COMMUNICABLE DISEASE REPORT
Quarterly Report

Volume 31, Number 3 December 2014

Healthcare-Associated Infections

In past issues of the Communicable Disease Report the focus has been on antibiotic-resistant organisms commonly reported from healthcare facilities including methicillin-resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile* (CD) and the healthcare-associated infections attributed to these organisms. Healthcare-associated infections (HAIs) are infections acquired while receiving health care whether the individual is in a hospital, long-term care facility, ambulatory care, or at home. This report will highlight the surveillance reports for these organisms and will introduce other HAIs such as device associated infections.

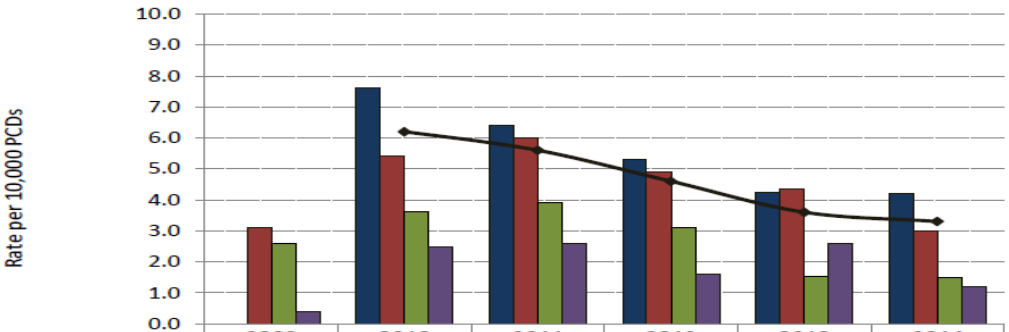
MRSA and CDI

In NL, surveillance for MRSA and CD infections has been ongoing since 2009. Infection Prevention and Control (IPAC) Programs in each Regional Health Authority (RHA) have been instrumental in reporting these infections. More importantly, the IPAC Programs have been influential in highlighting the importance of preventing these infections. Strategies to address prevention include having a comprehensive hand hygiene program which incorporates hand hygiene education and audits of the hand hygiene practices of healthcare workers (HCWs). Hand hygiene is the single most important way to prevent infections in healthcare settings. In each hospital facility an emphasis has been placed on having hand hygiene access at the point-of-care. This would include having hand hygiene sinks or alcohol-based hand rubs readily available for use by HCWs, patients and visitors. Patients are encouraged to become partners in hand hygiene by being informed of the importance of practicing hand hygiene and by promoting hand hygiene to others.

Other IPAC activities include education on the importance of adhering to Routine Practices (RP) and Additional Precautions (AP) using the RPAP Tools set, surveillance activities which encompasses providing best practice guidelines on surveillance targets, providing feedback to HCWs on rates of infections and establishing dialogue with HCWs on preventative approaches. The results of the MRSA and CDI surveillance for acute care facilities in NL from January 01, 2010 to December 31, 2014 are provided in Figure 1 and Figure 2 respectively. The numerator is the number of infections for each acute care facility and the denominator is the total number of patient days for the facility in each RHA.

In Figure 1, the MRSA rate in acute care facilities illustrates a notable decline in the rate over the five year.

Figure 1: Incidence rate of MRSA infections in acute care facilities, Newfoundland and Labrador, 2009 – 2014

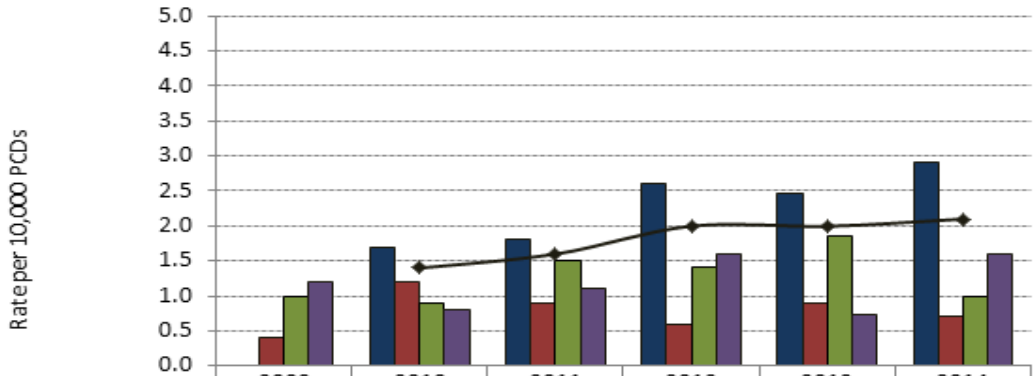


	2009	2010	2011	2012	2013	2014
Eastern		7.6	6.4	5.3	4.2	4.2
Central	3.1	5.4	6.0	4.9	4.3	3.0
Western	2.6	3.6	3.9	3.1	1.5	1.5
Lab-Grenfell	0.4	2.5	2.6	1.6	2.6	1.2
NL		6.2	5.6	4.6	3.6	3.3

Report Year

Clostridium difficile infection (CDI) is recognized as the most frequent cause of outbreaks of infectious diarrhea in Canadian hospitals and long-term care facilities and has been independently associated with an increased risk of in-hospital death.[1] A comprehensive study in an Ottawa hospital reported one death for every ten patients acquiring CDI.[2] The incidence rate for CDI in Canadian hospitals declined to 5.1/100,000 patient care days in 2013 from a range of 5.8 – 6.7 reported between 2009-2012.[3] In NL, although a slight rise is shown in the CDI rate over the past five years (Figure 2), the provincial rate ranges from 1.4 – 2.1 for 2010 – 2014 thus remains below the Canadian average.

