

COMMUNICABLE DISEASE REPORT

Quarterly Report

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NEWFOUNDLAND AND LABRADOR

IMMUNIZATION COVERAGE

REPORT

2005-2012

Introduction

The Canadian Public Health Association named immunization as one of the top ten public health achievements in the 1900s. As a result of immunization programs, vaccine preventable diseases cause less than five percent of all deaths in Canada. Immunization programs are the cornerstone of child health programs and make significant differences in the health of the elderly and other individuals who have lowered resistance to disease.

In Newfoundland and Labrador since the 1990's we have seen several vaccines added to the provincial publicly funded immunization programs. They include hepatitis B vaccine, meningococcal and pneumococcal vaccine, Human papillomavirus vaccine, and the varicella (chickenpox) vaccine.

In the past there have also been "catch-up" publically funded programs. These "catch-up" programs are offered to a cohort to allow for greater coverage of a specific vaccine. It is usually time limited and is done to ensure that the cohort is protected as soon as possible.

Our primary and school immunization programs are delivered by public health nurses working in the 4 regional health authorities. There is some physician delivery of primary vaccines in the largest health authority; Eastern Health. Primary and school program vaccines are provided free of charge.

Immunization coverage rates are calculated yearly. The coverage rate is calculated by taking the eligible cohort e.g. the birth cohort for a specific year and comparing it to the number immunized for that same birth cohort. Measuring vaccination coverage rates permits evaluation of vaccine programs and assessment of vaccination strategies in preventing disease. Each regional health authority reports to the province the collated immunization coverage for their region for the primary and school programs.

Newfoundland and Labrador's immunization coverage rates remain high and meet most of the national targeted coverage rate goals. The regional health authorities work tirelessly to improve access to immunization and to ensure that the province's immunization coverage rates remain high. Due to these rates of vaccination in Newfoundland and Labrador we have not experienced disease outbreaks such as measles or other vaccine preventable diseases that have been seen in other provinces and territories in Canada.

Table 1: January 2012 the provincial immunization schedule* includes:

<u>Vaccination</u>	<u>Age</u>
DTaP-IPV-Hib	2, 4, 6, 18 months
Pneu-C-13	2, 4, & 12 months ‡
MMRV	12 months
Men-C-C	12 months
MMR	18 months
DTaP-IPV/Tdap-IPV	4 – 6 years
Influenza	6 – 59 months

‡Children at high risk for disease should receive an additional dose of Pneu-C-13 at 6 months

Table 2: School Programs

<u>Vaccination</u>	<u>Grade</u>
Men-C-ACYW135	Grade 4
Hepatitis B	Grade 6 (2 doses)
HPV-4	Grade 6 (3 doses)
Tdap	Grade 9

* Please note that the provincial's immunization schedule has changed several times in the last 12 years to reflect the recommendations from the Canadian Immunization Guide and the National Advisory Committee on Immunizations.

Note: Children considered at higher risk for disease may be eligible for other vaccines.

