Notifiable Diseases in Nova Scotia

Surveillance Report
2005

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Prepared by: Office of the Chief Medical Officer of Health
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Acknowledgements

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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. For diseases that have been more recently designated as reportable, data are summarized for the period 1997-2005 only. 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 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, NS 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 groupings of districts that Public Health Services refer to as the Western, Capital, Northern and Eastern regions. Geographic comparisons are made on this regional basis. Rates calculated for selected enteric, sexually transmitted and blood-borne infections for these regions in 2005 have been age-standardized to the age distribution of the 2001 census population for Canada. Cases for which age was not specified were not included in this calculation and these numbers have been noted. For selected diseases, 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 charts used to depict incidences 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 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 Hepatitis C Virus 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 hepatitis C virus (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.

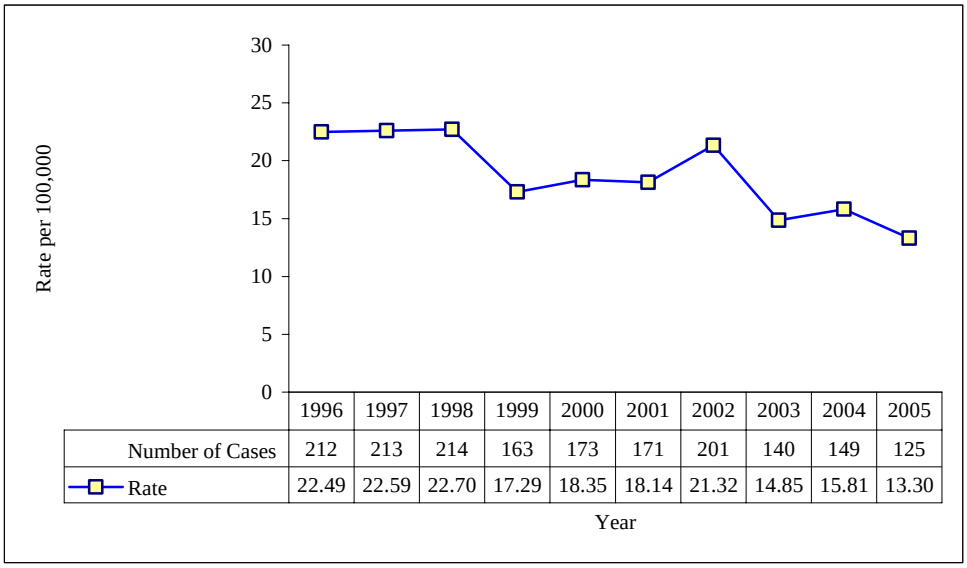
Section II: Enteric, Food and Waterborne Diseases

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]

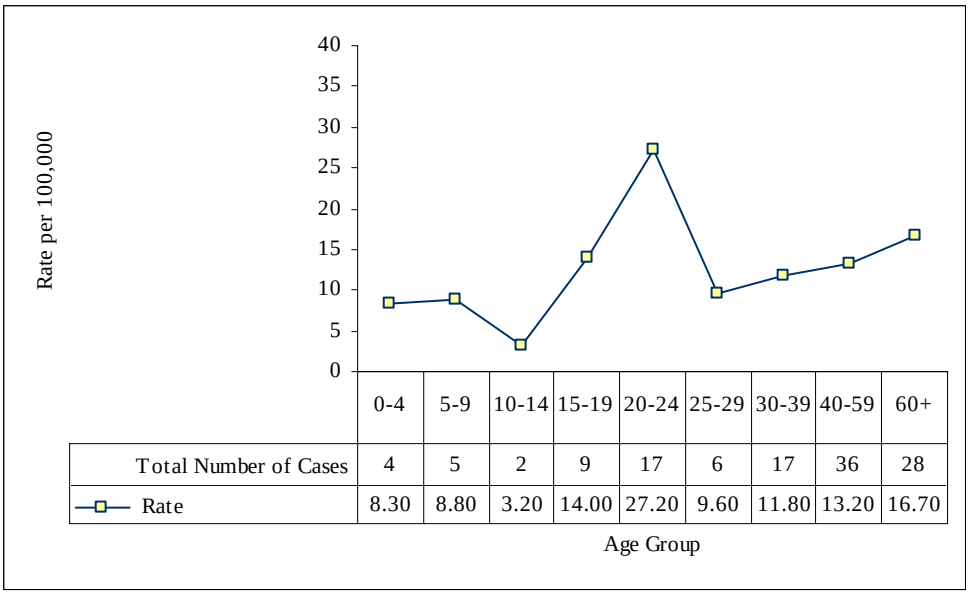
The crude incidence of campylobacteriosis in Nova Scotia has shown a decreasing trend over the last decade, from 22.5 cases per 100,000 population in 1996 to 13.3 cases per 100,000 population in 2005 (Figure 1). Approximately 65% of all campylobacteriosis cases in Nova Scotia in 2005 were reported in individuals 30 years of age or older (Figure 2). The age-specific incidence for these groups ranged from 11.8 to 16.7 cases per 100,000 (Figure 2).

Figure 1: Incidence of Campylobacteriosis, Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	212	213	214	163	173	171	201	140	149	125
Rate	22.49	22.59	22.70	17.29	18.35	18.14	21.32	14.85	15.81	13.30

Figure 2: Age specific incidence of Campylobacterosis by age groups, Nova Scotia, 2005



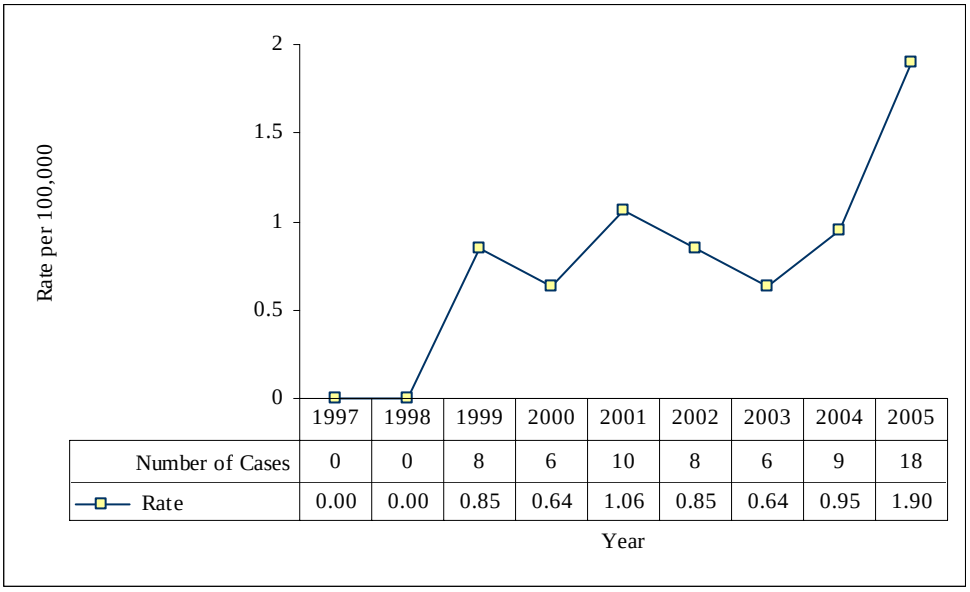
	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Total Number of Cases	4	5	2	9	17	6	17	36	28
Rate	8.30	8.80	3.20	14.00	27.20	9.60	11.80	13.20	16.70

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 and 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]

The incidence of cryptosporidiosis infection in Nova Scotia has remained very low over the last seven years with an average annual incidence of less than two cases per 100,000 population (Figure 3). The apparent increase in rates post-1998 may reflect changes in laboratory testing that would have detected cases of cryptosporidiosis in addition to those for which testing for cryptosporidiosis was specifically requested.

Figure 3: Incidence of Cryptosporidiosis, Nova Scotia, 1997-2005



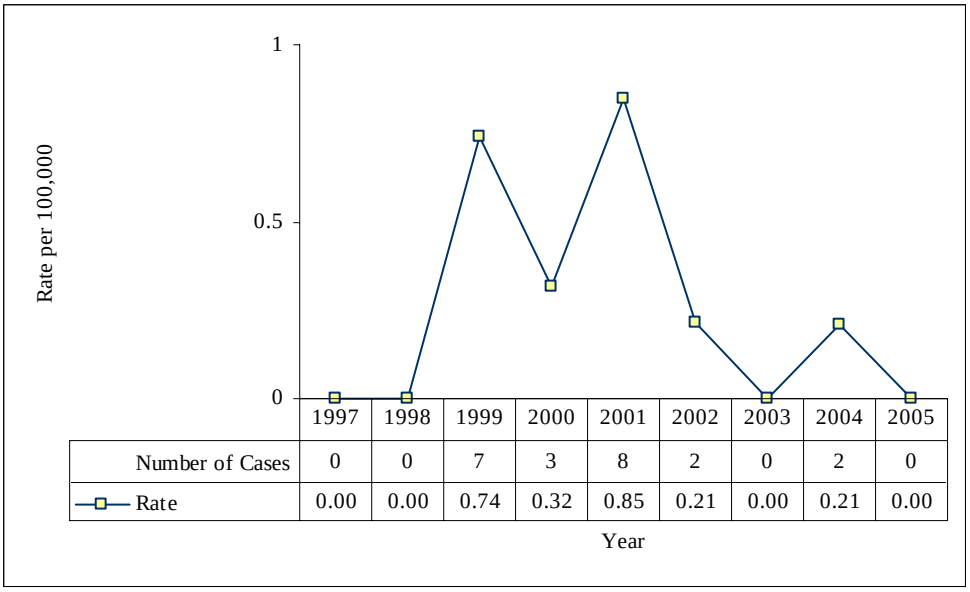
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	0	0	8	6	10	8	6	9	18
Rate	0.00	0.00	0.85	0.64	1.06	0.85	0.64	0.95	1.90

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 many developing countries. International outbreaks have been traced back to raspberries; basil and lettuce have also been implicated. It has also been associated with travel to an endemic area (e.g., Caribbean islands, Mexico, and Asia).[5]

The incidence of cyclosporiasis has been consistently low in Nova Scotia over the past six years with less than one case per 100,000 population reported annually. There were no reported cases of cyclosporiasis in 2005 (Figure 4). As with cryptosporidiosis, the apparent increase in rates post-1998 may reflect changes in laboratory testing.

Figure 4: Incidence of Cyclosporiasis, Nova Scotia, 1997-2005



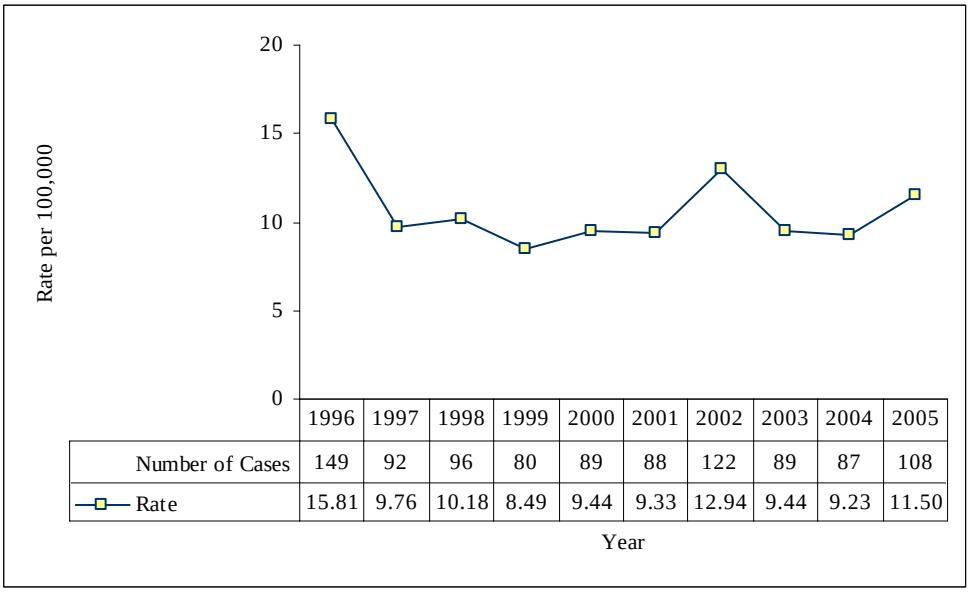
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	0	0	7	3	8	2	0	2	0
Rate	0.00	0.00	0.74	0.32	0.85	0.21	0.00	0.21	0.00

Giardiasis

Giardiasis is a protozoan infection, primarily of the upper small intestine. Transmission is person-to-person with the primary mode of spread 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]

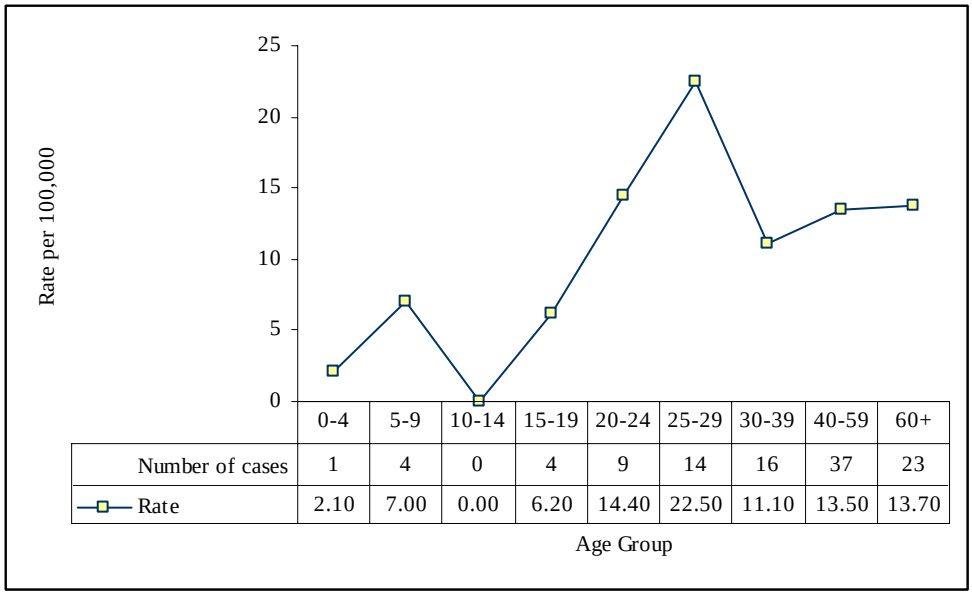
The incidence of giardiasis has decreased slightly over the last decade, with the exception of 1996 when incidence peaked at 15.8 cases per 100,000 population (Figure 5). In 2005, 59% of cases were reported in males. Approximately 55% of all reported cases were diagnosed in individuals 40 years of age or older and the highest age-specific incidence was reported in individuals 25-29 years of age (Figure 6). The greatest proportion of cases (16.7%) was reported in September.

