Notifiable Diseases in Nova Scotia

Surveillance Report
2006

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Prepared by: Nova Scotia Health Promotion and Protection
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Section I: Introduction

Introduction

Surveillance has been defined by the US Centers for Disease Control and Prevention (CDC) as "the ongoing, systematic collection, analysis and interpretation of health data essential to the planning, implementation and evaluation of public health practice, closely integrated with the timely dissemination of these data to those who need to know."[1] In Canada, surveillance of communicable diseases is supported by provincial legislation that mandates the reporting or notifying of diseases by laboratories and physicians. The list of such diseases differs by province/territory. The Public Health Agency of Canada through the Centre for Infectious Disease Prevention and Control provides disease specific case definitions for those diseases under national surveillance. This facilitates comparability across jurisdictions.[2]

In Nova Scotia, the *Health Protection Act* and the regulations under the act govern the reporting of communicable diseases. Notifiable communicable diseases are listed and the responsibilities of physicians and laboratories in the timely reporting of these diseases are delineated. The method of reporting is determined by the urgency of reporting the disease.[3]

This report reviews the communicable disease data collected over a 10-year period in Nova Scotia through a series of charts and tables. Diseases are grouped according to the national surveillance categories: Enteric, Food and Waterborne Diseases; Diseases Transmitted by Direct Contact and Respiratory Routes; Sexually Transmitted and Bloodborne Pathogens; Vectorborne and Other Zoonotic Diseases; Diseases Preventable by Routine Vaccination; and Other Diseases. It should be emphasized that the numbers cited in this report reflect only those diseases that are reported to Public Health Services and may under-represent the true number of cases in the population.

Methodology

Unless otherwise indicated, all incidences are given by crude rates based on the census population of Nova Scotia in 2001 (census data supplied by the Information Analysis and Reporting Section of the Office of the Chief Information Officer, Nova Scotia Department of Health). Please note that rates for the previously published 2001-2002 annual report were calculated based on the 1991 census population. The rates in the subsequent reports (2003-2004 and 2005) therefore are not directly comparable.

Currently, Nova Scotia is composed of nine District Health Authorities (DHAs). Many of the DHAs have shared service agreements resulting in four regions: Western, Northern, Eastern and Capital. Geographic comparisons are made on this regional basis. Rates calculated for selected enteric, sexually transmitted and blood-borne infections for these regions in 2006 have been age-standardized to the age distribution of the 2001 census population for Canada. Cases for which the age was not specified were not included in this calculation and these numbers have been noted. For selected diseases, the age-specific incidence and distribution of cases by month of diagnosis are also presented. Ages have been grouped by five-year intervals for those 0 to 29 years of age, by ten-year intervals for those 30 to 59 years of age, and a single grouping has been designated for those 60 years of age and older.

Limitations

Crude Rates:

The scales on the charts used to depict the incidence of disease in this report vary with the disease presented. Although trends may appear to show great variability, often very low rates of disease have been graphically presented and this should be noted as such.

Out-of-Province Testing:

Individuals who may reside in Nova Scotia but have previously tested positive outside of the province will not be reported here and therefore do not appear in Nova Scotia provincial statistics. Cases are usually attributed to the province where the initial positive diagnosis was made.

HIV and HCV Testing:

The number of positive HIV test reports describes those who have been tested and given a diagnosis of HIV infection but is not representative of the total number of persons living with HIV (i.e. prevalence) or the number of newly infected individuals (i.e. incidence).[4]

Similarly, the number of HCV positive reports describes those who have been tested and diagnosed as HCV positive but is not representative of all those living with HCV (prevalence) or those who are newly infected (incidence). The peak noted in 1997 is probably a reflection of increased testing through the provincial targeted programs and the resultant diagnosis of an increased number of new cases from the pool of prevalent cases.

Section II: Enteric, Food and Waterborne Diseases

Campylobacteriosis

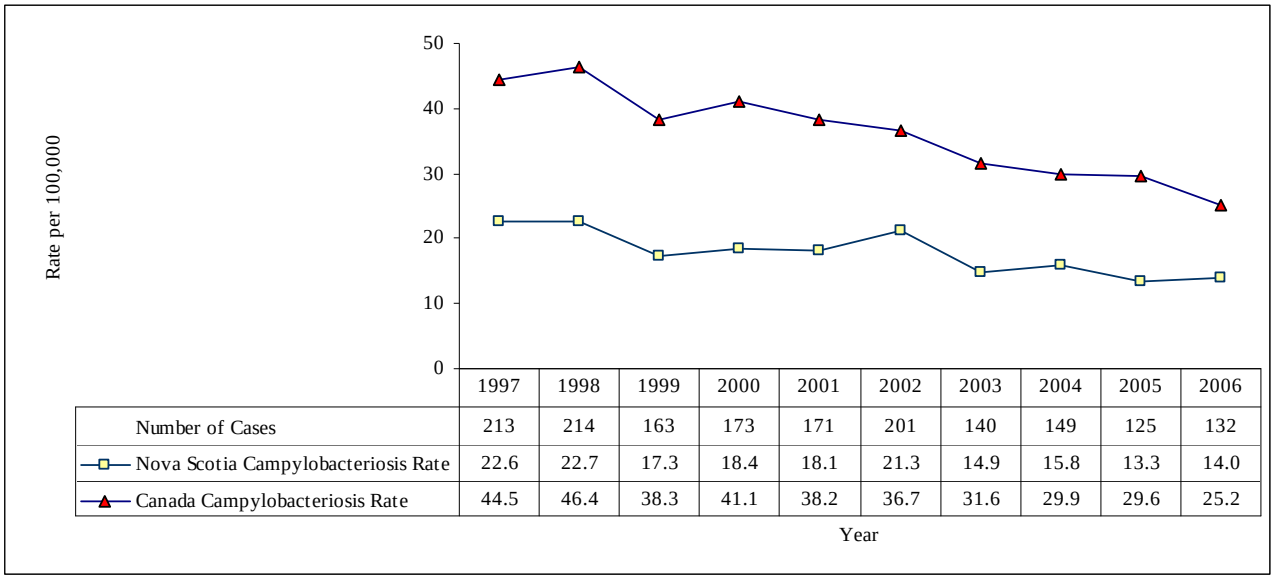
Campylobacteriosis is an acute zoonotic bacterial disease that affects the gastrointestinal tract. The disease varies in severity and is characterized by diarrhea (frequently with blood in the stool), abdominal pain, malaise, fever, nausea and vomiting. Infection occurs through the consumption of undercooked chicken or pork, contaminated food, water or raw milk and may also be acquired through close contact with infected infants. Infected puppies, kittens or farm animals may also be a source of the disease.[5]

There were 132 cases of Campylobacteriosis reported in Nova Scotia in 2006. The crude incidence has shown a decreasing trend over the last decade (Figure 1). The national rate for 2006 was 25.2 cases per 100,000 population.[24]

In 2006, 59% of cases occurred among males. The mean age was 38 years (range: 1-85 years). Approximately 65% of cases were reported in individuals 30 years of age or older but the age-specific incidence was highest among those aged 20-29 years (Figure 2). Twenty-two cases (16.7%) were travel related.

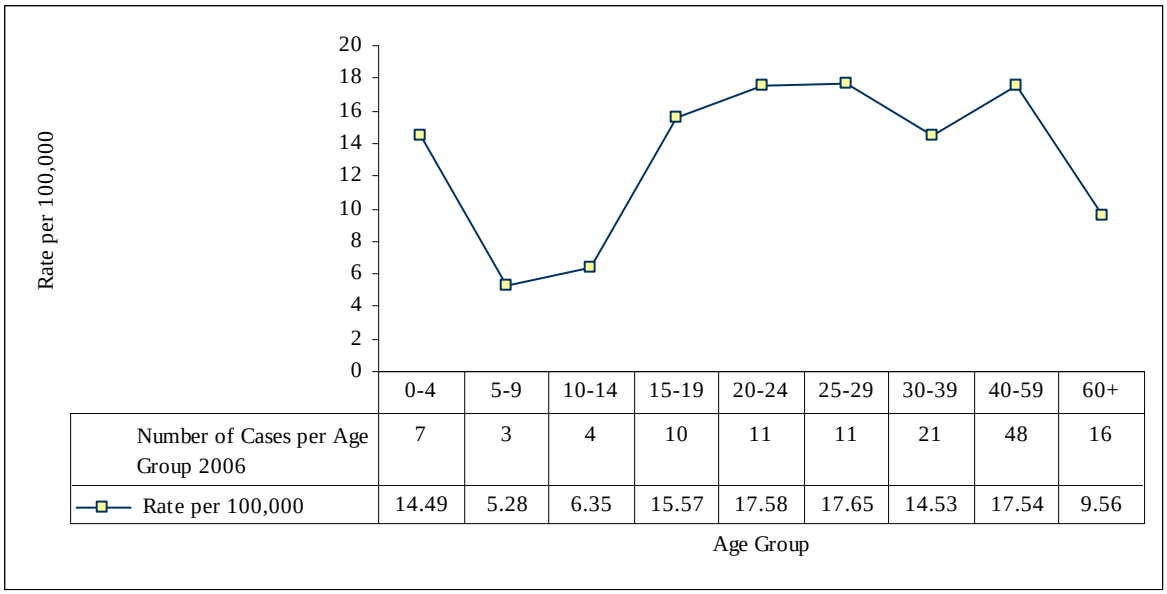
The incidence of campylobacteriosis in the Western region was 19.9 cases per 100,000 population; 14.3 per 100,000 in Capital; 14.1 per 100,000 in Northern; and 6.5 cases per 100,000 population in Eastern. In 2006, the rate in Western was higher than the provincial rate (P=0.029) while the rate in Eastern was lower than the provincial rate (P=0.0001).

Figure 1: Incidence of Campylobacteriosis, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	213	214	163	173	171	201	140	149	125	132
Nova Scotia Campylobacteriosis Rate	22.6	22.7	17.3	18.4	18.1	21.3	14.9	15.8	13.3	14.0
Canada Campylobacteriosis Rate	44.5	46.4	38.3	41.1	38.2	36.7	31.6	29.9	29.6	25.2

Figure 2: Age specific incidence of Campylobacteriosis by age group, Nova Scotia, 2006



	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Number of Cases per Age Group 2006	7	3	4	10	11	11	21	48	16
Rate per 100,000	14.49	5.28	6.35	15.57	17.58	17.65	14.53	17.54	9.56

Age Group

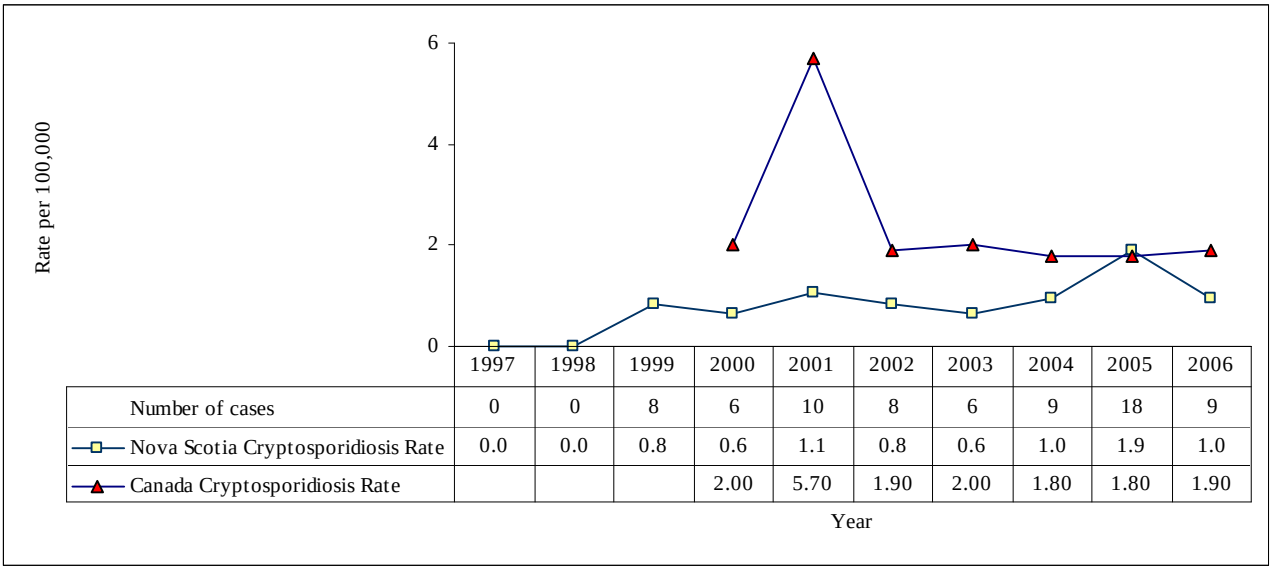
Cryptosporidiosis

Cryptosporidiosis is a parasitic infection affecting humans and more than 45 vertebrate species including poultry, birds, fish, reptiles and small and large mammals. *Cryptosporidium parvum* is associated with human infection, affecting the epithelial cells of the gastrointestinal, biliary or respiratory tracts. The infection can be symptomatic or asymptomatic. Diarrhea is the main manifestation of the disease but other less frequent symptoms can occur including pain, nausea, vomiting, and fever. The disease is transmitted via the fecal-oral route and may be waterborne, foodborne, passed from person-to-person or from animal-to-person.[5]

Nine cases of Cryptosporidiosis were reported in Nova Scotia in 2006. The incidence of Cryptosporidiosis in Nova Scotia has remained low over the past ten years with an average annual rate of less than two cases per 100,000 population (Figure 3). The national rate for 2006 was 1.9 cases per 100,000 population. [24]

In 2006, the mean age of the cases was 20 years (range: 3-28 years). Four of the cases were travel related. Seven cases (77.7%) were from Capital.

Figure 3: Incidence of Cryptosporidiosis, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of cases	0	0	8	6	10	8	6	9	18	9
Nova Scotia Cryptosporidiosis Rate	0.0	0.0	0.8	0.6	1.1	0.8	0.6	1.0	1.9	1.0
Canada Cryptosporidiosis Rate				2.00	5.70	1.90	2.00	1.80	1.80	1.90

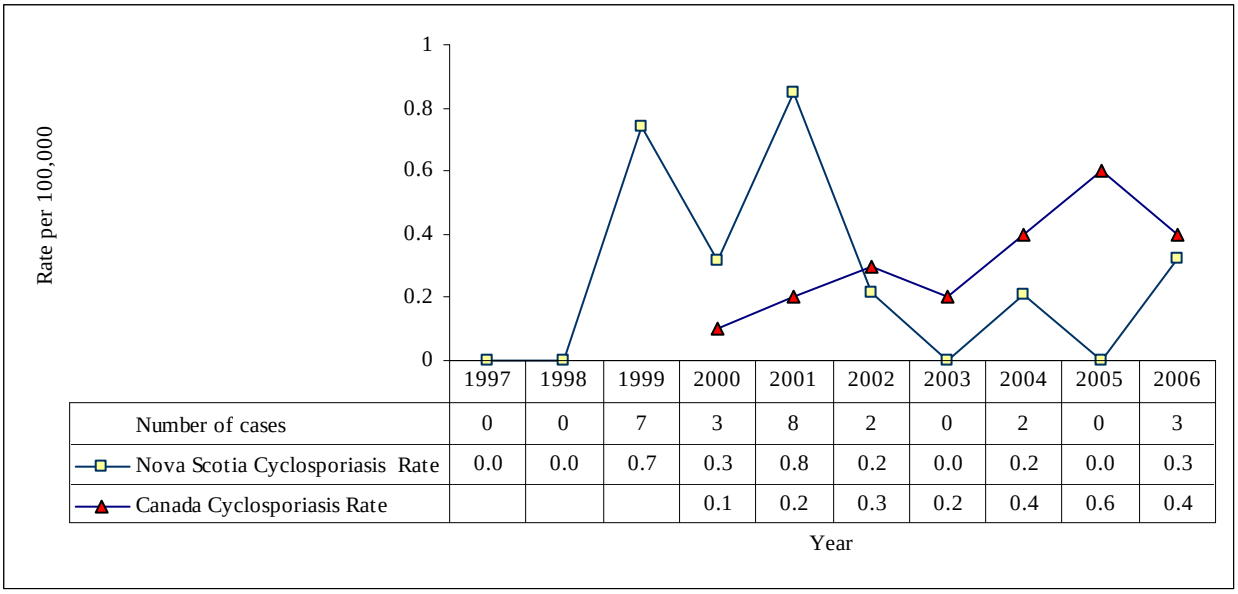
Cyclosporiasis

Cyclospora cayetanensis is a coccidian protozoan responsible for diarrheal disease. Food and water are the main vehicles of transmission. The disease is endemic in developing countries and infection has been associated with travel to endemic areas (e.g. Caribbean islands, Mexico, and Asia).[5] International outbreaks have been traced back to raspberries: basil and lettuce have also been implicated.

Three cases of Cyclosporiasis were reported in Nova Scotia in 2006. The incidence of Cyclosporiasis has been consistently low in Nova Scotia (Figure 4). The national rate for 2006 was 0.4 cases per 100,000 population.[24]

In 2006, the mean age of the cases was 49 years (range: 41-61 years). One case was travel related and the remaining cases were connected to imported produce.

Figure 4: Incidence of Cyclosporiasis, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of cases	0	0	7	3	8	2	0	2	0	3
Nova Scotia Cyclosporiasis Rate	0.0	0.0	0.7	0.3	0.8	0.2	0.0	0.2	0.0	0.3
Canada Cyclosporiasis Rate				0.1	0.2	0.3	0.2	0.4	0.6	0.4

Giardiasis

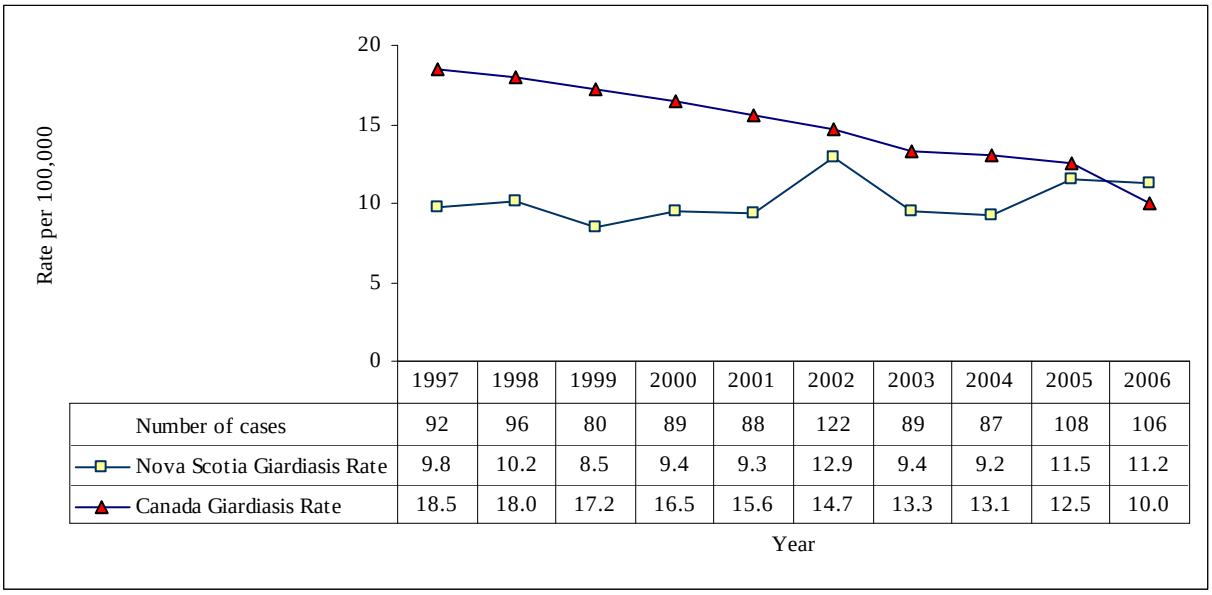
Giardiasis is a protozoan infection, primarily of the upper small intestine. Transmission is person-to-person with the primary mode of spread probably related to hand-to-mouth transfer of cysts from the feces of infected persons (particularly in institutions and daycare centres). Ingestion of cysts in fecally contaminated water and, more rarely, food, may lead to localized outbreaks.[5]

There were 106 cases of Giardia reported in Nova Scotia in 2006. The incidence of Giardiasis ranged from 8.49 to 12.94 cases per 100,000 over the last decade (Figure 5). The national rate for 2006 was 10.0 cases per 100,000 population.[24]

In 2006, 57 cases (53.8%) were male. The mean age was 41 years (range: 1-102 years). Approximately 51.9% of all reported cases were diagnosed in individuals 40 years of age or older while the highest age-specific incidence was reported in individuals 30-39 years of age (Figure 6). The greatest proportion of cases (48.1%) was reported between August and October.

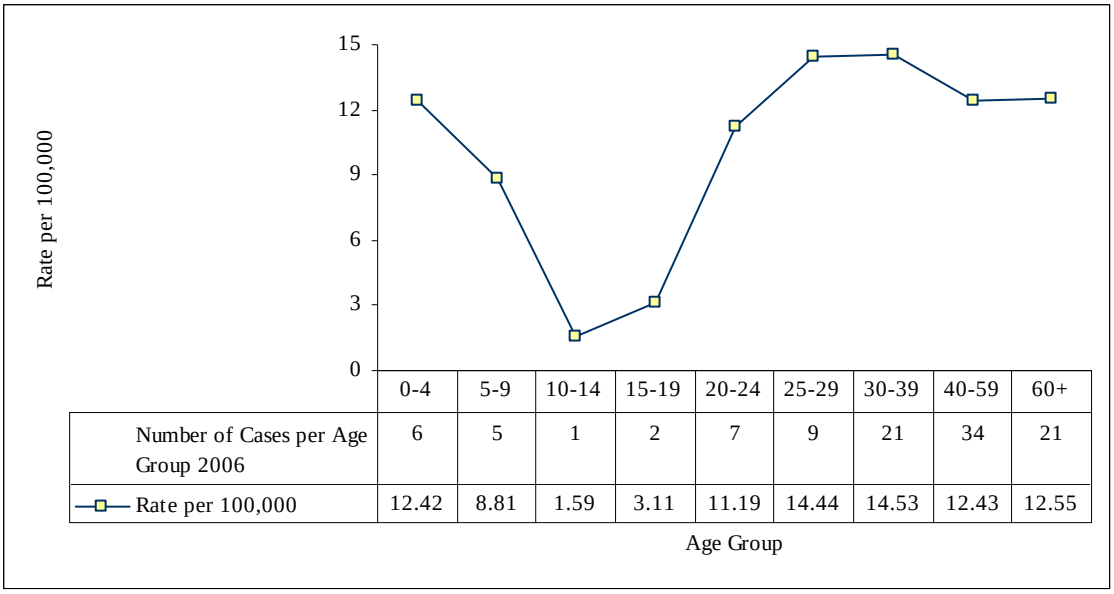
In 2006, the rates in both Western and Northern were lower than the provincial rate (P<0.05).

Figure 5: Incidence of Giardiasis, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of cases	92	96	80	89	88	122	89	87	108	106
Nova Scotia Giardiasis Rate	9.8	10.2	8.5	9.4	9.3	12.9	9.4	9.2	11.5	11.2
Canada Giardiasis Rate	18.5	18.0	17.2	16.5	15.6	14.7	13.3	13.1	12.5	10.0

Figure 6: Age specific incidence of Giardiasis, Nova Scotia, 2006



	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Number of Cases per Age Group 2006	6	5	1	2	7	9	21	34	21
Rate per 100,000	12.42	8.81	1.59	3.11	11.19	14.44	14.53	12.43	12.55

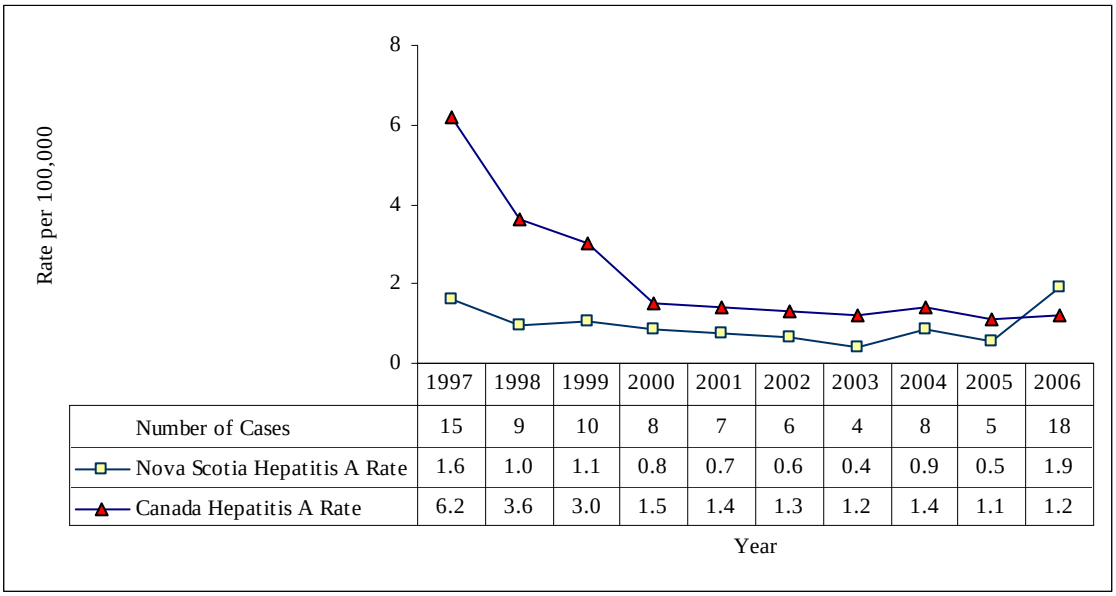
Hepatitis A

Hepatitis A Virus (HAV) is an infection of the liver caused by a Picornavirus. Infection can be asymptomatic or symptomatic. The symptoms, which range from mild to severe, include fever, loss of appetite, nausea, stomach pain, dark urine, and jaundice. Transmission is person to person via the fecal-oral route. Common source outbreaks have been related to contaminated water and food through infected food handlers or from contaminated molluscs and produce.[5]

Eighteen cases of HAV were reported in Nova Scotia in 2006 (Figure 7). The incidence of HAV in Nova Scotia has decreased since 1997 and has remained below approximately one case per 100,000 population until 2005. The national rate for 2006 was 1.2 cases per 100,000 population.[24]

In 2006, the mean age for all cases was 22 years (range: 1-46 years). There was an increase in HAV incidence in 2006 due to an outbreak in Capital. Fifteen cases were associated with this outbreak, which occurred between May and November 2006.