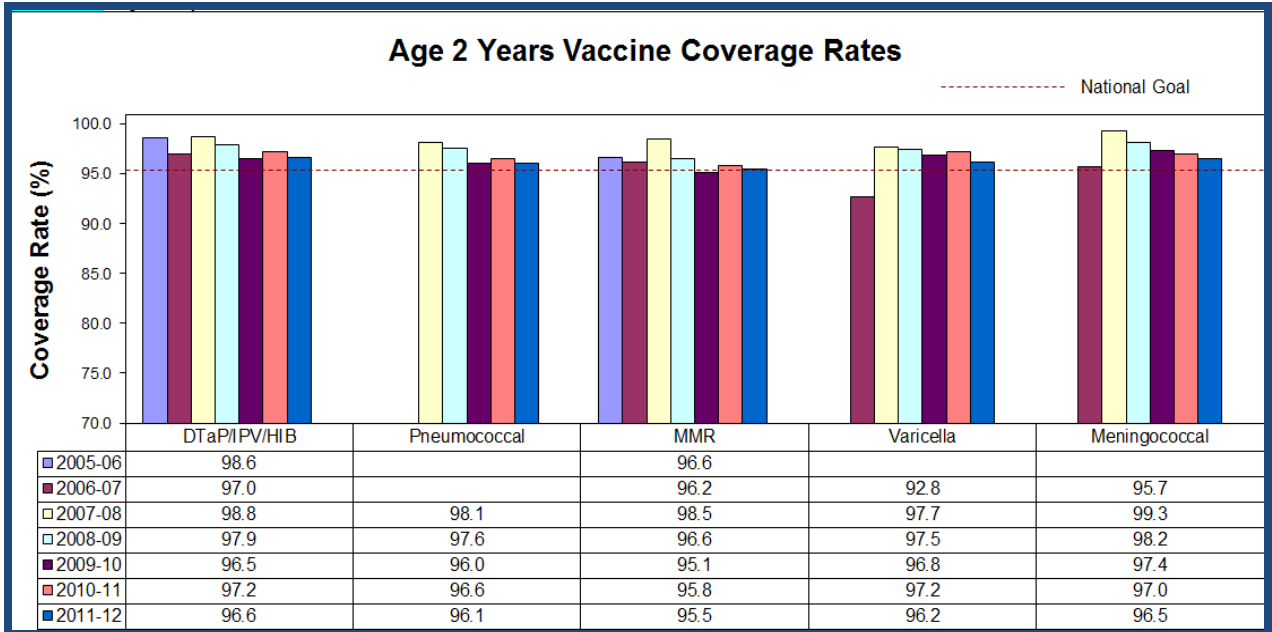
Vaccine abbreviations

MMR	Protects against measles, mumps & rubella
MMRV	Protects against measles, mumps, rubella and varicella
HPV-4	Protects against 4 types of Human Papillomavirus
Pneu-C-7	Protects against 7 types of pneumococcal disease
Pneu-C-10	Protects against 10 types of pneumococcal disease
Pneu-C-13	Protects against 13 types of pneumococcal disease
Tdap	Protects against tetanus, diphtheria, and pertussis
Men-C-C	Protects against type C meningococcal disease
Men-C-ACYW135	Protects against type C, A, Y and W135 type meningococcal disease
Varicella	Protects against chickenpox

Coverage Rates

Children Age Two Years

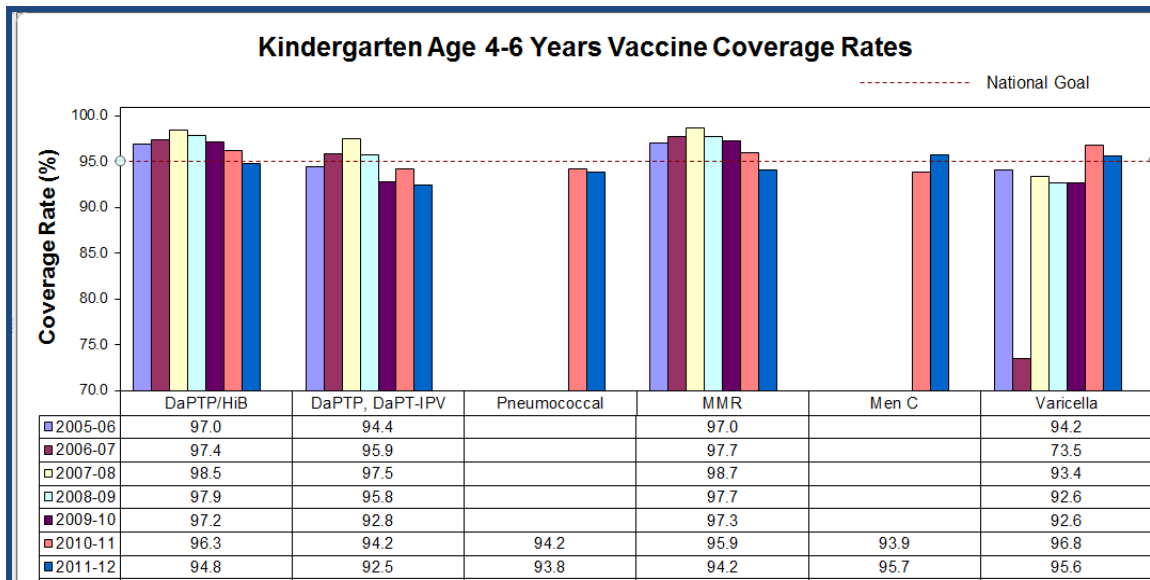
In 2011-2012, the coverage rates of children at 2 years of age (born in 2009) for the five vaccinations offered (DTaP-IPV-Hib, Pneumococcal vaccine, MMR, Varicella and Men-C-C) were all above 95%. Previous year's rates were very similar, averaging over 95% coverage for all vaccinations offered from 2005 onward. This exceeded the national target rate of 95%.