Figure 5: Incidence of Giardiasis, Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	149	92	96	80	89	88	122	89	87	108
Rate	15.81	9.76	10.18	8.49	9.44	9.33	12.94	9.44	9.23	11.50

Figure 6: Age specific incidence of Giardiasis, Nova Scotia, 2005



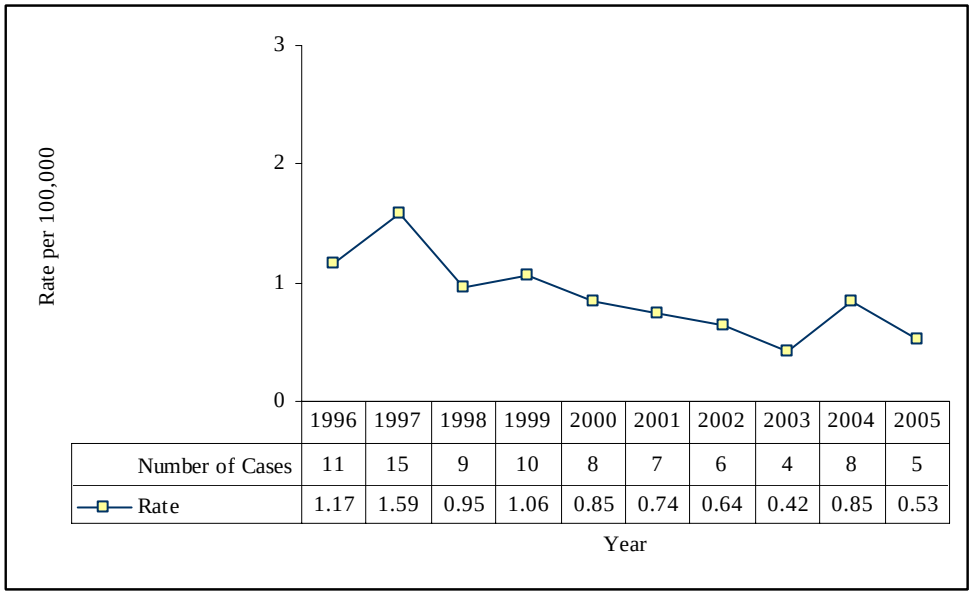
	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Number of cases	1	4	0	4	9	14	16	37	23
Rate	2.10	7.00	0.00	6.20	14.40	22.50	11.10	13.50	13.70

Hepatitis A

Hepatitis A Virus (HAV) is an infection of the liver caused by a picornavirus. Infection can be asymptomatic or symptomatic. 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 associated with water and food contaminated by infected food handlers and with contaminated molluscs and produce.[5]

The incidence of HAV in Nova Scotia has decreased since 1997 and has remained below one case per 100,000 population since 1999 (Figure 7). In 2005, 80% of all cases were reported between April and July.

Figure 7: Incidence of Hepatitis A, Nova Scotia, 1996-2005



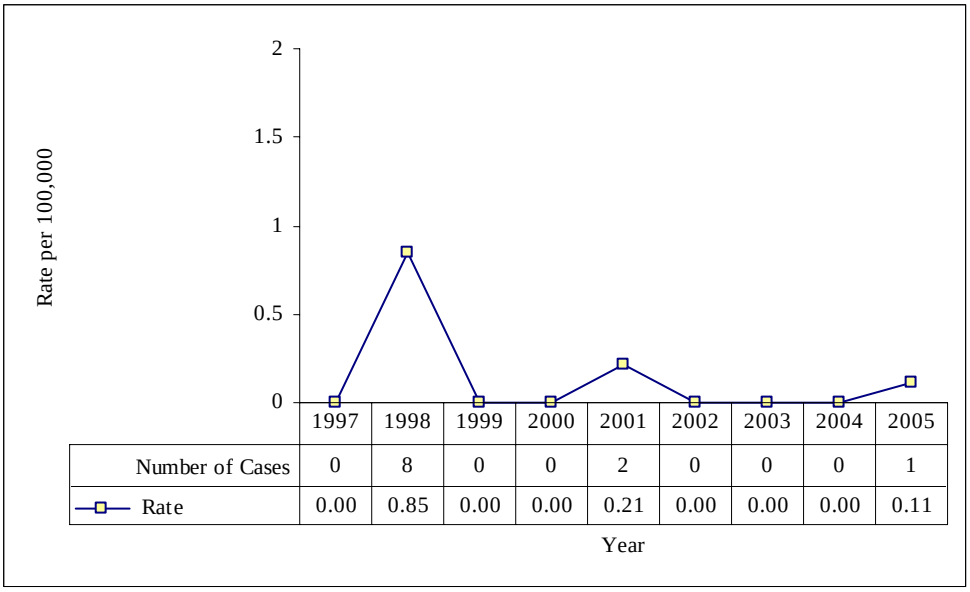
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	11	15	9	10	8	7	6	4	8	5
Rate	1.17	1.59	0.95	1.06	0.85	0.74	0.64	0.42	0.85	0.53

Paralytic Shellfish Poisoning

Paralytic Shellfish Poisoning (PSP) is a syndrome of characteristic symptoms predominantly neurologic in nature caused by saxitoxins present in shellfish. Saxitoxins are produced by the *Alexandrium* species as well as other dinoflagellates. The onset of symptoms occurs minutes to hours following the consumption of bivalve molluscs. 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. While PSP commonly occurs in shellfish harvested from colder waters, it may also occur in tropical waters.[5]

Cases are reported sporadically in Nova Scotia and since 1997, have only been reported in 3 years (1998, 2001, and 2005) (Figure 8).

Figure 8: Incidence of Paralytic Shellfish Poisoning (PSP), Nova Scotia, 1997-2005



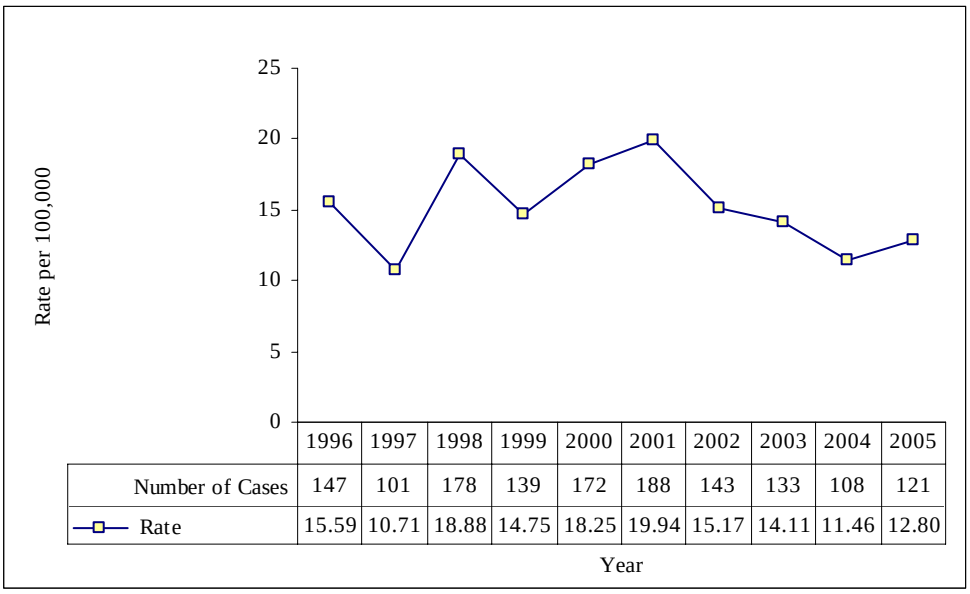
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	0	8	0	0	2	0	0	0	1
Rate	0.00	0.85	0.00	0.00	0.21	0.00	0.00	0.00	0.11

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, 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]

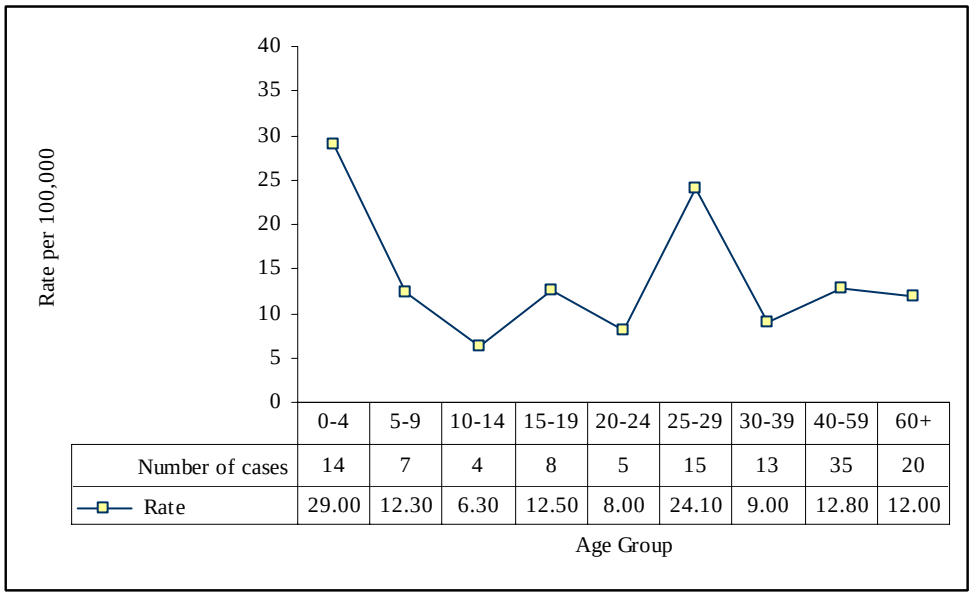
The incidence of salmonellosis in Nova Scotia has varied between 10-20 cases per 100,000 population since 1996 and has shown an apparent decreasing trend since 2001 (Figure 9). Fifty-one percent of cases were reported between July and October 2005, and 56% of cases occurred in those 30 years of age or older. Age-specific incidence was highest in the 0-4 year old age group (29 cases per 100,00 population) followed by those in the 25-29 year old age group (24.1 cases per 100,00 population) (Figure 10). It is of note that many of the reported cases of salmonellosis are travel-related.

Figure 9: Incidence of Salmonellosis, Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	147	101	178	139	172	188	143	133	108	121
Rate	15.59	10.71	18.88	14.75	18.25	19.94	15.17	14.11	11.46	12.80

Figure 10: Age specific incidence of Salmonellosis, Nova Scotia, 2005



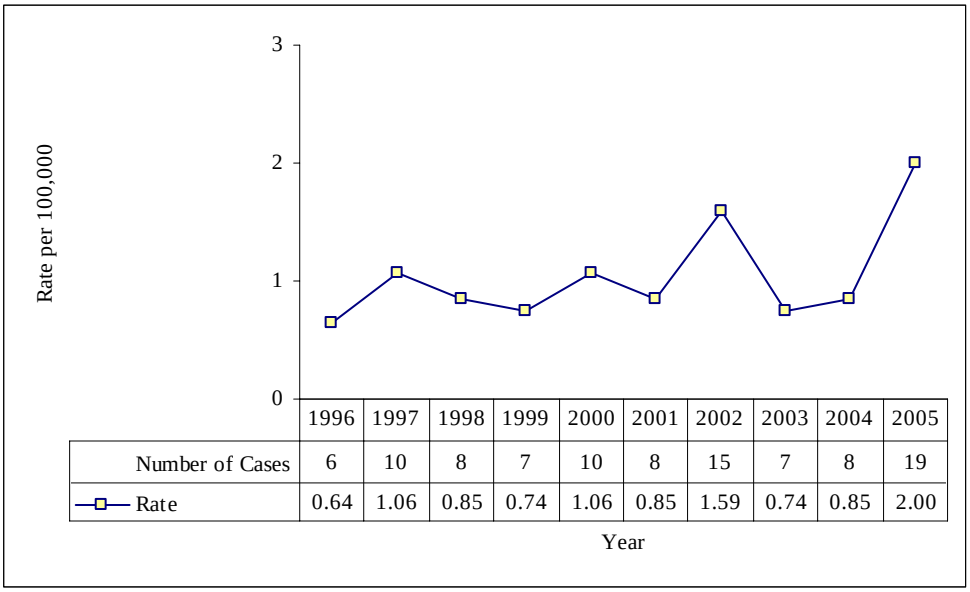
	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Number of cases	14	7	4	8	5	15	13	35	20
Rate	29.00	12.30	6.30	12.50	8.00	24.10	9.00	12.80	12.00

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 and through flies that contaminate uncovered food.[5]

The incidence of shigellosis in Nova Scotia has remained consistently low over the past ten years at less than one case per 100,000 population with the exception of 2002 and 2005 when the incidence reached 1.6 and 2.0 cases per 100,000 population respectively (Figure 11). In 2005, all cases were reported between January and July. The age specific incidence was highest for those 20-24 years of age at 4.8 cases per 100,000 population.