Figure 7: Incidence of Hepatitis A, Nova Scotia and Canada, 1997-2006



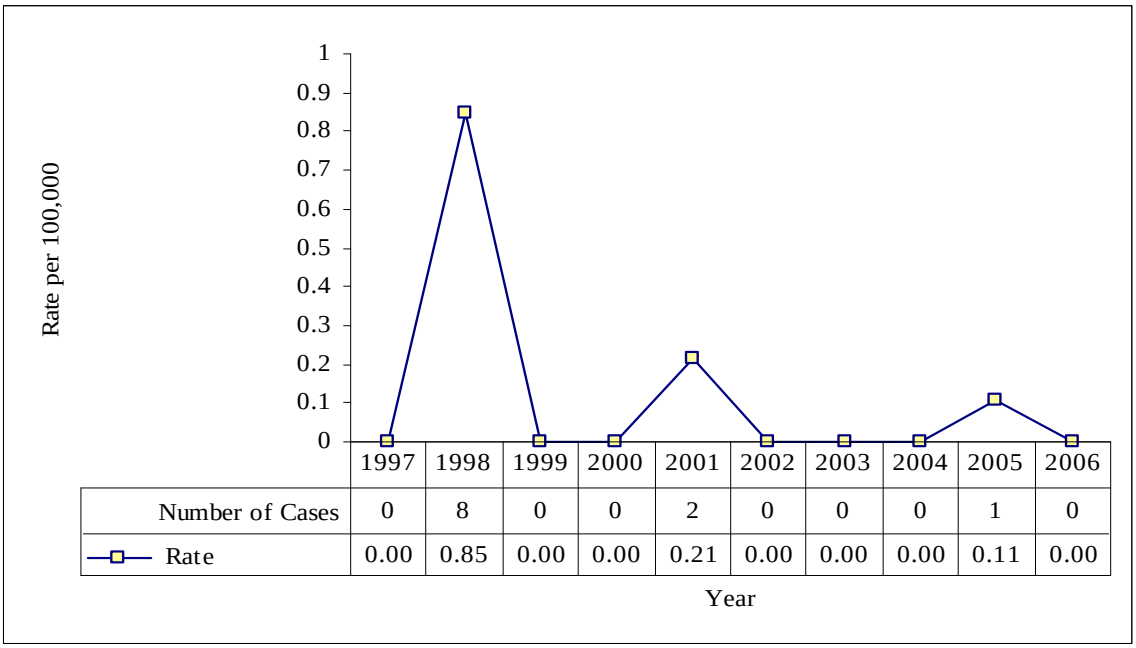
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	15	9	10	8	7	6	4	8	5	18
Nova Scotia Hepatitis A Rate	1.6	1.0	1.1	0.8	0.7	0.6	0.4	0.9	0.5	1.9
Canada Hepatitis A Rate	6.2	3.6	3.0	1.5	1.4	1.3	1.2	1.4	1.1	1.2

Paralytic Shellfish Poisoning

Paralytic Shellfish Poisoning (PSP) is a syndrome of predominantly neurological symptoms caused by saxitoxins present in shellfish. Saxitoxins are produced by the *Alexandrium* species as well as by other dinoflagellates. The toxins become concentrated especially during algae blooms that are termed "red tides" but also occur in the absence of such blooms. Once shellfish become toxic and the bloom subsides, they maintain their toxicity for a number of weeks. In some species, the toxicity is ongoing. The onset of symptoms occurs within minutes to hours following the consumption of bivalve molluscs. While PSP commonly occurs in shellfish harvested from colder waters, it may also occur in tropical waters.[5]

Since 1997, PSP has been reported in Nova Scotia in 1998, 2001 and 2005, with the incidence remaining less than one case per 100,000 population (Figure 8).

Figure 8: Incidence of Paralytic Shellfish Poisoning (PSP), Nova Scotia, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	0	8	0	0	2	0	0	0	1	0
Rate	0.00	0.85	0.00	0.00	0.21	0.00	0.00	0.00	0.11	0.00

Salmonellosis

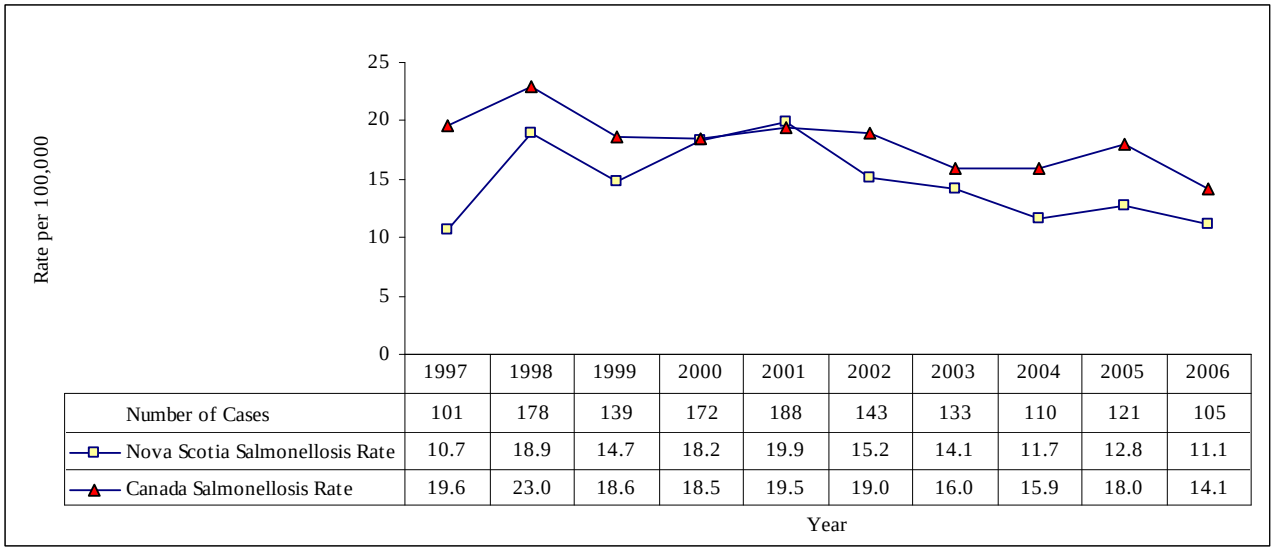
Salmonellosis is an enteric infection of bacterial origin. Numerous serotypes of *Salmonella* are pathogenic for animals and humans and vary in prevalence from country to country. In most areas, only a few serotypes account for most of the confirmed cases. The disease is transmitted by the ingestion of food derived from infected animals or through the fecal contamination of food from an animal or person with the disease. Potential sources of infection include raw and undercooked eggs and egg products, raw milk and raw milk products, contaminated water, meat and meat products, and poultry and poultry products as well as reptiles and chicks. Raw fruits and vegetables may also be implicated if contamination occurs when the produce is sliced [5].

There were 105 cases of *Salmonella* reported in Nova Scotia in 2006. The incidence of Salmonellosis has varied between 10-20 cases per 100,000 population since 1997 (Figure 9). The national rate for 2006 was 14.1 cases per 100,000 population.[24]

In 2006, 64% of the cases were female. The mean age for all cases was 39 years (range: four months to 102 years). The age-specific incidence was highest in the 0-4 year old age group (22.77 cases per 100,000 population) (Figure 10). Seventy-one (68%) cases were reported between March and August 2006: 35 (34%) cases were related to travel.

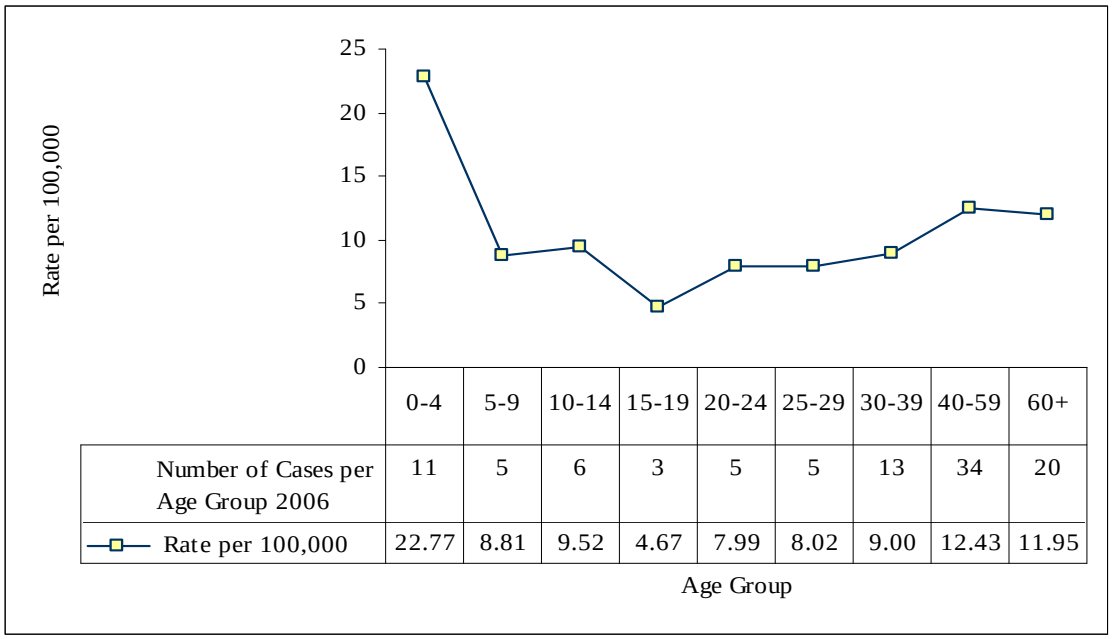
In 2006, the rate in Capital was higher than the provincial rate (P=0.011).

Figure 9: Incidence of Salmonellosis, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	101	178	139	172	188	143	133	110	121	105
Nova Scotia Salmonellosis Rate	10.7	18.9	14.7	18.2	19.9	15.2	14.1	11.7	12.8	11.1
Canada Salmonellosis Rate	19.6	23.0	18.6	18.5	19.5	19.0	16.0	15.9	18.0	14.1

Figure 10: Age specific incidence of Salmonellosis, Nova Scotia, 2006



	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Number of Cases per Age Group 2006	11	5	6	3	5	5	13	34	20
Rate per 100,000	22.77	8.81	9.52	4.67	7.99	8.02	9.00	12.43	11.95

* Age was not specified for two cases.

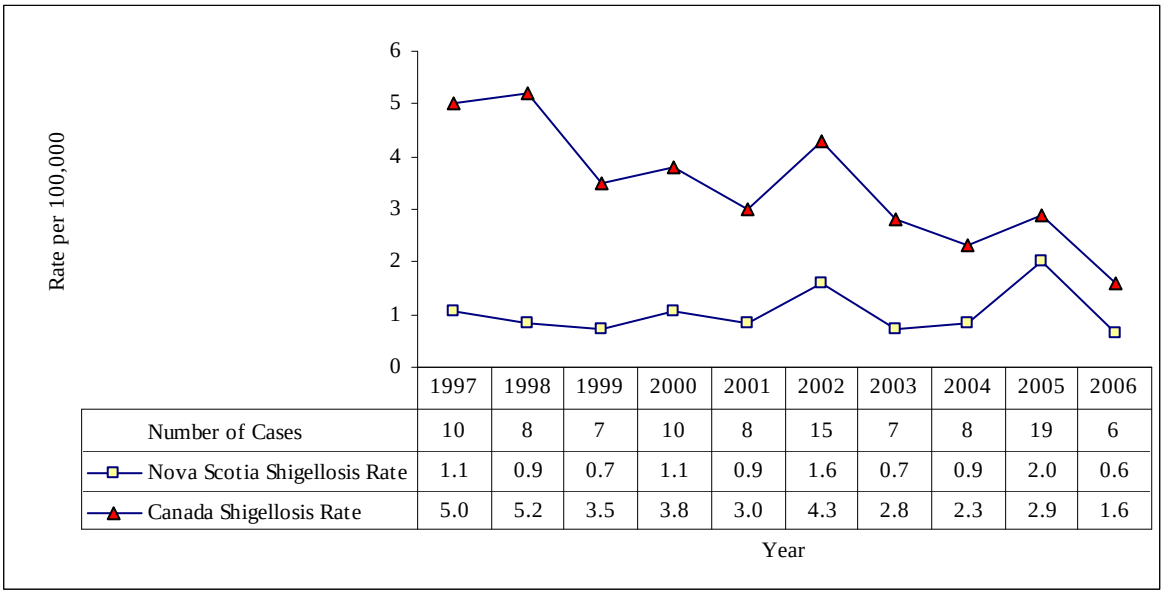
Shigellosis

Shigellosis is an acute bacterial intestinal disease caused by four species or serogroups of the genus *Shigella*. Transmission is direct or indirect from a symptomatic individual or from a short-term asymptomatic carrier via the fecal-oral route. Transmission may also occur through direct fecal contamination of water and milk or through flies that contaminate uncovered food.[5]

Six cases of Shigella were reported in Nova Scotia in 2006. The incidence of shigellosis in Nova Scotia has remained less than two cases per 100,000 population over the last ten years (Figure 11). The national rate for 2006 was 1.6 cases per 100,000 population [24].

In 2006, three cases were female. The mean age for all cases was 35 years (range: 22-52 years). Five cases were travel related. All cases were reported between February and June.

Figure 11: Incidence of Shigellosis, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	10	8	7	10	8	15	7	8	19	6
Nova Scotia Shigellosis Rate	1.1	0.9	0.7	1.1	0.9	1.6	0.7	0.9	2.0	0.6
Canada Shigellosis Rate	5.0	5.2	3.5	3.8	3.0	4.3	2.8	2.3	2.9	1.6

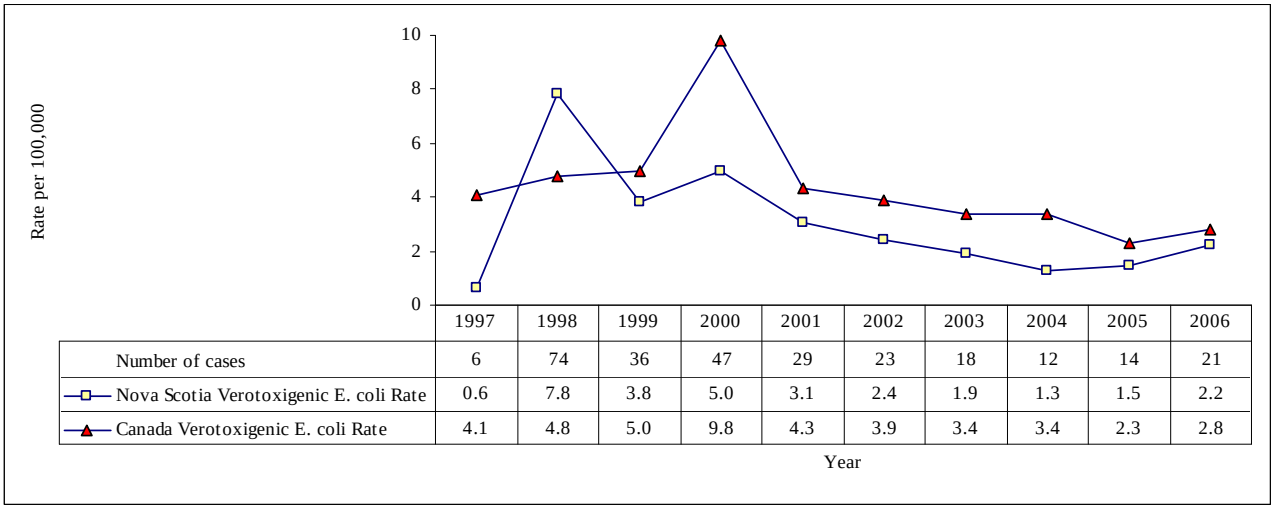
Verotoxigenic *E. coli* Infection

Infection with Verotoxigenic/Shigatoxigenic *E. coli* (VTEC/STEC) may lead to hemorrhagic colitis and potentially the more severe Hemolytic Uremic Syndrome (HUS), a serious complication of the infection. A common serotype in North America is *E. coli* 0157:H7. Transmission may occur through water but commonly the infection is transmitted through contaminated food. Inadequately cooked beef (particularly ground beef), raw milk and fruits or vegetables that have been contaminated with feces from ruminants are commonly responsible. The bacteria may also be passed person-to-person through direct contact in families, childcare centres, and institutions.[5]

There were 21 cases of verotoxigenic *E. coli* reported in Nova Scotia in 2006. The incidence of verotoxigenic *E. coli* infection in Nova Scotia was 2.2 cases per 100,000 population (Figure 12). The national rate for 2006 was 2.8 cases per 100,000 population.[24]

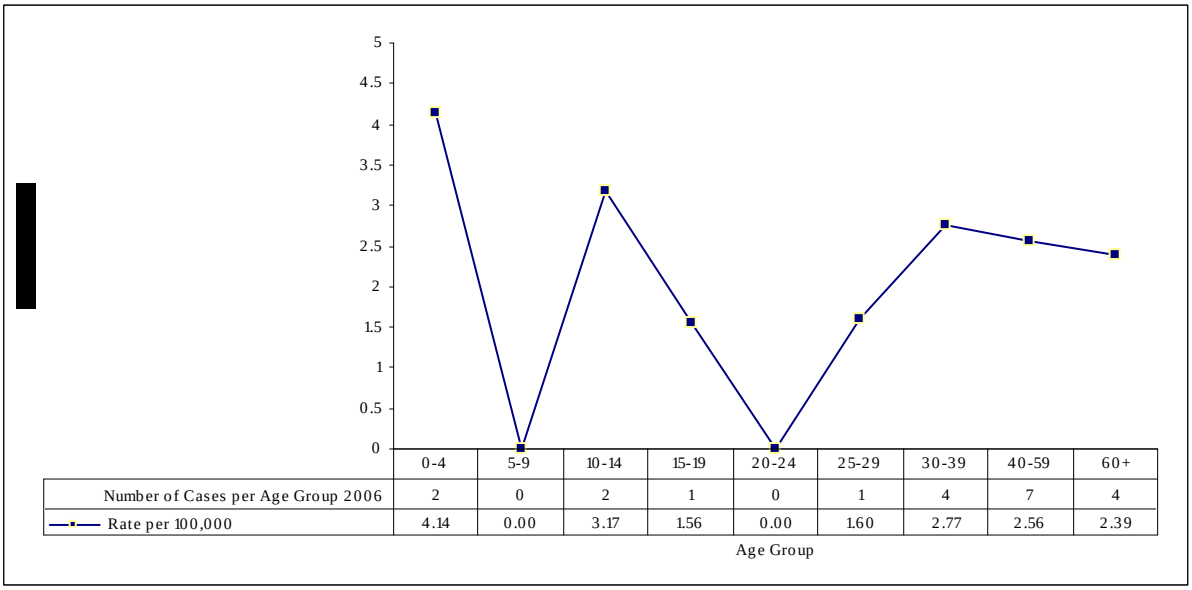
In 2006, 42.8% of the cases were males. The mean age was 40 years (range: 2-89 years). The highest age-specific incidence occurred in those 0-4 years of age at 4.14 cases per 100,000 population (Figure 13). Seventy six percent of the cases were reported between August and November.

Figure 12: Incidence of Verotoxigenic *E. coli*, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of cases	6	74	36	47	29	23	18	12	14	21
Nova Scotia Verotoxigenic E. coli Rate	0.6	7.8	3.8	5.0	3.1	2.4	1.9	1.3	1.5	2.2
Canada Verotoxigenic E. coli Rate	4.1	4.8	5.0	9.8	4.3	3.9	3.4	3.4	2.3	2.8

Figure 13: Age specific incidence of Verotoxigenic *E. coli*, Nova Scotia, 2006

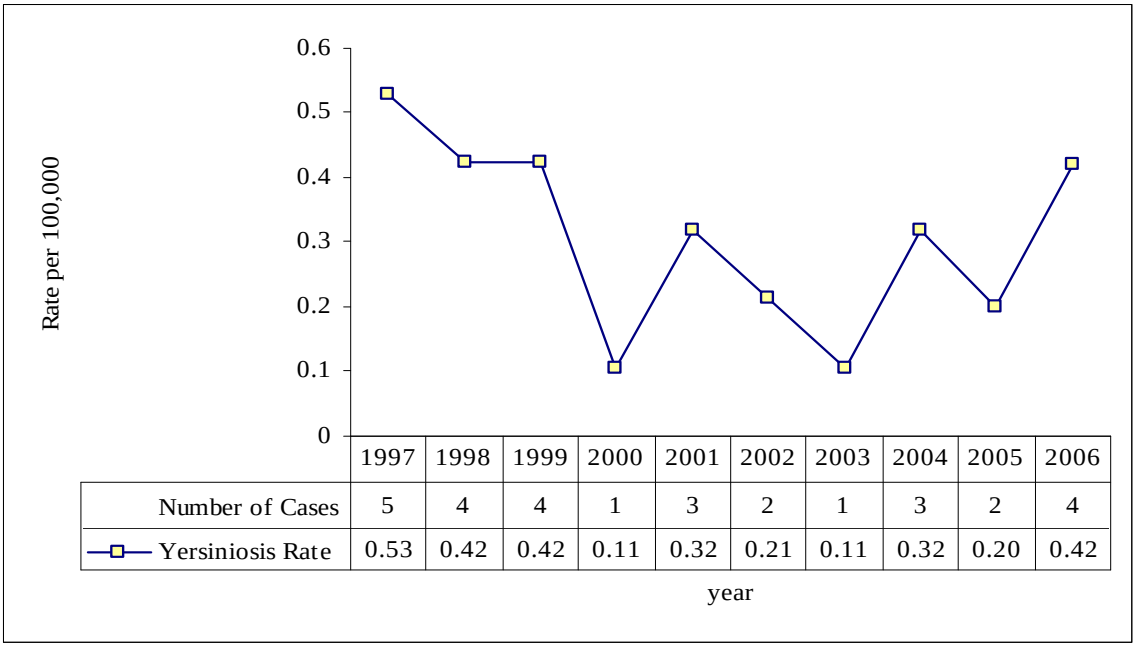


Yersiniosis

Yersiniosis is an acute enteric disease of bacterial origin. Y*ersinia enterocolitica* and *Y. pseudotuberculosis* both cause clinical illness but *Y. enterocolitica* is responsible for most reported cases. Transmission is via the fecal-oral route through consumption of contaminated food and water or by contact with infected humans and animals. Pathogenic strains of *Y. enterocolitica* have been most commonly isolated from raw pork or pork products.[5]

Four cases of *Yersinia* were reported in Nova Scotia in 2006. The incidence of Yersiniosis in Nova Scotia has been less than one case per 100,000 population since 1997 (Figure 14).

Figure 14: Incidence of Yersiniosis, Nova Scotia, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	5	4	4	1	3	2	1	3	2	4
Yersiniosis Rate	0.53	0.42	0.42	0.11	0.32	0.21	0.11	0.32	0.20	0.42

Enteric Outbreaks in Nova Scotia, 1997 – 2006

Between 1997 and 2006, a total of 194 outbreaks of enteric illness were reported in Nova Scotia. Approximately 7,784 individuals were affected. The majority (74.2%) of outbreaks occurred in residential facilities (i.e., long term care), affecting a total of 6,181 people. Private functions (19; 9.8%) and non-residential facilities (18; 9.3%) accounted for 37 (19.1%) of the outbreaks while nine (4.6%) involved food services establishments. Three deaths were associated with these outbreaks: one in 1998 during an *E. coli* outbreak, two in 2003, both associated with outbreaks of rotavirus.

The etiologic agent was identified in 74 of these outbreaks with viral agents causing 59 (30.4%) of the outbreaks and bacteria 15 (7.7%). The isolated organisms included: *Norovirus* virus (49), Rotavirus (10), *Salmonella* (5), *E. coli* O157 (4), *Bacillus cereus* (3), *Clostridium difficile* (1), *Staphylococcus aureus* (1), and *Giardia* (1).

Section III: Diseases Transmitted by Direct Contact and Respiratory Routes

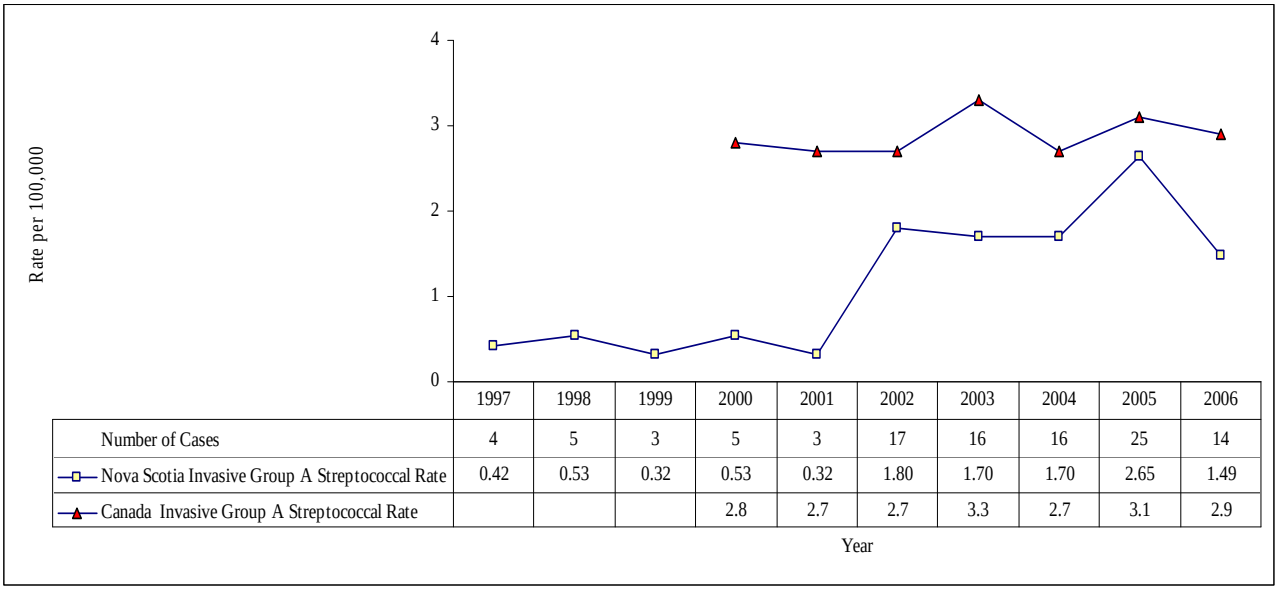
Group A Streptococcal Disease (GAS) - Invasive

There are approximately 80 serologically distinct types of *Streptococcus pyogenes*, group A streptococci. A variety of diseases are caused by these bacteria but streptococcal sore throat and skin infections are the most commonly encountered. Other diseases include scarlet fever, puerperal fever, septicemia, erysipelas, cellulitis, mastoiditis, otitis media, pneumonia, peritonsillitis and wound infections. Rarely, infection may lead to necrotizing fasciitis, rheumatic fever and a toxic shock-like syndrome. Invasive GAS infection is defined as disease associated with the isolation of *Streptococcus pyogenes* from a normally sterile body site, such as blood or cerebrospinal fluid. Transmission occurs through large respiratory droplets or direct contact with patients or individuals who are carriers of the bacteria.[5]

The incidence of invasive group A streptococcal disease has remained less than three cases per 100,000 population (Figure 15). The national rate for 2006 was 2.9 cases per 100,000 population.[24]

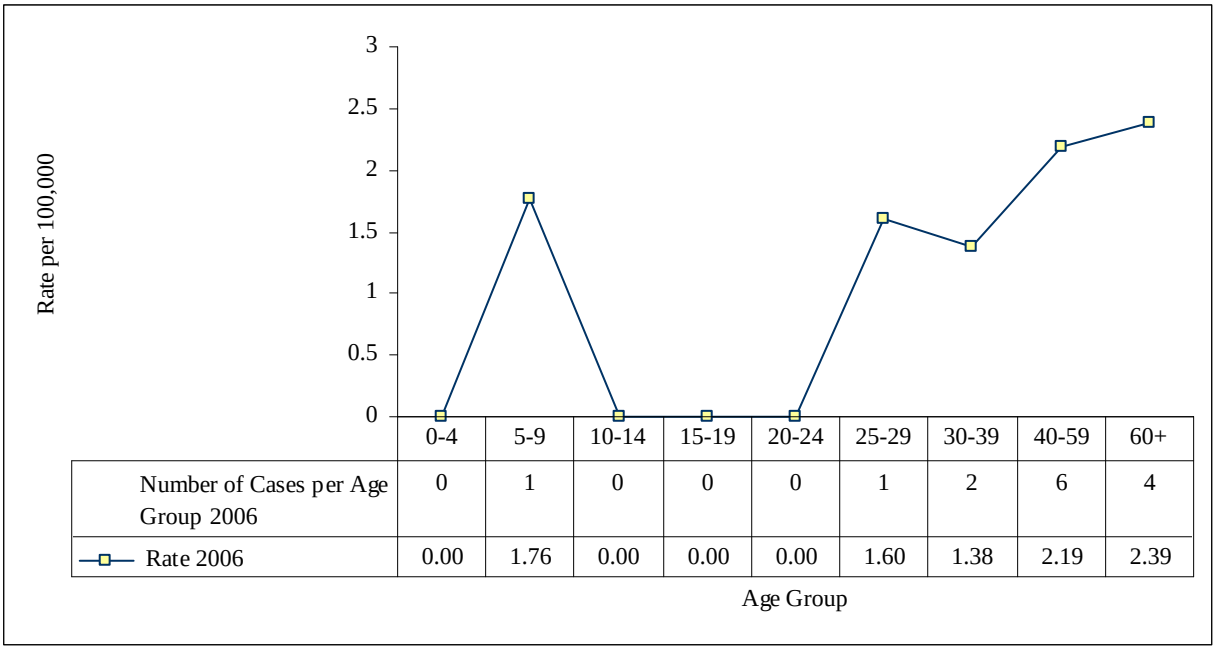
In 2006, 50% of the cases were reported among males. The mean age was 54 years (range: 8-96 years). The highest incidence rates were noted in adults 40 year of age or older and children aged 5-9 years.

