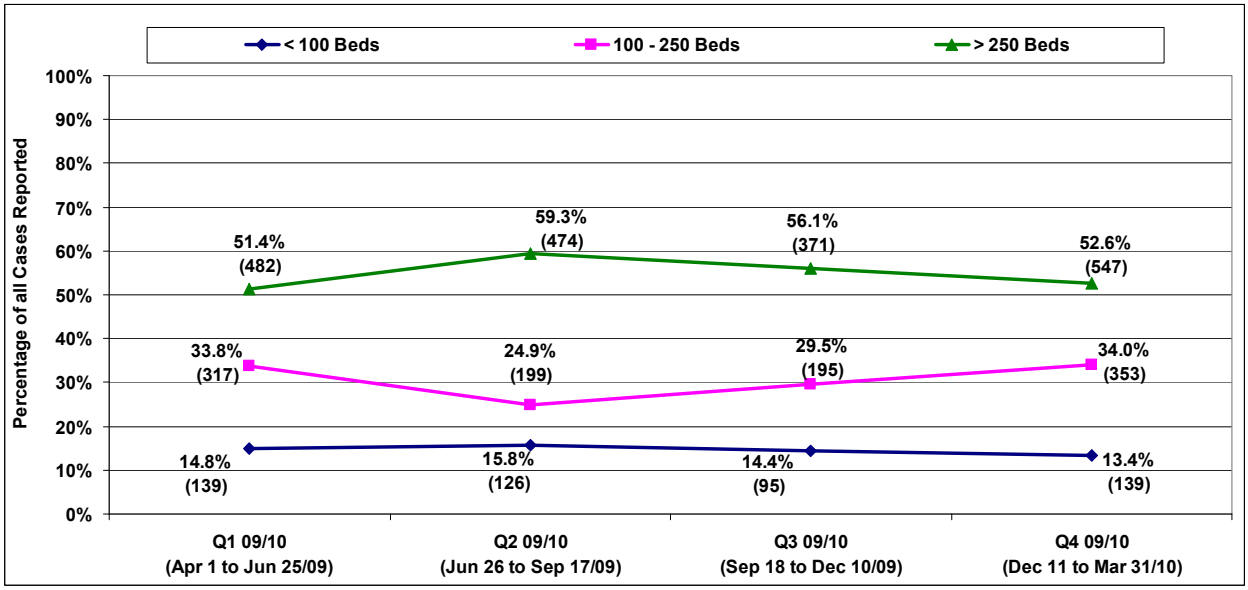
As shown in Table 1, the majority (72%) of BC acute care facilities have less than 100 acute care beds; only 11% have more than 250 beds.

Table 1. Number of Acute Care Facilities by HA, Hospital Size

	Hospital Size			
HA	**<100**	**100-250**	**>250**	**Total**
FHA	5	5	4	**14**
IHA	18	3	1	**22**
NHA	17	1	0	**18**
PHSA	1	1	0	**2**
VCHA	7	2	2	**11**
VIHA	11	2	2	**15**
Total	**59**	**14**	**9**	**82**

In 2009/10, 54.5% (1874) of cases were reported by facilities with more than 250 acute care beds. Facilities with 100 to 250 acute care beds accounted for 31.0% (1064) of all the cases reported while facilities with less than 100 acute care beds accounted for 14.5% (499). As shown in Figure 3, facilities with more than 250 acute care beds accounted for more than half of the cases reported in all four quarters while facilities with less than 100 acute care beds accounted for approximately 15%.

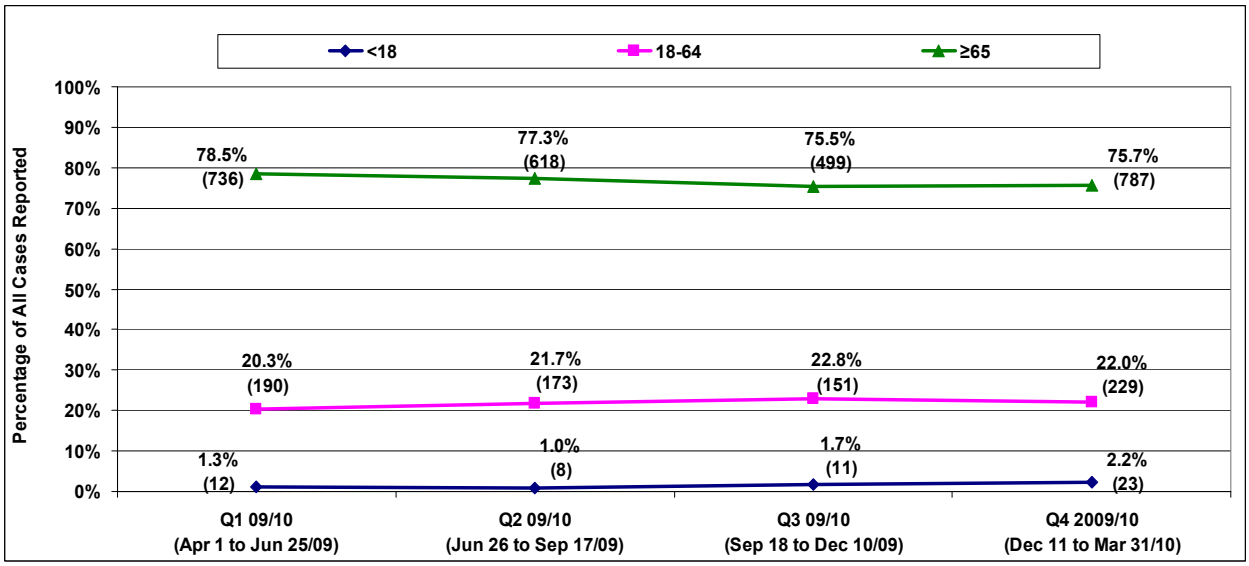
Figure 3. Percentage of Cases of CDI in BC Acute Care Facilities by Hospital Size, FQ



Cases by Sex and Age Group

Of all the CDI cases reported in 2009/10, 45.2% (1554) were male and 54.8% (1883) were female. Pediatric patients (<18 years of age) accounted for 1.6% (54) of all the cases reported, while patients ≥ 65 years of age accounted for 76.8% (2640). The percentage of cases of CDI by age and FQ is shown in Figure 4.