- The Men-C-C and varicella vaccination program started in 2005 thus coverage first reported in 2006
- Pneu-C-7 vaccination program started in 2005 thus coverage first reported in 2008. In 2009 Pneu-C-10 replaced Pneu-C-7, in October 2010 Pneu-C-13 replaced Pneu-C-10.
- These numbers represent the percentage of two-year olds who have had their recommended vaccines by the time they reached their second birthday. For example, the data for 2011 -2012 represents children born in 2009.

Kindergarten Age Four-Six Years

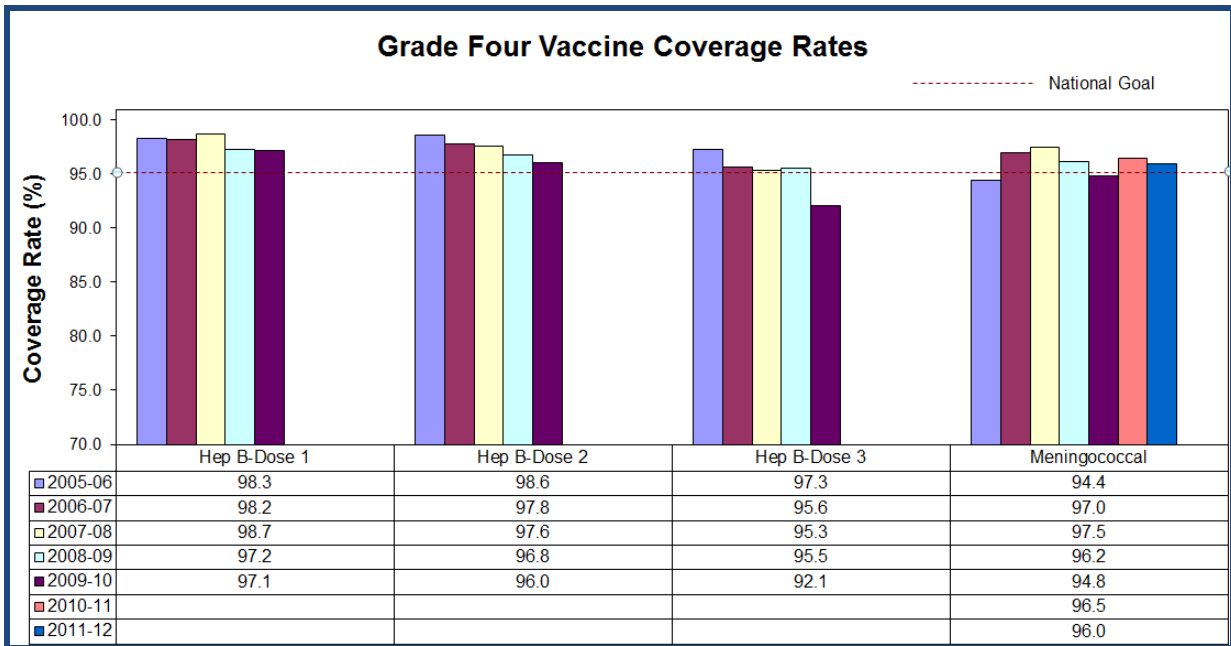
In the 2011-2012 school year the coverage rates for children entering kindergarten for the six vaccinations offered (DTaP-IPV-Hib, DaPT-IPV, Pneumococcal, MMR, Men-C-C and Varicella) were all above 90%. Previous year's rates were very similar, averaging over 95% coverage for all vaccinations offered from 2005 onward with the exception of 2006-2007 Varicella. In 2006 -2007 lower coverage rates in Central and Labrador-Grenfell Regional Health Authorities (74.5% and 57.8%, respectively) lowered the provincial average for Varicella. It was noted however that in the 2006-2007 school year, Varicella coverage was 100% among smaller aboriginal communities in Labrador-Grenfell RHA.