Figure 15: Incidence of Invasive Group A Streptococcal Disease, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	4	5	3	5	3	17	16	16	25	14
Nova Scotia Invasive Group A Streptococcal Rate	0.42	0.53	0.32	0.53	0.32	1.80	1.70	1.70	2.65	1.49
Canada Invasive Group A Streptococcal Rate				2.8	2.7	2.7	3.3	2.7	3.1	2.9

Figure 16: Age-specific incidence of reported cases of Invasive Group A Streptococcal Disease, Nova Scotia, 2006



	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Number of Cases per Age Group 2006	0	1	0	0	0	1	2	6	4
Rate 2006	0.00	1.76	0.00	0.00	0.00	1.60	1.38	2.19	2.39

Group B Streptococcal (GBS) Disease of the Newborn

The human sub-types of group B streptococci (*S. agalactiae*) are responsible for two forms of illness in newborn infants. Group B streptococcal disease may have an early onset (one to seven days after birth) and is acquired *in utero* or during delivery. It is characterized by sepsis, respiratory distress, apnea, shock, pneumonia and meningitis and often occurs in low-birth weight infants. The disease may also have a late onset (seven days to several months after birth) and is characterized by sepsis and meningitis. Late onset disease is acquired by person-to-person contact and occurs in full-term infants. Case fatality for early onset disease is about 50% and approximately 25% for late onset disease.[5]

Since 1998, there have been no cases of group B streptococcal disease of the newborn reported in Nova Scotia except for 5 cases in 2001 (incidence less than one case per 100,000 population). The absence of cases in other years may reflect underreporting. The national rate for 2006 was 0.2 cases per 100,000 population.[27]

Influenza

Influenza is an acute viral illness characterized by sudden onset of fever, myalgia, coryza, sore throat and dry cough. Although usually self-limiting, serious complications including death can occur, particularly for the very young, the elderly, and those with compromised immune systems.

In temperate countries like Canada, the influenza season usually runs from November to April. It is estimated that 10% to 25% of Canadians may suffer from influenza each year. Rates of illness in closed population such as nursing homes or schools can be even higher. Approximately 75,000 hospitalizations and 6,700 deaths are attributed to influenza each year in Canada.

Surveillance Results (2006 – 2007)

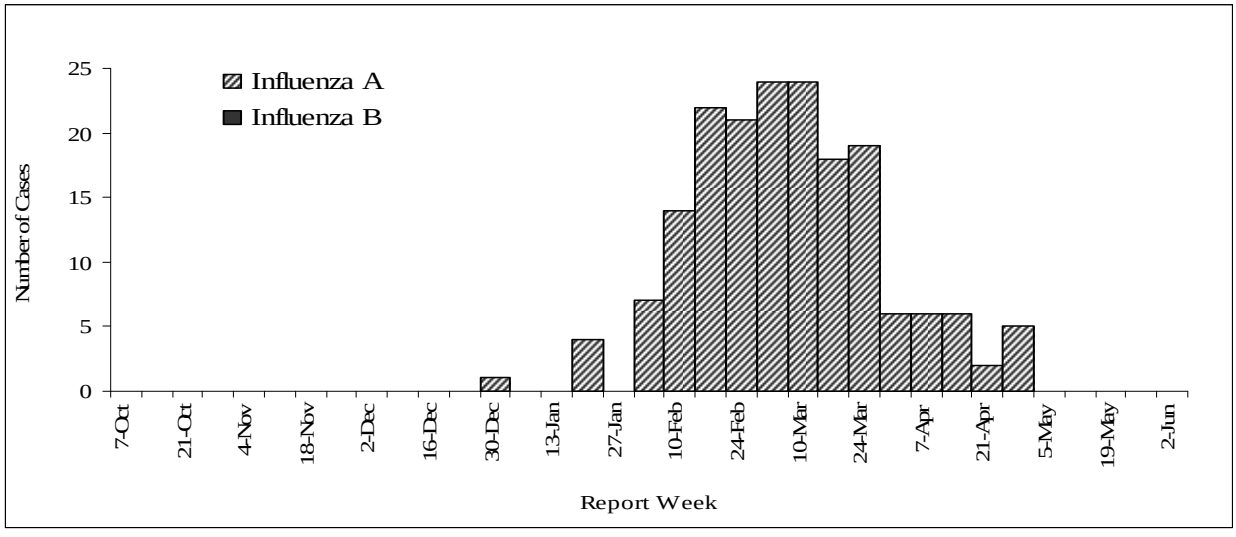
Influenza-like Illness (ILI)

The rate (per 100 patient visits) of ILI activity reported by sentinel physicians in 2006-2007 is compared with each of the previous three seasons (2003/04 to 2005/06). In 2006-2007, the rate of ILI peaked early in the season at week 52 (week ending December 30). Smaller peaks occurred in weeks 6 (early February) and 12 (mid March). The trend in this season followed the 2003-2004 season.

Laboratory-confirmed influenza

As of the week ending June 23, 2007 (Week 25), a total of 179 laboratory-confirmed cases of influenza had been reported in Nova Scotia. Figure 17 presents the total number of laboratory-confirmed cases by report week for the 2006-2007 influenza season.

Figure 17: Number of lab-confirmed Influenza cases by report week, Nova Scotia, 2006-2007



Influenza type A was the only type isolated in Nova Scotia in the 2006-2007 season, 97% were type A in 2004-05, 100% in 2003-04 and 96% in 2001-02. As of May 12, 2007, the National Microbiology Laboratory (NML) had characterized 955 influenza viruses for the 2006-2007 season: 254 (27%) A/New Caledonia/20/1999(H1N1)-like, 595 (62%) A/Wisconsin/67/05(H3N2)-like, 12 (1%) B/Malaysia/2506/2004-like, and 94 (10%) B/Shanghai/361/2002-like. All but the B/Shanghai/361/2002-like strain were included in the composition of the 2006-2007 Canadian influenza vaccine.

The number of cases reported by each of the province's nine District Health Authorities (DHAs) are presented in Table 1.

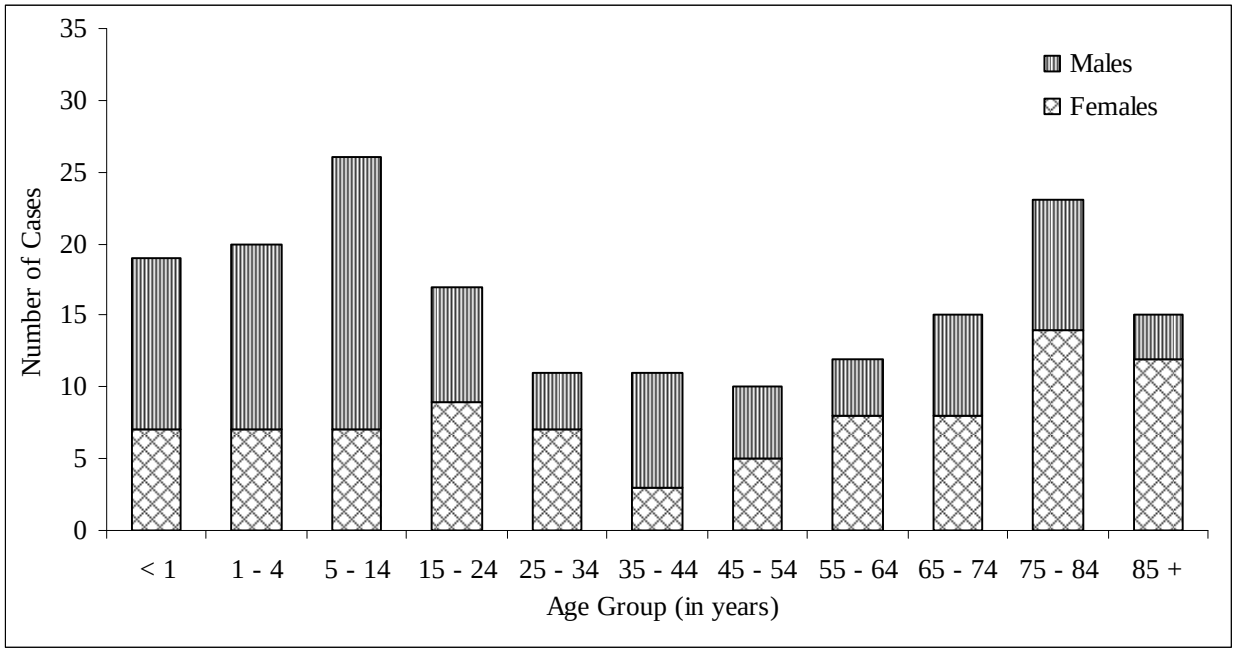
Table 1: Laboratory-confirmed influenza cases by District Health Authority, Nova Scotia, 2006-2007

Region	District Health Authority	Influenza A	Total (%)
Western	South Shore Health (DHA1)	18	18 (10.1%)
	South West Health (DHA2)	21	21 (11.7%)
	Annapolis Valley Health (DHA3)	9	9 (5.1%)
Northern	Colchester East Hants Health Authority (DHA4)	12	12 (6.7%)
	Cumberland Health Authority (DHA5)	2	2 (1.1%)
	Pictou County Health Authority (DHA6)	11	11 (6.1%)
Eastern	Guysborough Antigonish Strait Health Authority (DHA7)	22	22 (12.3%)
	Cape Breton District Health Authority (DHA8)	25	25 (14.0%)
Capital	Capital Health (DHA9)	59	59 (32.9%)
TOTAL (Nova Scotia)		**179**	**179 (100.0%)**

Of the 179 influenza cases reported in 2006-2007, 87 (48.6%) were females. Sixty-five cases (36.3%) were children 14 years of age or younger; 61 cases (34.1%) adults 15 to 64 years of age and 53 cases (29.6%) were 65 years of age or older. In previous years, the majority of cases have been reported in individuals 65 years of age or older. The increase in pediatric cases was partially explained by the fact that the IWK Health Centre started testing for influenza this season.

Figure 18 shows the number of lab-confirmed cases reported by age group and sex.

Figure 18: Cumulative number of lab confirmed influenza cases by age group and sex, Nova Scotia, 2006-2007



Influenza Immunization Coverage

Immunization is widely recognized as the most effective means for reducing the morbidity and mortality associated with influenza. Each year in Canada, the National Advisory Committee on Immunization (NACI) publishes a statement with recommendations as to which groups should be targeted by annual immunization programs. The Nova Scotia Department of Health Promotion and Protection (HPP) makes available free vaccine to individuals belonging to the three main groups recommended by NACI. In 2006-2007, these groups included: 1) persons at high-risk of influenza-related complications, 2) persons capable of transmitting influenza to those at high-risk of complications, and 3) persons performing essential community services. In the fall of each year, HPP provides a supply of vaccine to the district Public Health Services offices who in turn distribute the vaccine to physicians and other health care organizations responsible for vaccine administration.

Methodology for Determining Immunization Coverage Rates

Immunization coverage rates were determined by calculating the number of individuals who received the vaccine as a proportion of the total number of individuals eligible to receive the vaccine. Denominator data for each of the eligible risk groups are obtained from projected population estimates from the 2001 Canadian census, as well as from acute and long-term care facilities.

The number of individuals who were immunized for influenza by physicians was available from the provincial Medical Services Insurance (MSI) physician-billing database. District public health offices and other community agencies [e.g., Victorian Order of Nurses (VON)] provided the total number of persons immunized in the community, categorized by the risk group to which they

belong. Finally, acute and long-term care facilities provided the total number of staff who received influenza vaccine through their occupational health programs, as well as the total number of residents and/or patients immunized. This year, data from private workplace clinics were obtained from the VON. Additional information on the methodology and limitations for each of the eligible risk groups can be found under their respective headings.

Limitations

In previous influenza reports, the population totals for each age group were determined based on mid-year population projections from the 1996 Canadian census. Since the 2003-2004 annual reports, population estimates were obtained from the 2001 census, consistent with the methodology used in other reports published by this department. Comparison of age-specific coverage rates with previous seasons must therefore be interpreted carefully.

Other limitations are the completeness of reporting and data collection. With the exception of the computerized MSI physician-billing database, surveillance data are collected in a paper-based format from the sources described above. Risk group information, which is determined largely by self-report, is collected at the individual level and then summarized and reported as aggregate data. There is potential for duplicate reporting as well as misclassification. For example, a health care worker who received vaccine from their physician would be captured in the MSI database and also be reported by the facility in which the individual was employed. These limitations should be considered when interpreting the immunization rates presented in this report.

While data from private workplace clinics were obtained this year, there was no mechanism to ensure that all private workplace clinics reported immunization data.

Vaccine Coverage

Children 6 to 23 Months of Age

The 2006-2007 influenza season marked the third year that children aged 6 to 23 months were eligible to receive publicly-funded influenza vaccine.

Children under nine years of age who are being immunized for the first time require two doses of influenza vaccine given at least four weeks apart. Due to limitations in data extraction from the MSI physician-billing database, it was difficult to determine the total number of children in this age group who had received the appropriate number of doses. Therefore, the numbers presented in the following tables (Tables 2 and 3) may overestimate vaccine coverage rates for this age group.

Table 2: Influenza immunization coverage rates for children 6 to 23 months of age, Nova Scotia, 2004-2007

Year	Total Population 6 to 23 Months of Age	Total No. (%) Immunized
2006 – 2007	12,636	4,487(35.5)
2005 – 2006	12,660	4,959 (39.2)
2004 – 2005	12,786	5,456 (42.7)

Table 3: Influenza immunization coverage rates for children six to 23 months of age by DHA, Nova Scotia, 2006-2007

DHA	DHA Population 6 to 23 Months of Age	No. (%) Immunized by Physicians	No. (%) Immunized by Public Health / Other	Total No. (%) Immunized
1	630	172 (27.3)	35 (5.5)	207 (32.8)
2	795	135 (16.9)	37 (4.6)	172 (21.6)
3	1053	321 (30.4)	0	321 (30.4)
4	920	362 (39.3)	18 (1.9)	380 (41.3)
5	365	33 (9.0)	17 (4.6)	50 (13.6)
6	661	136 (20.5)	12 (1.8)	148 (22.3)
7	542	75 (13.8)	23 (4.2)	98 (18.0)
8	1,646	256 (15.5)	77 (4.6)	333 (20.2)
9	6,024	2716 (45.0)	0	2716 (45.0)
TOTAL	**12,636**	**4268* (33.7)**	**219 (1.7)**	**4,487* (35.5)**

Under 65 Years of Age (2 to 64 years of age) (National Target for High-Risk – 80%)
Immunization coverage rates for individuals between 2 to 64 years of age were determined using the same methodology as for children 6 to 23 months of age. The total number immunized was obtained from the physician-billing database (MSI), as well as from public health clinics, other community clinics, such as pharmacies plus workplace clinics conducted by occupational nurses and private nursing agencies (such as VON). Data were not available from workplace clinics conducted directly by occupational health programs. Projected population estimates for persons between 2 to 64 years of age were taken from the 2001 Canadian census.

This category also includes fire fighters and police officers (i.e., first responders) and health care workers. Immunization data for health care workers in acute, long-term and home care agencies are presented in "Health Care Workers" paragraph and are also included in Tables 10 and 11. For first responders and all other health care workers (i.e., dentists, dental hygienists and assistants, pharmacists and physiotherapists), group specific immunization data were not available and would only be included in the following tables if they were immunized by a physician, at a community clinic or a workplace clinic conducted by a private nursing agency.

Presently, the province does not have an estimate of the total population between 2 to 64 years of age who have a high-risk condition or who are a household contact of a person with a high-risk condition. Instead, coverage rates were calculated for the entire population between 2 to 64 years of age. In 2006-2007, 19.3% of individuals in this age group received influenza vaccine (Tables 4). Since 1998, there has been an increasing trend in the proportion immunized.

Table 4: Influenza immunization coverage rates for residents 2 to 64 years of age, Nova Scotia, 1998-2007

Year	Total Population 2 to 64 Years of Age	No. (%) Immunized by Physicians	No. (%) Immunized by Public Health / Other	No. (%) Immunized by Private Supply	Total No. (%) Immunized
2006/07	783,884	135,351 (17.0)	13,235 (1)	2,718 (0.35)	151,304 (19.3)
2005/06	787,812	134,524 (17.1)	45,029 (5.7)	10,000 (1.3)	189,553(24.1)
2004/05	805,692	138,804 (17.2)	29,804 (3.7)	n/a	168,608 (20.9)
2003/04	816,734	121,261 (14.8)	33,666 (4.1)	n/a	154,927 (19.0)
2002/03	809,074	89,042 (11.0)	20,636 (2.6)	n/a	109,678 (13.6)
2001/02	811,217	86,471 (10.7)	17,213 (2.1)	n/a	103,684 (12.8)
2000/01	806,118	71,254 (8.8)	9,408 (1.2)	n/a	80,622 (10.0)
1999/00	805,328	57,944 (7.2)	11,186 (1.4)	n/a	69,130 (8.6)
1998/99	805,028	48,624 (6.0)	12,889 (1.6)	n/a	61,513 (7.6)

Table 5: Influenza immunization coverage rates for residents 2 to 64 year of age, by DHA, 2006-2007

DHA	DHA Population 2 to 64 Years of Age	No. (%) Immunized by Physicians	No. (%) Immunized by Public Health / Other	No. (%) Immunized by Private Supply	Total No. (%) Immunized
1	48,082	9,112 (19)	1,084 (2)	34 (0.07)	10,230 (21.2)
2	50,948	7,360 (14)	2,321 (5)	68 (0.13)	9,749 (19.1)
3	67,079	13,335 (20)	0	18 (0.03)	13,353 (19.9)
4	64,108	11,882 (19)	1,704 (3)	9 (0.01)	13,595 (21.2)
5	25,339	2,452 (10)	1,237 (5)	3 (0.01)	3,692 (14.5)
6	38,425	4,068 (11)	1423 (4)	4 (0.01)	5,495 (14.3)
7	37,080	4,284 (12)	1,452 (4)	356 (0.96)	6,092 (16.4)
8	105,108	15,567 (15)	2,039 (2)	980 (0.93)	18,586 (17.6)
9	347,715	65,953 (19)	1,975 (0.6)	1,246 (0.36)	69,174 (19.9)
TOTAL	**783,884**	**135,351* (17)**	**13,235 (2)**	**2,718 (0.35)**	**151,304* (19.3)**

* An additional 1338 individuals were immunized but their DHAs were unknown.

Adults 65 years of age and older (National Target – 80%)

This category includes all adults 65 years of age and older who are not residents of a long-term care facility (i.e., community-living seniors). Immunization data were obtained from both the MSI physician billing database and from public health and other community agencies (i.e., VON, pharmacy clinics). The total population of this group was based on population projections estimates provided by the 2001 Canadian census.

Table 6: Influenza immunization coverage rates for community residents 65 years of age and older, Nova Scotia, 1998-2007

Year	Total Population 65+ (excluding LTC residents)	No. (%) Immunized by Physicians	No. (%) Immunized by Public Health / Other	No. (%) Immunized by Private Supply	Total No. (%) Immunized
2006/07	131,132	77,928 (59.4)	8,736 (6.6)	302 (0.2)	87,476 (66.7)
2005/06	126,409	79,052 (62.5)	9,737 (7.7)	1,348 (1.1)	90,137 (71.3)
2004/05	124,834	78,063 (62.5)	9,829 (7.9)	n/a	87,892 (70.4)
2003/04	119,017	75,942 (63.8)	9,434 (7.9)	n/a	85,376 (71.7)
2002/03	121,934	71,070 (58.3)	7,793 (6.4)	n/a	78,863 (64.7)
2001/02	120,104	70,892 (59.0)	11,460 (9.5)	n/a	82,352 (68.6)
2000/01	119,866	66,638 (55.6)	7,974 (6.7)	n/a	74,612 (62.2)
1999/00	117,358	61,829 (52.7)	12,111 (10.3)	n/a	73,940 (63.0)
1998/99	116,637	57,240 (49.1)	10,360 (8.9)	n/a	67,600 (58.0)

Table 7: Influenza immunization coverage rates for community residents 65 years of age and older by DHA, Nova Scotia, 2006-2007

DHA	DHA Population 65+ (Excluding LTC residents)	No. (%) Immunized by Physicians	No. (%) Immunized by Public Health / Other	No. (%) Immunized by Private Supply	Total No. (%) Immunized
1	10,850	6,180 (57)	539 (5)	49 (0.5)	6,768 (62.3)
2	10,244	5,406 (53)	994 (10)	108 (1)	6,508 (63.5)
3	13,340	8,996 (67)	0	5 (0.04)	9,001 (67.4)
4	11,079	6,079 (55)	974 (9)	33 (0.9)	7,183 (64.8)
5	5,882	2,526 (43)	977 (17)	14 (0.2)	3,517 (59.7)
6	6,849	3,393 (50)	1,145 (17)	14 (0.2)	4,552(66.4)
7	7,521	3,191 (42)	1,029 (14)	15 (0.2)	4,235 (56.3)
8	19,934	11,158 (56)	3,078(15)	0	14,236 (71.4)
9	45,433	30,999 (68)	130 (0.3)	64 (0.1)	31,193 (68.6)
TOTAL	**131,132**	**77,928 (59)**	**8,866 (7)**	**302 (0.2)**	**87,476* (66.7)**

Residents of Long-Term Care Facilities (National Target – 95%)

Long-term care facilities provided the province with both the number of individuals living in their institutions as well as the total number who received influenza immunization.

Table 8: Influenza immunization coverage rates for residents of long term care facilities, Nova Scotia, 1998-2007

Year	Total Population in Long-term Care	Total No. (%) Immunized
2006 - 2007	7,011	6,601 (94.2)
2005 – 2006	6,918	6,544 (94.6)
2004 – 2005	6,896	6,530 (94.7)
2003 – 2004	6,940	6,545 (94.3)
2002 – 2003	6,654	6,254 (94.0)
2001 – 2002	7,164	6,638 (92.7)
2000 – 2001	6,711	6,121 (91.2)
1999 – 2000	5,901	5,329 (90.3)
1998 – 1999	5,874	5,699 (97.0)

Table 9: Influenza immunization coverage rates for residents of long term care facilities by DHA, Nova Scotia, 2006-2007

DHA	No. Residents in Long-Term Care	Total No. (%) Immunized
1	528	505 (95.6)
2	515	484 (93.9)
3	552	527 (95.5)
4	420	369 (87.9)
5	440	420 (95.5)
6	599	550 (91.8)
7	348	327 (93.9)
8	1,480	1,360 (91.9)
9	2,129	2,059 (96.7)
TOTAL	7,011	6,601 (94.2)

Health Care Workers (National and Provincial Target – 70%)

Direct Care and Support Staff

Acute and long-term care facilities, as well as continuing care/home care agencies, provided the province with the total number of health care workers that they employ, as well as the number who received influenza vaccine. Coverage rates were calculated separately for those working in direct patient care and support staff and are presented by setting (Tables 10 and 11).

Table 10: Influenza immunization coverage rates for health care workers (direct care and support staff) by setting, Nova Scotia, 2003-2007

Year	Acute Care		Long-term Care		Continuing/Home Care	
	Direct Care (No./%)	Support Staff (No./%)	Direct Care (No./%)	Support Staff (No./%)	Direct Care (No./%)	Support Staff (No./%)
2006 – 2007	7527/19626 (38)	6313/9421 (67)	4459/6788 (66)	2509/3972 (63)	657/1554 (42)	132/229 (58)
2005 – 2006	5860/10798 (54)	5536/10641 (52)	4452/6456 (69)	2597/3853 (67)	946/1724 (55)	233/392 (59)
2004 – 2005	5501/11893 (46)	5411/10438 (52)	4053/6291 (64)	2395/3536 (68)	1552/2809 (55)	281/385 (73)
2003 –2004	4398/9539 (46)	4870/9898 (49)	3724/6044 (62)	2405/3721 (65)	1224/2399 (51)	314/526 (60)

Table 11: Influenza immunization coverage rates for health care workers (direct care and support staff) by setting and DHA, 2006-2007

DHA	Acute Care		Long-Term Care		Continuing/Home Care	
	Direct Care (No./%)	Support Staff (No./%)	Direct Care (No./%)	Support Staff (No./%)	Direct Care (No./%)	Support Staff (No./%)
1	210/430 (49)	357/549 (65)	445/558 (80)	180/237 (76)	12/32 (38)	5/6 (83)
2	289/498 (58)	407/603 (67)	248/473 (52)	145/230 (63)	95/144 (66)	50/56 (89)
3	693/1134 (61)	105/171 (61)	354/496 (71)	169/239 (71)	36/158 (23)	10/17 (59)
4	366/675 (54)	90/235 (38)	239/299 (80)	124/185 (67)	105/219 (48)	7/12 (58)
5	174/189 (92)	121/298 (41)	253/347 (73)	106/184 (58)	52/107 (49)	5/8 (63)
6	225/299 (75)	258/346 (75)	314/504 (62)	233/332 (70)	57/83 (69)	2/4 (50)
7	187/512 (36)	111/222 (50)	169/271 (62)	96/152 (63)	8/16 (50)	1/4 (25)
8	278/1026 (27)	564/1587 (36)	924/1636 (56)	543/949 (57)	88/232 (38)	3/9 (33)
9	5105/14861 (34)	4300/5410 (79)	1513/2204 (69)	913/1464 (62)	204/563 (36)	49/113 (34)
TOTAL	**7527/19626 (38)**	**6313/9421 (67)**	**4459/6788 (66)**	**2509/3972 (63)**	**657/1554 (42)**	**132/229 (58)**

Physicians

A request to collect and report physician influenza vaccination data to the Department of Health Promotion and Protection is sent every autumn to Vice Presidents of Medicine / Chiefs of Staff in each DHA. Physicians who do not report data were considered to not have received vaccine (Tables 12 and 13).

Table 12: Influenza immunization coverage rates of physicians by DHA, Nova Scotia, 2006 – 2007

DHA	Total Number of Physicians	Total No. (%) Immunized
1	100	51(51)
2	76	31(41)
3	136	112 (82)
4	N/A	N/A
5	53	28 (53)
6	N/A	N/A
7	N/A	N/A
8	275	76 (28)
9	774	378 (49)
IWK*	135	70 (52)
TOTAL	**1549**	**746 (48)**

* Influenza vaccine coverage data not reported by all Medical Departments

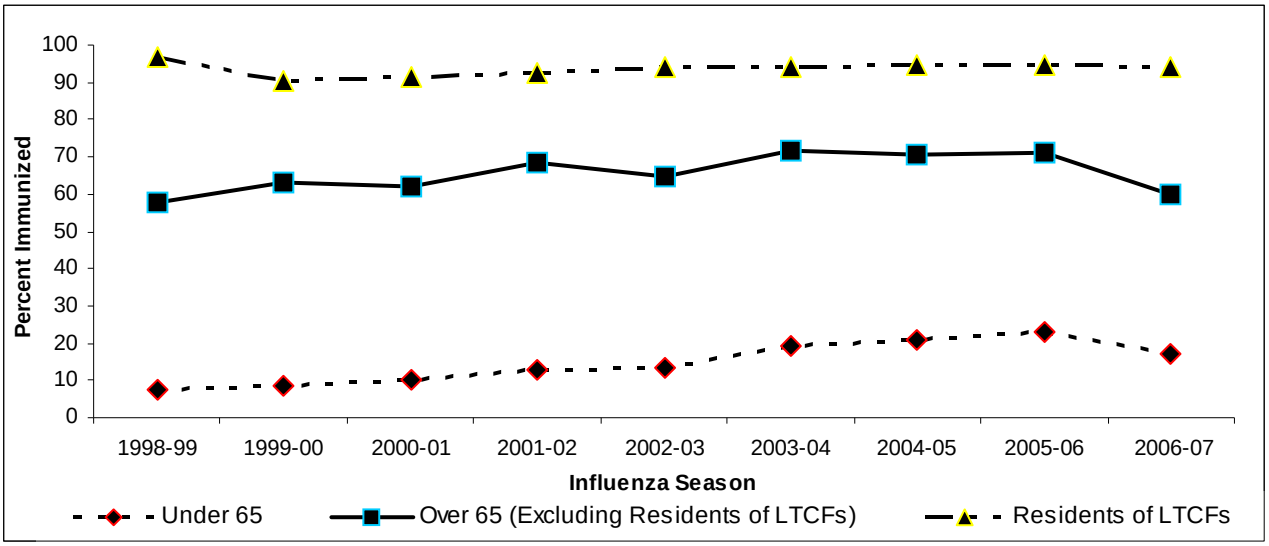
Table 13: Influenza immunization coverage rates for physicians, Nova Scotia, 2004 -2007

Year	Total Number of Physicians*	Total No. (%) Immunized*
2006 – 2007	1,549	746 (48)
2005 – 2006	1,659	912 (55.0)
2004 – 2005	1,603	797 (49.7)

Trends in Influenza Immunization in Nova Scotia

In Nova Scotia, an increasing trend in the proportion of individuals under 65 years of age, over 65 years of age (excluding residents of long-term care facilities), residents of long-term care facilities and health care workers who have received influenza immunization has been observed. However, most of the groups had a decrease in their vaccine coverage rates in 2006-2007.