Figure 11: Incidence of Shigellosis, Nova Scotia, 1996-2005



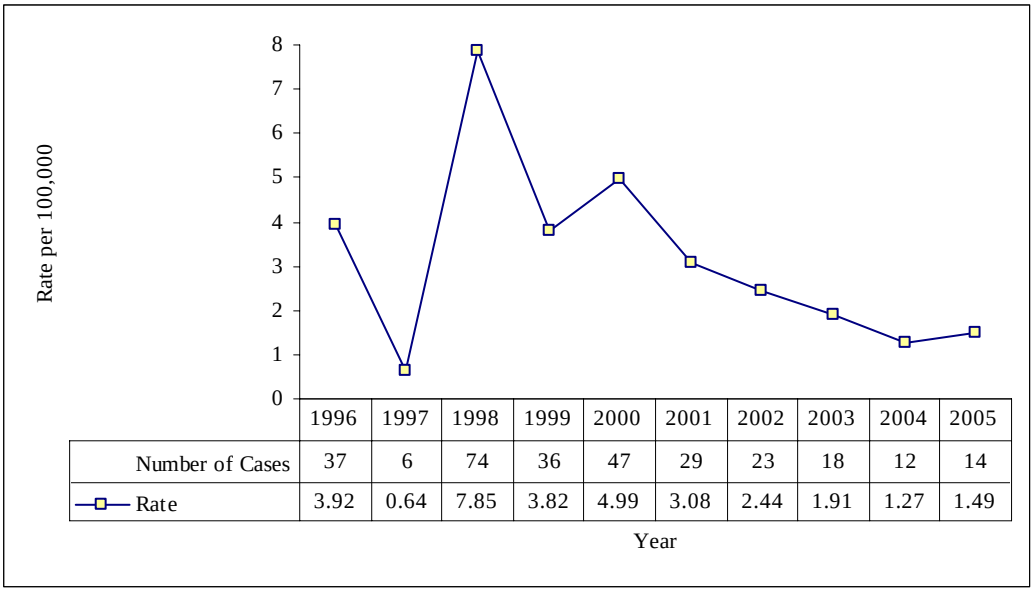
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	6	10	8	7	10	8	15	7	8	19
Rate	0.64	1.06	0.85	0.74	1.06	0.85	1.59	0.74	0.85	2.00

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* O157:H7. Transmission may be 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]

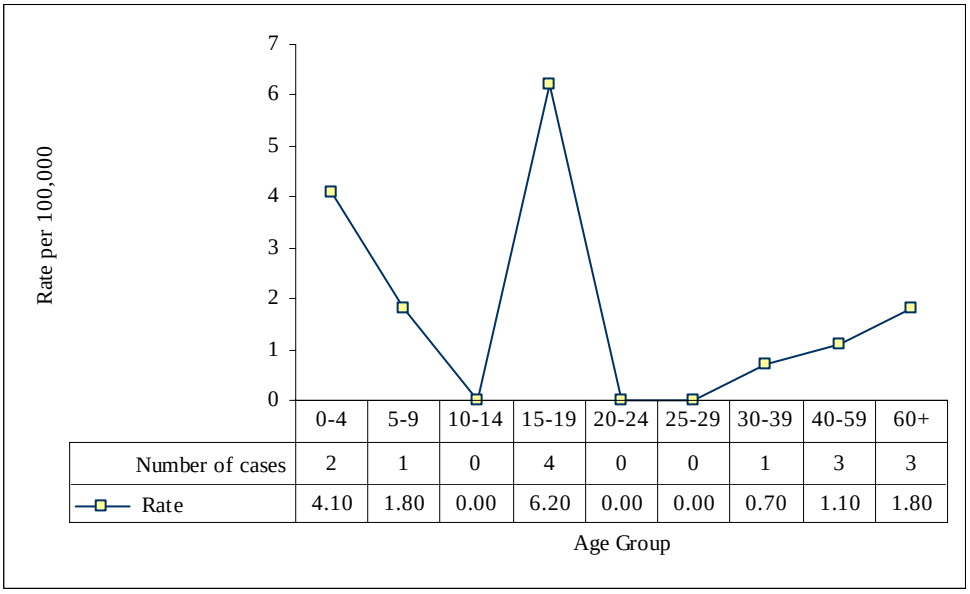
The incidence of verotoxigenic *E. coli* infection in Nova Scotia peaked at 7.9 cases per 100,000 population in 1998 followed by an apparent decrease to 1.3 and 1.5 cases per 100,000 population in 2004 and 2005 respectively (Figure 12). Reported cases in 2005 occurred equally in females and males. Half of the reported cases in 2005 were in individuals less than 20 years of age. The highest age-specific incidence occurred in those 15-19 years of age at 6.2 cases per 100,000 population (Figure 13).

Figure 12: Incidence of Verotoxigenic *E. coli*, Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	37	6	74	36	47	29	23	18	12	14
Rate	3.92	0.64	7.85	3.82	4.99	3.08	2.44	1.91	1.27	1.49

Figure 13: Age specific incidence of Verotoxigenic *E. coli*, Nova Scotia, 2005



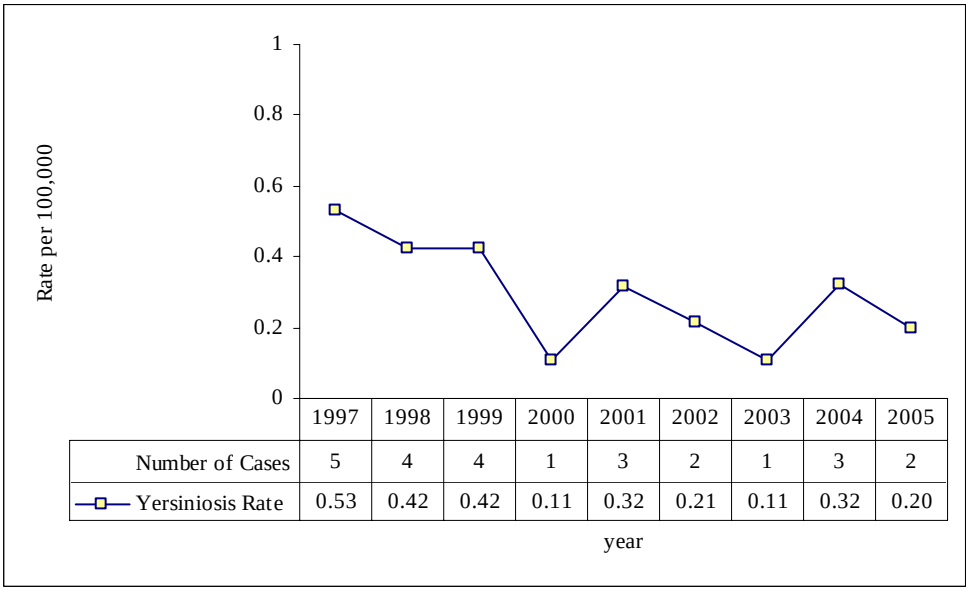
	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Number of cases	2	1	0	4	0	0	1	3	3
Rate	4.10	1.80	0.00	6.20	0.00	0.00	0.70	1.10	1.80

Yersiniosis

Yersiniosis is an acute enteric disease of bacterial origin. Y*ersinia enterocolitica* and *Yersinia pseudotuberculosis* both cause clinical illness but *Y. enterocolitica* is responsible for most of the 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]

The incidence of yersiniosis in Nova Scotia has been very low over the past nine years at less than one case per 100,000 population (Figure 14).

Figure 14: Incidence of Yersiniosis, Nova Scotia, 1997-2005



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

Enteric Outbreaks in Nova Scotia, 1997 – 2005

Between 1997 and 2005, a total of 165 outbreaks of enteric illness were reported in Nova Scotia. Approximately 6,812 individuals were affected and four deaths occurred. The majority (76.9%) of outbreaks occurred in residential (i.e., long-term care) facilities, affecting a total of 5,666 people. Private functions and non-residential facilities accounted for 29 (17.6%) of the outbreaks and seven (4.2%) involved food services establishments.

During this period of time, 70 (42.4%) of the enteric outbreaks were attributed to viral agents, 20 (12.1%) were attributed to bacterial agents and in 75 (45%) of the reported outbreaks, the agent was unknown.

Of the 59 (35.8%) outbreaks where the etiological agent was confirmed, the isolated organisms included: Norwalk-like virus (34), Rotavirus (10), *Salmonella* species (5), *E. coli* O157 (4), *Bacillus cereus* (3), *Clostridium difficile* (1), and *Staphylococcus aureus* (1).

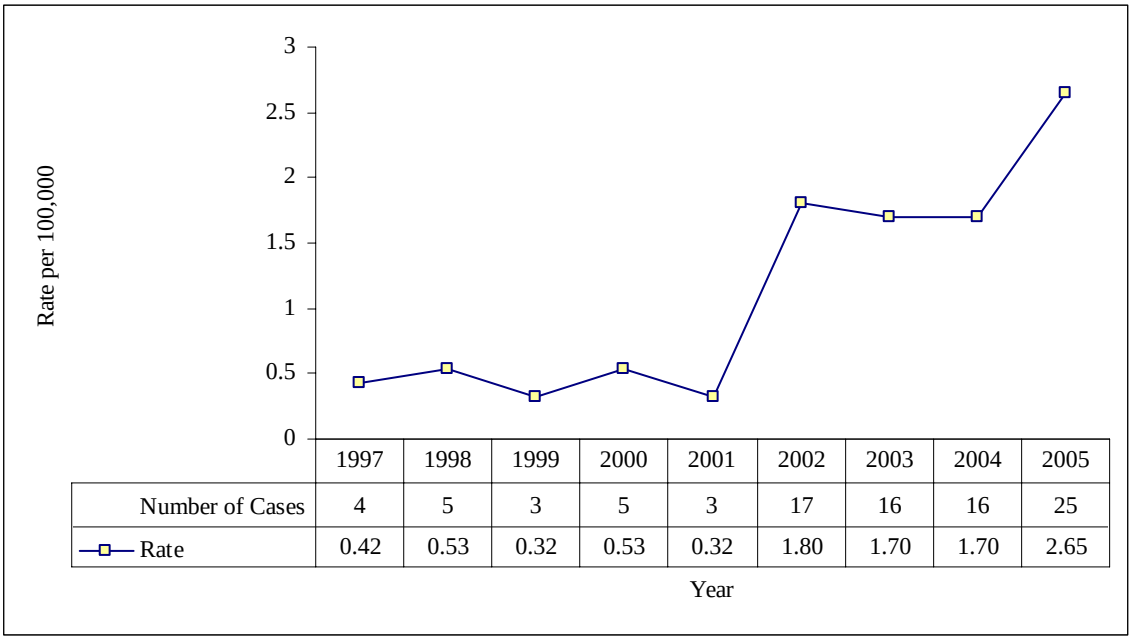
Section III: Diseases Transmitted by Direct Contact and Respiratory Routes

Group A Streptococcal Disease - 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 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. Transmission is through large respiratory droplets or direct contact with patients or individuals who are carriers of the bacteria.[5]

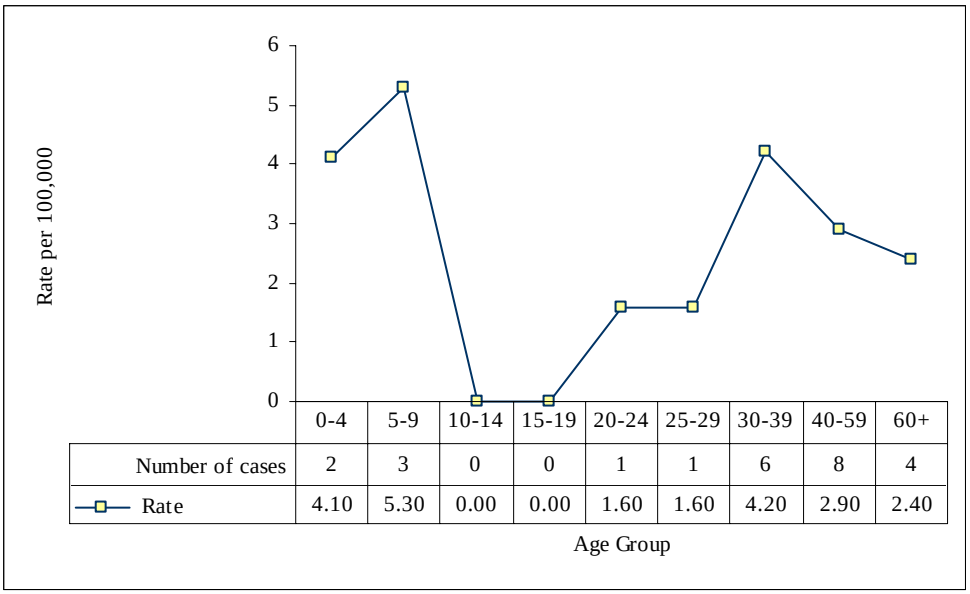
The incidence of invasive group A streptococcal disease in Nova Scotia between 1997 and 2001 was very low with an average annual rate of less than one case (0.32) per 100,000 population (Figure 15). The incidence showed an apparent increase to 1.8 cases per 100,000 between 2002 and 2004. In 2005, the rate (2.65 cases per 100,000 population) was eight-fold higher than the 2001 rate. This apparent increase in incidence may reflect better reporting. The highest incidence rates were noted in children aged 5-9 years and adults 30-39 years with 72% of cases reported in adults 30 years of age or older (Figure 16).