- The Men-C and Pneumococcal vaccination program started in 2005 thus coverage first reported in 2010 for this cohort

Grade Four

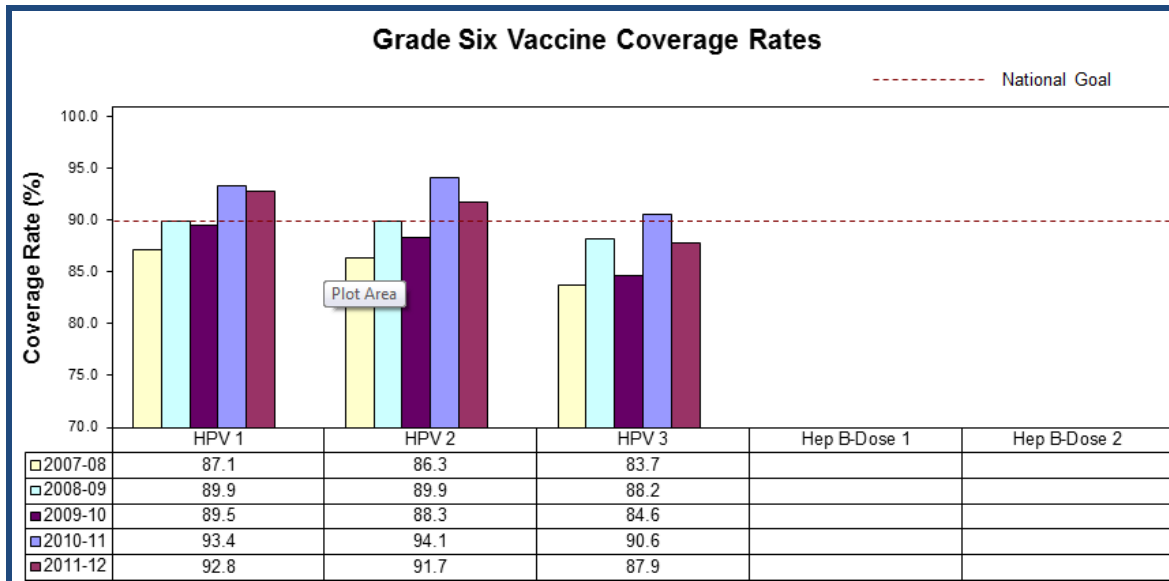
In the 2009 - 2010 school year, coverage rates for the four vaccinations offered (Hep. B – Dose 1, 2 and 3 and meningococcal vaccine) were all above 90%. Previous year's rates were very similar, averaging over 90% coverage for all vaccinations offered from 2005 onward. In 2010 a decision was made to move the vaccination program for hepatitis B to grade six as a two dose schedule and this will begin in the school year of 2012 -13.



- In September 1995 a universal program grade four hepatitis B program was introduced. In 2010 this program moved to grade six as a two dose schedule. This program resumed in grade six in September 2012.
- Men-C-ACYW135 replaced Men C-C in 2009.

Grade Six

The HPV vaccination program was started in 2007 to prevent morbidity and mortality of cervical cancer. The immunization rate continues to be very high (around 85 - 90%) for the HPV vaccine program since 2007-2008, Newfoundland and Labrador has had a very high uptake of the vaccine, averaging over 85% coverage in each of school years the program was offered. In 2011 - 2012 the average coverage rate for all three doses reached greater than 90%. Beginning in the school year 2012 -2013 the hepatitis B vaccine will be offered in grade six as a two dose program.