Figure 19: Trend in influenza immunization in Nova Scotia, 1998-2007



Adverse Events Following Immunization (AEFI)

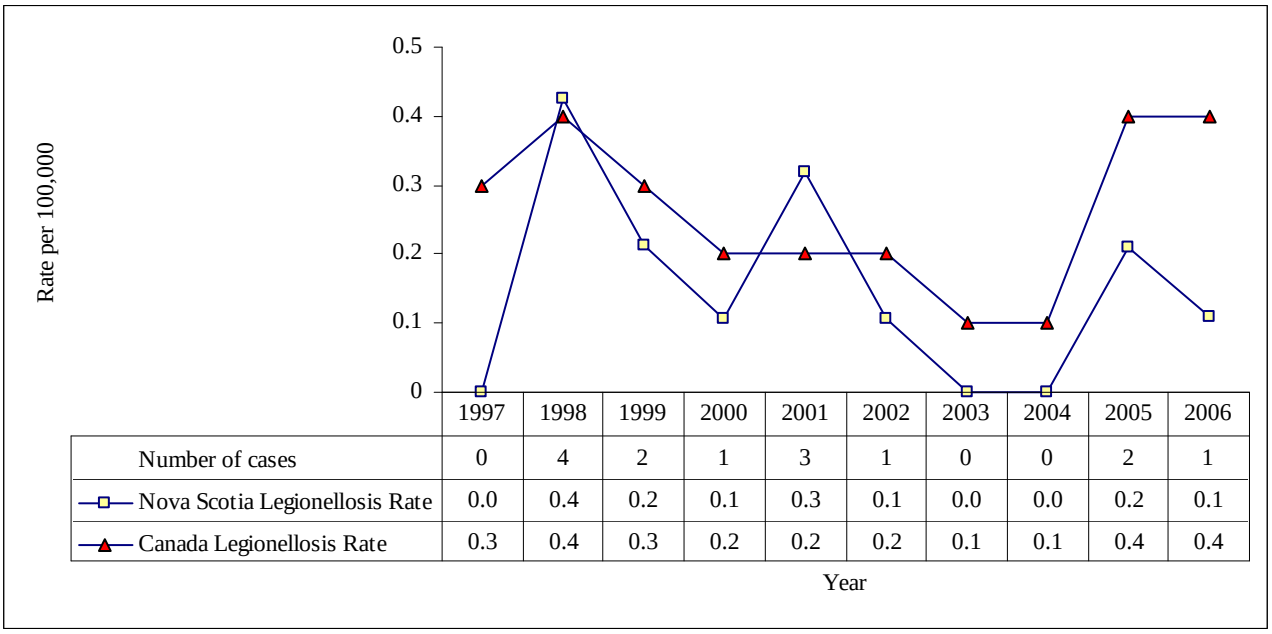
During the 2006-2007 influenza immunization campaign, there were eight reported adverse events following immunization (AEFI) in Nova Scotia. The adverse events included rash, erythema, dry mouth, swelling of the lips and tongue, dry mouth and fever. None required hospitalization.

Legionellosis

Legionellosis is an acute disease caused by the gram-negative bacilli *Legionellae* that may lead to pneumonia or death. Water is probably the primary reservoir and, epidemiologically, hot water systems (showers), cooling towers for air conditioning systems, evaporative condensers, humidifiers, whirlpool spas, equipment used in respiratory therapy, and decorative fountains have been implicated. Airborne transmission has been supported by epidemiologic evidence but the bacteria may also be transmitted by aspiration of water.[5]

One case of *Legionella* was reported in Nova Scotia in 2006. The incidence of Legionellosis in Nova Scotia has been low with less than one new case per 100,000 population reported annually since 1997 (Figure 20). The national rate for 2006 was 0.4 cases per 100,000 population.[27]

Figure 20: Incidence of Legionellosis, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of cases	0	4	2	1	3	1	0	0	2	1
Nova Scotia Legionellosis Rate	0.0	0.4	0.2	0.1	0.3	0.1	0.0	0.0	0.2	0.1
Canada Legionellosis Rate	0.3	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.4	0.4

Meningococcal Disease – Invasive

Meningococcal disease is an infectious bacterial disease caused by *Neisseria meningitidis*. The two serious forms of the disease, meningococcemia and meningococcal meningitis, are referred to as invasive meningococcal disease (IMD).

Five serogroups (A, B, C, Y and W-135) of *N. meningitidis* cause the majority of invasive infections. In Canada, serotypes B and C predominate. C isolates have been responsible for outbreaks in schools and communities in Canada and the US.[5]

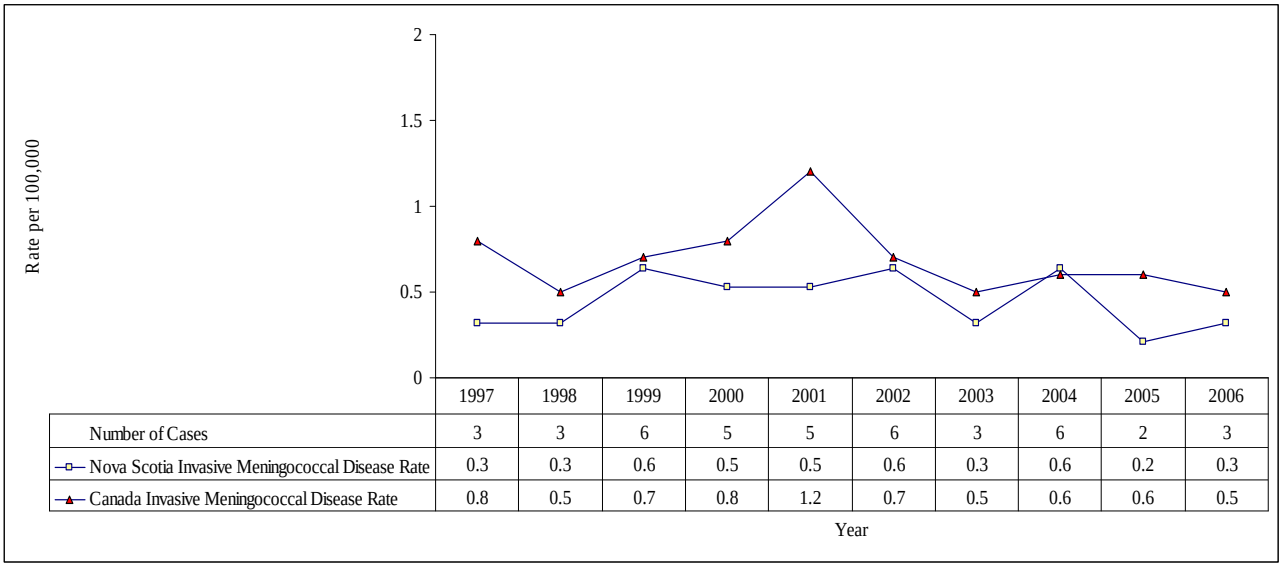
In Canada, meningococcal disease is cyclical with an increase seen every 10 to 15 years.[20] Annually, 300 to 400 people are affected by the disease (two cases per 100,000 population). Overall, the incidence has been highest among children under one year of age and those 15 to 19 years of age. The majority of cases occur during the winter months.[20]

Following an outbreak in Nova Scotia (1992), the incidence of IMD has remained low (Figure 21). Forty-eight cases of IMD (41 lab confirmed and seven clinical) were reported between 1997 and 2006, including five deaths (Table 14). The incidence was highest among children 0-4 years of age and declined with increasing age (Table 15).

Three cases of IMD were reported in Nova Scotia in 2006. The national rate for 2006 was 0.5 cases per 100,000 population.[24]

In Nova Scotia, meningococcal group C vaccine is publicly funded for 12-month old infants.

Figure 21: Incidence of laboratory confirmed Invasive Meningococcal Disease, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	3	3	6	5	5	6	3	6	2	3
Nova Scotia Invasive Meningococcal Disease Rate	0.3	0.3	0.6	0.5	0.5	0.6	0.3	0.6	0.2	0.3
Canada Invasive Meningococcal Disease Rate	0.8	0.5	0.7	0.8	1.2	0.7	0.5	0.6	0.6	0.5

Table 14: Number of reported cases of Invasive Meningococcal Disease (Laboratory confirmed and clinical) by serogroup and outcome, Nova Scotia, 1997-2006

YEAR	TOTAL NUMBER CASES	CASE							OUTCOME	
		Confirmed with Serogroup					Clinical	Rate 100,000/Year		
		B	C	Y	W-135	Unknown			Recovered	Died
1997	3	1	-	-	-	2	-	0.3	1	2
1998	4	3	-	-	-	-	1	0.3	4	-
1999	6	5	-	1	-	-	-	0.6	5	1
2000	5	2	-	1	-	2	-	0.5	4	1
2001	7	1	-	2	-	2	2	0.5	7	-
2002	8	3	1	2	-	-	2	0.6	7	1
2003	3	1	1	1	-	-	-	0.3	3	-
2004	6	4	1	-	1	0	-	0.6	6	-
2005	3	1	1	-	-	-	1	0.3	3	-
2006	3	-	-	1	-	1	1	0.3	3	-
Total	48	21	4	8	1	7	7		43	5

Table 15: Number of reported cases of laboratory confirmed Invasive Meningococcal Disease by age group and serogroup, Nova Scotia, 1997-2006

Year	Age-Group	CASE						
		Confirmed with Serogroup						
		B	C	Y	W135	Unknown	Total	Rate/100,000
1997	**0-4**	1	-	-	-	1	2	4.1
	15-19	-	-	-	-	1	1	1.6
1998	**0-4**	2	-	-	-	-	2	4.1
	10-14	1	-	-	-	-	1	1.6
1999	**0-4**	1	-	-	-	-	1	2.1
	5-9	1	-	-	-	-	1	1.8
	10-14	1	-	-	-	-	1	1.6
	15-19	1	-	-	-	-	1	1.5
	40-59	1	-	1	-	-	2	0.7
2000	**0-4**	1	-	-	-	-	1	2.1
	5-9	-	-	-	-	1	1	1.8
	15-19	1	-	1	-	-	2	3.1
	20-24	-	-	-	-	1	1	1.6
2001	**5-9**	-	-	1	-	-	1	1.8
	10-14	-	-	1	-	1	2	3.2
	15-19	1	-	-	-	1	2	3.1
2002	**0-4**	2	-	-	-	-	2	4.1
	10-14	-	-	1	-	-	1	1.6
	15-19	1	1	-	-	-	2	3.1
2003	**0-4**	1	-	-	-	-	1	2.1
	15-19	-	1	-	-	-	1	1.5
	60+	-	-	1	-	-	1	0.6
2004	**0-4**	1	-	-	1	-	2	4.1
	15-19	2	1	-	-	-	3	4.7
	60+	1	-	-	-	-	1	0.6
2005	**10-14**	-	1	-	-	-	1	1.6
	30-39	1	-	-	-	-	1	0.7
2006	**0-4**	-	-	1	-	1	2	4.1

Methicillin-Resistant *Staphylococcus aureus* (MRSA)

Staphylococcus aureus causes a variety of infections including skin infections, foreign-body infections, pneumonia, endocarditis and osteomyelitis as well as toxin-mediated diseases, such as toxic shock syndrome and food poisoning.

Methicillin-resistant *S. aureus* (MRSA) is resistant to Beta-lactam antibiotics, such as methicillin, but also to more common antibiotics such as oxacillin and amoxicillin. MRSA is an important nosocomial pathogen, although the organism has increasingly been recognized as a significant cause of community-acquired infection.[21]

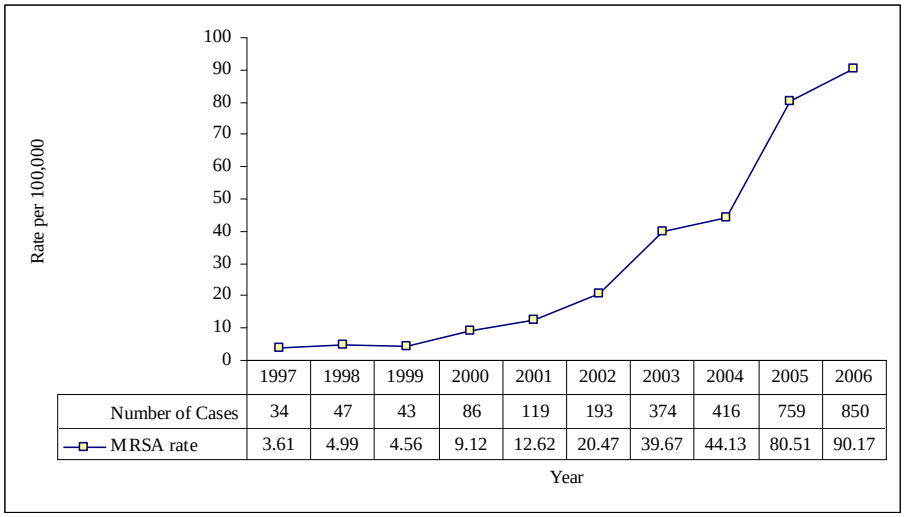
Surveillance for MRSA has been ongoing since January 1995 under the Canadian Nosocomial Infection Surveillance Program (CNISP) conducted by sentinel hospitals in Canada. Between 1995 and 2003, the rate of MRSA increased in CNISP hospitals from 0.46 cases per 1,000 admissions to 5.10 per 1,000 admissions (P = 0.002). Increases were noted across the country but most occurred in Ontario and Quebec. Although the rates of MRSA remain low in the Atlantic Provinces, they recently appear to have increased. Much of the observed increase in the detection of MRSA may be attributed to screening programs.[7]

In 2006, 850 cases of MRSA were reported in Nova Scotia (Figure 22). The incidence of MRSA has increased since 1997; however, there has also been an increase in testing during this time. Additionally, positive tests may reflect patients who are not only infected but also those who are colonized with MRSA. The national rate for 2006 was not available at the time of publication of this report.

In 2006, the mean age of the cases in Nova Scotia was 69 years (range: five months to 104 years) and 52% were male (Table 20).

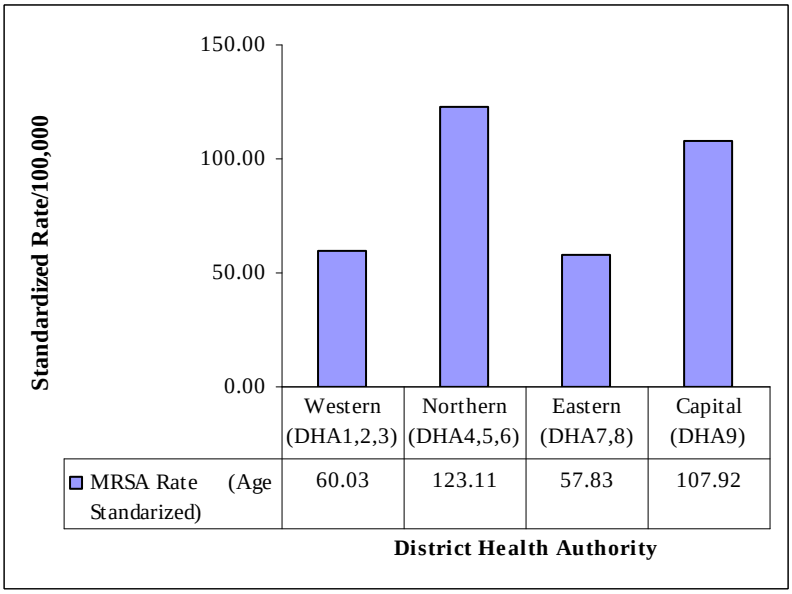
The age-standardized incidence of MRSA by Shared Service Area is presented in Figure 23 and Table 21. There was no statistical difference between the provincial rate and any of the SSA rates.

Figure 22 : Incidence of Methicillin Resistant *Staphylococcus aureus* (MRSA), Nova Scotia, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	34	47	43	86	119	193	374	416	759	850
MRSA rate	3.61	4.99	4.56	9.12	12.62	20.47	39.67	44.13	80.51	90.17

Figure 23: Age-standardized incidence of MRSA by Shared Service Area, Nova Scotia, 2006



	Western (DHA1,2,3)	Northern (DHA4,5,6)	Eastern (DHA7,8)	Capital (DHA9)
MRSA Rate (Age Standarized)	60.03	123.11	57.83	107.92

Pneumococcal Disease – Invasive

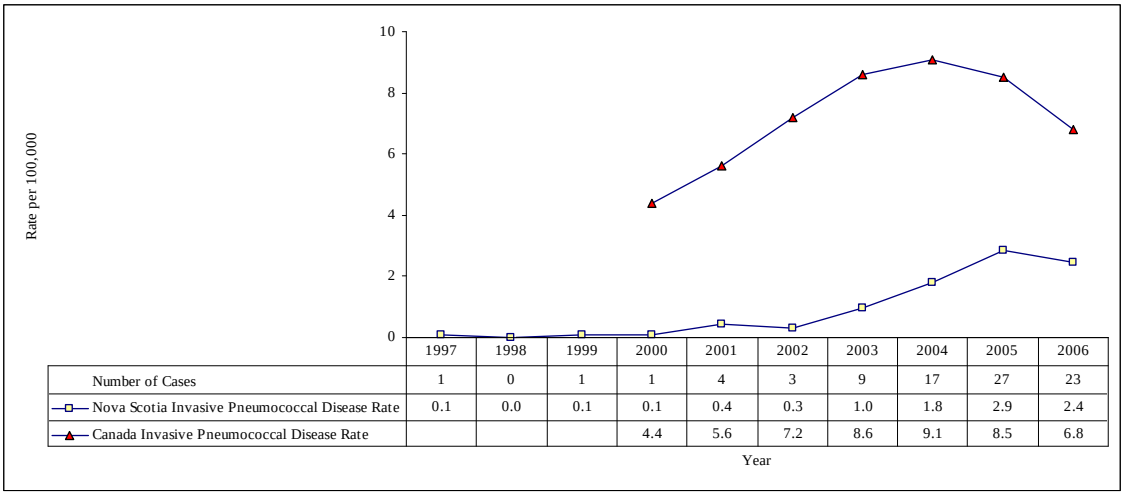
Invasive pneumococcal disease is an acute bacterial disease caused by *Streptococcus pneumoniae* (pneumococcus). It is the leading cause of invasive bacterial infections, meningitis, bacterial pneumonia and acute otitis media in children. Invasive disease is most commonly diagnosed in the very young, the elderly and those groups at high risk of disease (functional or anatomic asplenia and congenital or acquired immune deficiency including AIDS).[8] The organism is transmitted by droplet spread, direct oral contact or through indirect contact with articles freshly contaminated with respiratory discharges.

The pneumococcal vaccine is publicly funded in Nova Scotia for infants born after January 1, 2005. The vaccine is also recommended for all adults over the age of 65 years and others at high risk of pneumococcal disease.

The incidence of invasive pneumococcal disease in Nova Scotia has remained less than three cases per 100,000 population since 1997 (Figure 24). The national rate for 2006 was 6.8 cases per 100,000 population.[24]

In 2006, 23 cases of invasive pneumococcal disease were reported in Nova Scotia. The mean age of the cases was 45 years (range: 1-86 years) and 43.5% were males.

Figure 24: Incidence of Invasive Pneumococcal Disease, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	1	0	1	1	4	3	9	17	27	23
Nova Scotia Invasive Pneumococcal Disease Rate	0.1	0.0	0.1	0.1	0.4	0.3	1.0	1.8	2.9	2.4
Canada Invasive Pneumococcal Disease Rate				4.4	5.6	7.2	8.6	9.1	8.5	6.8

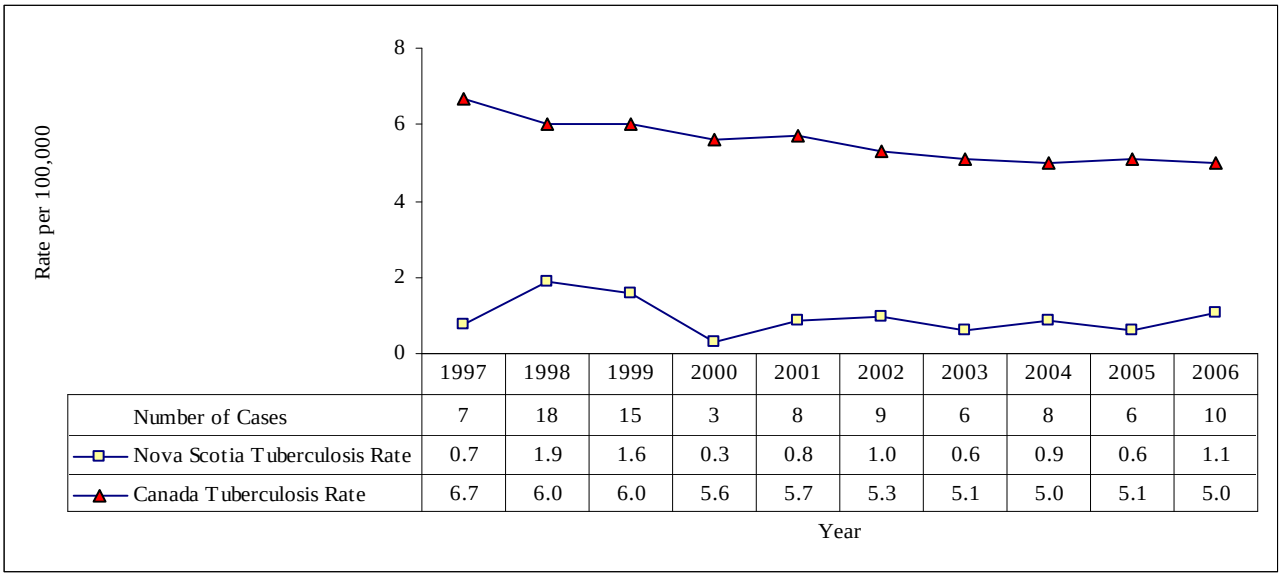
Tuberculosis

Tuberculosis is a bacterial disease caused by *Mycobacterium tuberculosis* complex, including *M. tuberculosis* and *M. africanum*, primarily from humans, and *M. bovis*, primarily from cattle. Although tuberculosis may affect any organ or tissue, pulmonary tuberculosis is the most common form of the disease. Tubercule bacilli are transmitted in airborne droplet nuclei through coughing and sneezing by individuals with pulmonary or laryngeal tuberculosis.[5]

The incidence of tuberculosis in Nova Scotia since 1997 is presented in Figure 25. The national rate for 2006 was 5.0 cases per 100,000 population.[32]

Ten cases of tuberculosis were reported in Nova Scotia in 2006. The mean age of the cases was 54.7 years (range: 23-87 years) and 70% were male.

Figure 25: Incidence of new active and relapsed cases of Tuberculosis, Nova Scotia and Canada, 1997-2006



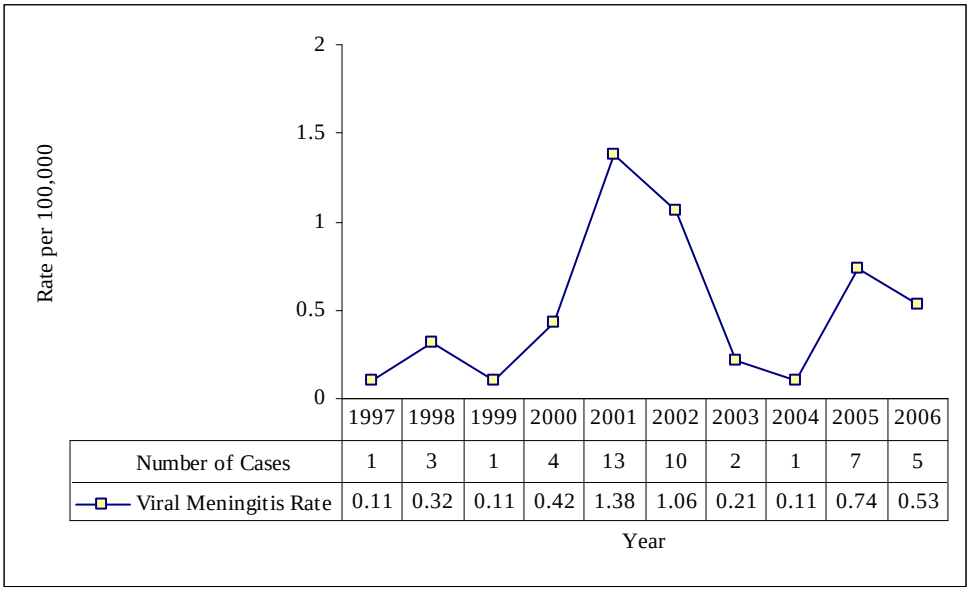
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	7	18	15	3	8	9	6	8	6	10
Nova Scotia Tuberculosis Rate	0.7	1.9	1.6	0.3	0.8	1.0	0.6	0.9	0.6	1.1
Canada Tuberculosis Rate	6.7	6.0	6.0	5.6	5.7	5.3	5.1	5.0	5.1	5.0

Viral Meningitis

Viral meningitis is a clinical syndrome with meningeal features caused by a number of viruses, including Coxsackieviruses and echoviruses. More than 50% of cases have no demonstrable etiology. It is comparatively common but seldom with serious consequences. The mode of transmission varies with the infectious agent.[5]

Since 1997, the incidence of viral meningitis in Nova Scotia has remained low at less than two cases per 100,000 (Figure 26).