Figure 15: Incidence of Invasive Group A Streptococcal, Nova Scotia, 1997-2005



	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	4	5	3	5	3	17	16	16	25
Rate	0.42	0.53	0.32	0.53	0.32	1.80	1.70	1.70	2.65

Figure 16: Age-specific incidence of reported cases of Group A Streptococcal Disease - Invasive, Nova Scotia, 2005



	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Number of cases	2	3	0	0	1	1	6	8	4
Rate	4.10	5.30	0.00	0.00	1.60	1.60	4.20	2.90	2.40

Group B Streptococcal Disease of the Newborn

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

There were no cases of group B streptococcal disease of the newborn reported in Nova Scotia between 1998 and 2000 and between 2002 and 2005. This may reflect underreporting. The incidence in 2001 was less than one case per 100,000 population.

Influenza

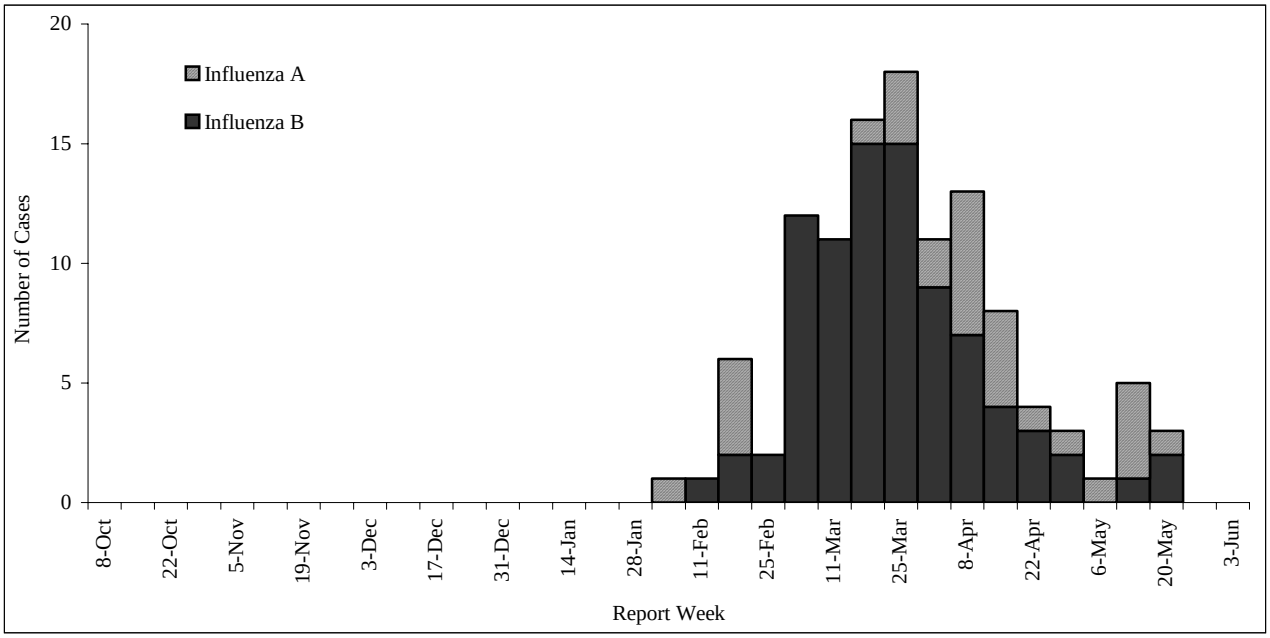
This section reports activity during the influenza season (November to April) rather than the 2005 calendar year.

Laboratory-confirmed influenza:

As of the week ending June 24, 2006 (Week 25 of the year), 115 laboratory-confirmed cases of influenza were reported in Nova Scotia: 29 (25.2%) influenza A and 86 (74.8%) influenza B. This represents a significant decrease from the number of confirmed cases reported in 2004-05 (n=513) and 2003-04 (n=357) but was consistent with the number of cases reported in 2002-03 and 2001-02 (n=67 and n=98, respectively).

Figure 17 presents the total number of laboratory-confirmed cases by report week for the 2005-2006 influenza season. The first confirmed case was not reported until the week ending February 4, 2006 (Week 5). This was considerably later than in each of the past few influenza seasons which began as early as November. Influenza activity peaked around the end of March (Week 12) and the last confirmed case was reported during the week ending May 20, 2006 (Week 20).

Figure 17: Number of lab-confirmed Influenza cases by report week, Nova Scotia, 2005-2006



The specific number of cases reported by each of the province's nine District Health Authorities (DHAs) is presented in Table 1. The highest proportion (n=51, 44.3%) of lab-confirmed influenza cases in 2005-06 were reported in Capital District, followed by Cape Breton District Health Authority. The highest rate of influenza, however, was reported in South Shore Health which

reported an incidence of 24.8 cases per 100,000 population, followed by Guysborough Antigonish Strait Health Authority (incidence: 18.4 cases per 100,000 persons).

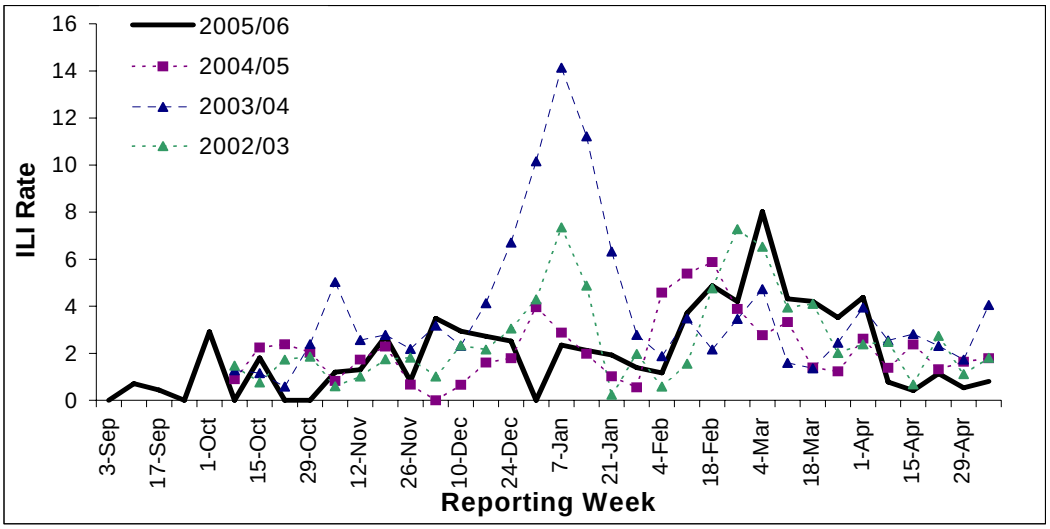
Of the 115 influenza cases reported in 2005-2006, 64 (55.7%) were females and 51 (44.3%) were males. Unlike previous influenza seasons where the majority of cases have been reported in those 65 years of age or older, in 2005-06 the majority (63.2%) of influenza cases were reported among persons under 25 years of age. Additionally, 47 (41.2%) of the lab-confirmed cases this season were in youth under 15 years of age.

Table 1: Laboratory-confirmed influenza cases by District Health Authority, Nova Scotia, 2005-2006

Region	District Health Authority	Influenza A	Influenza B	Total (%)
Western	South Shore Health	7	8	15 (13.0)
	South West Health	0	3	3 (2.6)
	Annapolis Valley Health	3	7	10 (8.7)
Northern	Colchester East Hants Health Authority	0	2	2 (1.7)
	Cumberland Health Authority	0	0	0
	Pictou County Health Authority	0	4	4 (3.5)
Eastern	Guysborough Antigonish Strait Health Authority	2	7	9 (7.8)
	Cape Breton District Health Authority	0	21	21 (18.3)
Capital	Capital Health	17	34	51 (44.3)
TOTAL		29	86	115 (100.0)

In 2005-2006, the rate of influenza-like illness (ILI) did not peak until the week ending March 4 (Week 9). In each of the past three influenza seasons, the ILI rate peaked twice, once around the beginning of January and with a second peak occurring in early March. The rate (per 100 patient visits) of ILI activity reported by sentinel physicians in 2005-2006 is compared with each of the previous three seasons (2002/03 to 2004/05) in Figure 18.

Figure 18: Percent of patient visits due to ILI reported by sentinel physicians (2002/03, 2003/04, 2004/05 and 2005/06 seasons)



Outbreaks

During the 2005-2006 season, 25 outbreaks of influenza-like illness (ILI) were reported by long-term care facilities in the province. This is less than half the number of outbreaks reported last season (n=63). Of the 25 reported ILI outbreaks, an etiologic agent could be confirmed for only 10 (40.0%). Of these 10, six were confirmed as influenza A, three were confirmed as parainfluenza virus and one was confirmed as respiratory syncytial virus.

Influenza Immunization

Children 6 to 23 Months of Age

The 2005-2006 influenza season marked the second year that children aged 6 to 23 months were eligible to receive publicly-funded influenza vaccine. A total of 4959 children in this age group were reported to have received the influenza vaccine in 2005-2006, for a provincial coverage rate of 39.2% (Table 2). This is slightly lower than the rate reported in 2004-2005 (42.7%); however, since this is only the second year that this group was eligible to receive influenza vaccine, it is too soon to indicate a trend.

Table 2: Influenza immunization coverage rates for children 6 to 23 months of age, Nova Scotia, 2004-2006

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

The proportion of children 6 to 23 months old who were immunized in 2005-2006 ranged from 14.9% in Cumberland Health Authority to 54.2% in Colchester East Hants Health Authority (Table 3).

Table 3: Influenza immunization coverage rates for children 6 to 23 months of age by DHA, Nova Scotia, 2005-2006

DHA	DHA Population 6 to 23 Months of Age	Total No. (%) Immunized
1	706	261 (37.0)
2	767	156 (20.3)
3	1,188	442 (37.2)
4	926	502 (54.2)
5	444	66 (14.9)
6	645	150 (23.3)
7	674	118 (17.5)
8	1,724	395 (22.9)
9	5,586	2,869 (51.4)
TOTAL	12,660	4,959 (39.2)

Under 65 Years of Age

In 2005-2006, only 24.0% of individuals in this age group received influenza vaccine (Table 4); however, there has been an increasing trend in the proportion immunized since 1998. In 2005-2006, the proportion of individuals under 65 years of age (excluding children 6 to 23 months) who received influenza immunization ranged from 18.9% in Pictou County Health Authority to 26.8% in South Shore Health (Table 5).

Table 4: Influenza immunization coverage rates for residents under 65 years of age (excluding children 6 to 23 months), Nova Scotia, 1998-2006

Year	Total Population Under 65	Total No. (%) Immunized
2005-2006	787,812	188,704 (24.0)
2004-2005	805,692	168,608 (20.9)
2003-2004	816,734	154,927 (19.0)
2002-2003	809,074	109,678 (13.6)
2001-2002	811,217	103,684 (12.8)
2000-2001	806,118	80,662 (10.0)
1999-2000	805,328	69,130 (8.6)
1998-1999	805,028	61,513 (7.6)

For 2005-2006, data were available on the number of doses of influenza vaccine given to individuals not eligible for the publicly funded program.

Table 5: Influenza immunization coverage rates for residents under 65 years of age (excluding children 6 to 23 months), by DHA, 2005-2006

DHA	DHA Population Under 65	Total No. (%) Immunized
1	48,965	13,104 (26.8)
2	50,858	10,906 (21.4)
3	70,590	18,070 (25.6)
4	61,685	16,009 (26.0)
5	26,357	5,099 (19.3)
6	39,742	7,514 (18.9)
7	40,467	8,094 (20.0)
8	101,083	23,744 (23.5)
9	348,065	86,164 (24.8)
TOTAL	787,812	188,704 (24.0)

Adults 65 years of age and older

This category includes all adults 65 years of age and older who are not residents of long-term care facilities (i.e., community-living seniors). In 2005-2006, 71.3% (n=90,137) of adults in this age group received influenza vaccine (Table 6) (National Target – 80%). This represented a slight increase from the proportion reported in 2004-2005 (70.4%) and indicated an increasing trend overall since 1998-1999. The proportion of community-living seniors receiving influenza immunization in 2004-2005 ranged from 61.8% in South West Health to 76.0% in Capital Health (Table 7).

Table 6: Influenza immunization coverage rates for community residents 65 years of age and older, Nova Scotia, 1998-2006

Year	Total Population 65+ (excluding LTC residents)	Total No. (%) Immunized
2005-2006	126,409	90,137 (71.3)
2004-2005	124,834	87,892 (70.4)
2003-2004	119,017	85,376 (71.7)
2002-2003	121,934	78,863 (64.7)
2001-2002	120,104	82,352 (68.6)
2000-2001	119,866	74,612 (62.2)
1999-2000	117,358	73,940 (63.0)
1998-1999	116,637	67,600 (58.0)

Table 7: Influenza immunization coverage rates for community residents 65 years of age and older by DHA, Nova Scotia, 2005-2006

DHA	DHA Population 65+ (Excluding LTC residents)	Total No. (%) Immunized
1	10,171	7,054 (69.4)
2	10,033	6,197 (61.8)
3	12,351	9,319 (75.5)
4	10,101	7,183 (71.1)
5	5,832	3,664 (62.8)
6	6,932	4,777 (68.9)
7	7,332	4,694 (64.0)
8	19,790	13,926 (70.4)
9	43,867	33,323 (76.0)
TOTAL	126,409	90,137 (71.3)

Residents of Long-Term Care Facilities

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. Vaccine coverage in this group has been consistently high, ranging from 90.3% in 1999-2000 to 97.0% in 1998-1999 (Table 8). During the 2005-2006 season, a total of 6544 residents of long-term care facilities were reported to have received influenza vaccine for a provincial coverage rate of 94.6% (National Target – 95%). The proportion of long-term care residents who received influenza vaccine in 2005-2006 ranged from 91.2% in Cape Breton District Health Authority to 97.0% in Colchester East Hants Health Authority (Table 9).