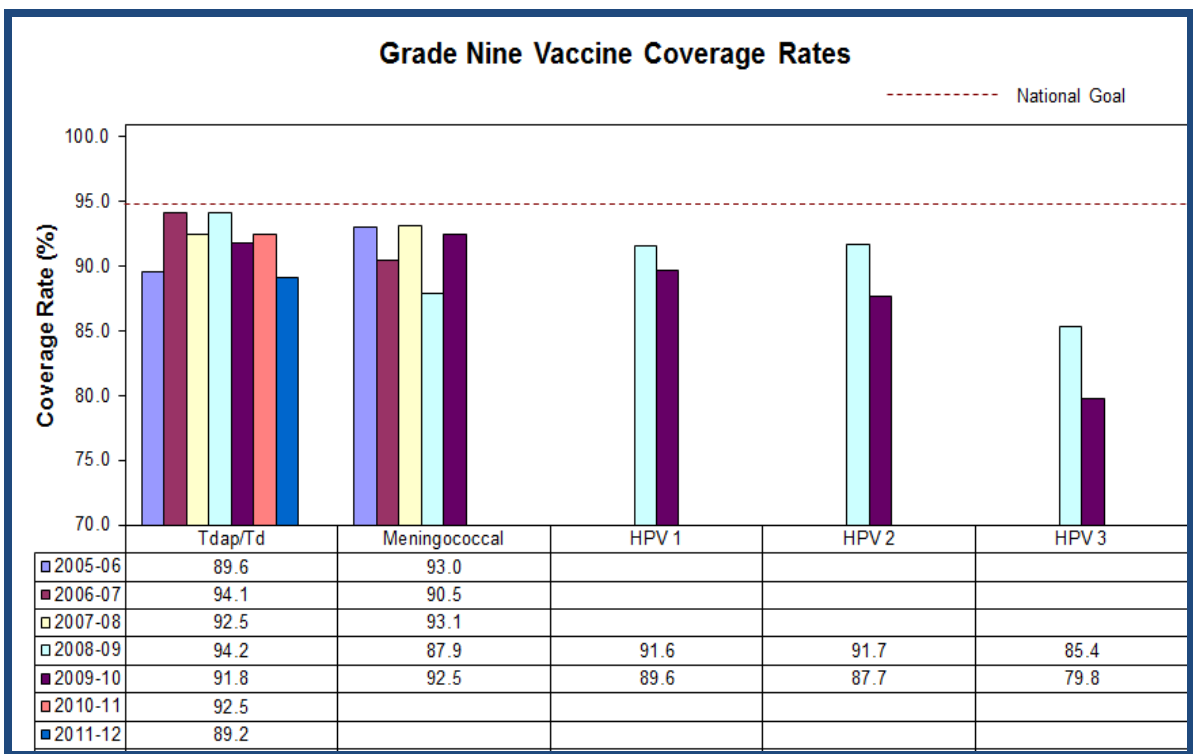


- In September 1995 a universal program grade four hepatitis B program was introduced. In 2010 this program moved to grade six as a two dose program and resumed in September 2012 thus coverage rates for this program will not be reported until the end of school year 2012 -2013.

Grade Nine

In the 2011-2012 school year, coverage rates for the Tdap/Td was above 89%. Previous year's rates were very similar, averaging approximately 90% coverage for vaccinations offered from 2005 onward. The Meningococcal grade nine catch-up program was completed in 2009-10 school year.

The grade nine HPV vaccine coverage rate was also very high, averaging over 85% coverage for the two school years this catch up program was offered. This catch up program was offered in school years 2008-2009 and 2009-2010. Coverage rates for Eastern, Western and Central Regional Health Authorities (RHA) average nearly 90% coverage, with Labrador-Grenfell averaging closer to 75%, respectively. Data for the 2008-2009 school years for Labrador-Grenfell RHA are only from Labrador – North.



- HPV grade nine program was a catch up program offered for 2 years; 2008-2009 and 2009-2010 respectively. Note the national goal for HPV programs is 90% compared to 95% for other vaccine programs
- Men C-C catch up program was completed in 2010

Conclusion

Newfoundland and Labrador boasts immunization coverage rates that are meeting or are greater than the target of over 90 per cent for all childhood and school-based programs with the exception of 2011-12 grade nine Tdap program. This draws attention to an area where work is needed to ensure an adequate coverage rate. The majority of immunizations are provided through the public health clinics by our dedicated public health nurses and they are to be commended for their efforts in providing the immunizations and in the collection of the coverage rates. This report was only possible due to their hard work.

Sources

Canadian Public Health Association. (2010) 12 Great Achievements
<http://www.cpha.ca/en/programs/history/achievements/12-v.aspx>

Public Health Agency of Canada. (2009). Immunization: The most successful public health measure. <http://www.phac-aspac.gc.ca/im/measure-intervention-eng.php>

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British Columbia Centre for Disease Control (2010) Communicable Disease Control Immunization Programs. Section III-Immunization of Special Populations.

Glossary

Booster – A second, third, or greater immunization with a specific vaccine that may be necessary to insure that the individual is protected against the infectious disease.

Community/herd immunity – A large percentage of the population is vaccinated in order to prevent the spread of certain infectious diseases. Even individuals not vaccinated (such as newborns and those with chronic illnesses) are offered some protection because the disease has little opportunity to spread within the community. Also known as “herd immunity.”

Conjugate polysaccharide vaccine – A vaccine in which the polysaccharide is chemically combined with a protein molecule to increase efficacy and immunogenicity (e.g., Hib, pneumococcal, and meningococcal conjugate vaccines.)

Coverage rate (immunization coverage) – The proportion of the target populations that has been vaccinated through the publicly funded programs that provides certain vaccines at little or no cost.