Figure 26: Incidence of viral meningitis, Nova Scotia, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	1	3	1	4	13	10	2	1	7	5
Viral Meningitis Rate	0.11	0.32	0.11	0.42	1.38	1.06	0.21	0.11	0.74	0.53

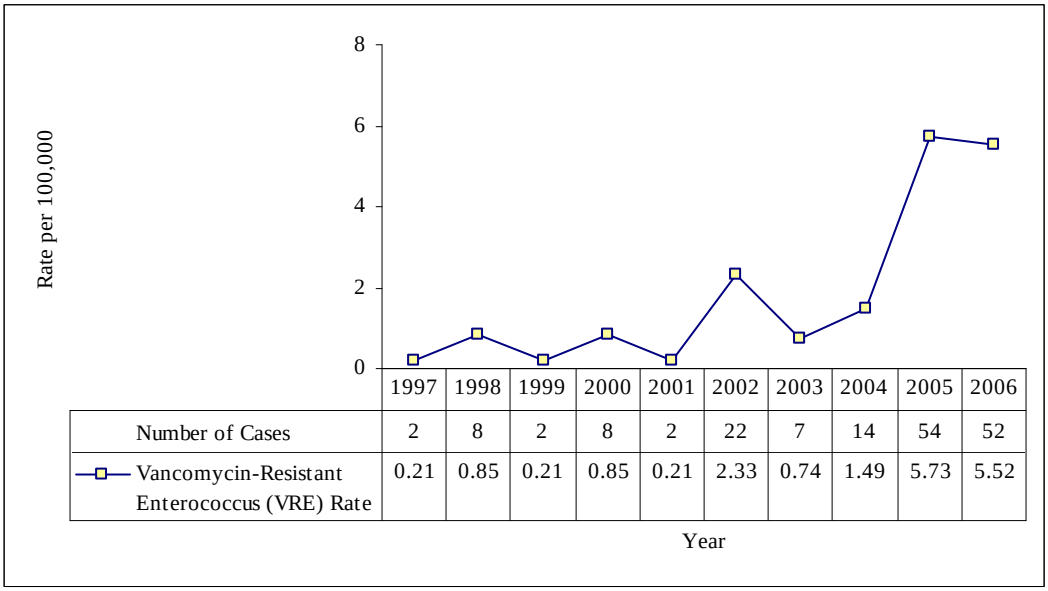
Vancomycin Resistant *Enterococcus* (VRE)

Enterococcus species are important nosocomial pathogenic organisms.[9] As well as causing endocarditis, they are a cause of nosocomial infection and "superinfection" in patients who have received antimicrobial agents. The first report of vancomycin-resistant *enterococci* (VRE) was made in the United States in 1986, almost 30 years following the clinical introduction of vancomycin. This occurrence of VRE was probably prompted by the use of orally administered vancomycin in hospitals in the treatment of antibiotic-associated diarrhea. Of all vancomycin-resistant *enterococci* recovered in the United States, more than 95% are *E. faecium* and all show resistance to high levels of ampicillin.[11]

Until 2001, the incidence of VRE in Nova Scotia was less than one case per 100,000 population but has increased since then (Figure 27). The national rate for 2006 was not available at the time of publication of this report.

In 2006, 52 cases of VRE were reported in Nova Scotia. The mean age of the cases was 65 years (range: 24-101 years) and 58% were male.

Figure 27: Incidence of Vancomycin Resistant *Enterococcus* (VRE), Nova Scotia, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	2	8	2	8	2	22	7	14	54	52
Vancomycin-Resistant Enterococcus (VRE) Rate	0.21	0.85	0.21	0.85	0.21	2.33	0.74	1.49	5.73	5.52

Creutzfeldt - Jakob disease (CJD)

Creutzfeldt - Jakob disease (CJD) is a fatal neurologic disease caused by infectious agents called prions. There are two types of CJD: classical (which includes sporadic, iatrogenic and familial CJD) and variant.

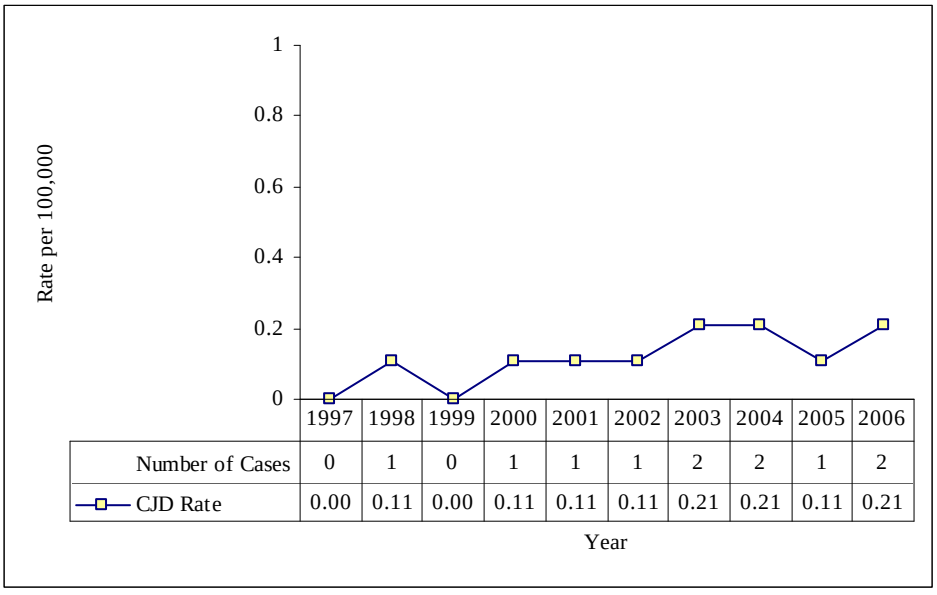
Classical CJD occurs naturally in the population at a rate of approximately one person in a million people per year throughout the world.[22] The average age of onset is 60 years, symptoms occur suddenly and death occurs within 2-3 months.

Variant CJD is linked to eating products from cattle infected with Bovine Spongiform Encephalopathy (BSE). The average onset age is 29 years.[22] Death usually occurs one year after onset of symptoms.

Classical CJD is rare in Nova Scotia. The annual rate between 1997 and 2006 was less than one case per 100,000 population (Figure 28).

In 2006, two cases of classical CJD were reported in Nova Scotia. The mean age of the cases was 59.5 years and one case was male.

Figure 28: Incidence of classical Creutzfeldt-Jakob disease (CJD), Nova Scotia, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	0	1	0	1	1	1	2	2	1	2
CJD Rate	0.00	0.11	0.00	0.11	0.11	0.11	0.21	0.21	0.11	0.21

Section IV: Sexually Transmitted and Bloodborne Pathogens

Human Immunodeficiency Virus (HIV) Infection

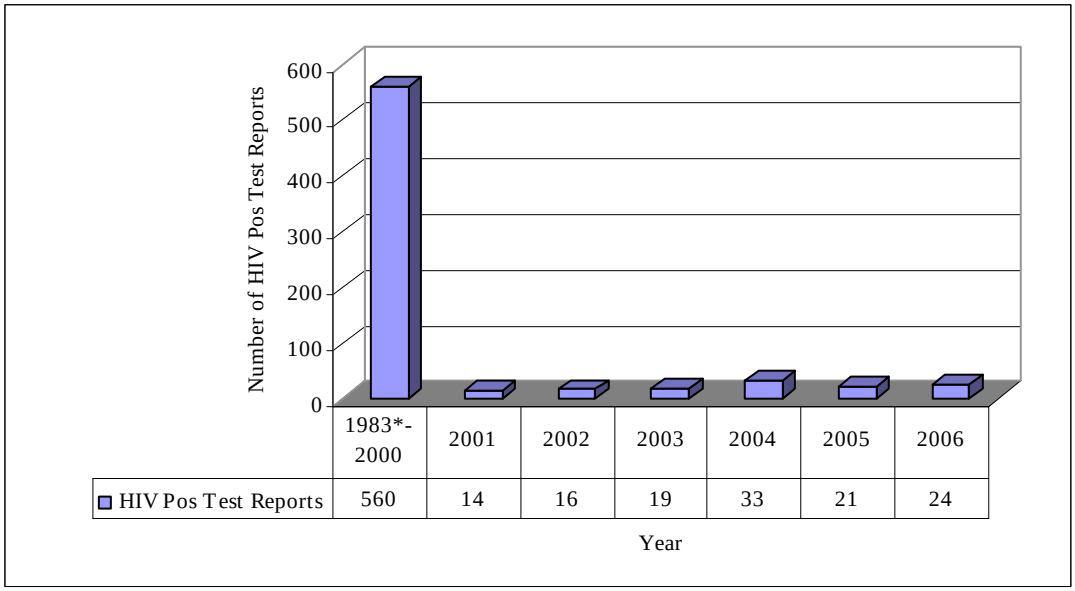
Two types of the Human Immunodeficiency Virus (HIV) have been identified: type 1 (HIV-1) and type 2 (HIV-2) but type 2 is less pathogenic.[5] Person-to-person transmission of the virus occurs through sexual contact, vertical transmission during birth, sharing HIV contaminated needles and syringes, transfusion of HIV infected blood or blood components and transplantation of tissues or organs that have been infected with HIV.[5]

The number of positive HIV test reports describes those who have been tested and given a new diagnosis of HIV infection but is not representative of all those infected and living with HIV (e.g. prevalence) or the number of newly infected individuals on a yearly basis (e.g. incidence).

Between 1983 and 2006, there were 687 new HIV-positive tests reported in Nova Scotia and Prince Edward Island (Figure 29). The rate in NS/PEI for 2006 was 2.23 cases per 100,000 population. The national rate for 2005 was 7.5 cases per 100,000 population.[24]

In 2006, 24 new positive HIV tests were reported in Nova Scotia and Prince Edward Island (Figure 29). The mean age of the cases was 38.7 years (range: 21 to 64 years) and 95.8% were male.

Figure 29: Number of HIV positive test reports, Nova Scotia and Prince Edward Island, 1983-2006



Acquired Immunodeficiency Syndrome (AIDS)

AIDS is a disease syndrome representing the late clinical stage of infection with the Human Immunodeficiency Virus (HIV).

Between 1985 and 2006, there were 318 reported new cases of AIDS in Nova Scotia and Prince Edward Island (Figure 30). The most common risk group identified over this time period was men who have sex with men (MSM) (Figure 31).[4]

In 2006 there were 9 new reported cases of AIDS in Nova Scotia and Prince Edward Island. The rate in NS/PEI for 2006 was 0.83 cases per 100,000 population. The national rate for 2006 was 0.9 cases per 100,000 population.[24] The mean age of these 9 cases was 40.6 years (range: 34 to 49 years), 100% were male.

Figure 30: Number of reported cases of AIDS, Nova Scotia and Prince Edward Island, 1983-2006

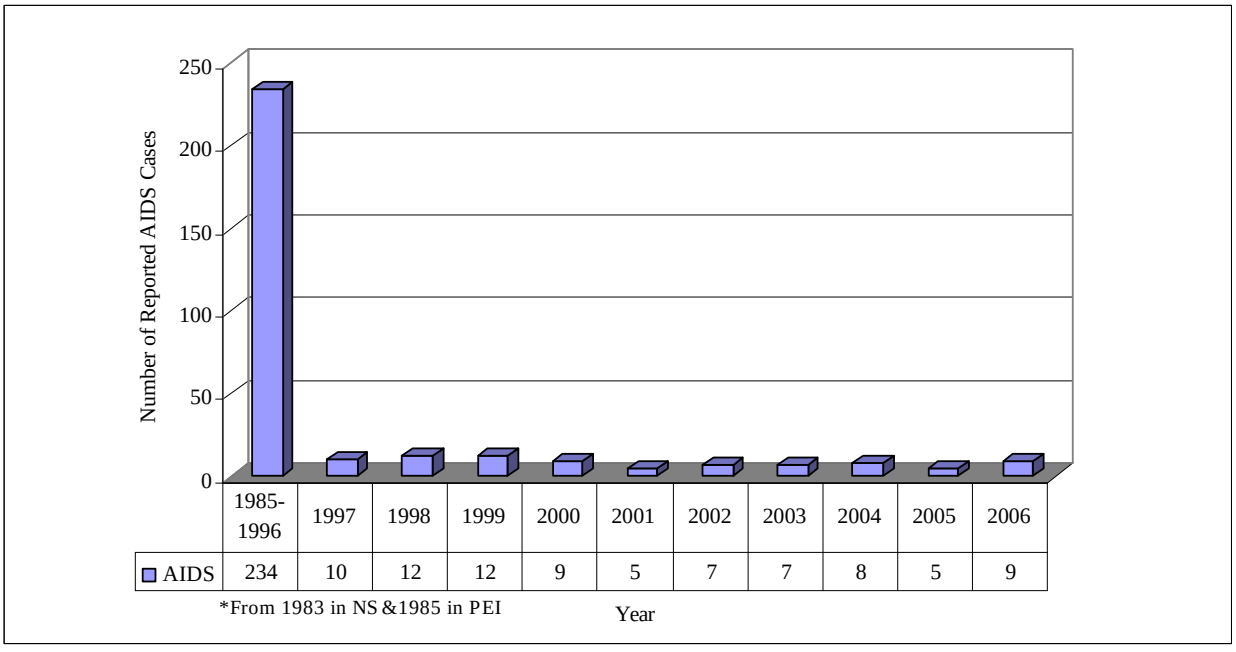
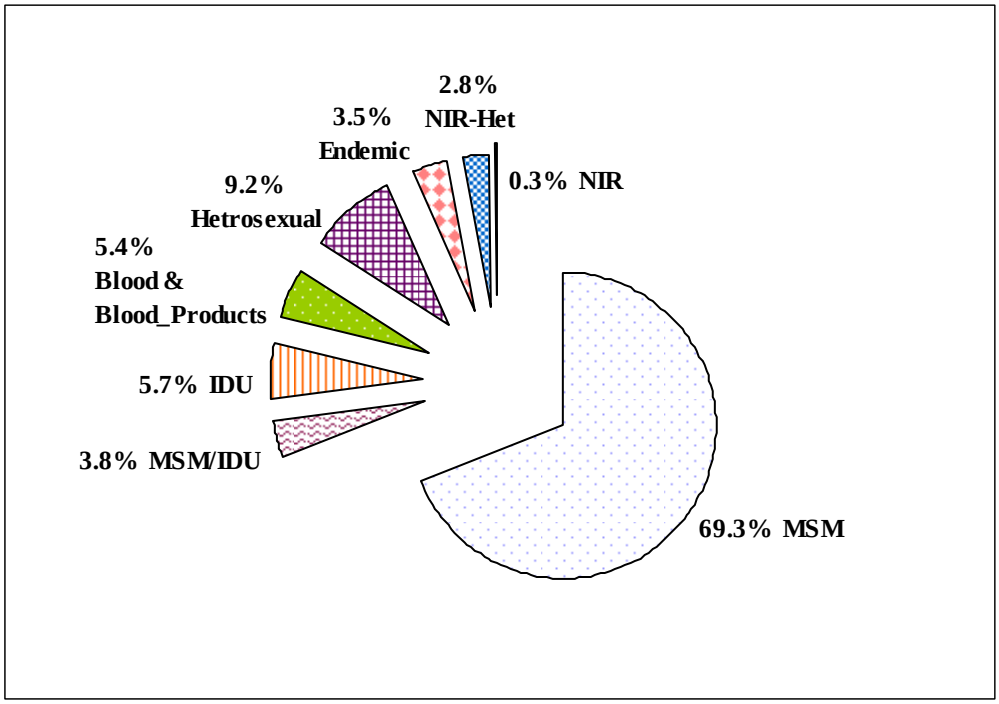


Figure 31: Percentage of distribution of reported cases of AIDS by most common exposure categories, Nova Scotia and Prince Edward Island, 1983 (NS) / 1985 (PEI) to 2006



Percentages are based on total reports 318 (Age>15 years)
(NIR = No identified risk)
(NIR-Het = No identified risk other than heterosexual)
(MSM = Men who have sex with men)
(MSM/IDU = Men who have sex with men and have injected drugs)
(Endemic = Origin from an HIV-endemic country)

Genital Chlamydial Infection

Chlamydiae cause a number of sexually transmitted infections as well as eye and lung infections of infants consequent to maternal genital infection. Genital chlamydial infection is a sexually transmitted infection caused by the bacterium *Chlamydia trachomatis*, manifested in males mainly as urethitis and in females primarily as mucopurulent cervicitis.[5]

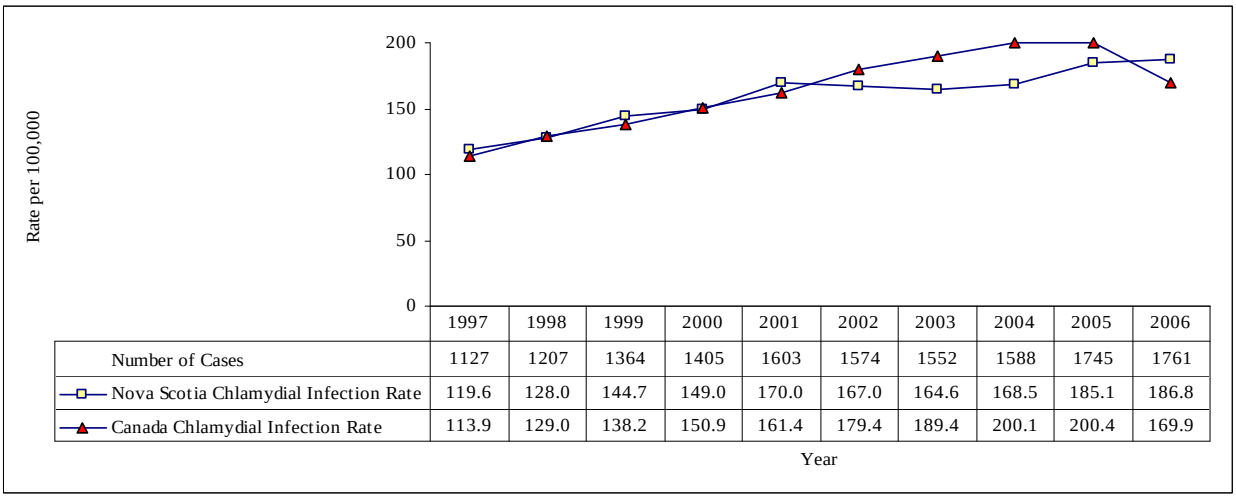
National goals for Chlamydia by the year 2010 include that the overall rate of chlamydia will be less than 50 cases per 100,000 population and the rate in women between the ages of 15-24 will be less than 200 cases per 100,000 population.[28]

The recent increase in the incidence rate of chlamydial infection can be attributed to changes in testing methodology (Figure 32). In 2001, the Microbiology Laboratory of the Queen Elizabeth II Health Sciences Centre replaced an enzyme immunoassay (EIA) method of testing with a more sensitive polymerase chain reaction (PCR) method.[12]

In 2006, 1761 cases of Chlamydia were reported in Nova Scotia. The national rate for 2006 was 169.9 cases per 100,000 population.[24] The majority of cases (73%) in Nova Scotia were reported in those aged 15 to 24 years (Figure 33). The incidence in females exceeded that of males for all age groups. This may reflect more females than males undergoing testing.

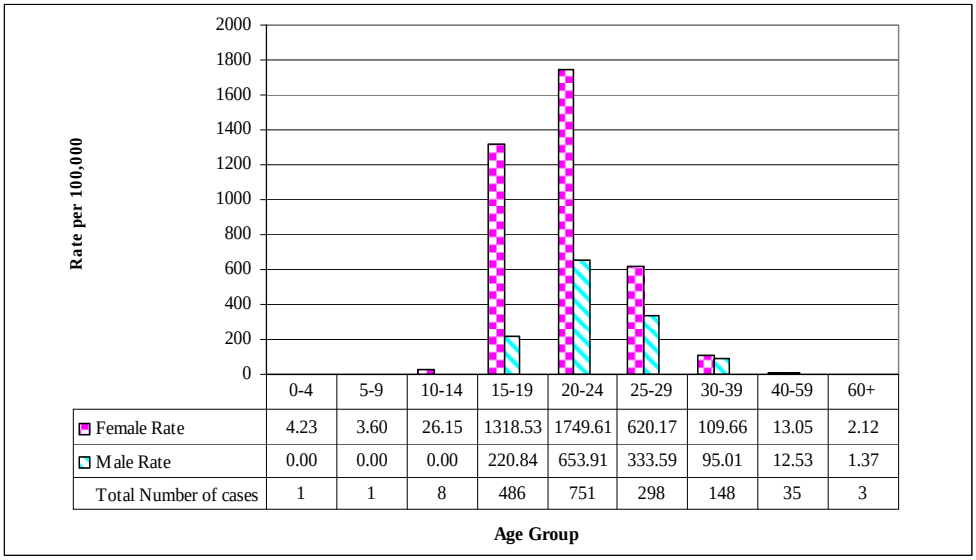
In 2006, the rate in Capital was higher than the provincial rate (P=0.0024) while the rates in Western (P=0.0027), Northern (P=0.0029) and Eastern (P=0.0028) were lower than the provincial rate.

Figure 32: Incidence of Chlamydial infection, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	1127	1207	1364	1405	1603	1574	1552	1588	1745	1761
Nova Scotia Chlamydial Infection Rate	119.6	128.0	144.7	149.0	170.0	167.0	164.6	168.5	185.1	186.8
Canada Chlamydial Infection Rate	113.9	129.0	138.2	150.9	161.4	179.4	189.4	200.1	200.4	169.9

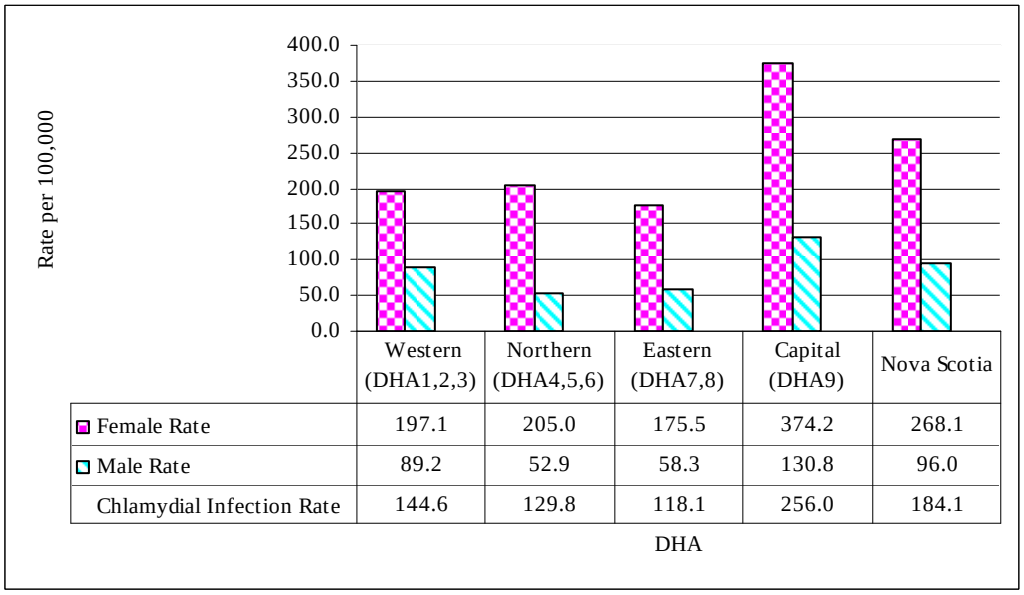
Figure 33: Age specific incidence of Chlamydial infection by gender, Nova Scotia, 2006



	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Female Rate	4.23	3.60	26.15	1318.53	1749.61	620.17	109.66	13.05	2.12
Male Rate	0.00	0.00	0.00	220.84	653.91	333.59	95.01	12.53	1.37
Total Number of cases	1	1	8	486	751	298	148	35	3

*3 cases age were not specified

Figure 34: Age standardized incidence of Chlamydial infection by gender and Shared Service Area, Nova Scotia, 2006



	Western (DHA1,2,3)	Northern (DHA4,5,6)	Eastern (DHA7,8)	Capital (DHA9)	Nova Scotia
Female Rate	197.1	205.0	175.5	374.2	268.1
Male Rate	89.2	52.9	58.3	130.8	96.0
Chlamydial Infection Rate	144.6	129.8	118.1	256.0	184.1

Gonorrhea

Gonorrhea is a sexually transmitted infection caused by the gonococcus *Neisseria gonorrhoea*. It causes genital infections in males and females and can cause conjunctivitis in newborns, potentially leading to blindness if not quickly and adequately treated.[5]

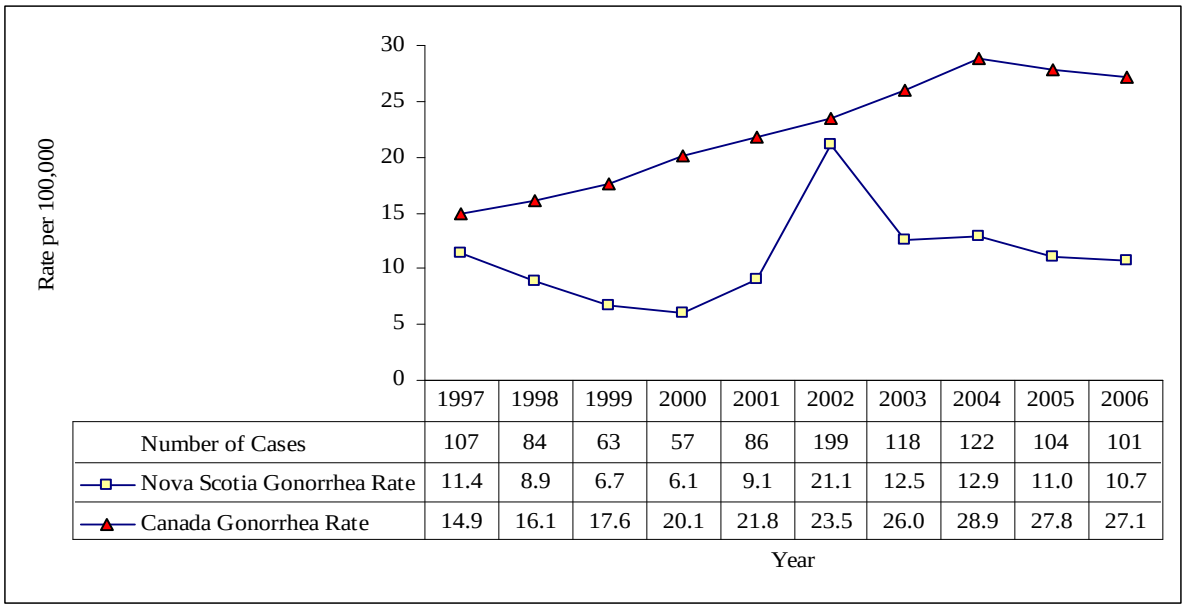
National goals for gonorrhea by the year 2010 include eliminating locally transmitted infection by *N. gonorrhoeae* and reducing secondary transmission of imported cases of gonorrhea to less than one per reported case (reproductive rate $R_o < 1$).[28]

In 2002, the incidence of gonorrhea in Nova Scotia peaked at 21 cases per 100,000 population, and has declined to 10.7 cases per 100,000 population since that year (Figure 35). The national rate for 2006 was 27.1 cases per 100,000 population.[24]

In 2006, 101 cases of gonorrhea were reported in Nova Scotia: 59% were male and 69% were individuals 15 to 29 years of age. The age-specific incidence was highest in males 20-24 years old and females 15-19 years old (Figure 36).

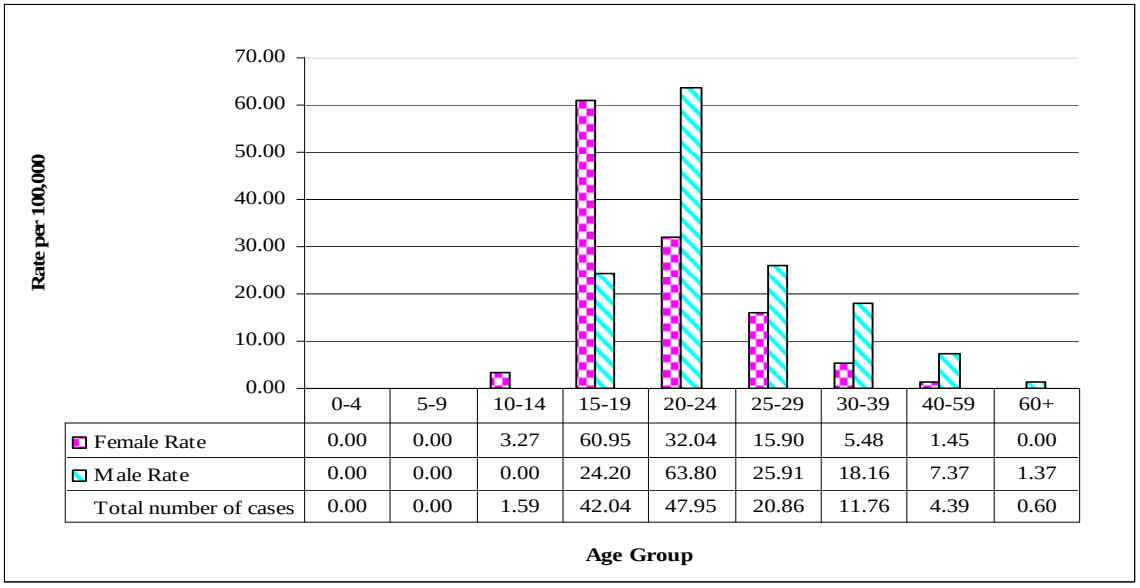
In 2006, the rate in Capital was higher than the provincial rate (P<0.001) while the rates in Northern (P<0.001) and Eastern (P<0.001) were lower than the provincial rate (Figure 37).