Table 8: Influenza immunization coverage rates for residents of long term care facilities, Nova Scotia, 1998-2006

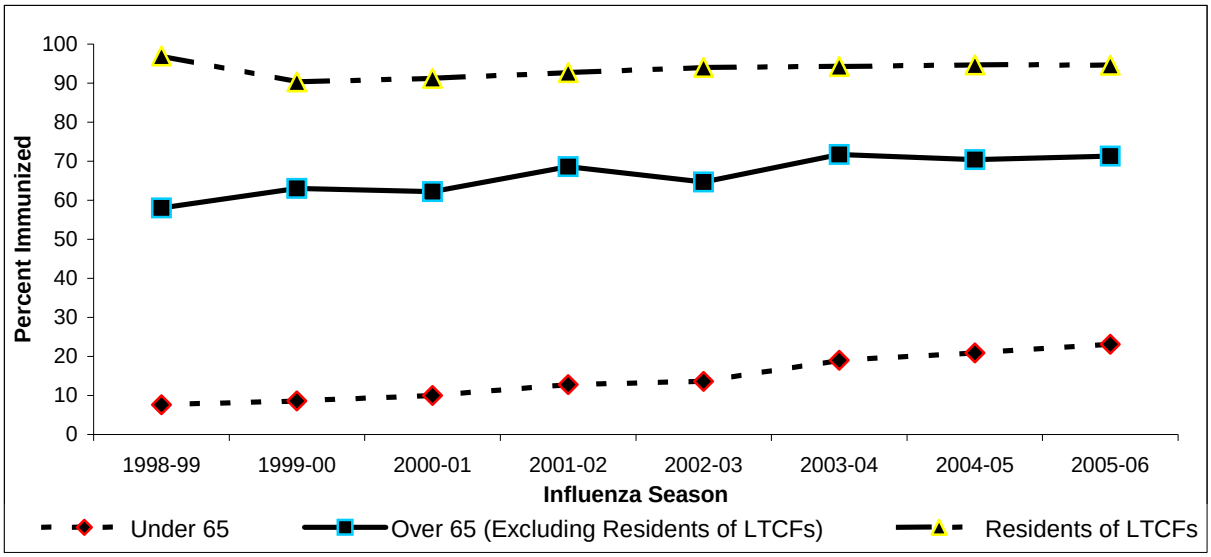
Year	Total Population in Long Term Care	Total No. (%) Immunized
2005 – 2006	6,918	6,544 (94.6)
2004 – 2005	6,896	6,530 (94.7)
2003 – 2004	6,940	6,545 (94.3)
2002 – 2003	6,654	6,254 (94.0)
2001 – 2002	7,164	6,638 (92.7)
2000 – 2001	6,711	6,121 (91.2)
1999 – 2000	5,901	5,329 (90.3)
1998 – 1999	5,874	5,699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

Table 9: Influenza immunization coverage rates for residents of long term care facilities by DHA, Nova Scotia, 2005-2006

DHA	No. Residents in Long Term Care	Total No. (%) Immunized
1	598	571 (95.5)
2	510	483 (94.7)
3	528	510 (96.6)
4	368	357 (97.0)
5	414	390 (94.2)
6	629	599 (95.2)
7	501	465 (92.8)
8	1,237	1,128 (91.2)
9	2,133	2,041 (95.7)
TOTAL	6,918	6,544 (94.6)

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), and residents of long-term care facilities who have received influenza immunization has been observed (Figure 19). Further information may be found in the Influenza Program Annual Report, 2005-2006 prepared by the Office of the Chief Medical Officer of Health, Nova Scotia Health Promotion and Protection.[6]

Figure 19: Trend in influenza immunization in Nova Scotia, 1998-2006

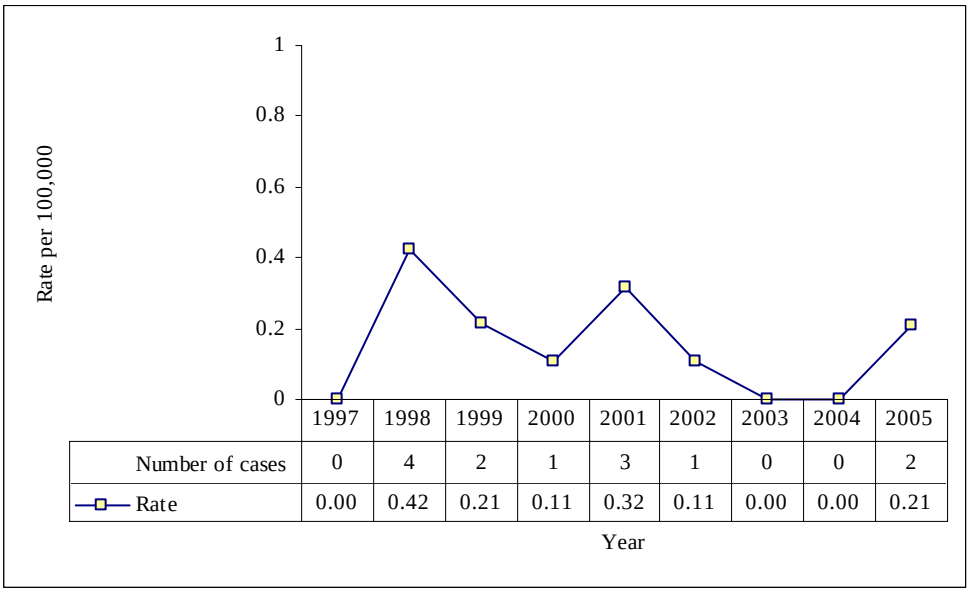


Legionellosis

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]

The incidence of legionellosis in Nova Scotia has been extremely low with less than one new case per 100,000 population reported annually between 1998 and 2005 (Figure 20). No cases were reported in 2003 and 2004.

Figure 20: Incidence of Legionellosis, Nova Scotia, 1997-2005



	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of cases	0	4	2	1	3	1	0	0	2
Rate	0.00	0.42	0.21	0.11	0.32	0.11	0.00	0.00	0.21

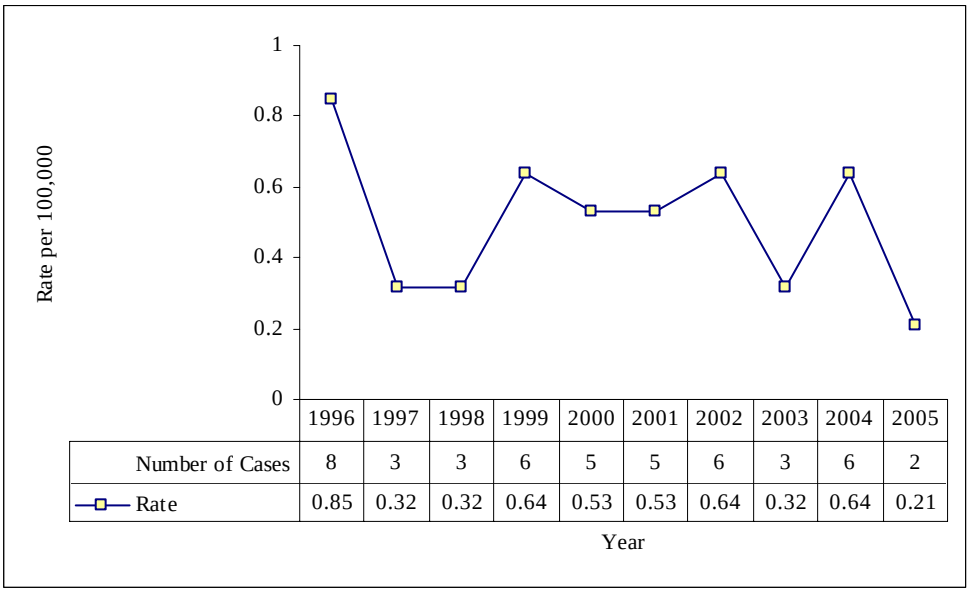
Meningococcal Disease - Invasive

Invasive meningococcal disease (IMD) is an acute bacterial disease caused by the meningococcus, *Neisseria meningitidis*. The disease is spread by direct contact and droplet infection from the nose and throat of infected individuals. The prevalence of those who carry the bacteria in the absence of meningitis or invasive disease may be 25% or more but the invasion of bacteria sufficient to cause systemic disease is uncommon. Serogroups A, B, C and Y are responsible for most cases of disease but groups W-135, X and Z have also been recognized as pathogens.[5]

Following an outbreak in 1992, the overall incidence of IMD in Nova Scotia has remained consistently low (Figure 21). The highest incidence was reported in children and youth less than 20 years of age, with a mean rate of 2 cases per 100,000 annually since 1998.

A total of 53 laboratory-confirmed and clinical cases of IMD were reported between 1996 and 2005 in Nova Scotia, including 5 deaths (Table 10). The incidence has been shown to be highest among young children and to decline with increasing age. Immunization programs generally focus on those less than 20 years of age. Tables 10 and 11 summarize the reported cases of laboratory-confirmed IMD from 1996 to 2005 with confirmed serogroups (B, C, Y, W-135 and unknown) by age group.

Figure 21: Incidence of laboratory confirmed Invasive Meningococcal Disease, Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	8	3	3	6	5	5	6	3	6	2
Rate	0.85	0.32	0.32	0.64	0.53	0.53	0.64	0.32	0.64	0.21

Table 10: Number of reported cases of Invasive Meningococcal Disease (Laboratory confirmed and clinical) by serogroup and outcome, Nova Scotia, 1996-2005

YEAR	TOTAL NUMBER CASES	CASE							OUTCOME	
		Confirmed with Serogroup					Clinical	Rate 100,000/Year		
		B	C	Y	W-135	Unknown			Recovered	Died
1996	8	3	3	1	-	1	-	0.8	8	-
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	-	-	0.6	6	-
2005	3	1	1	-	-	-	1	0.3	3	-
Total	53	24	7	8	1	7	6		48	5

Table 11: Number of reported cases of laboratory confirmed Invasive Meningococcal Disease by age group and serogroup, Nova Scotia, 1996-2005

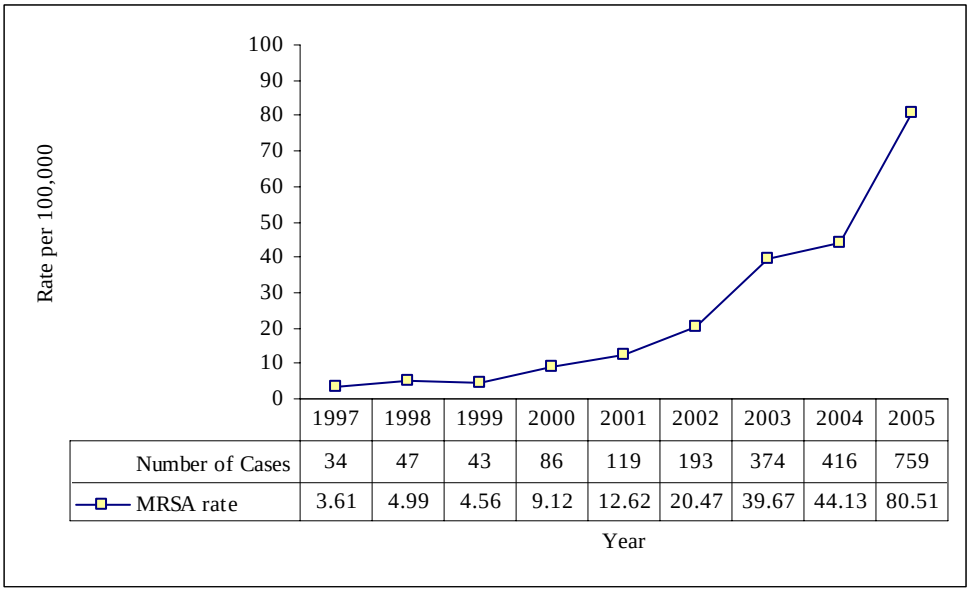
Year	Age-Group	CASE						
		Confirmed with Serogroup						
		B	C	Y	W135	Unknown	Total	Rate/100,000
1996	**0-4**	3	2	1	-	-	6	12.4
	5-9	-	-	-	-	1	1	1.8
	15-19	-	1	-	-	-	1	1.6
1997	**0-4**	1	-	-	-	1	2	4.1
	15-19	-	-	-	-	1	1	1.6
1998	**0-4**	2	-	-	-	-	2	4.1
	10-14	1	-	-	-	-	1	1.6
1999	**0-4**	1	-	-	-	-	1	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

Methicillin-Resistant *Staphylococcus aureus* (MRSA)

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 rates 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 rate of MRSA remains low in the Atlantic provinces, they recently appear to have increased significantly. Much of the observed increase in the detection of MRSA may be attributed to screening programs.[7]

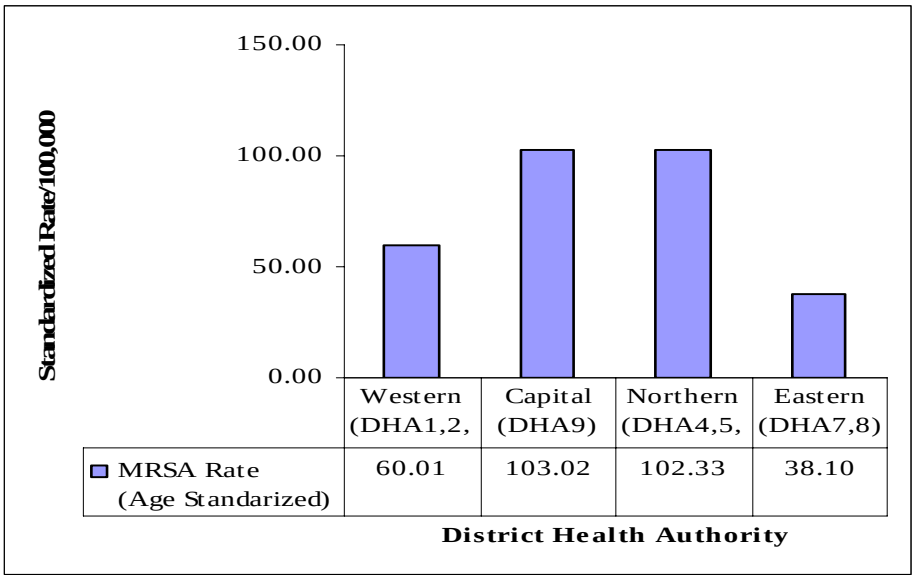
The incidence of MRSA in Nova Scotia has been steadily increasing from a rate of 3.6 cases per 100,000 in 1997 to 80.5 cases per 100,000 in 2005 (Figure 22). The highest age standardized rate of MRSA was reported in Capital District Health Authority (Figure 23). It should be noted that accompanying this increase in incidence was a marked increase in testing; positive tests may reflect patients who are not only infected with MRSA but also those who are colonized with MRSA.