Figure 4. Percentage of Cases of CDI in BC Acute Care Facilities by Age Group, FQ

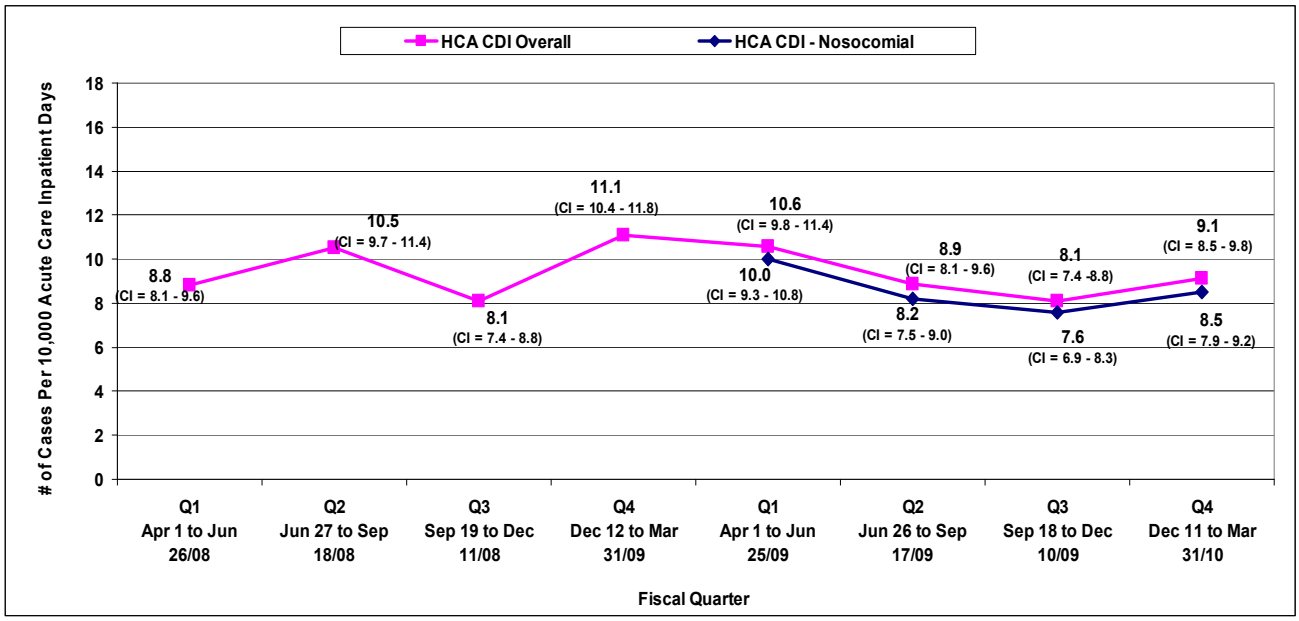


CDI Rates- April 1, 2008 to March 31, 2010

The provincial rates for overall HCA CDI measures the number of new HCA infections (including new infections associated with the reporting facility and those associated with other facilities) per 10,000 acute care inpatient days. The rates for HCA CDI – Nosocomial[2] measures only new infections associated with the reporting facility per 10,000 acute care inpatient days. Relapses, CA and cases of unknown origin are excluded from the calculation for both overall HCA CDI and HCA CDI – Nosocomial rates. In 2009/10, the provincial rate for HCA CDI was 9.2 cases per 10,000 acute care inpatient days [95% Confidence Interval (CI) = 8.8 – 9.5], which is slightly lower than the 2008/2009 rate [9.7 cases per 10,000 acute care inpatient days (95% CI = 9.3 – 10.1)].

The provincial rates for both overall HCA CDI and HCA CDI – Nosocomial in BC acute care facilities by FQ are shown in Figure 5.

Figure 5. Provincial Rates for HCA CDI by FQ



The above graph shows that over the surveillance period (Apr 1, 2008 – Mar 31, 2009), the provincial rates for overall HCA CDI ranged from 8.1 (95% CI = 7.4 – 8.8) to 11.1 (95% CI = 10.4 – 11.8) cases per 10,000 acute care inpatient days. Both overall HCA CDI and HCA CDI – Nosocomial rates decreased in 2009/10.

[2] Data on HCA CDI – Nosocomial was not available until April 1, 2009.

The HA rates[3] (including 95% CI) for overall HCA CDI by FQ are shown in Figure 6a and Table 2. The HA rates (including 95% CI) for HCA CDI - Nosocomial by FQ are shown in Figure 6b and Table 3.