Figure 35: Incidence of Gonorrhea, Nova Scotia and Canada, 1997-2006



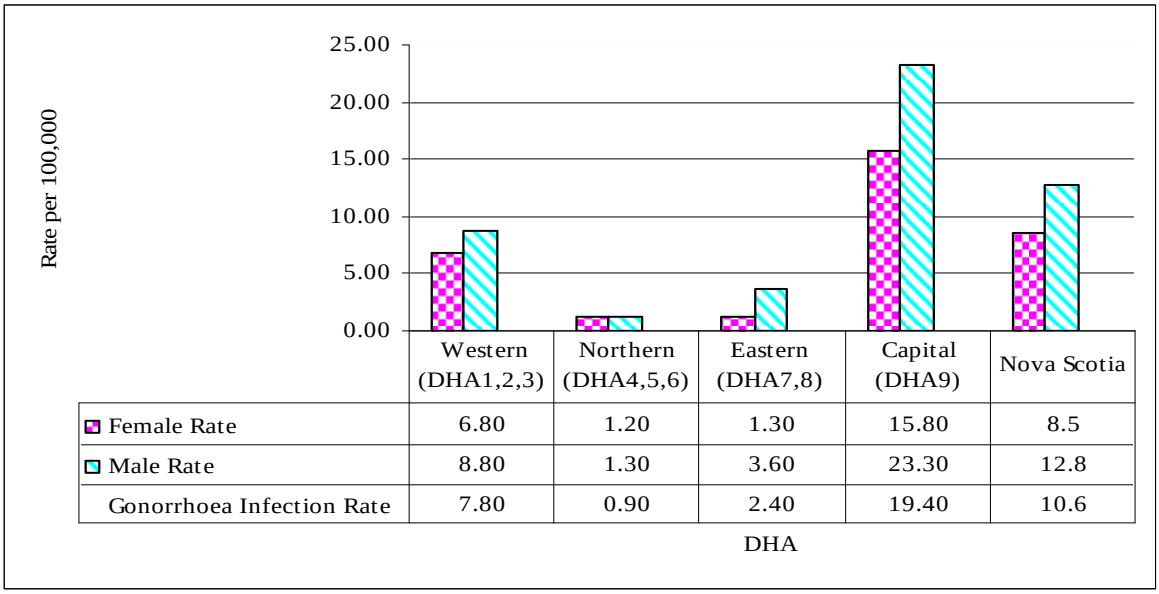
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	107	84	63	57	86	199	118	122	104	101
Nova Scotia Gonorrhea Rate	11.4	8.9	6.7	6.1	9.1	21.1	12.5	12.9	11.0	10.7
Canada Gonorrhea Rate	14.9	16.1	17.6	20.1	21.8	23.5	26.0	28.9	27.8	27.1

Figure 36: Age specific incidence of Gonorrhea by gender, Nova Scotia, 2006



	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Female Rate	0.00	0.00	3.27	60.95	32.04	15.90	5.48	1.45	0.00
Male Rate	0.00	0.00	0.00	24.20	63.80	25.91	18.16	7.37	1.37
Total number of cases	0.00	0.00	1.59	42.04	47.95	20.86	11.76	4.39	0.60

Figure 37: Age Standardized incidence of Gonorrhea by gender and Shared Service Area, Nova Scotia, 2006



	Western (DHA1,2,3)	Northern (DHA4,5,6)	Eastern (DHA7,8)	Capital (DHA9)	Nova Scotia
Female Rate	6.80	1.20	1.30	15.80	8.5
Male Rate	8.80	1.30	3.60	23.30	12.8
Gonorrhoea Infection Rate	7.80	0.90	2.40	19.40	10.6

Hepatitis B (Acute / Chronic Carrier)

The Hepatitis B virus (HBV) causes acute and chronic infections. HBV is transmitted sexually, through household contact with an infected individual, perinatally from mother to infant, through injection drug use, and through nosocomial exposure.[5] Chronic infection is found in 0.5% of North American adults.[5] The risk of developing chronic infection varies inversely with age following acute infection; the risk is also increased in immunocompromised individuals.[8]

The national goal for Hepatitis B is to reduce the prevalence of indigenously acquired chronic Hepatitis B infections in children and young adults by 90% by the year 2015.[31]

In Nova Scotia, the Hepatitis B vaccine has been publicly funded for Grade 4 students since 1995.

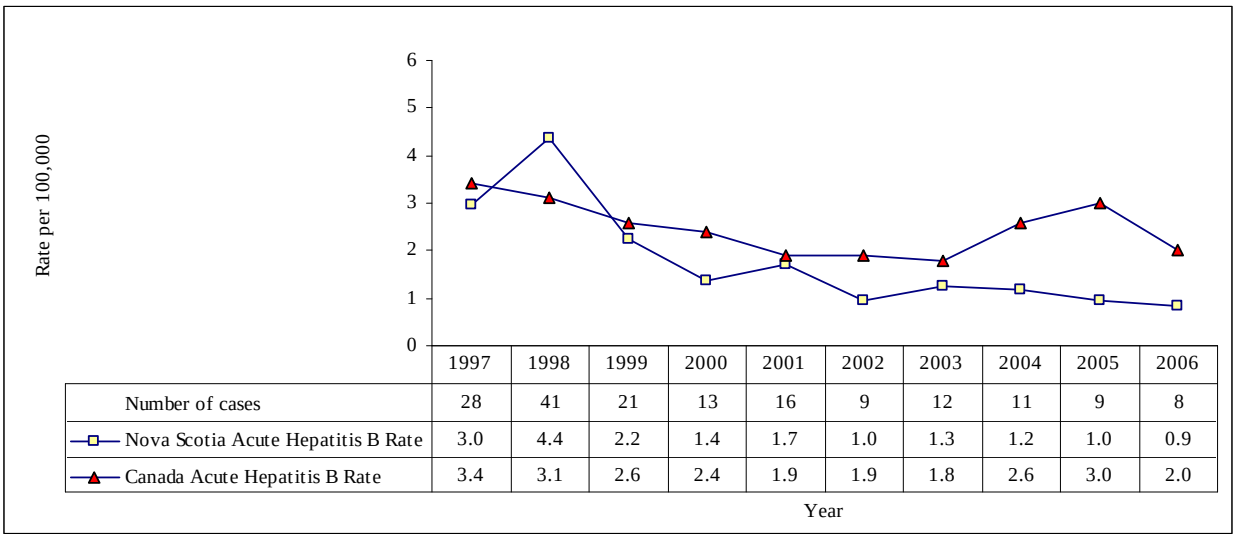
The incidence of acute HBV in Nova Scotia has declined since 1998 to less than one case per 100,000 (Figure 38). The national rate for acute HBV in 2006 was two cases per 100,000 population.[24]

Chronic HBV peaked at 5.4 cases per 100,000 in 1999 in Nova Scotia (Figure 39). Chronic HBV is not nationally notifiable; therefore, the national rate is not known.[29]

In 2006, eight cases of acute Hepatitis B were reported in Nova Scotia. The mean age of the cases was 43 years (range: 23 to 63 years) and 63% were male.

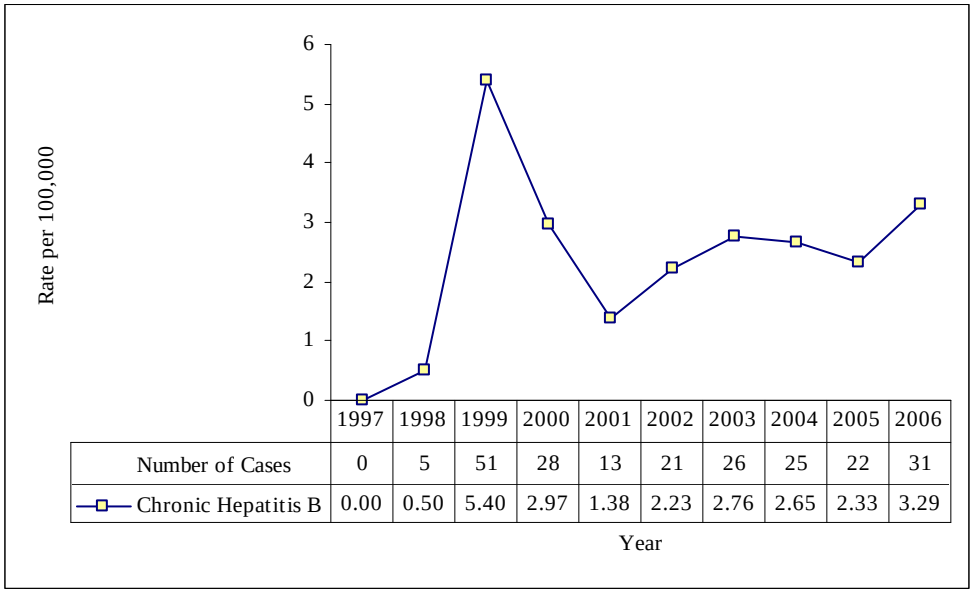
Thirty-two cases of chronic Hepatitis B were reported in Nova Scotia in 2006. The mean age of these cases was 40 years (range: 3 to 85 years) and 61% were male.

Figure 38: Incidence of Acute Hepatitis B, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of cases	28	41	21	13	16	9	12	11	9	8
Nova Scotia Acute Hepatitis B Rate	3.0	4.4	2.2	1.4	1.7	1.0	1.3	1.2	1.0	0.9
Canada Acute Hepatitis B Rate	3.4	3.1	2.6	2.4	1.9	1.9	1.8	2.6	3.0	2.0

Figure 39: Incidence of Chronic Hepatitis B, Nova Scotia, 1997–2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	0	5	51	28	13	21	26	25	22	31
Chronic Hepatitis B	0.00	0.50	5.40	2.97	1.38	2.23	2.76	2.65	2.33	3.29

Hepatitis C

Hepatitis C is a viral infection caused by the Hepatitis C Virus (HCV). Transmission of HCV is commonly parenteral but sexual transmission has been documented to occur, however, far less efficiently than the parenteral route.[5]

As with testing for HIV, it must be remembered that the number of reported cases represents the number of positive test reports of those who have come forward for testing. As such, these numbers are not a reflection of the true incidence in the population.

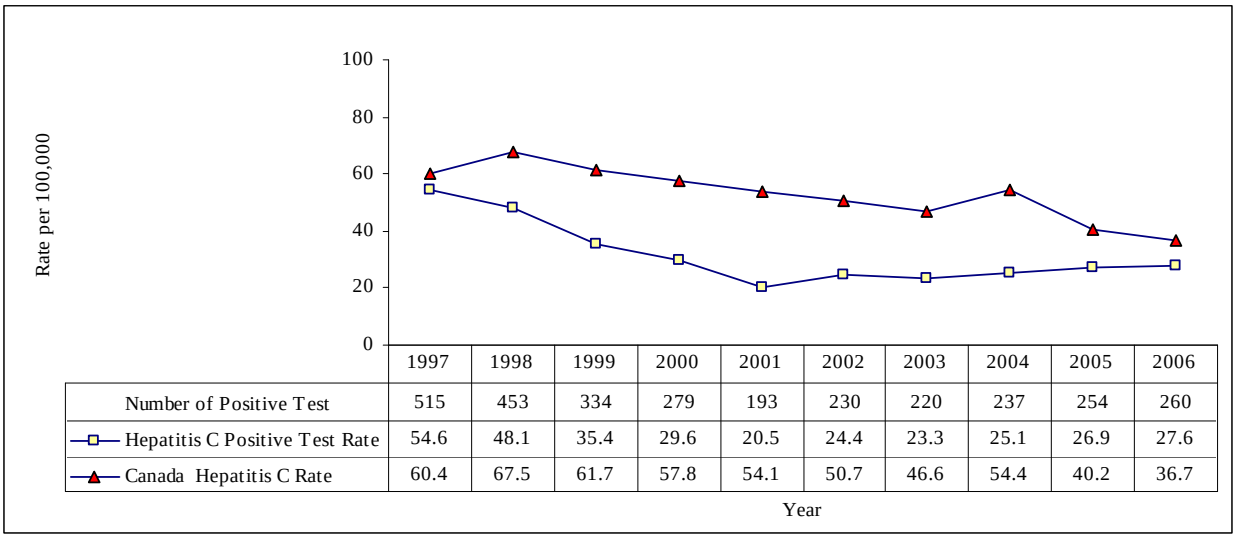
Between 1997 and 2006, 2,975 cases of HCV were reported in Nova Scotia. During this period, the rate of positive test reports declined from 54.6 per 100,000 population in 1997 to 27.6 per 100,000 population in 2006 (Figure 40). Sixty-nine percent of these cases were male. The incidence by sex and age group is presented in Figure 41.

Risk factor information was available for 1,949 of these positive case reports (Table 35, Figure 42). Of these, 1,216 (62%) cases identified injection drug use (IDU) as a risk factor, receipt of tattoos in 41%, sharing needles 36%, ear piercing 36% and blood transfusion was reported as a risk factor in 20% of cases. Sexual risk factors were not included in this analysis. Risk factors are not mutually exclusive with many cases reported more than just one risk factor.

In 2006, 260 cases of HCV were reported in Nova Scotia. The mean age of these cases was 41 years (range: 16-73) and 73.5% were male. The national rate for 2006 was 31.2 cases per 100,000 population.[24]

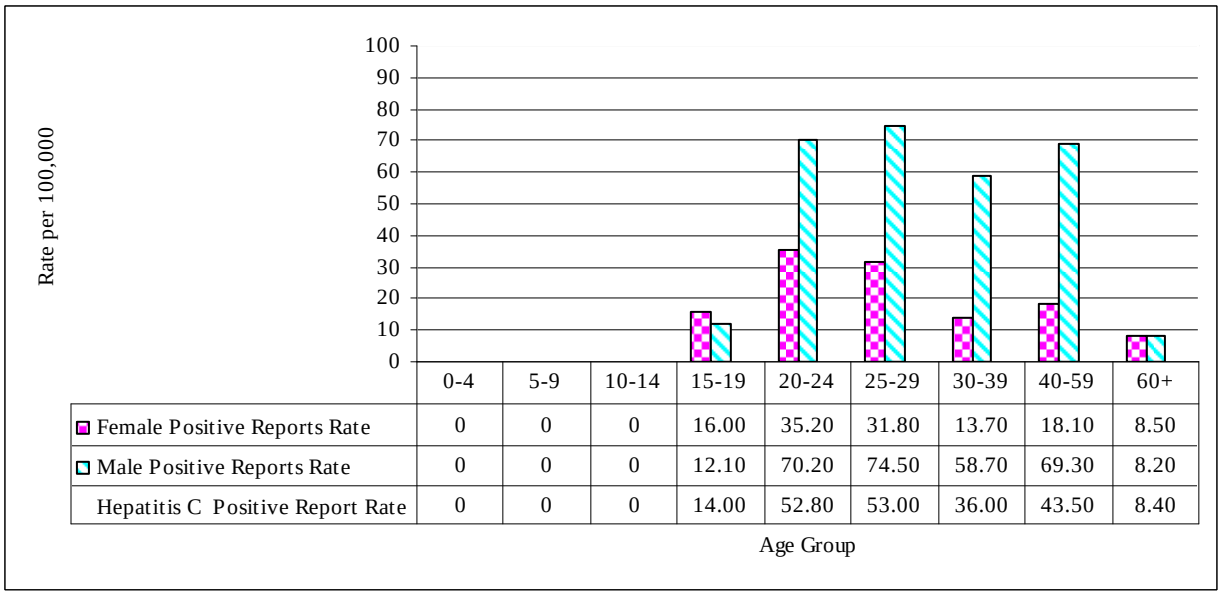
In 2006, the rates in Western ($P<0.001$) and Capital ($P=0.039$) were lower than the provincial rate while the rates in Northern ($P=0.010$) and Eastern ($P=0.026$) were higher than the provincial rate.

Figure 40: Number and rate of Hepatitis C positive test reports, Nova Scotia, 1997-2006



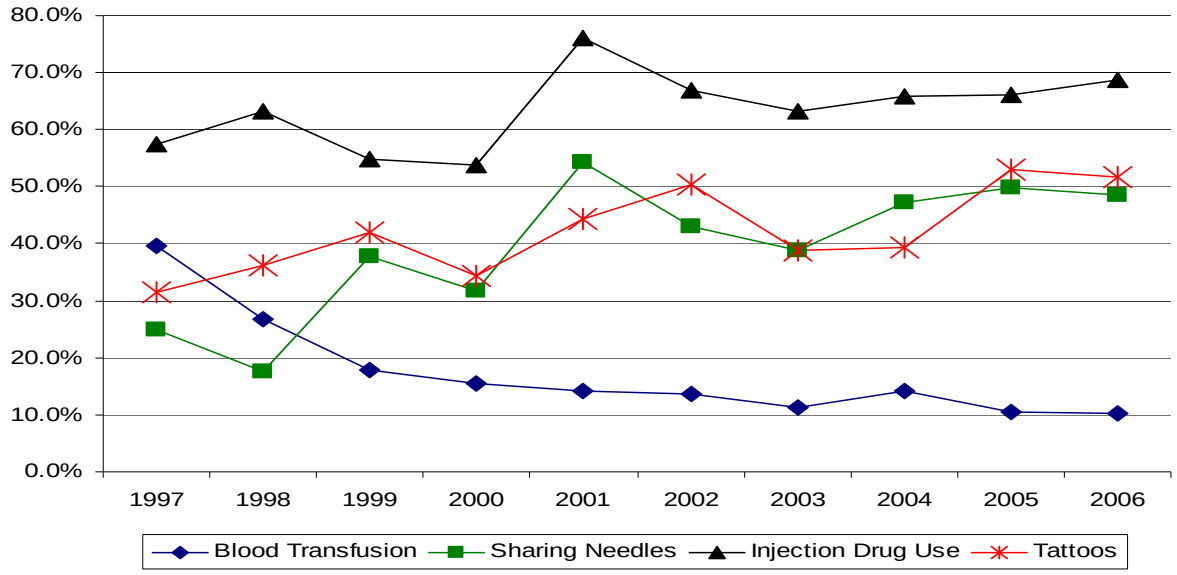
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Positive Test	515	453	334	279	193	230	220	237	254	260
Hepatitis C Positive Test Rate	54.6	48.1	35.4	29.6	20.5	24.4	23.3	25.1	26.9	27.6
Canada Hepatitis C Rate	60.4	67.5	61.7	57.8	54.1	50.7	46.6	54.4	40.2	36.7

Figure 41: Hepatitis C positive test reports rate by age group and sex, Nova Scotia, 2006



	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Female Positive Reports Rate	0	0	0	16.00	35.20	31.80	13.70	18.10	8.50
Male Positive Reports Rate	0	0	0	12.10	70.20	74.50	58.70	69.30	8.20
Hepatitis C Positive Report Rate	0	0	0	14.00	52.80	53.00	36.00	43.50	8.40

Figure 42: Age Percentage of Reported Cases of Hepatitis C with Selected Risk Factor Information, Nova Scotia, 1997-2006



Syphilis

Syphilis is a bacterial infection that may be acute or chronic and is caused by the bacterium *Treponema pallidum*. It is characterized by a primary lesion, a secondary eruption that involves the skin and mucous membranes, lengthy periods of latency and late lesions of the skin, bone, viscera and central nervous and cardiovascular systems. Syphilis is transmitted sexually, vertically to the fetus through the placenta from an infected pregnant woman and possibly through blood transfusion if the donor is in the early stages of infection.[5]

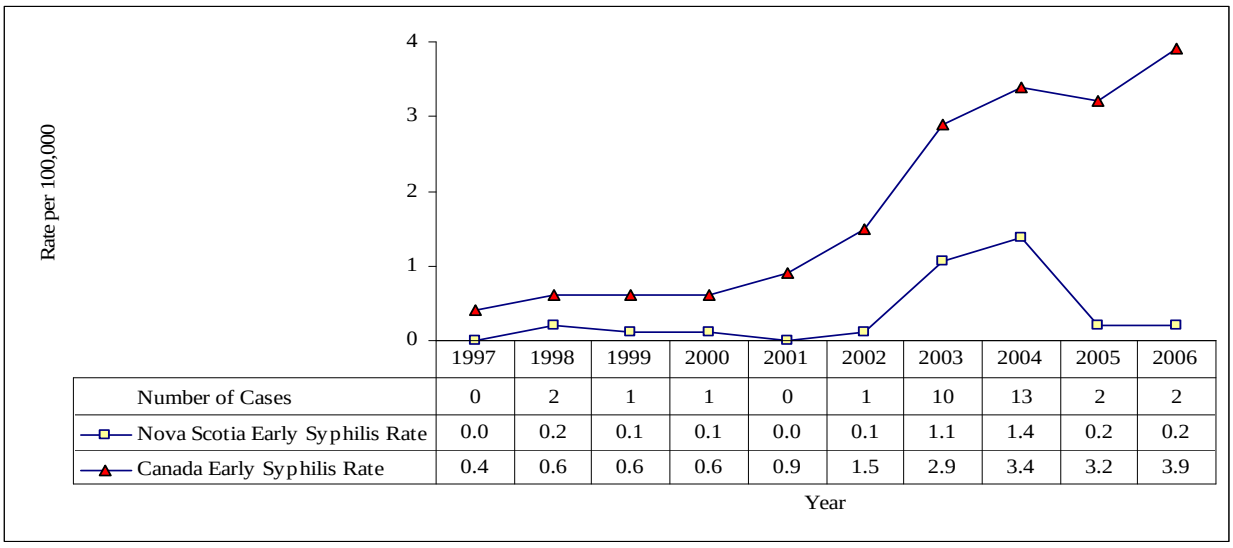
The national goal for syphilis was to maintain the rate for infectious syphilis below 0.5 per 100,000 population by the year 2000 and to prevent all cases of endemic congenital syphilis.[28]

The incidence of early syphilis (primary and secondary syphilis) between 1997 and 2006 in Nova Scotia was relatively stable at less than one case per 100,000 population with the exception of 2003-2004. An outbreak of infectious syphilis involving 26 cases occurred in Capital DHA during these two years. Other parts of Canada experienced similar trends. The decline in 2005/2006 may be due in part to the extensive efforts put forward by public health with key partners.[19]

Two cases of early syphilis were reported in Nova Scotia in 2006 (Figure 43). The national rate for 2006 was 3.9 cases per 100,000 population.[24]

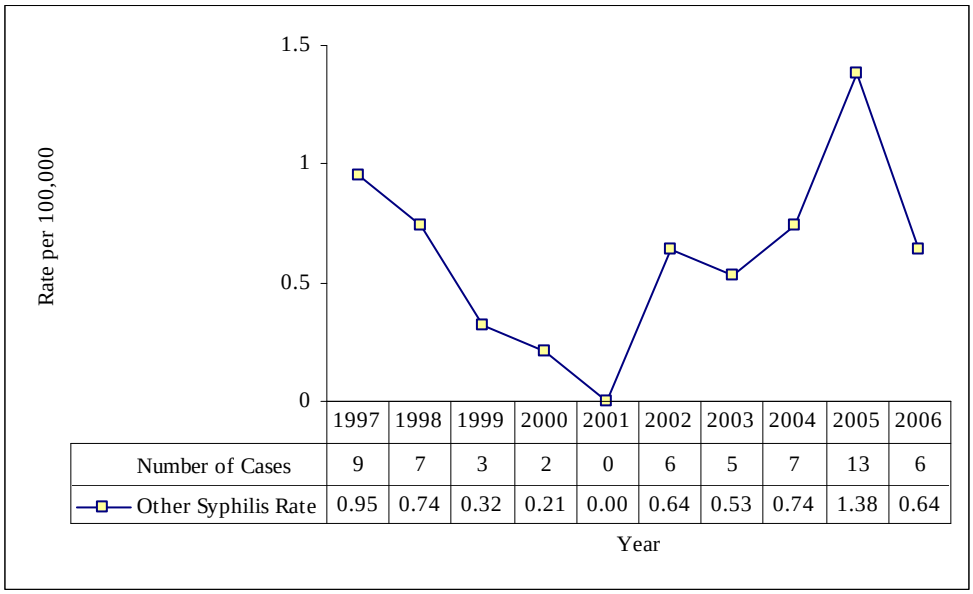
The incidence of "other" syphilis (late latent syphilis or syphilis of unknown duration) was less than one case per 100,000 between 1997 and 2006 (excluding 2004 and 2005) (Figure 44).