Immunization – Is an inclusive term denoting the process of inducing or providing immunity artificially by administering an immunologically active product; immunization may be passive or active-passive immunization denotes the provision of temporary immunity by the administration of performed antitoxin or antibodies (e.g., pooled human Ig or specific Ig preparations) – active immunization denotes the induction of antibody-mediated and/or cell-mediated immunity by the administration of an antigen, such as a vaccine; a process or procedure that increases an organism’s reaction to antigens, thereby improving its ability to resist or overcome infection.

Immunization record (professional chart and take home) – A record of all immunization a person has received. A record is kept by the healthcare provider who gave the immunization (professional chart), and in a local or provincial registry and by the individual or their parent or guardian (take-home record)

Immunization schedules (delay, interruption, etc.) – They outline the optimum timing of primary and secondary immunizations. A delayed immunization schedule may be used when a child receives his or her primary or secondary immunizations after their commended ages of their regional immunization schedule.

Immunization status – A client’s immunization status conveys whether they are eligible, due or overdue for a specified vaccine.

- **Eligible:** The earliest acceptable time period during which an immunization is considered a valid dose for immunization coverage reporting;
- **Due:** The time period during which an immunization is considered up to date according to the NACI schedule; and
- **Overdue:** This time period is one month after an individual is due for an immunization, unless otherwise specified.

Live attenuated vaccine – The vaccine contains whole, living bacteria or viruses that induce immunity by actively replicating within the host. Attenuated means the vaccine strains are weakened so infection is usually unapparent or very mild.

National Immunization Strategy – A comprehensive strategy to enable collaboration among levels of government to improve the effectiveness and efficiency of immunization programs across Canada.

Polysaccharide – the long chains of sugar molecules that resemble the surface of certain types of bacteria. Polysaccharide vaccines are available for pneumococcal disease, meningococcal disease and Haemophilus influenzae type B. They are recommended for outbreak control, for the protection of persons traveling to locations with epidemic disease attributable to vaccine serogroups. And for persons who may be at increased risk of meningococcal disease. Polysaccharide vaccines are not recommended for routine childhood immunization.

Primary Immunization – A preliminary vaccination or series of vaccinations which are required to prime the immune system to a specific antigen so that on subsequent exposure to the same antigen, a boosting effect or rapid and important expansion of memory cells will occur.

Surveillance – The monitoring of vaccine safety to maintain public confidence in vaccines and immunization programs.

Targeted immunization – The immunization program aimed at a specific group(s) or population(s).

Vaccination – is a method of preventing certain infections. It consists of introducing preparations called vaccines into an organism for the purpose of inducing active immunity. Refer to immunization.

Vaccine – A preparation of live (usually attenuated or treated) or inactivated microorganism or fractions thereof administered to induce immunity.

Vaccine – preventable disease (VPD) – Any infectious disease for which a vaccine exist.

Poor water sample results were not associated with periods of high rainfall ($r = .03$). Further analysis of private water sample data will be carried out in the future.

Newfoundland and Labrador Communicable Disease Surveillance Monthly Disease Report: March 2012



DISEASE CLASS	DISEASE NAME	TOTAL			EASTERN			CENTRAL			WESTERN			LABRADOR GRENFELL		
		Mar	YTD 12	YTD 11	Mar	YTD 12	YTD 11	Mar	YTD 12	YTD 11	Mar	YTD 12	YTD 11	Mar	YTD 12	YTD 11
	Tuberculosis, respiratory	1	1	2	0	0	1	0	0	0	1	1	0	0	0	1
Sexually Transmitted and Bloodborne Pathogens	Chlamydia	73	214	136	44	122	76	4	11	11	9	22	10	16	59	39
	Gonorrhoea	1	6	3	0	2	1	0	0	0	0	0	0	1	4	2
	Hepatitis C	6	26	19	4	20	15	0	0	1	2	6	3	0	0	0
	HIV Infection	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0
	Syphilis, infectious	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0
	Syphilis, non-infectious	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0
Vectorborne & Other Zoonotic Diseases	Lyme disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Malaria	0	0	0	0	0	0	0	0	0	0	0	0	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	58	246	77	4	15	10	26	142	7	28	86	59	0	3	1
	Congenital Rubella Syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hepatitis B	1	4	4	1	4	3	0	0	1	0	0	0	0	0	0
	Invasive Haemophilus Influenza type B (Hib)	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	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: Communicable Disease Control System, Department of Health and Community Services, Government of Newfoundland and Labrador

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"

Date verified: 17-Apr-2012