Figure 6a. Rates for Overall HCA CDI by HA, FQ

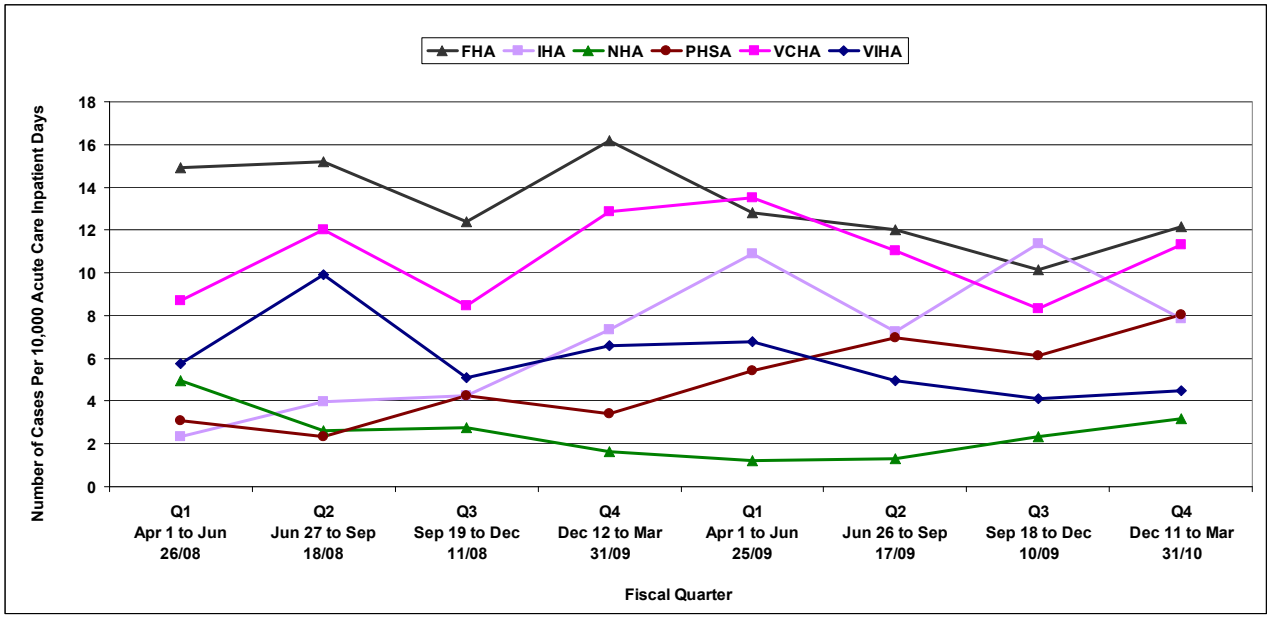


Table 2. Rates (including 95% CI) for Overall HCA CDI by HA, FQ

HA	HCA CDI Rates by HA (# of Cases Per 10,000 Acute Care Inpatient Days)							
	2008/09				2009/10			
	Q1 Apr 1 to Jun 26/08	Q2 Jun 27 to Sep 18/08	Q3 Sep 19 to Dec 11/08	Q4 Dec 12 to Mar 31/09	Q1 Apr 1 to Jun 25/09	Q2 Jun 26 to Sep 17/09	Q3 Sep 18 to Dec 10/09	Q4 Dec 11/09 to Mar 31/10
FHA	14.9 (CI = 13.4 - 16.7)	15.2 (CI = 13.5 - 17.0)	12.4 (CI = 10.9 - 13.9)	16.2 (CI = 14.7 - 17.7)	12.8 (CI = 11.3 - 14.5)	12.0 (CI = 10.6 - 13.6)	10.2 (CI = 8.8 - 11.6)	12.2 (CI = 10.9 - 13.6)
IHA	2.3 (CI = 1.5 - 3.4)	4.0 (CI = 2.9 - 5.4)	4.3 (CI = 3.1 - 5.7)	7.3 (CI = 6.0 - 8.9)	10.9 (CI = 9.0 - 13.1)	7.3 (CI = 5.7 - 9.1)	11.4 (CI = 9.4 - 13.7)	7.9 (CI = 6.4 - 9.5)
NHA	5.0 (CI = 3.1 - 7.4)	2.6 (CI = 1.5 - 4.5)	2.7 (CI = 1.6 - 4.7)	1.6 (CI = 0.9 - 2.9)	1.2 (CI = 0.4 - 2.7)	1.3 (CI = 0.5 - 2.9)	2.3 (CI = 1.2 - 4.1)	3.2 (CI = 1.9 - 5.0)
PHSA	3.1 (CI = 1.0 - 7.4)	2.3 (CI = 0.6 - 6.3)	4.3 (CI = 1.7 - 8.8)	3.4 (CI = 1.4 - 7.1)	5.4 (CI = 2.2 - 11.3)	7.0 (CI = 3.2 - 13.2)	6.1 (CI = 2.7 - 12.1)	8.1 (CI = 4.4 - 13.7)
VCHA	8.7 (CI = 7.3 - 10.4)	12.0 (CI = 10.2 - 14.1)	8.5 (CI = 7.0 - 10.1)	12.8 (CI = 11.3 - 14.6)	13.5 (CI = 11.7 - 15.5)	11.0 (CI = 9.4 - 12.9)	8.3 (CI = 6.9 - 10.0)	11.3 (CI = 9.9 - 13.0)
VIHA	5.7 (CI = 4.5 - 7.3)	9.9 (CI = 8.1 - 12.0)	5.1 (CI = 3.8 - 6.6)	6.6 (CI = 5.3 - 8.1)	6.8 (CI = 5.4 - 8.3)	5.0 (CI = 3.8 - 6.4)	4.1 (CI = 3.1 - 5.4)	4.5 (CI = 3.6 - 5.6)

[3] Providence Health Care (PHC), R.W. Large Memorial Hospital and Bella Coola General Hospital are affiliates of Vancouver Coastal Health (VCH). Cases from these facilities were included in the HCA CDI rates for VCHA.

Wrinch Memorial Hospital is an affiliate hospital of Northern Health Authority (NHA). Cases from this facility were included in the HCA CDI rates for NHA.

St Joseph's General Hospital is an affiliate hospital of Vancouver Island Health Authority (VIHA). Cases from this facility were included in the HCA CDI rates for VIHA.

Figure 6b. Rates for HCA CDI – Nosocomial by HA, FQ

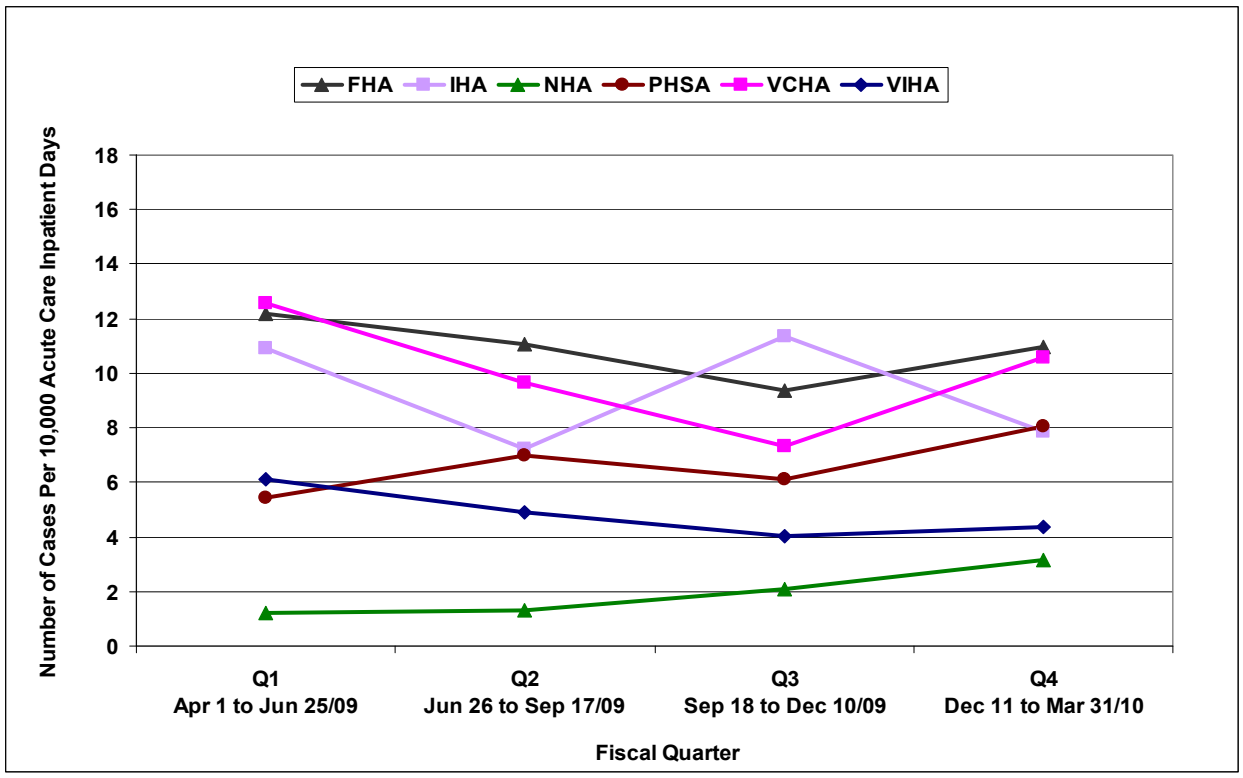
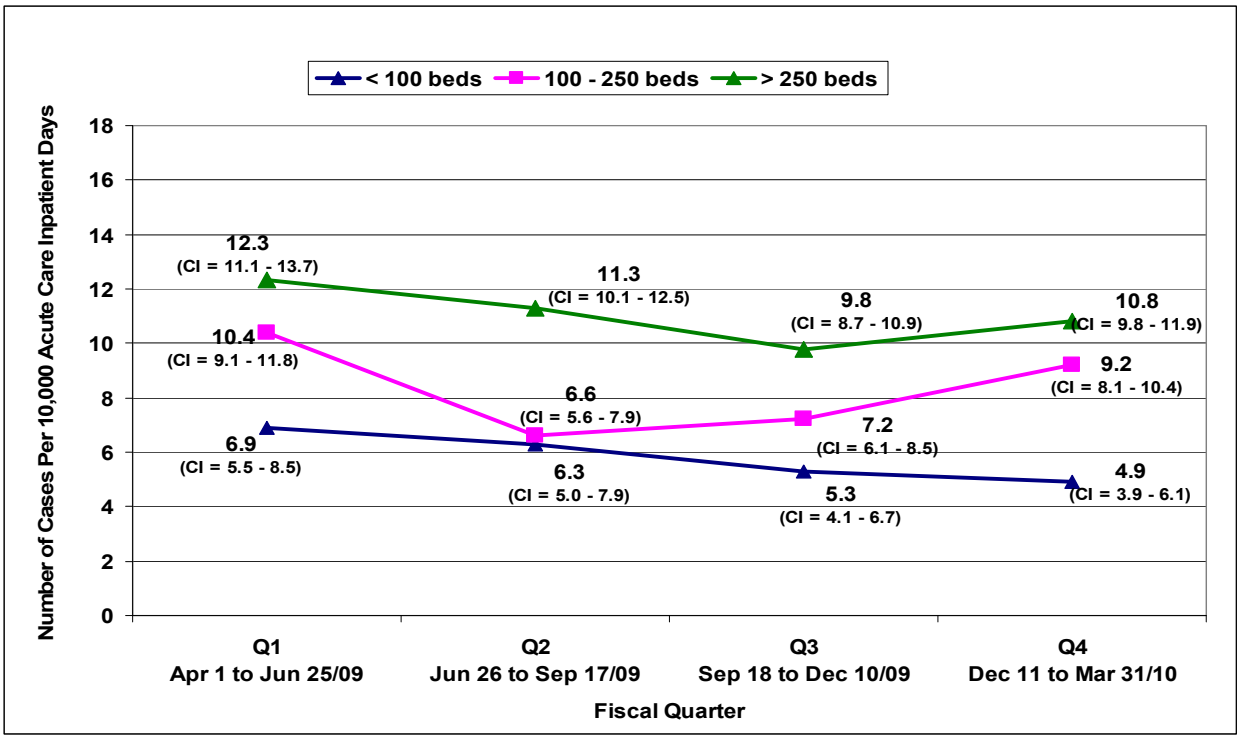