Figure 2: Incidence rate of *Clostridium difficile* infections in acute care facilities, Newfoundland and Labrador, 2009 – 2014



	2009	2010	2011	2012	2013	2014
Eastern		1.7	1.8	2.6	2.5	2.9
Central	0.4	1.2	0.9	0.6	0.9	0.7
Western	1.0	0.9	1.5	1.4	1.9	1.0
Lab-Grenfell	1.2	0.8	1.1	1.6	0.7	1.6
NL		1.4	1.6	2.0	2.0	2.1

Report Year

Note: A more sensitive test was used in the regions as follows. Eastern Health in September 2012, Western in December 2012, Central in October 2013, and Labrador-Grenfell in February 2013.

Device-related HAIs

Devices commonly used in the treatment of patients both in acute care hospitals and long-term care facilities have been associated with HAIs including urinary catheters, central-lines and ventilators. Ventilator-associated pneumonia (VAP) is a leading cause of death for HAIs; it can also lead to increased ventilator days and increased length of stay for patients.[4] Central lines are often placed in patients requiring dialysis or intensive care. These lines have been associated with significant blood stream infections and death.[5] Catheter-associated urinary tract infections (CAUTIs) are the most common HAIs in hospitals and long-term care facilities worldwide.[6,7] In the United States it is estimated that the cost of CAUTIs is $340-$370 million per year.[6] Not only do these infections cause grief to the patients but they are also a cause for concern as they contribute to the emergence of antibiotic-resistant pathogens.

The Canadian Patient Safety Institute has partnered with Infection Prevention and Control Programs to emphasize the importance of preventing these patient safety incidents. Healthcare workers have been provided with care bundles which have a number of infection prevention strategies to reduce device-related HAIs. The implementation of these initiatives has been influential in decreasing infections related to these devices. Infection prevention and control experts are now encouraging patients to become more active in their safe and correct care. Patients or their loved ones can be involved in the following ways:

- Communicate your concerns – Speak up and ask questions about your care. If you have devices (such as a urinary catheter) ask if it is still needed.
- Clean your hands – Hand hygiene is the single most important way to prevent the transmission of infections in healthcare. Also ensure that healthcare workers and visitors clean their hands.
- Choose to be vaccinated – The influenza and pneumococcal vaccines help prevent pneumonia.
- Get smart about antibiotics – Ask questions about the antibiotics that you have been given; do you need them and are they the correct for you? Watch out for diarrhea. If you have three or more diarrhea episodes in 24 hours; tell your doctor.
- Know the signs of infections to watch for – Redness, pain or drainage at an IV catheter site or surgery site may be an indication of infection. Tell your doctor if you have these symptoms.

Newfoundland and Labrador Communicable Disease Surveillance
Monthly Disease Report: December 2014