Figure 22 : Incidence of Methicilli Resistant *Staphylococcus aureus* (MRSA), Nova Scotia, 1997-2005



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

Figure 23: Age-standardized incidence of MRSA by District Health Authority, Nova Scotia, 2005

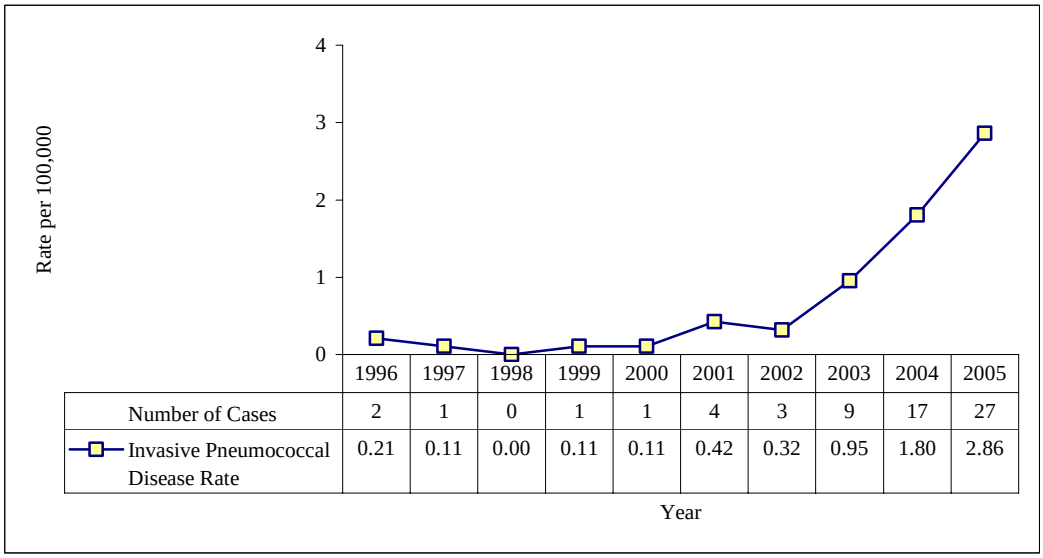


Pneumococcal Disease - Invasive

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 deficiencies, including AIDS).[8] The infection is transmitted by droplet spread, direct oral contact or through indirect contact with articles freshly contaminated with respiratory discharges. Pneumococcal vaccine is available for infants and the elderly.

Between 1996 and 2003, the incidence of invasive pneumococcal disease in Nova Scotia remained low with an annual rate of less than one case per 100,000 population. Although there was an apparent increase in incidence in 2004 and 2005, the rate remained low at 2.9 cases per 100,000 population (Figure 24).

Figure 24: Incidence of Invasive Pneumococcal Disease, Nova Scotia, 1996-2005



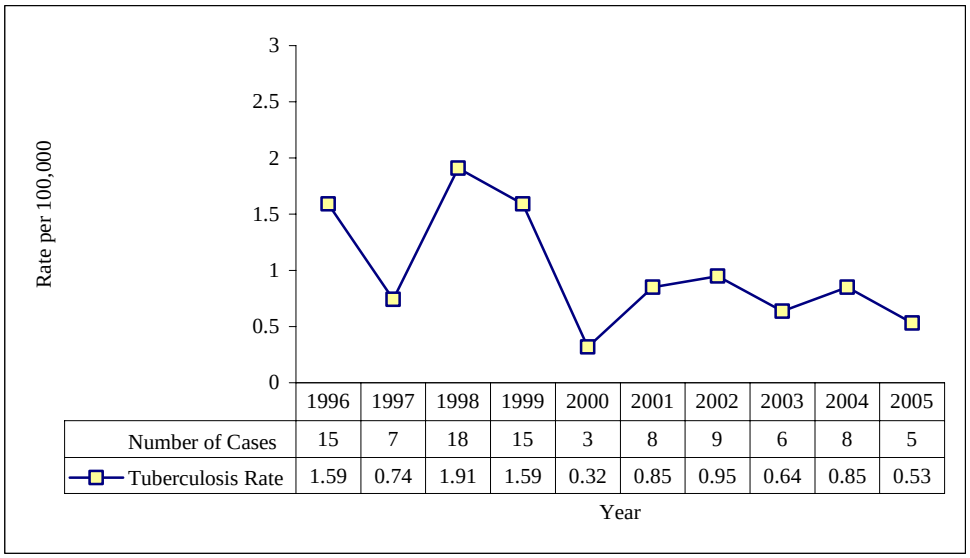
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	2	1	0	1	1	4	3	9	17	27
Invasive Pneumococcal Disease Rate	0.21	0.11	0.00	0.11	0.11	0.42	0.32	0.95	1.80	2.86

Tuberculosis

Tuberculosis is a bacterial disease caused by the *Mycobacterium tuberculosis* complex, which includes *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. Exposure to tuberculous cattle can result in bovine tuberculosis.[5]

The incidence of new active and relapsed cases of tuberculosis in Nova Scotia has declined in recent years (Figure 25). Between 2000 and 2005, the incidence was less than one case per 100,000 population.

Figure 25: Incidence of new active and relapsed cases of Tuberculosis, Nova Scotia, 1996-2005



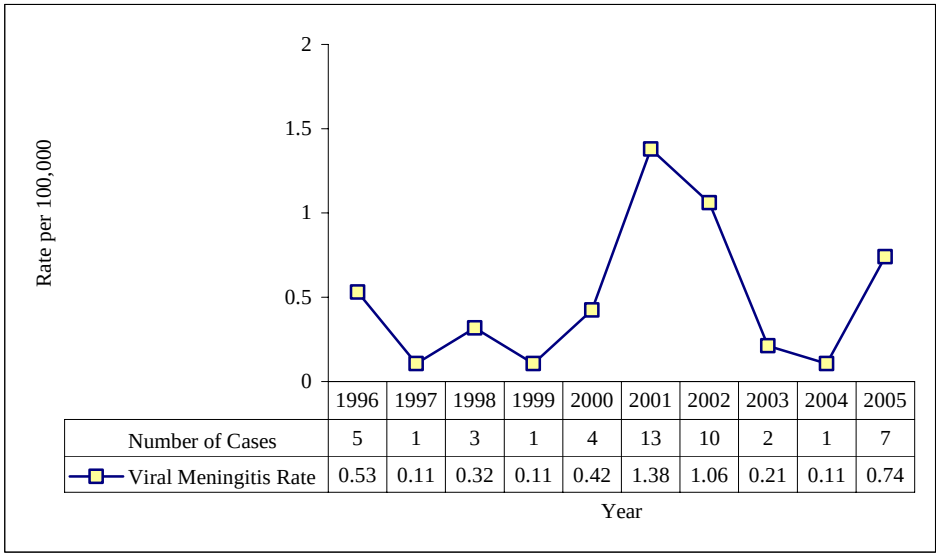
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	15	7	18	15	3	8	9	6	8	5
Tuberculosis Rate	1.59	0.74	1.91	1.59	0.32	0.85	0.95	0.64	0.85	0.53

Viral Meningitis

Viral meningitis is a clinical syndrome with meningeal features caused by a number of viruses. It is comparatively common but seldom with serious consequences, with more than 50% of cases having no demonstrable etiology. In the United States, enteroviruses (picornaviruses) are responsible for the majority of cases of known etiology. Certain types of Coxsackievirus group B and echoviruses cause one-third and one-half of cases, respectively. The mode of transmission varies with the infectious agent.[5]

Since 1996, the incidence of viral meningitis in Nova Scotia has remained very low at less than one case per 100,000 population, with the exception of 2001 when the rate was 1.4 cases per 100,000 population (Figure 26). This may under represent the true number of cases in the population.

Figure 26: Incidence of viral meningitis, Nova Scotia, 1996-2005



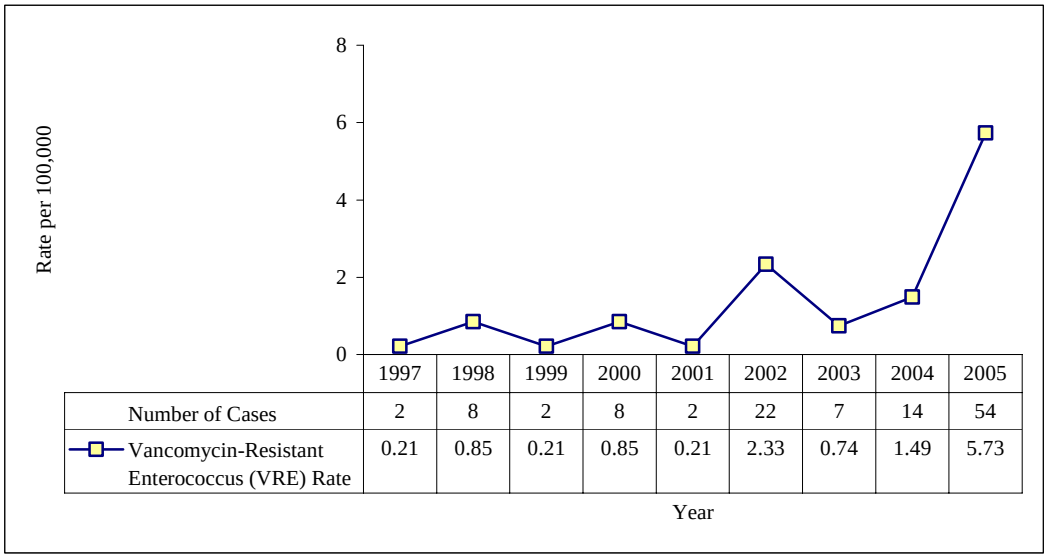
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	5	1	3	1	4	13	10	2	1	7
Viral Meningitis Rate	0.53	0.11	0.32	0.11	0.42	1.38	1.06	0.21	0.11	0.74

Vancomycin Resistant *Enterococcus* (VRE)

Enterococcus species are now acknowledged as important nosocomial pathogenic organisms.[9] While recognized as a cause of endocarditis for nearly a hundred years, they have been recently recognized as a cause of nosocomial infection and "superinfection" in patients who have received antimicrobial agents. In the past 20 years, the emergence of enterococci is, in many ways, attributable to their resistance to a number of commonly used antimicrobial agents (aminoglycosides, aztreonam, cephalosporins, clindamycin, semi-synthetic penicillins, nafcillin, oxacillin and trimethoprim-sulfamethoxazole).[10] In 1986, the first report of vancomycin-resistant enterococci (VRE) was made in the United States, 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]

The incidence of VRE in Nova Scotia was consistently low between 1997 and 2001 at less than one case per 100,000 population (Figure 27). Recent apparent increases may reflect increased testing.

Figure 27: Incidence of Vancomycin Resistant *Enterococcus* (VRE), Nova Scotia, 1997-2005



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

Creutzfeldt-Jakob Disease (CJD)

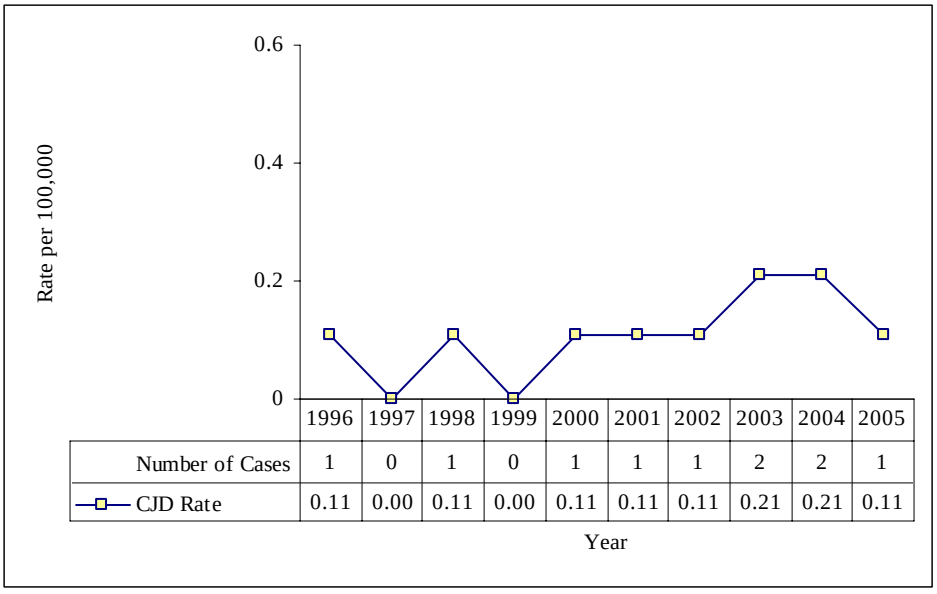
Creutzfeldt-Jakob Disease (CJD) is one of a small group of fatal diseases caused by infectious agents called prions. These attack the brain, killing cells and creating gaps in the tissue. The disease is always fatal. The main two types of CJD are classical and variant.