Table 3. Rates (including 95% CI) for HCA CDI – Nosocomial by HA, FQ

HA	HCA CDI Rates - Nosocomial by HA (# of Cases Per 10,000 Acute Care Inpatient Days) 2009/10			
	Q1 Apr 1 to Jun 25/09	Q2 Jun 26 to Sep 17/09	Q3 Sep 18 to Dec 10/09	Q4 Dec 11/09 to Mar 31/10
FHA	12.2 (CI = 10.8 - 13.8)	11.0 (CI = 9.7 - 12.6)	9.4 (CI = 8.1 - 10.8)	11.0 (CI = 9.8 - 12.3)
IHA	10.9 (CI = 9.0 - 13.1)	7.3 (CI = 5.7 - 9.1)	11.4 (CI = 9.4 - 13.7)	7.9 (CI = 6.4 - 9.5)
NHA	1.2 (CI = 0.4 - 2.7)	1.3 (CI = 0.5 - 2.9)	2.1 (CI = 1.0 - 3.8)	3.2 (CI = 1.9 - 5.0)
PHSA	5.4 (CI = 2.2 - 11.3)	7.0 (CI = 3.2 - 13.2)	6.1 (CI = 2.7 - 12.1)	8.1 (CI = 4.4 - 13.7)
VCHA	12.6 (CI = 10.8 - 14.5)	9.6 (CI = 8.1 - 11.4)	7.3 (CI = 6.0 - 8.9)	10.6 (CI = 9.1 - 12.1)
VIHA	6.1 (CI = 4.9 - 7.6)	4.9 (CI = 3.7 - 6.3)	4.0 (CI = 3.0 - 5.3)	4.4 (CI = 3.4 - 5.5)

As shown in Figures 7a and Figure 7b, overall HCA CDI and HCA CDI – Nosocomial rates for facilities with more than 250 acute care beds are higher than rates for smaller facilities. Figure 7a shows overall HCA CDI rates decreased for all hospital sizes. The decrease for acute care facilities with 100 to 250 beds, from 10.4 in Q1 to 6.6 in Q2, was statistically significant as there was no overlap in CI.

Figure 7a. Rates for Overall HCA CDI by Hospital Size, FQ

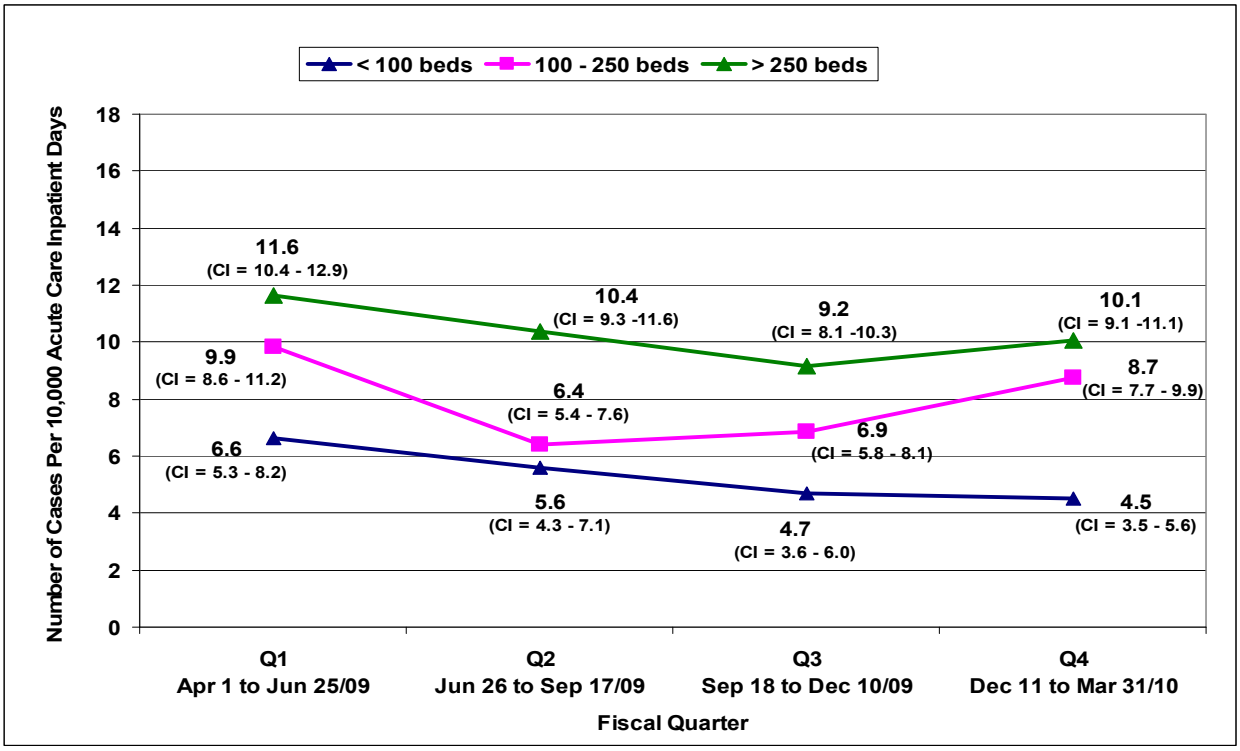


The incidence rate of nosocomial CDI may vary with hospital populations and is influenced by the presence of predisposing factors, such as increased patient age, type and duration of antimicrobial therapy, severity of underlying illness, and length of hospital stay. Since severe underlying illnesses are predisposing factors for CDI, larger centers with larger critically ill patient populations should be expected to have higher disease incidence rates.[4]

[4] Alfa M, Du T, Gabi B. Survey of Incidence of *Clostridium difficile* Infection in Canadian Hospitals and Diagnostic Approaches. J. Clin. MicB. July 1998. 2076-2080.