DISEASE CLASS	DISEASE NAME	TOTAL			EASTERN			CENTRAL			WESTERN			LABRADOR GRENFELL		
		Dec	YTD 14	YTD 13	Dec	YTD 14	YTD 13	Dec	YTD 14	YTD 13	Dec	YTD 14	YTD 13	Dec	YTD 14	YTD 13
Enteric, Food and Waterborne	Amoebiasis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Botulism	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Campylobacteriosis	**3**	**40**	**47**	**3**	**30**	**27**	0	**6**	**11**	0	**4**	**9**	0	0	0
	Cryptosporidiosis	0	**4**	**3**	0	0	0	0	0	0	0	**3**	**3**	0	**1**	0
	Cyclosporiasis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Cytomegalovirus	**2**	**29**	**25**	**2**	**17**	**19**	0	**6**	**2**	0	**4**	**1**	0	**2**	**3**
	Giardiasis	**1**	**20**	**31**	0	**1**	**2**	**1**	**5**	**3**	0	**9**	**24**	0	**5**	**2**
	Hepatitis A	0	**5**	0	0	**2**	0	0	**2**	0	0	**1**	0	0	0	0
	Listeriosis	0	**1**	**1**	0	0	**1**	0	0	0	0	**1**	0	0	0	0
	Norovirus Infection	**10**	**41**	**88**	**2**	**4**	**38**	0	**16**	**26**	**8**	**21**	**21**	0	0	**3**
	Salmonellosis	0	**83**	**55**	0	**31**	**29**	0	**26**	**10**	0	**21**	**8**	0	**5**	**8**
	Shigellosis	0	**2**	**3**	0	**1**	**3**	0	0	0	0	0	0	0	**1**	0
	Typhoid/Paratyphoid Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Verotoxigenic Escherichia coli	0	**9**	**4**	0	**9**	**4**	0	0	0	0	0	0	0	0	0
	Yersiniosis	0	**1**	**1**	0	0	0	0	0	0	0	**1**	**1**	0	0	0
Diseases Transmitted by Direct Contact and Respiratory Route	Creutzfeldt-Jakob Disease (CJD)	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0
	Group B Streptococcal Disease of Newborn	0	**2**	**1**	0	0	0	0	0	0	0	**1**	0	0	**1**	**1**
	Influenza Virus of a Novel Strain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Influenza A, Laboratory Confirmed	**215**	**562**	**627**	**62**	**243**	**258**	**76**	**119**	**135**	**58**	**114**	**197**	**19**	**86**	**37**
	Influenza B, Laboratory Confirmed	**2**	**252**	**33**	**1**	**71**	**10**	0	**85**	**10**	**1**	**90**	**11**	0	**6**	**2**
	Invasive Group A Streptococcal Disease	**1**	**10**	**9**	0	**6**	**3**	0	0	**1**	**1**	**4**	**3**	0	0	**2**
	Invasive Haemophilus Influenza non-type B	0	**2**	**2**	0	0	**1**	0	**1**	0	0	**1**	**1**	0	0	0
	Invasive Meningococcal Disease (IMD), Conf	0	**1**	0	0	0	0	0	0	0	0	0	0	0	**1**	0
	Invasive Meningococcal Disease (IMD), Prob	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Invasive Pneumococcal Disease (IPD)	**4**	**10**	**11**	**2**	**4**	**4**	**2**	**4**	0	0	**2**	**6**	0	0	**1**
	Legionellosis	0	**1**	0	0	0	0	0	**1**	0	0	0	0	0	0	0
	Meningitis, Bacterial (other than Hib, IMD or IPD)	0	0	**1**	0	0	0	0	0	**1**	0	0	0	0	0	0
	Meningitis, Viral	0	**2**	**3**	0	**2**	**2**	0	0	0	0	0	0	0	0	**1**
	Nontuberculosis Mycobacterial Disease	0	**7**	**2**	0	**3**	**1**	0	**2**	0	0	**2**	**1**	0	0	0
	Severe Respiratory Illness, unknown origin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tuberculosis, non-respiratory	0	**2**	**3**	0	**1**	**1**	0	0	0	0	0	**1**	0	**1**	**1**
	Tuberculosis, respiratory	0	**5**	**9**	0	0	**2**	0	0	0	0	**1**	**1**	0	**4**	**6**
Sexually Transmitted and Bloodborne Pathogens	Chlamydia	**63**	**869**	**801**	**45**	**549**	**500**	**4**	**66**	**61**	**8**	**91**	**106**	**6**	**163**	**134**
	Gonorrhoea	**6**	**62**	**41**	**5**	**54**	**38**	0	**4**	0	**1**	**3**	**1**	0	**1**	**2**
	Hepatitis C	**6**	**125**	**104**	**4**	**92**	**75**	**1**	**12**	**7**	**1**	**20**	**20**	0	**1**	**2**
	HIV Infection	**1**	**8**	**6**	**1**	**8**	**6**	0	0	0	0	0	0	0	0	0
	Syphilis, infectious	**1**	**24**	**9**	**1**	**23**	**5**	0	0	**1**	0	**1**	**3**	0	0	0
	Syphilis, non-infectious	0	**5**	**3**	0	**4**	**2**	0	0	0	0	**1**	0	0	0	**1**
Vectorborne & Other Zoonotic Diseases	Lyme disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Malaria	0	**3**	**1**	0	**2**	0	0	**1**	0	0	0	**1**	0	0	0
	Q Fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rabies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Toxoplasmosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Trichinellosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	West Nile Virus Infection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vaccine Preventable	Chickenpox	**2**	**104**	**159**	**2**	**60**	**83**	0	**29**	**60**	0	**8**	**10**	0	**7**	**6**
	Congenital Rubella Syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hepatitis B	**1**	**13**	**25**	**1**	**8**	**11**	0	**2**	**5**	0	0	**1**	0	**3**	**8**
	Invasive Haemophilus Influenza type B (Hib)	0	**2**	0	0	**2**	0	0	0	0	0	0	0	0	0	0
	Measles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mumps	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pertussis	**1**	**10**	**20**	**1**	**10**	**14**	0	0	0	0	0	0	0	0	**6**
	Rubella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tetanus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Communicalble Disease Control System, Department of Health and Community Services, Government of Newfoundland and Labrador

Date verified: 14-May-2015

Disclaimer: Data are subject to continuous updates; small variations in numbers may occur.

Note: Prior to January 2011, "Invasive Meningococcal Disease, Probable" was included under the heading "Invasive Meningococcal Disease"

The majority of chickenpox cases meet the probable case 'definition'

There was one case of Dengue Fever in August 2013 related to travel.

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