Variant CJD is a new disease in humans linked to eating beef products from cattle infected with Bovine Spongiform Encephalopathy (BSE). Transmission to humans has not been established, but the favoured theory attributes the transmission to consumption of food contaminated with the agent.[5] The mean onset age is 28 years. Other prion diseases include scrapie in sheep and Chronic Wasting Disease in deer and elk.

Classical CJD is a human prion disease which occurs naturally in the population at a rate of approximately one person in a million people per year. The mean age of onset is 60 years. It is not linked to eating beef and is seen sporadically in populations around the world. Iatrogenic cases have been reported due to medical or surgical treatment.

Classical CJD is very rare in Nova Scotia. The annual rate between 1996 and 2005 was less than one case per 100,000 population (Figure 28). Eight out of 10 cases were 60 years of age or older. Age was unknown in two cases.

Figure 28: Incidence of classical Creutzfeldt-Jakob Disease (CJD), Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	1	0	1	0	1	1	1	2	2	1
CJD Rate	0.11	0.00	0.11	0.00	0.11	0.11	0.11	0.21	0.21	0.11

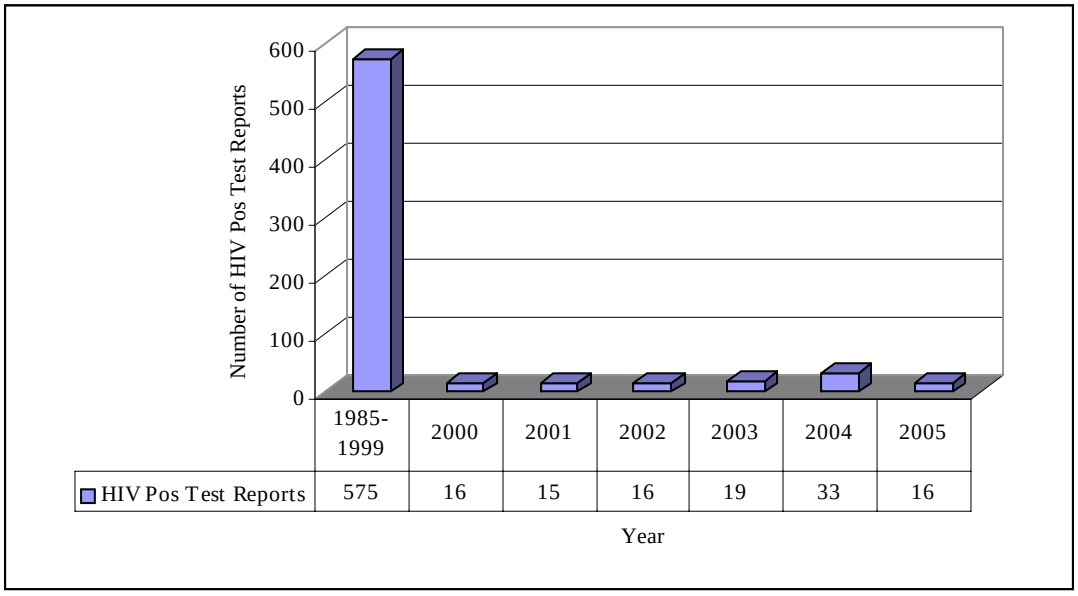
Section IV: Sexually Transmitted and Bloodborne Pathogens

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): type 2 is less pathogenic.[5] Person-to-person transmission of the virus occurs through sexual contact, 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 diagnosis of HIV infection but is not representative of all those infected and living with HIV (e.g., prevalence) nor the number of newly infected individuals on a yearly basis (e.g., incidence). Between 1985 and 2005, there were 690 new HIV-positive tests reported in Nova Scotia and Prince Edward Island (Figure 29).[4]

Figure 29: Number of HIV positive test reports, Nova Scotia and Prince Edward Island, 1985-2005



Acquired Immunodeficiency Syndrome (AIDS)

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

Between 1979 and 2005, there were 326 reported cases of AIDS in Nova Scotia and Prince Edward Island. There has been a continuous decline since 1995 (Figure 30). The most common risk group identified over this time period was MSM (men who have sex with men) (Figure 31).[4]

Figure 30: Number of reported cases of AIDS, Nova Scotia and Prince Edward Island, 1979-2005

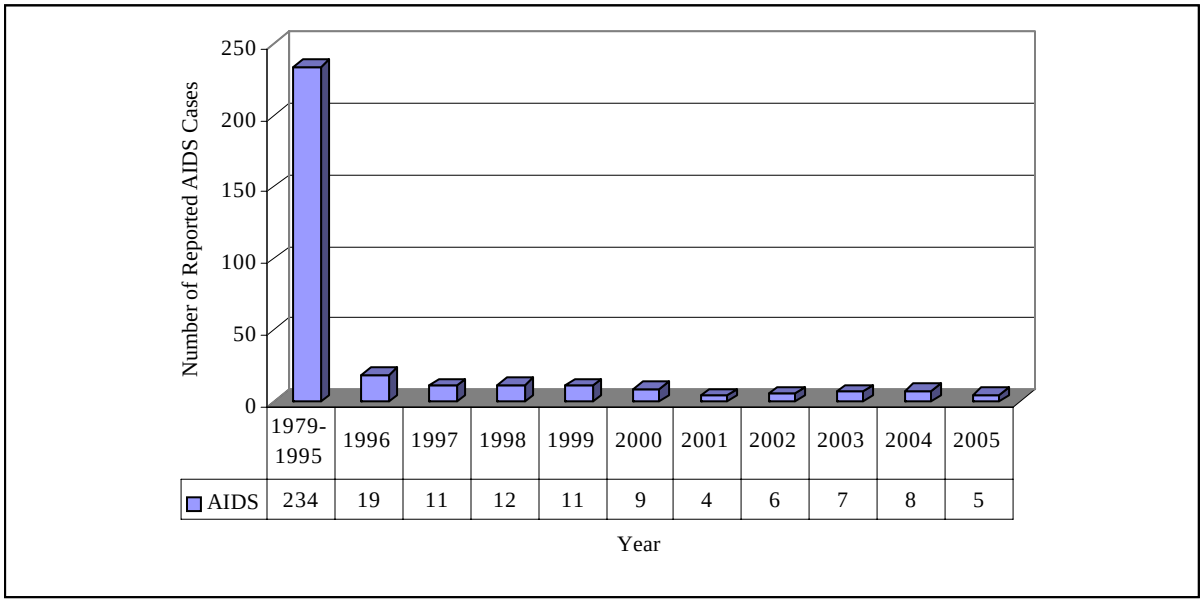
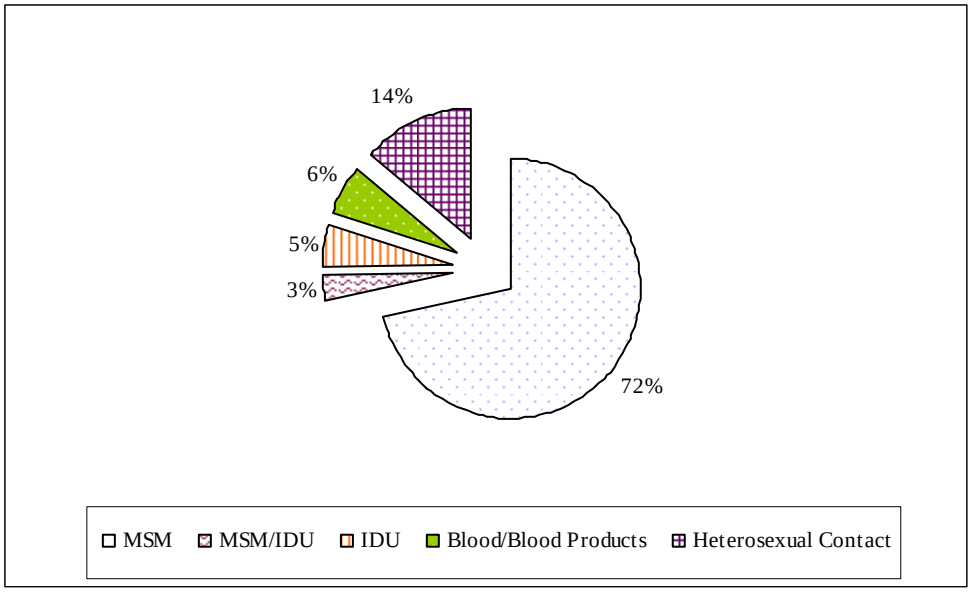


Figure 31: Percentage of distribution of reported cases of AIDS by most common exposure categories, Nova Scotia and Prince Edward Island, 1979 to 2005



Percentages based on total reports minus reports with no identified risk (3 reports). Other exposure categories: Occupational exposure: 0.0%; Perinatal exposure: 0.0%; Other 0.0%;

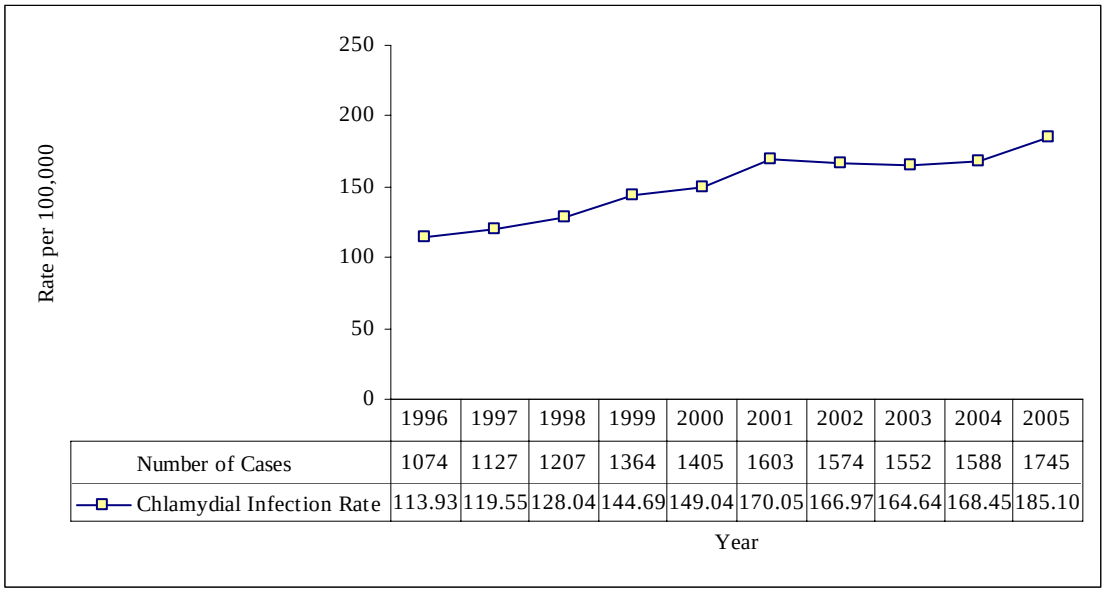
Genital Chlamydial Infection

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

Recent increasing incidence rates of chlamydial infection probably reflect to a large degree changes in testing methodology. The number of *Chlamydia trachomatis* infections in Capital District Health Authority showed a marked increase in 2001 coincidental with the replacement of an enzyme immunoassay (EIA) method of testing with a more sensitive polymerase chain reaction (PCR) method at the Microbiology Laboratory of the Queen Elizabeth II Health Sciences Centre. Therefore, while rates may have increased (Figure 32), much of this increase can be attributed to more sensitive testing.[12]

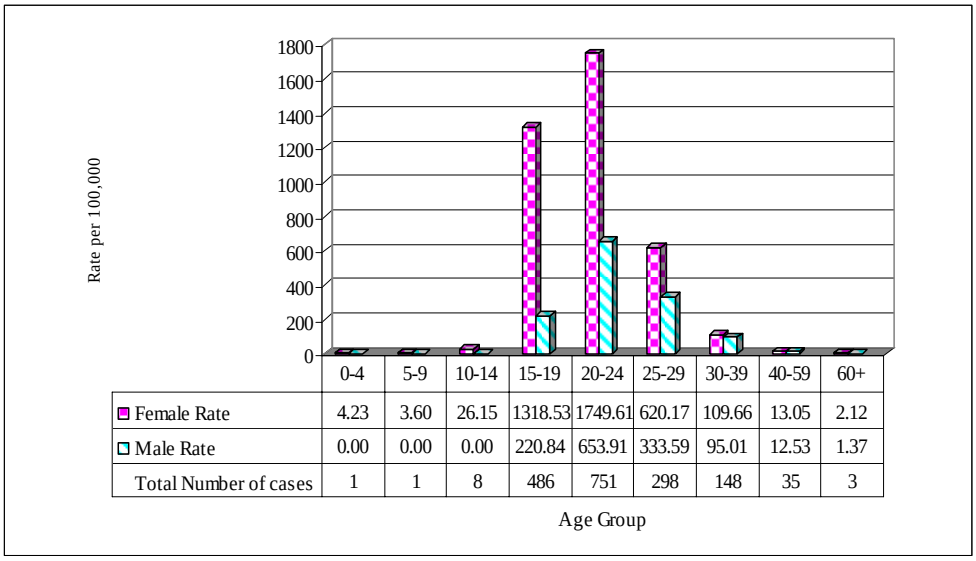
In 2005, the incidence of reported new cases of genital chlamydial infection in females exceeded the rates in males for those 15-39 years age (Figure 33): 72% of all reported new cases were diagnosed in females. This may be reflective of more females than males undergoing testing. The greatest proportion of cases in 2005 (71%) were reported in the 15 to 24 year age group. DHA 9 (Capital) reported the highest age-standardized incidence of 247.7 cases per 100,000 population. Females in Capital had an age-standardized incidence of 340.5 per 100,000 population (Figure 34).