As illustrated in Figure 7b, HCA CDI – Nosocomial rates decreased for all hospital sizes. The decrease for acute care facilities with 100 to 250 beds, from 9.9 in Q1 to 6.4 in Q2, was statistically significant as there was no overlap in CI.

Figure 7b. Rates for HCA CDI – Nosocomial by Hospital Size, FQ



Relapses, Complications[5] and 30-day Outcomes

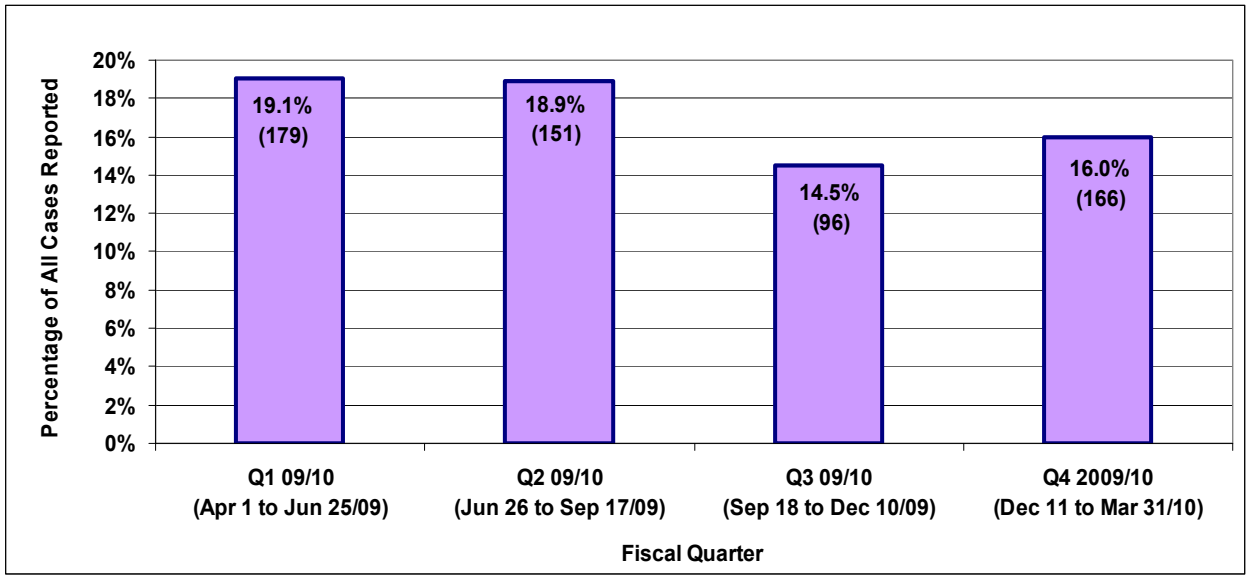
Cases of CDI were followed 30 days after identification to track relapses, complications and outcomes from the infection. If a patient was transferred or discharged within 30 days, no follow up was done.

Of the 3437 cases reported in 2009/10, 17.2% (592) were relapses from a previous infection and 6.0% (205) experienced one or more complications.

In 2009/10, 15.4% (531) of the 3437 cases died within 30 days. These deaths cannot be directly attributed to CDI as this includes deaths from all causes. All cause mortality was higher in patients aged 65 years and older (14.0%) than in patients between 18 and 64 years old (1.4%).

As shown in Figure 8, the percentage of patients who experienced a relapse decreased in Q3 of 2009/10 compared to the first two quarters of 2009/10. The 4.4% reduction was found to be statistically significant ($p = 0.032$).

Figure 8. Percentage of CDI - Relapses by FQ



[5] Complications being monitored include ICU admissions, toxic megacolon and total or partial colectomy

Figure 9 shows the percentage of patients who experienced complications in 2009/10. The percentage of patients admitted to the ICU as a result of CDI decreased from 7.1% in Q3 to 4.8% in Q4. The decrease was examined and is not statistically significant (p = 0.060).

Figure 9. Percentage of CDI - Complications by FQ

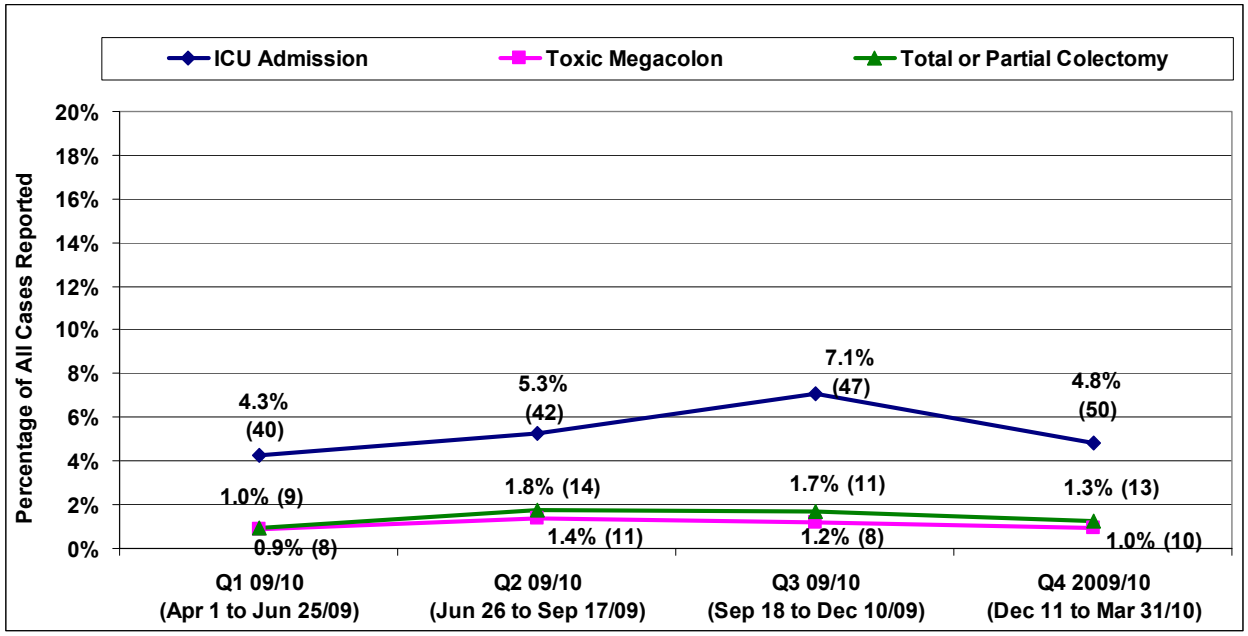


Figure 10a shows that the percentage of CDI cases that died from any cause decreased from 17.9% in Q1 to 14.9% in Q2. The reduction was not statistically significant (p = 0.105).