Figure 43: Incidence of Early Syphilis, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	0	2	1	1	0	1	10	13	2	2
Nova Scotia Early Syphilis Rate	0.0	0.2	0.1	0.1	0.0	0.1	1.1	1.4	0.2	0.2
Canada Early Syphilis Rate	0.4	0.6	0.6	0.6	0.9	1.5	2.9	3.4	3.2	3.9

Figure 44: Incidence of Syphilis (Other), Nova Scotia 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	9	7	3	2	0	6	5	7	13	6
Other Syphilis Rate	0.95	0.74	0.32	0.21	0.00	0.64	0.53	0.74	1.38	0.64

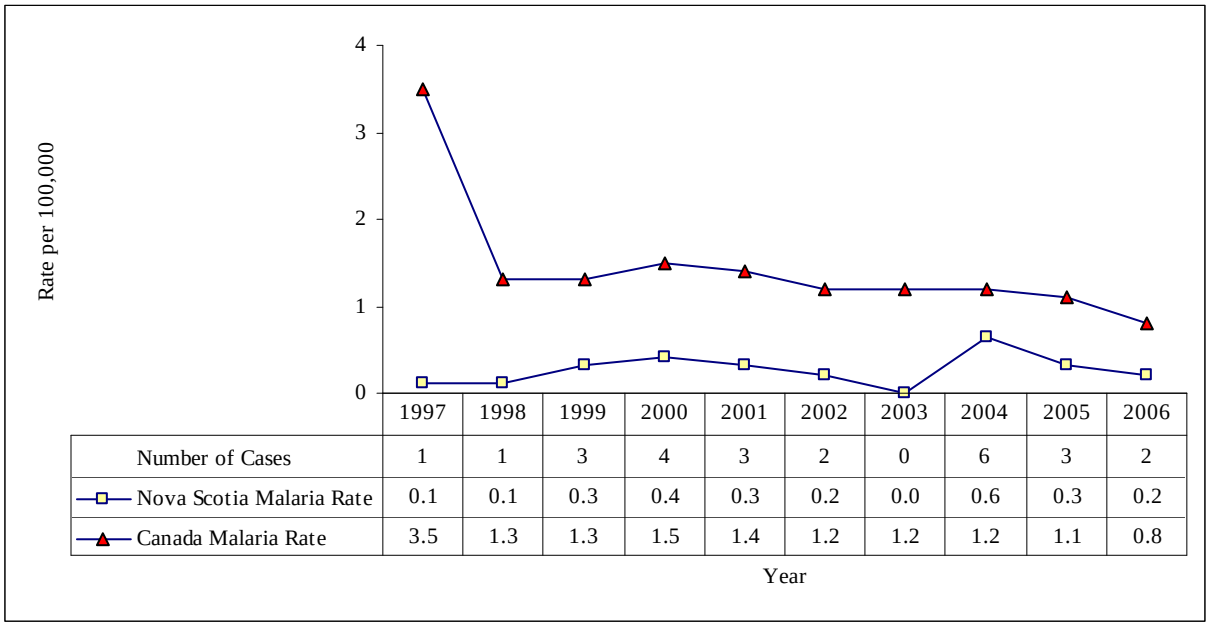
Section V: Vectorborne and Other Zoonotic Diseases

Malaria

Malaria is a parasitic disease acquired by infection with four possible human malarial parasites: *Plasmodium vivax*, *P. malariae*, *P. falciparum* and *P. ovale*. The most serious infection is *falciparum* malaria: the other malarias are usually not life-threatening. Malaria is a major cause of illness in many tropical and sub-tropical areas and is transmitted by the bite of an infected female *Anopheles* mosquito. Areas of high transmission are found on the edges of forests in South America (e.g. Brazil), Southeast Asia (e.g. Thailand and Indonesia) and throughout sub-Saharan Africa. Transfusion of blood from those infected or use of contaminated needles or syringes (injection drug users) may also transmit the infection. Congenital transmission is rare; however, stillbirth from mothers who have been infected is more common.[5]

The incidence of malaria in Nova Scotia has been exceedingly low with less than one case per 100,000 population since 1997. It should be noted that these cases are travel-related (Figure 45). The national rate for 2006 was 0.8 cases per 100,000 population.[24]

Figure 45: Incidence of Malaria, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	1	1	3	4	3	2	0	6	3	2
Nova Scotia Malaria Rate	0.1	0.1	0.3	0.4	0.3	0.2	0.0	0.6	0.3	0.2
Canada Malaria Rate	3.5	1.3	1.3	1.5	1.4	1.2	1.2	1.2	1.1	0.8

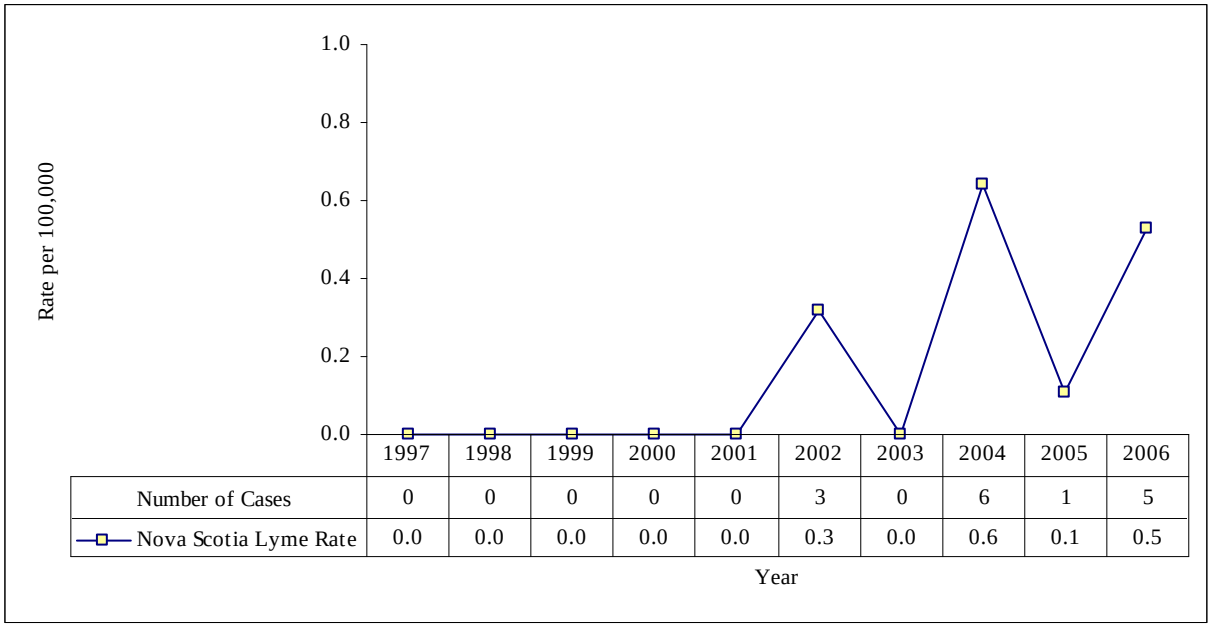
Lyme Disease

Lyme disease or Lyme borreliosis is a tickborne zoonotic disease caused by the bacterial spirochete *Borrelia burgdorferi*. It is often characterized by a distinctive skin lesion called "erythema migrans" and systemic symptoms. Neurologic, rheumatologic and cardiac involvement may also be present in varying combinations over months to years.[5]

Between 2002 and 2006, 15 cases of Lyme disease were reported in Nova Scotia (figure 46). Eight cases were acquired in Nova Scotia (endemic) while the remaining cases were acquired outside of Nova Scotia (USA 4, Europe 3). Nine cases were reported from Western, four from Eastern and two from Capital. The national rate for 2006 was 0.2 cases per 100,000 population.[24]

Five cases of Lyme disease were reported in Nova Scotia in 2006. The mean age of these cases was 40 years and 53% were male. Four cases were endemic and one was acquired in the US.

Figure 46: Lyme Disease in Nova Scotia, 2002 to 2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	0	0	0	0	0	3	0	6	1	5
Nova Scotia Lyme Rate	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.6	0.1	0.5

West Nile virus

West Nile virus (WNV) is a member of the Flaviviridae family of viruses and is usually transmitted to humans by mosquitoes that have become infected by feeding on viremic birds. The virus was initially isolated in 1937 in the West Nile province of Uganda and outbreaks have occurred in countries such as Egypt, Israel, South Africa and parts of Asia and Europe. The first North American outbreak occurred in the summer of 1999 in New York City and surrounding area. In Canada, the presence of the virus was first confirmed in September 2001 in birds in Ontario. The first human case was also confirmed in Ontario in September 2002.[13]

The majority of individuals who become infected with the virus will remain asymptomatic, however, a small proportion may go on to develop a febrile illness and, in some cases, severe neuro-invasive conditions such as encephalitis and meningitis.

In Canada during the 2006 West Nile virus season, 154 confirmed human West Nile virus cases were reported. Of these 154 cases, 113 were classified as non-neurological syndrome, 38 as West Nile Neurological Syndrome and three as asymptomatic infection. The national rate for 2006 was 0.5 cases per 100,000 population. [24]

Surveillance activities first detected WNV in Nova Scotia in 2002 with four positive dead birds. In 2003, the virus was detected in 17 dead birds and one horse. Two travel-related human cases were also diagnosed that summer. Since 2004, although surveillance activities were similar to those conducted in previous years, no WNV was detected in the province (testing of humans, dead birds, horses and mosquitoes).

A total of 118 dead birds were submitted for testing in 2006. Of these, one could not be tested due to partial decomposition of the specimen. The remaining 117 birds all tested negative for WNV. Mosquito pools collected from locations in Kings County were submitted for testing; all were negative for WNV. No other mammals (e.g., horses) were positive for WNV in the 2006 season.

From May 1 to October 1, 2006, 213 human specimens were tested by the virology lab at the QEII for WNV. There were no positive human cases.

No positive blood donors were detected in Nova Scotia by Canadian Blood Services.

Rabies

Rabies is a neurotropic disease of viral origin that is vaccine-preventable. It presents clinically in humans as furious (agitated) and paralytic (dumb) rabies and is almost invariably fatal. Furious rabies is most common and is associated with hydrophobia and/or aerophobia and usually results in death within a few days of onset of symptoms. The clinical course for paralytic rabies is more protracted and is associated with local paresthesia and progressive flaccid paralysis.[15]

There has been a steady increase in the number of cases of animal rabies in Canada over the last few years with the majority of cases reported from Ontario, Manitoba and Saskatchewan. Bats, skunks and foxes are the most commonly infected animals. There were no positive reports of rabies in animals in Nova Scotia (laboratory and clinical) reported to the Canadian Food Inspection Agency in 2006, however one cat and two bats positive for rabies were reported in 2003 and 2000 respectively.[16]

Human rabies is rare in Canada. There have been 22 human deaths due to rabies since reporting was initiated in 1925.[8] No human cases were reported after 1985 until a nine-year old boy from Montreal, Quebec died from rabies encephalitis in October 2000[17] and a 52-year-old man from the greater Vancouver region died from undiagnosed rabies encephalitis in January 2003.[18]

No cases of human or animal rabies were reported in Nova Scotia in 2006.

Section VI: Diseases Preventable by Routine Vaccination

Invasive *Haemophilus influenzae* Type b (Hib) Disease – Invasive

Prior to the introduction of Hib vaccines, *Haemophilus influenzae* b was not only the most common cause of bacterial meningitis, but was also an important cause of other serious invasive infections in young children. Approximately 55-65% of children affected had meningitis and the remainder had epiglottitis, bacteremia, cellulitis, pneumonia or septic arthritis. Otitis media, sinusitis, bronchitis and other respiratory tract disorders also are closely associated with Hib disease. Invasive disease is defined as the isolation of the bacteria from a normally sterile site, such as cerebrospinal fluid or from the epiglottis.

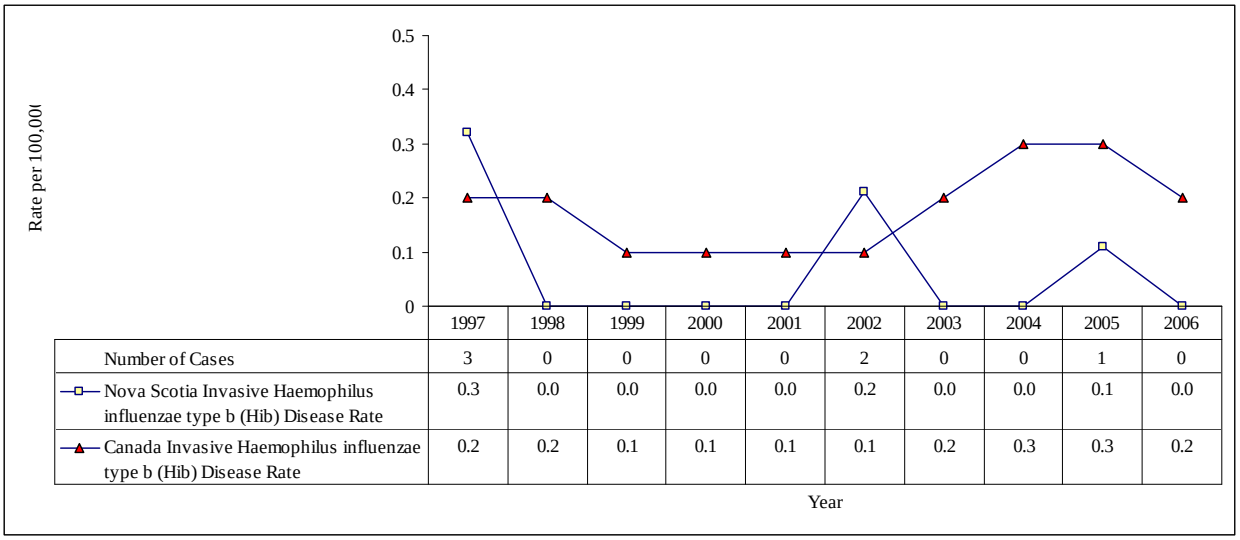
An estimated 2,000 cases of Hib disease occurred annually in Canada prior to the introduction of the Hib conjugate vaccine in 1988. Since that time, the overall incidence of the disease has declined by more than 99%. Most cases now occur in those children who are too old to have undergone primary immunization.[8]

The national goal for Hib disease was to achieve and maintain the absence of preventable cases of invasive *Haemophilus influenzae* type b (Hib) infections in children by the year 1997.[31]

The Hib vaccine was introduced in Nova Scotia in 1992 and is part of the routine childhood immunization schedule.

Since 1997, the rate of invasive *Haemophilus influenzae* b disease in Nova Scotia has remained low at less than one case per 100,000 population (Figure 47). The national rate for 2006 was 0.2 cases per 100,000 population.[24]

Figure 47: Incidence of Invasive *Haemophilus influenzae* type b (Hib) disease, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	3	0	0	0	0	2	0	0	1	0
Nova Scotia Invasive Haemophilus influenzae type b (Hib) Disease Rate	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0
Canada Invasive Haemophilus influenzae type b (Hib) Disease Rate	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2

Measles

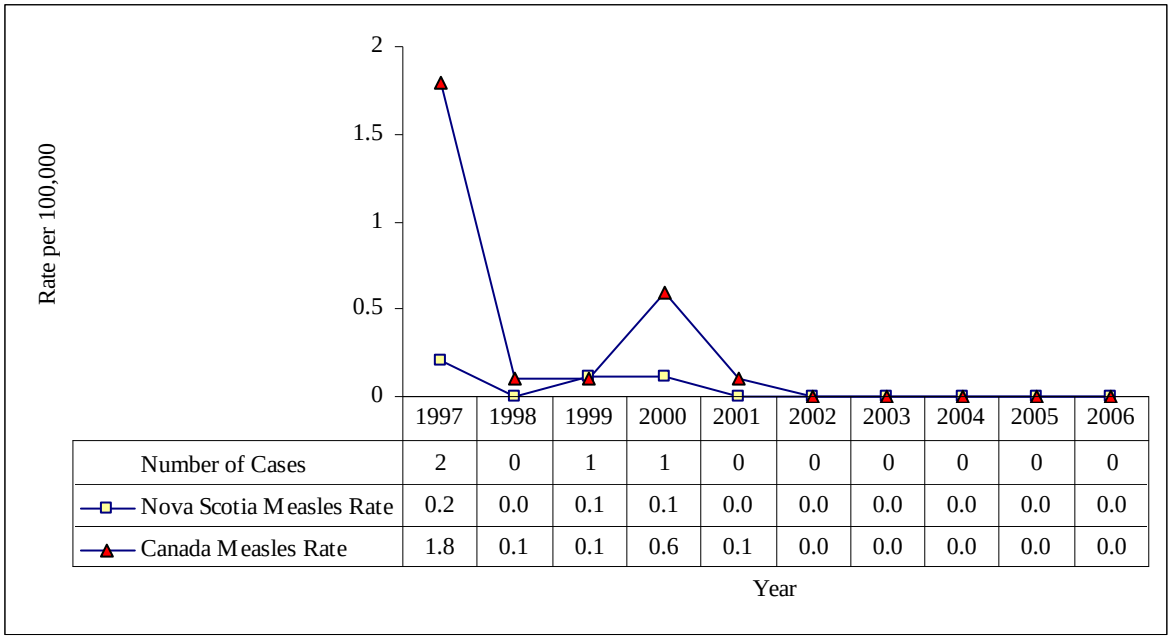
Measles or rubeola is the most contagious infection in humans that is vaccine preventable. Since the introduction of the vaccine, the incidence of measles has shown a marked decline in Canada and the two-dose schedule of immunization is further decreasing the proportion of children who are susceptible. Prior to the introduction of the vaccine, an estimated 300,000 to 400,000 cases occurred annually and occurrence was cyclical with incidence increasing every two to three years. In 1994, Canada and other pan-American countries resolved to eliminate measles in the Americas by the year 2000. This has occurred in Canada but imported cases continue to occur. Immunization for measles in Canada will be necessary until the disease has been eliminated globally.[8]

The national goal for measles was to eliminate indigenous measles in Canada by the year 2005.[31]

In Nova Scotia, the measles vaccine (MMR) is publicly funded for all children and is given at 12 months of age and again when starting school.

In Nova Scotia, over the last decade, the rate of measles has remained less than one case per 100,000 population (Figure 48). No cases have been reported since 2001. The national rate for 2006 was 0.0 cases per 100,000 population.[24]

Figure 48: Incidence of Measles, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	2	0	1	1	0	0	0	0	0	0
Nova Scotia Measles Rate	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Canada Measles Rate	1.8	0.1	0.1	0.6	0.1	0.0	0.0	0.0	0.0	0.0

Mumps

Mumps or infectious parotitis is an acute viral disease transmitted by droplet spread or by direct contact with the saliva of an infected individual.[5] Mumps was a major cause of viral meningitis prior to the extensive use of mumps vaccine. Since the vaccine was licensed in 1969, there has been a greater than 99% decrease in the reported number of cases of mumps.[8]

The national goal for mumps is to maintain an active prevention program for mumps to minimize serious sequelae.[31]

In Nova Scotia, the mumps vaccine (MMR) is publicly funded for all children and is given at 12 months of age and again when starting school.

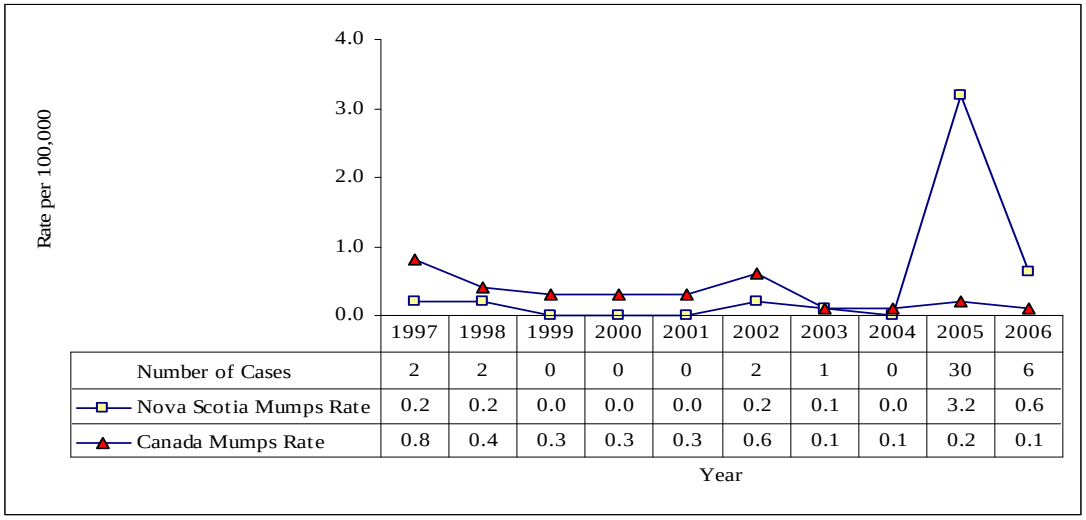
Between 1997 and 2004, less than one case of mumps per 100,000 population was reported in Nova Scotia (Figure 49).

In 2005, two mumps outbreaks occurred in Capital District Health Authority. The first outbreak took place from May to August 2005. A total of 13 cases of mumps were linked to the outbreak either epidemiologically or by laboratory confirmation. The median age was 14 years (range: 13 to 19 years). Nine cases (69%) had received two doses of Measles-Mumps-Rubella (MMR) vaccine in the past while four had received only one dose.

The second outbreak occurred from September 2005 to January 2006. A total of 19 laboratory-confirmed cases of mumps were reported among the staff and student population of a local university. The median age was 23 years of age (range: 20 – 27 years). In this outbreak, 18 cases (95%) had received only one dose of MMR in childhood. No epidemiological link was identified between the two outbreaks.

In 2006, six cases of mumps were reported in the province. Two of these cases were part of the second outbreak. The national rate for 2006 was 0.1 case per 100,000 population.[24]

Figure 49: Incidence of Mumps, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	2	2	0	0	0	2	1	0	30	6
Nova Scotia Mumps Rate	0.2	0.2	0.0	0.0	0.0	0.2	0.1	0.0	3.2	0.6
Canada Mumps Rate	0.8	0.4	0.3	0.3	0.3	0.6	0.1	0.1	0.2	0.1

Pertussis

Pertussis or whooping cough is a communicable acute bacterial respiratory infection caused by *Bordetella pertussis*. Transmission is commonly by droplet infection, usually by direct contact with discharges from respiratory mucous membranes of infected individuals.[5,8] Although any age may be affected, it is most severe in young infants. Although the incidence has declined by more than 90% in Canada, outbreaks still occur.[8]

The national goal for pertussis is to reduce the morbidity and mortality related to pertussis infection across the entire life span.[30]

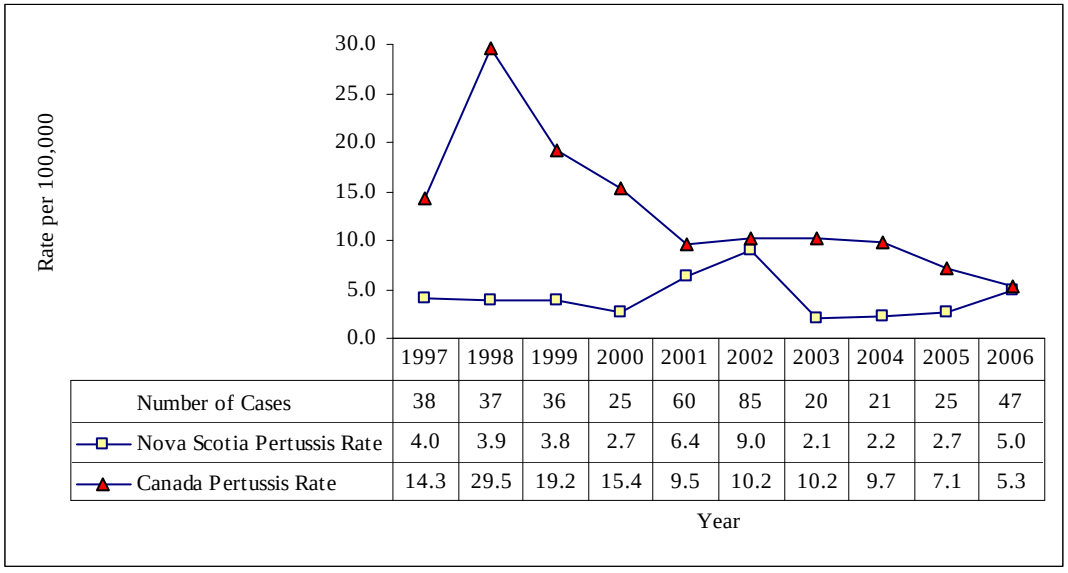
In Nova Scotia, the pertussis vaccine is part of the routine childhood immunization schedule.

Since 1997, the incidence of pertussis in Nova Scotia has ranged from 2.12 to 9.02 cases per 100,000 population (Figure 50). The national rate for 2006 was 5.3 cases per 100,000 population.[24]

In 2006, 47 cases of pertussis were reported in Nova Scotia. Most reported cases occurred among children (Figure 51). The mean age of the cases was 21 years (range: five months to 79 years) and 52% were male.

The age-standardized incidence of pertussis by sex and shared service area is presented in Figure 52.

Figure 50: Incidence of Pertussis, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	38	37	36	25	60	85	20	21	25	47
Nova Scotia Pertussis Rate	4.0	3.9	3.8	2.7	6.4	9.0	2.1	2.2	2.7	5.0
Canada Pertussis Rate	14.3	29.5	19.2	15.4	9.5	10.2	10.2	9.7	7.1	5.3

Figure 51: Age specific Incidence of Pertussis, by Age Group, Nova Scotia, 2006

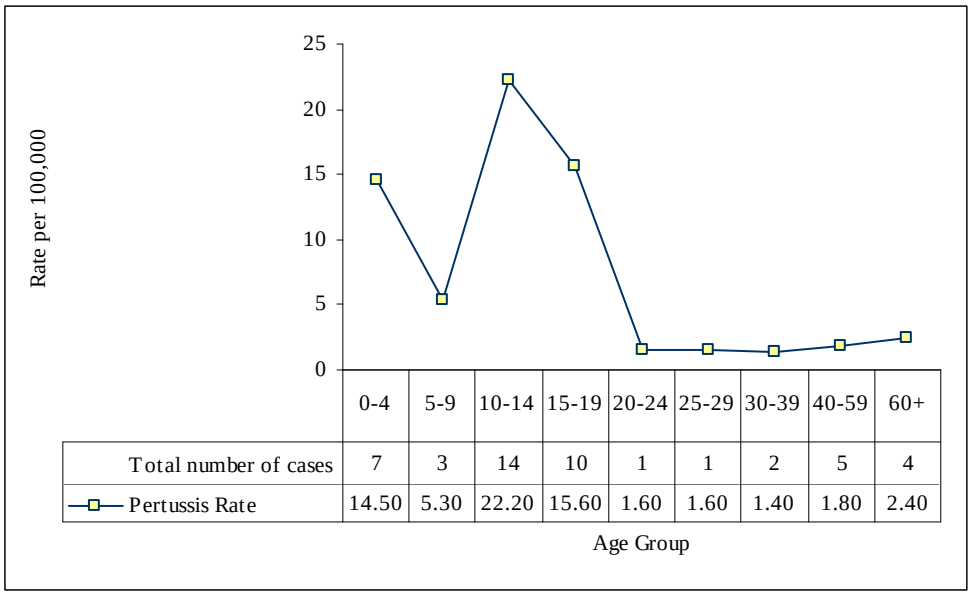
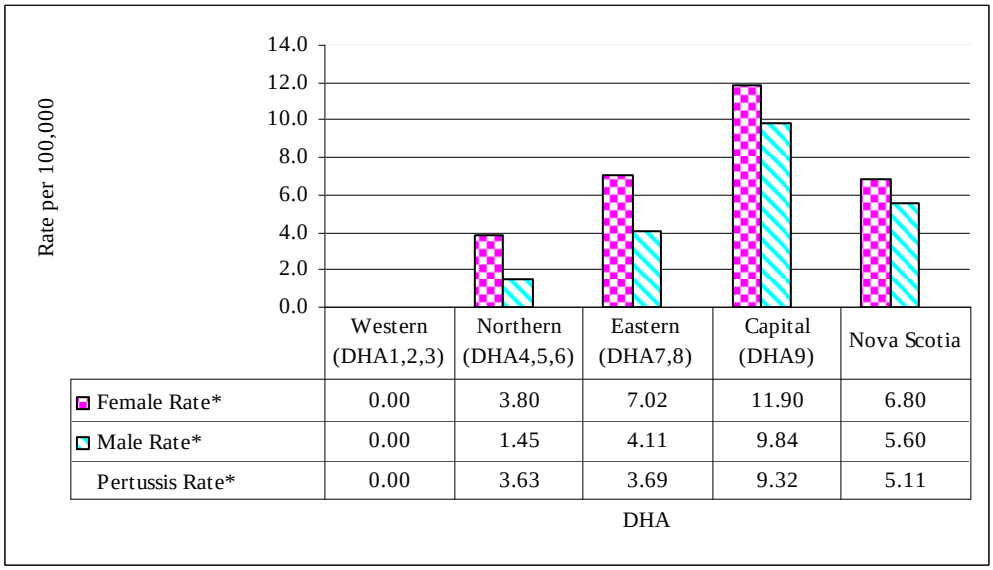


Figure 52: Age standardized Incidence of Pertussis by Sex and Shared Service Area, Nova Scotia, 2006



*Age Standardized Rate: based on age distribution of the 2001 census population of Canada per 100,000.

Rubella

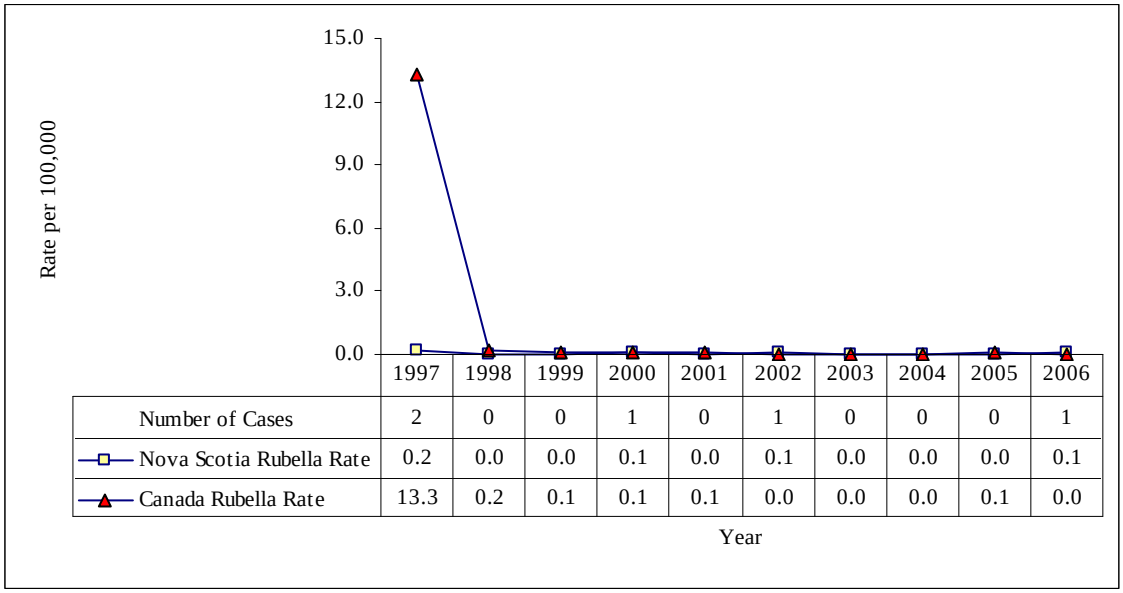
Rubella is a viral disease causing a mild, febrile illness. Transmission is through contact with nasopharyngeal secretions, direct contact with infected patients and by droplet spread. An immunization program for measles, mumps and rubella (MMR) directed to infants was introduced in Canada in April 1983. The main goal of immunization is the prevention of infection in pregnancy and thus prevention of the potential development of congenital rubella syndrome (CRS)[5,8].