Figure 10a. Percentage of CDI - All Cause Mortality by FQ

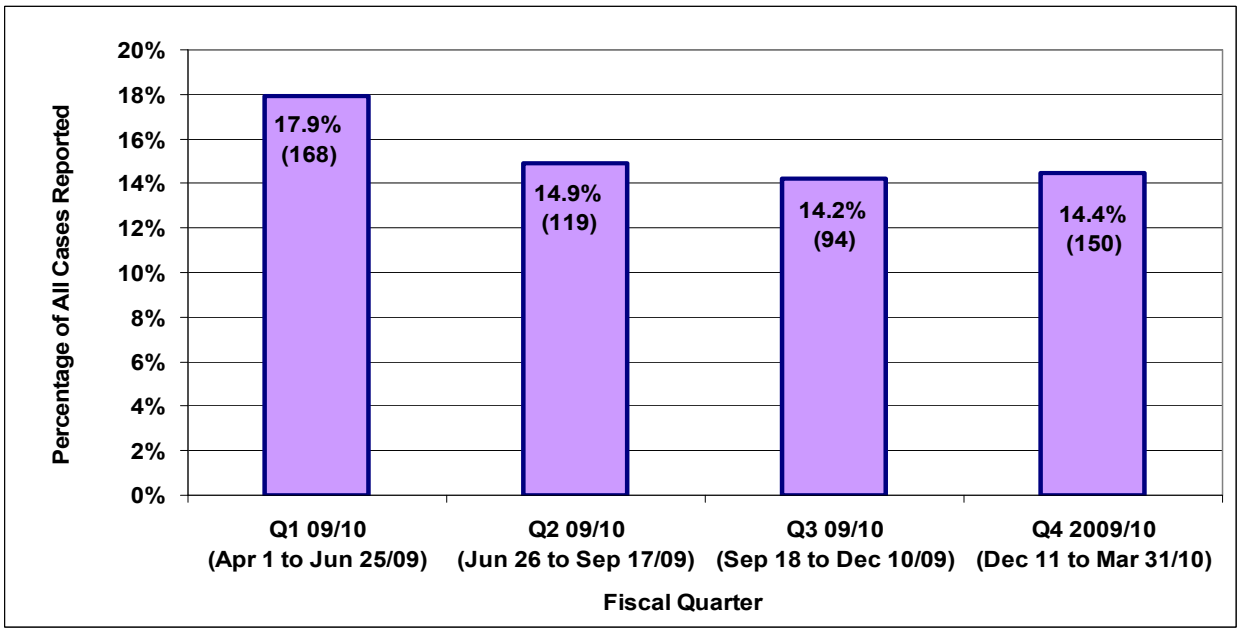
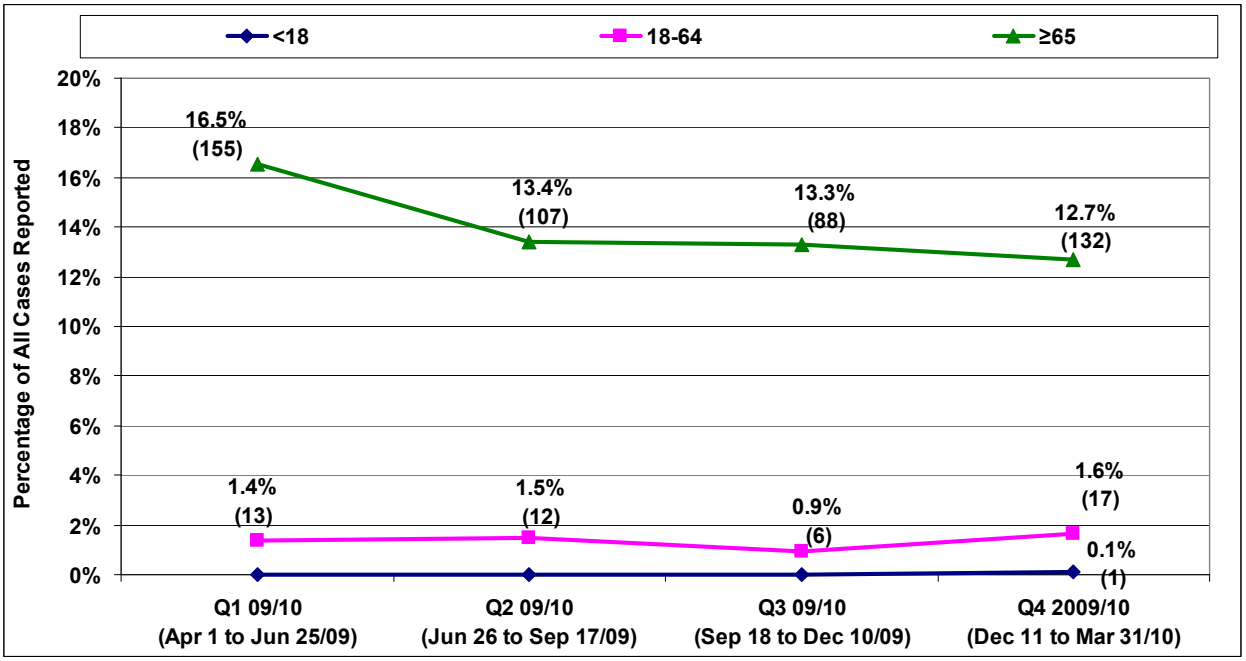


Figure 10b shows the percentage of CDI cases that died from any cause in 2009/10 by age group. The percentage of death was much higher in patients ≥ 65 years old than in younger patients. For patients ≥ 65 years old, the percentage of death decreased from 16.5% in Q1 to 13.4% in Q2. This reduction was not statistically significant (p = 0.080).

Figure 10b. Percentage of Cases of CDI - All Cause Mortality by Age Group, FQ



Identification Methods/Antibiotics

In 2009/10, 99.9% (3433) of all the cases reported in acute care facilities had a positive laboratory specimen; 4 cases were identified by surgical diagnosis (e.g. colectomy). 83.3% (2862) had received antibiotics in the six weeks prior to diagnosis (data not shown). Antibiotic treatment disrupts the normal bowel flora, predisposing patients to develop CDI.

Conclusions

In 2009/10, the provincial rate for HCA CDI was 9.2 cases per 10,000 inpatient days. This rate is slightly lower than the rate reported from data submitted for 2008/09 (9.7 cases per 10,000 inpatient days).

As a provincial program, PICNet does not provide interpretation of the rates for the HAs. Each HA is comprised of unique facilities, which provide services to different areas of BC. Each HA also has inimitable challenges and different at-risk populations which may contribute to their CDI rates being high or low – these analyses are beyond the scope of this report. HAs are best situated to respond to the HA or site specific data or rates.

PICNet wishes to thank the health authorities in BC and the affiliated healthcare facilities for their ongoing support and participation in our provincial HCA infections surveillance program.

Population under Surveillance

The population under surveillance is inpatients in acute care facilities in BC. This includes patients admitted to the emergency department awaiting placement (e.g. patients admitted to a service who are waiting for a bed), patients in alternative level of care beds and patients in labour and delivery beds.

Outpatient visits to acute care facilities, patients in extended care beds housed in acute care facilities, patients in psychiatric beds, and short-term emergency room admissions are excluded. Infants under one year of age are also excluded from this surveillance.