The national goal for rubella was to eliminate indigenous rubella infection during pregnancy and thus prevent fetal damage, congenital rubella syndrome, and other negative outcomes of infection by the year 2000.[31]

In Nova Scotia, the rubella vaccine (MMR) is publicly funded for all children and is given at 12 months of age and again when starting school.

Since 1997, the incidence of rubella has remained below one case per 100,000 population in Nova Scotia (Figure 53). The national rate for 2006 was 0.0 cases per 100,000 population.[24]

Figure 53: Incidence of Rubella, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	2	0	0	1	0	1	0	0	0	1
Nova Scotia Rubella Rate	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1
Canada Rubella Rate	13.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0

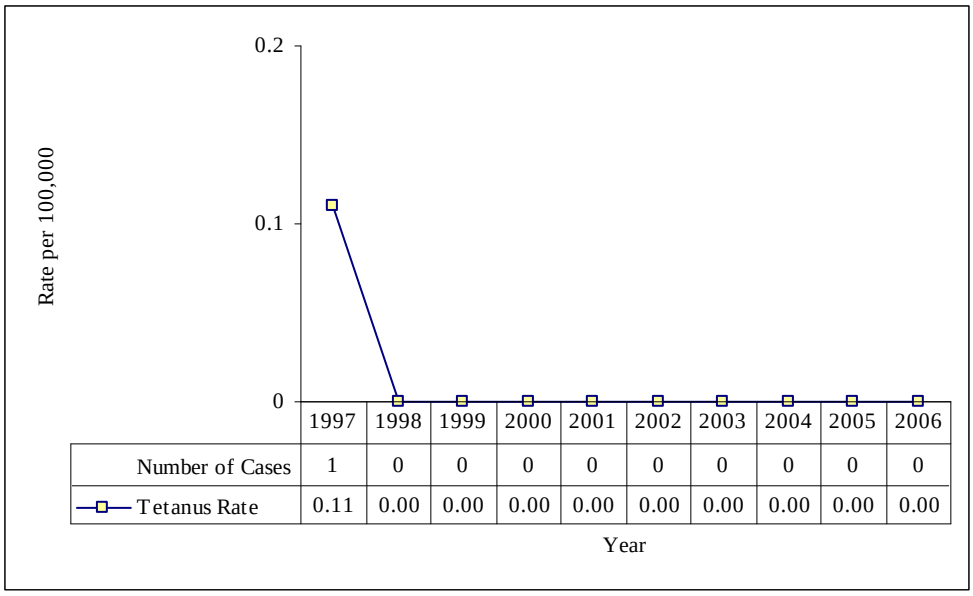
Tetanus

Tetanus is an acute disease caused by an exotoxin produced by the tetanus bacillus, *Clostridium tetani*, that grows at the site of injury in the absence of oxygen. The disease is transmitted by spores produced by the bacillus that are introduced into the body commonly through a contaminated puncture wound (e.g., from soil, street dust, animal or human feces), lacerations, burns, seemingly minor wounds or by injection of contaminated street drugs. Growth of the pathogen is favoured by necrotic tissue and/or foreign bodies.[5] Tetanus is rare in Canada and death due to tetanus quickly declined since the introduction of anti-tetanus toxoid. The last death in Canada from tetanus was reported in 1997.[20]

The national goal for tetanus is to maintain the absence of neonatal and childhood tetanus.[31]

No cases of tetanus have been reported in Nova Scotia since 1998 (Figure 54).

Figure 54: Incidence of Tetanus, Nova Scotia, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	1	0	0	0	0	0	0	0	0	0
Tetanus Rate	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

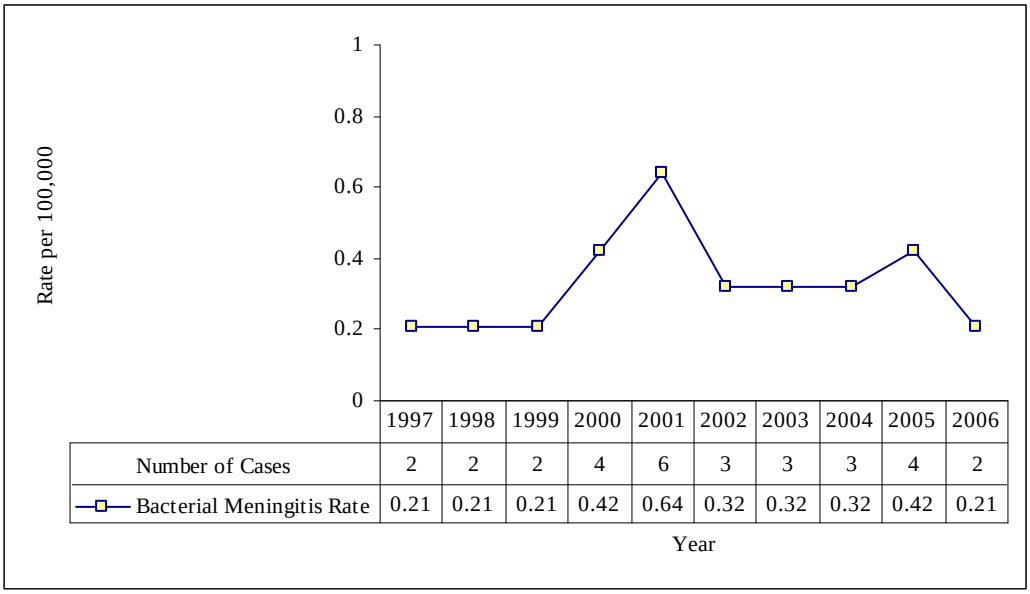
Section VII: Other Diseases

Bacterial Meningitis

The most common agents causing bacterial meningitis as of the late 1990s were *Neisseria meningitidis* and *Streptococcus pneumoniae*. In the United States and Canada, *Haemophilus influenzae b* was one of the most common causes of bacterial meningitis but has been essentially eliminated following the introduction of Hib vaccine. Other less common bacteria (staphylococci, enteric bacteria, group B streptococci and listeria) may lead to bacterial meningitis in individuals with particular susceptibilities.[5,23]

The incidence of reported bacterial meningitis (caused by other than *N. meningitidis, S. pneumoniae,* and *Haemophilus influenzae* b) has remained consistently low in Nova Scotia since 1997 at less than one case per 100,000 population (Figure 55).

Figure 55: Incidence of Bacterial Meningitis, Nova Scotia, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	2	2	2	4	6	3	3	3	4	2
Bacterial Meningitis Rate	0.21	0.21	0.21	0.42	0.64	0.32	0.32	0.32	0.42	0.21

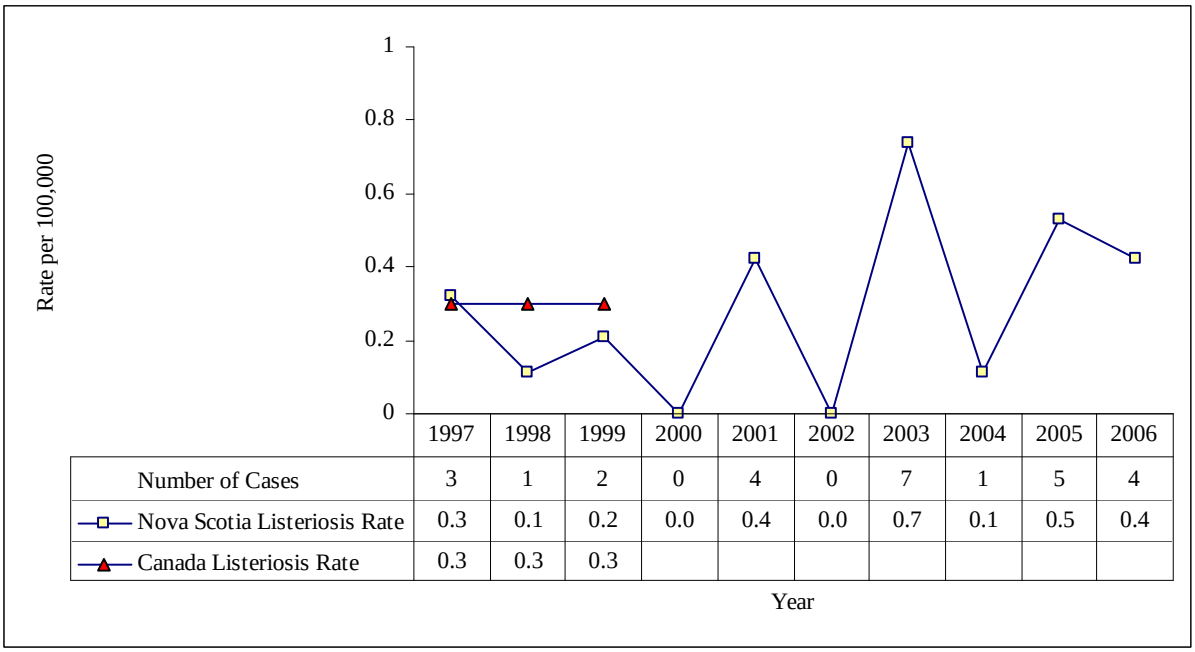
Listeriosis

Listeriosis is a bacterial disease commonly manifested as meningoencephalitis and/or septicaemia in both newborns and adults and as fever and abortion in pregnancy. Transmission is through direct contact with infected material or through neonatal infection where the infection may be passed to the fetus *in utero* or during birth through the birth canal. Outbreaks have been reported associated with consumption of raw or contaminated milk, soft cheeses, vegetables and pâté.[5]

The incidence of Listeriosis in Nova Scotia has remained consistently low since 1997 at less than one case per 100,000 population (Figure 56). The national rate for 2000 was 0.3 cases per 100,000 population.[24] (Listeriosis was removed from national surveillance in January 2000).

Four cases of listeriosis were reported in Nova Scotia in 2006. The mean age of these cases was 77 years (range: 60 to 100 years of age) and 100% were male. Three cases were reported from the Western region.

Figure 56: Incidence of Listeriosis, Nova Scotia and Canada, 1997-2006



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Number of Cases	3	1	2	0	4	0	7	1	5	4
Nova Scotia Listeriosis Rate	0.3	0.1	0.2	0.0	0.4	0.0	0.7	0.1	0.5	0.4
Canada Listeriosis Rate	0.3	0.3	0.3							

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Appendices

Appendix A:
Summary Tables for Selected Enteric, Food and Waterborne Diseases

Table 16: Number of reported cases, crude and age standardized rates for Campylobacteriosis by Shared Service Area, Nova Scotia, 2006

	Campylobacteriosis			
Shared Service Area	**Number of Reported Cases**	**% of Total for Nova Scotia**	**Crude Rate***	**Age-Standardized Rate****
1,2,3 (Western)	42	31.8	19.9	19.4
4,5,6 (Northern)	22	16.7	14.1	14.5
7,8 (Eastern)	12	9.1	6.5	6.4
9 (Capital)	56	42.4	14.3	14.0
Nova Scotia	132	100.0	14.0	13.8

*Crude rates based on the 2001 census population of Nova Scotia
**Rates adjusted to the age distribution of the 2001 census population of Canada.

Table 17: Number of reported cases, crude, and age standardized rates for Salmonellosis by Shared Service Area, Nova Scotia, 2006

	Salmonellosis			
Shared Service Area	**Number of Reported Cases**	**% of Total for Nova Scotia**	**Crude Rate***	**Age-Standardized Rate****
1,2,3 (Western)	14	13.5	6.6	6.0
4,5,6 (Northern)	14	13.5	9.0	8.3
7,8 (Eastern)	17	16.3	9.3	9.2
9 (Capital)	59	56.7	15.1	15.0
Nova Scotia	104	100.0	11.0	10.9

*Crude rates based on the 2001 census population of Nova Scotia
**Rates adjusted to the age distribution of the 2001 census population of Canada

Table 18: Number of reported cases, crude, and age standardized rates for Giardiasis by Shared Service Area, Nova Scotia, 2006

	Giardiasis			
Shared Service Area	**Number of Reported Cases**	**% of Total for Nova Scotia**	**Crude Rate***	**Age-Standardized Rate****
1,2,3 (Western)	13	12.2	6.2	6.3
4,5,6 (Northern)	6	5.7	3.8	4.0
7,8 (Eastern)	20	18.9	10.9	10.8
9 (Capital)	67	63.2	17.1	17.1
Nova Scotia	106	100.0	11.2	11.7

*Crude rates based on the 2001 census population of Nova Scotia
**Rates adjusted to the age distribution of the 2001 census population of Canada.

Table 19: Number of reported cases, crude, and age standardized rates for Verotoxigenic *E. coli* infection by Shared Service Area, Nova Scotia, 2006

	Verotoxigenic *E. coli*			
Shared Service Area	**Number of Reported Cases**	**% of Total for Nova Scotia**	**Crude Rate***	**Age-Standardized Rate****
1,2,3 (Western)	4	19.1	1.9	1.8
4,5,6 (Northern)	10	47.6	6.4	6.4
7,8 (Eastern)	0	0	0	0
9 (Capital)	7	33.3	1.8	1.8
Nova Scotia	21	100.0	2.2	2.2

*Crude rates based on the 2001 census population of Nova Scotia
**Rates adjusted to the age distribution of the 2001 census population of Canada.

Appendix B:
Summary Tables for Diseases Transmitted by Direct Contact and Respiratory Routes

Table 20: Number of reported cases of Methicillin Resistant *Staphylococcus aureus* (MRSA) by age group and gender, Nova Scotia, 2006.

	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+	N.S*	Total
Female	1	0	0	1	6	10	11	9	52	312	1	403
Male	0	3	3	0	6	8	6	15	81	323	1	446
Unknown	0	0	0	0	0	0	0	0	0	1	0	1
Total	1	3	3	1	12	18	17	24	133	636	2	850

***Age not specified**

Table 21: Number of reported cases, crude, and age standardized rates for Methicillin Resistant *Staphylococcus aureus* (MRSA) by Shared Service Area, Nova Scotia, 2006.

	MRSA			
Shared Service Area	**Number of Reported Cases**	**% of Total for Nova Scotia**	**Crude Rate***	**Age-Standardized Rate****
1,2,3 (Western)	146	17.2	69.2	60.0
4,5,6 (Northern)	211	24.8	134.9	123.1
7,8 (Eastern)	115	13.5	62.6	57.8
9 (Capital)	378	44.5	96.6	107.9
Nova Scotia	850	100.0	90.2	87.7

*Crude rates based on 2001 census population of Nova Scotia.
**Rates adjusted to the 2001 census population of Canada.

Appendix C:
Summary Tables for Selected Sexually Transmitted and Blood Borne Pathogens

HIV/AIDS

Table 22: Number of reported HIV positive reports, Nova Scotia and Prince Edward Island, 1983*(*83 for NS, 85 for PEI) -2006

(Includes test reports with gender not reported and total includes test reports for which age-group not reported).

Nova Scotia and Prince Edward Island	1983-2000	2001	2002	2003	2004	2005	2006	Total
	560	14	16	19	33	21	24	687

Table 23: Number of reported HIV positive test reports by gender, Nova Scotia and Prince Edward Island, November 1, 1983*(*83 for NS, 85 for PEI) to December 31, 2006

Nova Scotia and Prince Edward Island	Number of HIV-Positive Tests		
	Male	Female	Total
	590	97	687

Table 24: Number of reported HIV positive test reports, by exposure category, Nova Scotia and Prince Edward Island, January 1, 2006 to December 31, 2006

Exposure Category	Nova Scotia and Prince Edward Island
MSM	10
MSM/IDU	1
IDU	4
Recipient of Blood/Blood Products	
a) Recipient of Blood/ Clotting Factor	0
b) Recipient of Blood	0
c) Recipient of Clotting Factor	0
Heterosexual Contact	
a) origin from HIV-Endemic country	4
b) sexual contact with person at risk	0
c) NIR-Het: no identified risk heterosexual	5
Perinatal Transmission	0
Other	0
NIR: no identified risk	0
Occupational Exposure	0
Total	**24**

Table 25: Number of reported AIDS cases, Nova Scotia and Prince Edward Island, 1985-2006

	1985-1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
Nova Scotia and Prince Edward Island	232	10	12	12	9	5	7	7	8	5	9	316

Table 26: Number of reported AIDS cases by gender, Nova Scotia and Prince Edward Island, 1985-2006

	Number of Reported AIDS Cases		
Nova Scotia and Prince Edward Island	Male	Female	Total
	309	28	337

Table 27: Number of reported AIDS cases by exposure category, Nova Scotia and Prince Edward Island, up to December 31, 2006

Exposure Category	Nova Scotia and Prince Edward Island
MSM	235
MSM/IDU	12
IDU	18
Recipient of Blood/Blood Products	
a) Recipient of Blood	9
b) Recipient of Clotting Factor	10
Heterosexual Contact	
a) origin from HIV-Endemic country	11
b) sexual contact with person at risk	29
c) NIR-Het: no identified risk heterosexual	9
Occupational Exposure	0
Perinatal Transmission	0
Other	0
NIR: no identified risk	3
Total	336

Glossary of Terms [1]

MSM	Men who have had sex with men, including men reporting either homosexual or bisexual contact.
MSM/IDU	Men who have had sex with men and have injected drugs.
IDU	Injection drug use
Blood/Blood Products	Recipient of Blood/Clotting Factor: prior to 1998, not possible to separate exposure category. Since 1998, separated where possible into: b) Recipient of blood (transfusion of whole blood or components such as packed red cells, plasma, platelets or cryoprecipitate); c) Recipient of clotting factor (received pooled concentrates of factors VIII or IX for hemophilia/coagulation disorder).
Heterosexual Contact	a) Origin from HIV-endemic country/Sexual contact with person at risk: prior to 1998, not always possible to separate exposure category. Since 1998, separated where possible into: b) Origin from an HIV-endemic country: persons born in a country where HIV endemic (i.e. country in which predominant means of HIV transmission is heterosexual contact) and c) Sexual contact with a person at risk: persons reporting heterosexual contact with person either HIV-infected or at increased risk for HIV infection (i.e. injection drug user, bisexual male, from HIV-endemic country) d) No Identified Risk-Heterosexual (NIR-HET): heterosexual contact only risk factor reported and nothing known about HIV-related factors for partner.
Occupational Exposure	Exposure to HIV-contaminated blood, body fluids or concentrated virus in occupational setting (applies only to AIDS cases; occupational positive HIV test reports listed under "Other").
Perinatal Transmission	Transmission of HIV from HIV-infected mother to child in utero, during childbirth or through breastfeeding.
Other	Mode of HIV transmission known but cannot be classified among major exposure categories.

[1]Health Canada. HIV and AIDS in Canada Surveillance Report to December 31, 2005. Surveillance and Risk Assessment Division, Centre for Infectious Disease Prevention and Control, Health Canada, 2005.

Chlamydia trachomatis (Genital Chlamydia)

Table 28: Reported number of new cases of *Chlamydia trachomatis* by age, gender, Shared Service Area, Nova Scotia, 2006

SSA*	Sex	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+	N.SP.	Total
1,2,3 (Western)	Female	0	0	0	86	74	31	9	1	0	0	201
	Male	1	1	0	19	44	14	3	6	0	0	88
	Unkn	0	0	0	1	0	0	0	0	0	0	1
	Total	1	1	0	106	118	45	12	7	0	0	**290**
4,5,6 (Northern)	Female	0	0	3	63	54	27	11	2	0	0	160
	Male	0	0	0	8	16	9	4	3	1	1	42
	Unkn	0	0	0	0	1	1	0	0	0	0	2
	Total	0	0	3	71	71	37	15	5	1	1	**204**
7,8 (Eastern)	Female	0	0	2	63	69	24	12	0	0	2	172
	Male	0	0	0	14	28	8	3	1	0	0	54
	Total	0	0	2	77	97	32	15	1	0	2	**226**
9 (Capital)	Female	0	0	6	250	342	100	62	11	0	0	771
	Male	0	0	1	29	121	70	32	13	2	0	268
	Unkn	0	0	0	0	1	1	0	0	0	0	2
	Total	0	0	7	279	464	171	94	24	2	0	**1041**
Nova Scotia	Female	0	0	11	462	539	182	94	14	0	2	1304
	Male	1	1	1	70	209	101	42	23	3	1	452
	Unkn	0	0	0	1	2	2	0	0	0	0	5
	Total	1	1	12	533	750	285	136	37	3	3	**1761**

N.SP. = not specified; Unkn=unknown). SSA= Shared Service Area

Table 29: Age and gender specific, crude and age standardized rates per 100,000 of *Chlamydia trachomatis* by Shared Service Area, Nova Scotia, 2006

SSA**	Sex	0-4	5-9	10-14	15-19	20-24	25-29	30- 39	40-59	60+	Crude Rate	Age-Standardized Rate
1,2,3 (Western)	Female	0	0	0	1239.2	1132.4	541.5	58.5	3.2	0	187.9	197.1
	Male	19.5	15.8	0	264.5	659.9	241.5	19.0	19.6	0	84.5	89.2
	Total	10.0	8.1	0	750.5	893.7	390.5	38.5	11.4	0	137.4	**144.6**
4,5,6 (Northern)	Female	0	0	59.5	1176.5	1130.0	551.7	97.7	8.9	0	201.7	205.0
	Male	0	0	0	135.9	303.2	193.8	36.1	13.1	7.7	54.5	52.9
	Total	0	0	28.9	631.6	706.1	388.0	67.2	11.0	3.3	130.4	**129.8**
7,8 (Eastern)	Female	0	0	31.8	920.6	1066.1	479.7	98.9	0	0	182.4	175.5
	Male	0	0	0	193.6	440.5	155.8	26.3	3.7	0	60.4	58.3
	Total	0	0	15.5	547.1	756.1	315.7	63.7	1.8	0	123.0	**118.1**
9 (Capital)	Female	0	0	47.6	2077.6	2548.2	632.1	181.4	19.2	0	384.6	374.2
	Male	0	0	7.5	227.4	927.3	457.5	96.0	23.5	8.1	140.3	130.8
	Total	0	0	26.9	1125.5	1753.0	549.4	139.2	21.3	3.5	265.9	**256.0**
Nova Scotia	Female	0	0	36.0	1481.1	1727.2	578.8	128.8	10.1	0	271.1	268.3
	Male	4.0	3.4	3.1	211.8	666.7	327.1	58.7	17.0	4.1	97.9	95.8
	Total	2.1	1.8	19.0	829.9	1198.9	457.3	94.1	13.5	1.8	**186.8**	**184.1**

*Rates adjusted to the age distribution of the 2001 census population of Canada. SSA**= Shared Service Area

Gonorrhea

Table 30: Reported number cases of Gonorrhea by gender and age group, Nova Scotia, 2006

	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+	Total
Female	0	0	0	1	19	10	5	4	2	0	41
Male	0	0	0	0	8	20	8	13	10	1	60
Total	0	0	0	1	27	30	13	17	12	1	**101**

Table 31: Reported number cases of Gonorrhea, crude and age standardized rates by Shared Service Area, Nova Scotia, 2006

Shared Service Area	Number of Reported Cases	% of Total for Nova Scotia	Crude Rate *	Age-Standardized Rate **
1, 2, 3 (Western)	16	15.8	7.6	7.8
4, 5, 6 (Northern)	2	2.0	1.3	1.2
7, 8 (Eastern)	4	4.0	2.2	2.4
9 (Capital)	79	78.2	20.2	19.4
Nova Scotia	**101**	100.0	10.7	10.6

*Crude rates based on 2001 census population of Nova Scotia per 100,000.
**Rates adjusted to the age distribution of the 2001 census population of Canada, per 100,000.

Hepatitis C

Table 32: Reported number cases of Hepatitis C by age group and gender, Nova Scotia, 2006

	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+	Total
Female	-	-	-	-	5	11	10	10	25	8	69
Male	-	-	-	-	4	22	23	42	94	6	191
Total	-	-	-	-	9	33	33	52	119	14	260

Table 33: Reported number cases of Hepatitis C, crude, age standardized rates by Shared Service Area, Nova Scotia, 2006

	Hepatitis C			
Shared Service Area	**Number of Reported Cases**	**% of Total for Nova Scotia**	**Crude Rate***	**Age-Standardized Rate****
1, 2, 3 (Western)	22	8.5	10.4	10.6
4, 5, 6 (Northern)	85	32.7	54.3	55.3
7, 8 (Eastern)	77	29.6	41.9	42.4
9 (Capital)	76	29.2	19.4	18.8
Nova Scotia	260	100	27.6	27.2

*Crude rates based on 2001 census population of Nova Scotia per 100,000.
**Rates adjusted to the age distribution of the 2001 census population of Canada. Six cases age not specified.

Table 34: Number of Hepatitis C positive reports and age specific rates by gender in Nova Scotia, 2006

	Number of Reported Cases – Male	Age-Specific Rate	Number of Reported Cases – Female	Age-Specific Rate	Total	Age-Specific Rate
	n	Rate	n	Rate	n	Rate
<1						
1 – 4						
5 – 9						
10 – 14						
15 – 19	4	12.1	5	16.0	9	14.0
20 – 24	22	70.2	11	35.2	33	52.8
25 – 29	23	74.5	10	31.8	33	53.0
30 – 39	42	58.7	10	13.7	52	36.0
40 – 59	94	69.3	25	18.1	119	43.5
60+	6	8.2	8	8.5	14	8.4
Total	191	41.4	69	14.3	260	27.6

Rates per 100,000 based on 2001 census population of Nova Scotia

Table 35: Percentage of reported risk factors for Hepatitis C by year of positive test, Nova Scotia, 1997-2006

	Number of Cases with Risk Factor Information	Blood		Household**		Acupuncture		Tattoo		Ear Piercing		Body Piercing		Electrolysis		Injection Drug Use		Percutaneous Puncture		Sharing Needles	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1997	353	140	39.7	17	4.8	33	9.3	111	31.4	112	31.7	6	1.7	6	1.7	203	57.5	16	4.5	88	24.9
1998	296	79	26.7	22	7.4	20	6.8	107	36.1	114	38.5	7	2.4	2	0.7	187	63.2	20	6.8	52	17.6
1999	212	38	17.9	1	0.5	20	9.4	89	42.0	87	41.0	6	2.8	4	1.9	116	54.7	22	10.4	80	37.7
2000	195	30	15.4	-	-	25	12.8	67	34.4	56	28.7	5	2.6	3	1.5	105	53.8	16	8.2	62	31.8
2001	147	21	14.3	18	12.2	17	11.6	65	44.2	51	34.7	7	4.8	1	0.7	112	76.2	8	5.4	80	54.4
2002	109	15	13.8	42	38.5	12	11.0	55	50.5	43	39.4	8	7.3	1	0.9	73	67.0	16	14.7	47	43.1
2003	149	17	11.4	50	33.6	24	16.1	58	38.9	53	35.6	9	6.0	8	5.4	94	63.1	38	25.5	58	38.9
2004	140	20	14.3	5	3.6	23	16.4	55	39.3	45	32.1	22	15.7	-	-	92	65.7	7	5.0	66	47.1
2005	191	20	10.5	23	12.0	16	8.4	101	52.9	75	39.3	22	11.5	1	0.5	126	66.0	18	9.4	95	49.7
2006	157	16	10.2	15	9.6	12	7.6	81	51.6	71	45.2	16	10.2	1	0.6	108	68.8	17	10.8	76	48.4
Total	1949	396	20.3	193	9.9	202	10.4	789	40.5	707	36.3	108	5.5	27	1.4	1216	62.4	178	9.1	704	36.1

*Blood products refer to fractionated products or components of whole blood e.g. platelets, plasma, red blood cells
**Household refers to household contact

Percentages based on the number of diagnosed cases per year with reported risk factor information