Data Sources and Limitations

Sources

This report incorporates data submitted from all acute care facilities from Fraser Health Authority, Interior Health Authority, Northern Health Authority, Provincial Health Services Authority, Vancouver Coastal Health Authority, Vancouver Island Health Authority and affiliate hospitals - Providence Health Care, Bella Coola General Hospital, R.W. Large Memorial Hospital, Wrinch Memorial Hospital and St. Joseph's General Hospital.

Data collected are based on the minimal data set defined by the PICNet Surveillance Steering Committee. These data are collected quarterly, based on the fiscal year. Updates and modifications submitted after the data submission due dates will be reflected in future reports.

Limitations

There are limitations that warrant acknowledgement. Importantly, there is variation in case finding strategies and data collection methodologies across acute care facilities in BC. Several other limitations are noted below:

Case Definitions: PHC employs case definitions that are slightly different from the PICNet definitions. PHC uses a four week period to identify previous admissions to their facility as nosocomial cases. Other facilities employ an eight week look back period.

Denominator Data: Acute care inpatient days are used as the denominator to calculate the provincial and HA CDI rates in this report. Participating parties collect denominator data from HA information systems and submit data to PICNet on a quarterly basis. The following variations in denominator calculations are noted. FHA and VCH included patients less than one year of age in their denominator. VIHA included Rehabilitation beds in their denominator. Inclusion of these cases is due to the HAs' inability to separate them from their total denominator.

Laboratory Methodologies: Methods of detection include Enzyme-linked Immunosorbent Assay (EIA), Toxin Assays, Polymerase Chain Reaction (PCR), etc (British Columbia Association of Medical Microbiologists, 2006). There are a variety of laboratory methods used in BC to confirm CDI cases. As identification methods vary from site to site, the sensitivity of detection of cases also varies. VCH uses PCR to detect CDI cases. Use of this technology may result in an increased identification rate of up to 18% over traditional laboratory methodologies.

Key Measures

Figure No	Key Measure	What is Being Measured?
Figure 1	Percentage of Cases of CDI in BC Acute Care Facilities by Reported Association	Number of CDI cases in each reported association (HCA, CA and Unknown) / Total number of CDI cases reported in BC acute care facilities during the specified time period x 100%
Figure 2	Percentage of Nosocomial CDI Infections Vs. HCA CDI Infections – Another Acute Care Facility	Number of nosocomial new cases of CDI / Total number of HCA new cases of CDI reported in BC acute care facilities during the specified time period x 100%
		Number of HCA new cases of CDI – Another Acute Care Facility / Total number of HCA new cases of CDI reported in BC acute care facilities during the specified time period x 100%
Table 1	Number of Acute Care Facilities by HA, Hospital Size	The table summarizes the number of acute care facilities with < 100 beds, 100 - 250 beds and > 250 beds in each HA.
Figure 3	Percentage of Cases of CDI in BC Acute Care Facilities by Hospital Size, FQ	Number of CDI cases in each hospital size group (< 100 beds, 100 - 250 beds and > 250 beds) / Total number of CDI cases reported in BC acute care facilities during the specified time period x 100%
Figure 4	Percentage of Cases of CDI in BC Acute Care Facilities by Age Group, FQ	Number of CDI cases in each age group (< 18, 19 - 64 and ? 64) / Total number of CDI cases reported in BC acute care facilities during the specified time period x 100%
Figure 5	Provincial Rates for HCA CDI by FQ	The provincial rate HCA CDI measures the number of HCA new cases of CDI per 10,000 inpatient days during the specified time period. The rate is calculated as such:
		Number of HCA new cases of CDI / Total number of inpatient days reported in BC acute care facilities during the specified time period x 10,000
Figure 6a	Rates for Overall HCA CDI by HA, FQ	The rate for overall HCA CDI by HA measures the number of HCA new cases of CDI per 10,000 inpatient days in each HA during the specified time period. The rate is calculated as such:
		Number of HCA new cases of CDI in each HA / Total number of inpatient days reported in acute care facilities in each HA during the specified time period x 10,000
Table 2	Rates (including 95% CI) for Overall HCA CDI by HA, FQ	The table shows HA rates for overall HCA CDI and their 95% confidence interval.
Figure 6b	Rates for HCA CDI – Nosocomial by HA, FQ	The rate for HCA CDI - Nosocomial by HA measures the number of nosocomial new cases of CDI per 10,000 inpatient days in each HA during the specified time period. The rate is calculated as such:
		Number of nosocomial new cases of CDI in each HA / Total number of inpatient days reported in acute care facilities in each HA during the specified time period x 10,000
Table 3	Rates (including 95% CI) for HCA CDI – Nosocomial by HA, FQ	The table shows HA rates for HCA CDI - Nosocomial and their 95% confidence interval.
Figure 7a	Rates for Overall HCA CDI by Hospital Size, FQ	The rate for overall HCA CDI by hospital size measures the number of HCA new cases of CDI per 10,000 inpatient days in each hospital size group during the specified time period. The rate is calculated as such:
		Number of HCA new cases of CDI in each hospital size group / Total number of inpatient days reported in acute care facilities in each hospital size group during the specified time period x 10,000
Figure 7b	Rates for HCA CDI – Nosocomial by Hospital Size, FQ	The rate for HCA CDI - Nosocomial by hospital size measures the number of nosocomial new cases of CDI per 10,000 inpatient days in each hospital size group during the specified time period. The rate is calculated as such:
		Number of nosocomial new cases of CDI in each hospital size group / Total number of inpatient days reported in acute care facilities in each hospital size group during the specified time period x 10,000
Figure 8	Percentage of CDI - Relapses by FQ	Number of relapses of CDI / Total number of CDI cases reported in BC acute care facilities during the specified time period x 100%
Figure 9	Percentage of CDI - Complications by FQ	Number of complications from CDI / Total number of CDI cases reported in BC acute care facilities during the specified time period x 100%
Figure 10a	Percentage of CDI - All Cause Mortality by FQ	Number of deaths / Total number of CDI cases reported in BC acute care facilities during the specified time period x 100%
Figure 10b	Percentage of CDI - All Cause Mortality by Age Group, FQ	Number of deaths in each age group / Total number of CDI cases reported in BC acute care facilities during the specified time period x 100%

Glossary

Acute care facility

Acute care facilities are health care facilities in which patients are treated for brief but severe episodes of illness, for the sequelae of an accident or other trauma, or during recovery from surgery. In this report, acute care facility refers to acute care hospital in BC.

All cause mortality

The number of deaths resulting from any cause in patients who were diagnosed with CDI.

Clostridium difficile Infection (CDI)

A diagnosis of CDI applies to a person with:

- Acute onset of diarrhea (≥ 3 loose stools within a 24 hr period) without another etiology (loose stool is defined as that which takes the shape of the container that holds it).

  And one or more of the following

- Laboratory confirmation (positive toxin or culture with evidence of toxin production)
  or
- Diagnosis of typical pseudo-membranes on sigmoidoscopy or colonoscopy or histological/pathological diagnosis of CDI
  or
- Diagnosis of toxic megacolon.

Note: It is assumed that any stool sent to the laboratory for C. *difficile* testing is from a patient that has had a least 3 episodes of loose stools in a 24 hour period. It is accepted that the surveillance protocol may overestimate the number of cases as some patients may have had only one or two loose stools prior to a specimen being collected.

CDI of Unknown Origin

A CDI case where there is insufficient information on healthcare admission and/or discharge to classify as a healthcare or community associated care.

Chi Square

Any statistical test based on comparison of a test statistic to a chi-square distribution. The oldest and most common chi-square tests are for detecting whether two or more population distributions differ from one another; these tests usually involve counts of data, and may involve comparison of samples from the distributions under study, or the comparison of a sample to a theoretically expected distribution. (*Last JM, Ed. A Dictionary of Epidemiology, 4th Ed. New York, NY: Oxford University Press, 2001.*)

Community associated (CA) CDI

A CDI case (as defined above) with symptom onset in the community or 72 hours or less after admission to a healthcare facility, provided that symptom onset was more than 8 weeks after the last discharge from a healthcare facility.

Complication

Complications under PICNet's CDI surveillance include ICU admissions, toxic megacolon and total or partial colectomy. Other complications associated with CDI are excluded from the surveillance. Relapses are included in the CDI surveillance, but are reported separately.

Confidence Interval (CI)

The computed interval with a given probability, e.g., 95%, that the true value of a value such as a mean, median, proportion or rate is contained within that interval. (*Last JM, Ed. A Dictionary of Epidemiology, 4th Ed. New York, NY: Oxford University Press, 2001.*)

Fiscal Quarter (FQ)

There are four FQs in a fiscal year. Start and end dates of each FQ vary from year to year. The start and end dates of each FQ in 2008/09, 2009/10 are shown below:

	Fiscal Quarter	Start Date	End Date
2008/09	Q1	01-Apr-08	26-Jun-08
	Q2	27-Jun-08	18-Sep-08
	Q3	19-Sep-08	11-Dec-08
	Q4	12-Dec-08	31-Mar-09

	Fiscal Quarter	Start Date	End Date
2009/10	Q1	01-Apr-09	25-Jun-09
	Q2	26-Jun-09	17-Sep-09
	Q3	18-Sep-09	10-Dec-09
	Q4	11-Dec-09	31-Mar-10

Fiscal Year

A period used for calculating annual ("yearly") financial statements in businesses and other organizations. In BC, the government's financial year runs from April 1 to March 31. (*Source: http://en.wikipedia.org/wiki/Fiscal_year*)

Healthcare associated (HCA) CDI

A CDI case occurring more than three calendar days after admission to an acute care facility AND the case has not had CDI in the past eight weeks

OR

A CDI case with symptom onset in the community or 3 calendar days or less after admission to an acute care facility, provided that symptom onset was less than 4 weeks after the last discharge from that acute care facility.

OR

A case with symptom onset 3 calendar day or less after admission to an acute care facility; AND the case had an encounter with another healthcare facility, either as an inpatient (including Acute Care and Long Term Care), or an outpatient (including emergency care and clinics), within the last 4 weeks; AND the case has not had CDI in the past 8 weeks.

Health Authority (HA)

A Health Authority manages and delivers health care services. Five regional Health Authorities govern, plan, and coordinate services regionally within 16 health service delivery areas, while the Provincial Health Services Authority coordinates and/or provides provincial programs and specialized services. (*Source: http://www.health.gov.bc.ca/socsec/about.html*)

There are six HAs in BC:

- Fraser Health Authority (FHA)
- Interior Health Authority (IHA)
- Northern Health Authority (NHA)
- Provincial Health Services Authority (PHSA)
- Vancouver Coastal Health Authority (VCHA)
- Vancouver Island Health Authority (VIHA)

Inpatient Day (or Patient Day)

A unit in a system of accounting used by health care facilities and health care planners. Each day represents a unit of time during which the services of the institution or facility are used by a patient; thus 50 patients in a hospital for 1 day would represent 50 patient days. (*Source: http://medical-dictionary.thefreedictionary.com/patient+day*)

Nosocomial Infection

Infection associated with admission to the reporting healthcare facility

P Value

The probability that a test statistic would be as extreme or more extreme than observed if the null hypothesis (i.e., no difference) were true. The letter P, followed by the abbreviation n.s. (not significant) or by the symbol < (less than) or > (greater than) and a decimal notation, such as 0.01, 0.05 is a statement of the probability that the difference observed could have occurred by change if the groups were really alike, i.e., under the null hypothesis. In most biomedical and epidemiologic work, a study result whose probability value is less than 0.05 (5%) or 0.01 (1%) is considered sufficiently unlikely to have occurred by chance to justify the designation of "statistically significant". (*Last JM, Ed. A Dictionary of Epidemiology, 4th Ed. New York, NY: Oxford University Press, 2001.*)

Statistical Significance

In statistics, a result is called statistically significant if it is unlikely to have occurred by chance. (*Source: http://en.wikipedia.org/wiki/Statistical_significance)*

Relapse of CDI

A CDI case with recurrence of diarrhea within 2 to 8 weeks of a previous CDI episode (as determined by the date of a previous lab test, chart note or diagnosis by endoscopy or pathological specimen) provided that CDI symptoms from the earlier episode resolved with or without treatment.

A relapse is to be attributed to the source of the original infection (i.e., healthcare associated or community).

Note: A case with recurrence of diarrhea less than two weeks from the previous episode is considered to be a continuation of the previous episode and not a relapse.

30-day Outcome

The patient's outcome (alive or deceased) at 30 days post diagnosis/culture date.

Surveillance Steering Committee

The Provincial Infection Control Network of British Columbia (PICNet) is a provincially supported professional collaborative that provides guidance and advice on healthcare associated infection (HAI) prevention and control in British Columbia (BC). Under the aegis and accountability framework of the Provincial Health Services Authority, PICNet connects health care professionals from across the province to develop and create guidelines and tools, with a focus on surveillance, education and evidence-based practice.

PICNet is guided by a **multidisciplinary Advisory Committee** with representatives from the following organizations:

- BC Association of Medical Microbiologists
- BC Centre for Disease Control
- Community and Hospital Infection Control Association – BC Chapter (CHICA-BC)
- Fraser Health Authority
- Health Officer's Council (Public Health)
- Interior Health Authority
- Northern Health Authority
- Physicians specializing in Infectious Diseases
- Physicians specializing in Occupational Health and Safety
- Providence Health Care
- Provincial Occupational Health Directors
- Provincial Health Services Authority
- Vancouver Coastal Health
- Vancouver Island Health Authority
- Worksafe BC

PICNet's **Surveillance Steering Committee** provides guidance to PICNet's HAI surveillance programs and assists the PICNet Management Office in implementation within the participating Health Authorities.

- Jun Chen Collet, Provincial Health Services Authority
- David Crawford, Interior Health Authority
- Tara Donavan, Fraser Health Authority
- Leslie Forrester, Vancouver Coastal Health
- Bruce Gamage, PICNet
- Deanna Hembroff, Northern Health
- Dr. Bonnie Henry, Provincial Health Services Authority
- Dr. Linda Hoang, Provincial Health Services Authority
- Elisa Lloyd-Smith, Providence Health Care
- Kathryn Proudfoot, Vancouver Island Health Authority
- Ellie Sheng, PICNet