Figure 32: Incidence of Chlamydial infection, Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	1074	1127	1207	1364	1405	1603	1574	1552	1588	1745
Chlamydial Infection Rate	113.93	119.55	128.04	144.69	149.04	170.05	166.97	164.64	168.45	185.10

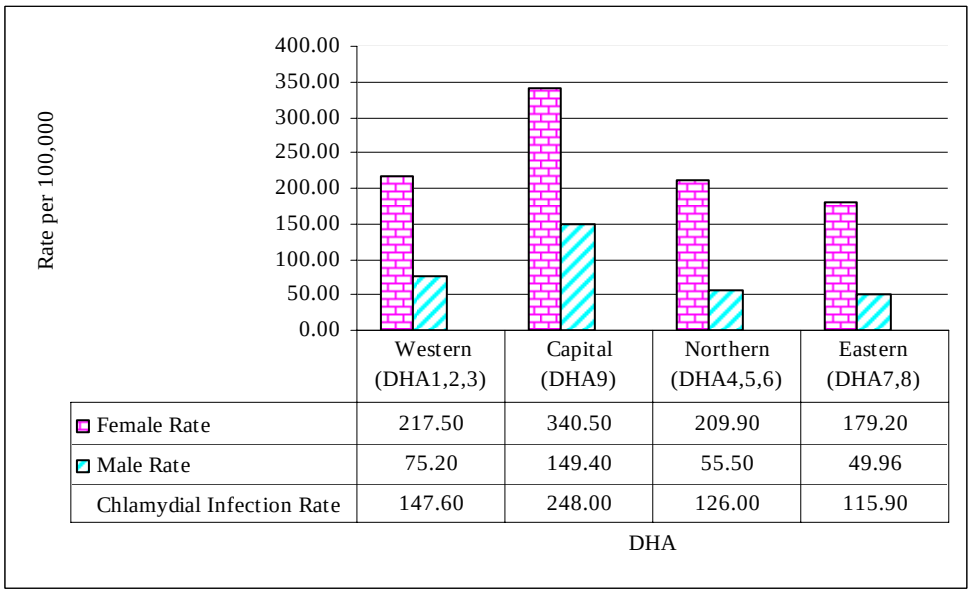
Figure 33: Age specific incidence of Chlamydial infection by gender, Nova Scotia, 2005



	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

* In 14 cases, the age was not specified.

Figure 34: Age standardized incidence of Chlamydial infection by gender and District Health Authority (DHA), Nova Scotia, 2005



	Western (DHA1,2,3)	Capital (DHA9)	Northern (DHA4,5,6)	Eastern (DHA7,8)
Female Rate	217.50	340.50	209.90	179.20
Male Rate	75.20	149.40	55.50	49.96
Chlamydial Infection Rate	147.60	248.00	126.00	115.90

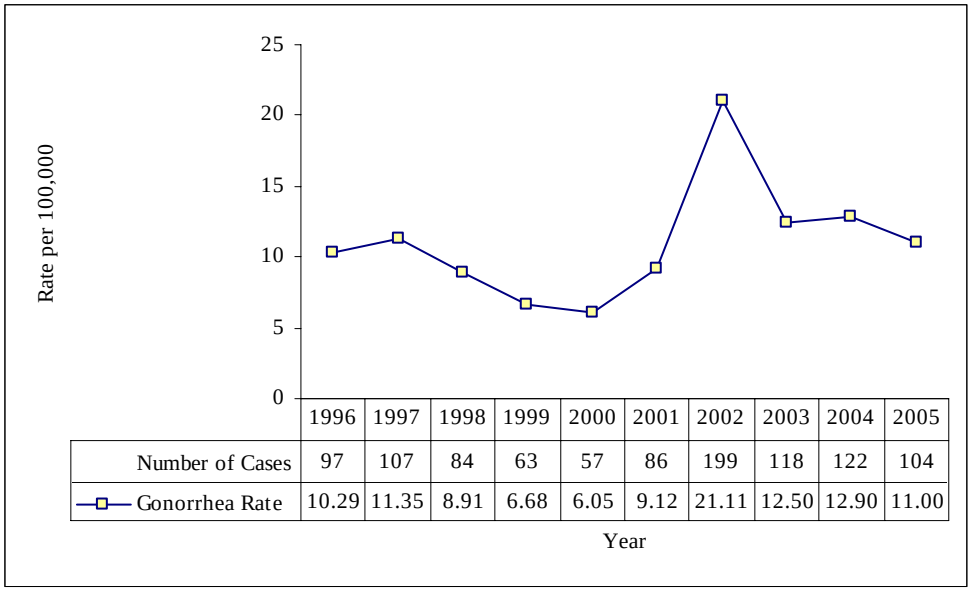
Gonorrhea

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]

In 2002, the incidence of gonorrhea in Nova Scotia peaked at 21 cases per 100,000 population, and has declined to 11 cases per 100,000 population since that year (Figure 35). This sharp peak in incidence may reflect, to some degree, the consolidation of testing in Capital District Health Authority to one site in Halifax that permitted extended hours of testing.

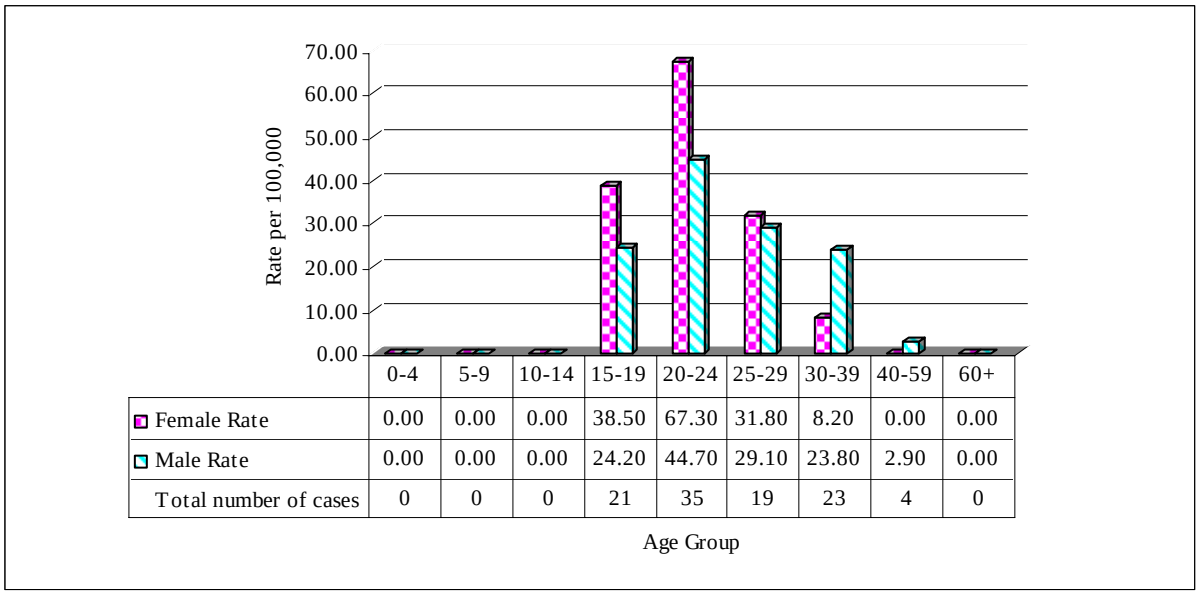
In 2005, 62.5% of reported cases were individuals 15 to 29 years of age and approximately 66% of cases were reported in females. Age-specific incidence was highest in the 20-24 year old age group in 2005. Females 20-24 years of age had an age specific incidence of 67 cases per 100,000 population. The incidence among females 30 years of age or younger was higher than in males of the same age. Conversely, the age-specific incidence among males 30 years of age or older was higher than in females of the same age (Figure 36). DHA9 (Capital) had the highest age-standardized incidence of 21 cases per 100,000 population. Males in DHA9 had an age-standardized incidence of 22.4 cases per 100,000 (Figure 37).

Figure 35: Incidence of Gonorrhea, Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	97	107	84	63	57	86	199	118	122	104
Gonorrhea Rate	10.29	11.35	8.91	6.68	6.05	9.12	21.11	12.50	12.90	11.00

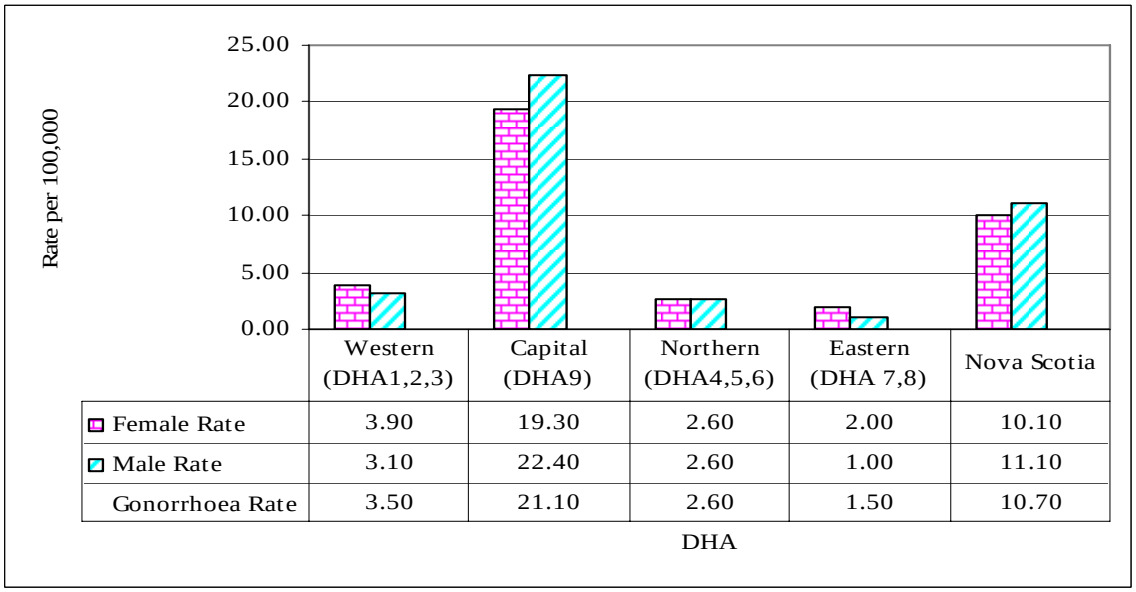
Figure 36: Age specific incidence of Gonorrhea by gender, Nova Scotia, 2005



	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Female Rate	0.00	0.00	0.00	38.50	67.30	31.80	8.20	0.00	0.00
Male Rate	0.00	0.00	0.00	24.20	44.70	29.10	23.80	2.90	0.00
Total number of cases	0	0	0	21	35	19	23	4	0

* In two cases, the age not specified.

Figure 37: Age Standardized incidence of Gonorrhea by gender and District Health Authority (DHA), Nova Scotia, 2005



	Western (DHA1,2,3)	Capital (DHA9)	Northern (DHA4,5,6)	Eastern (DHA 7,8)	Nova Scotia
Female Rate	3.90	19.30	2.60	2.00	10.10
Male Rate	3.10	22.40	2.60	1.00	11.10
Gonorrhoea Rate	3.50	21.10	2.60	1.50	10.70

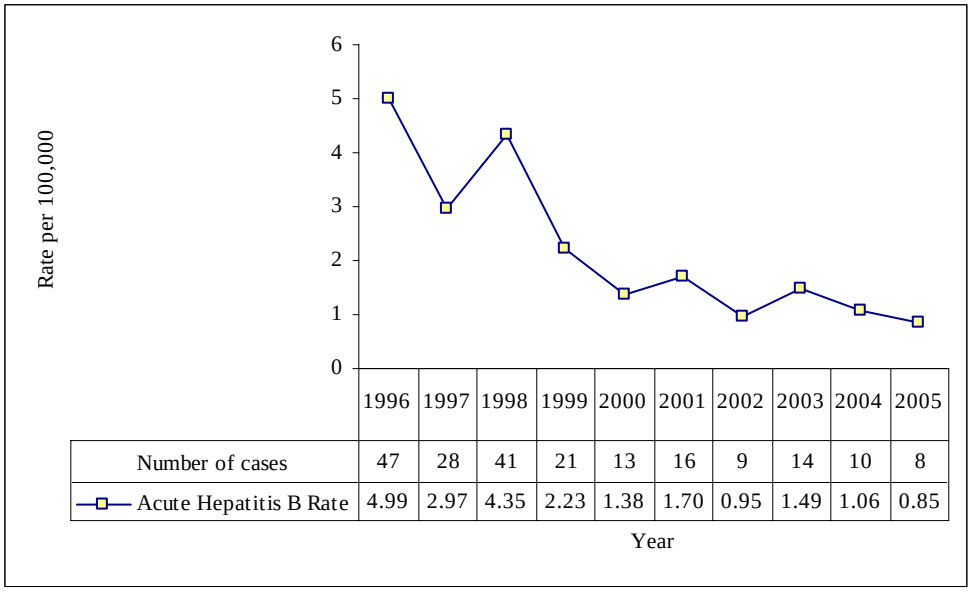
Hepatitis B (Acute / Chronic Carrier)

Hepatitis B is an acute or chronic infection caused by the Hepatitis B virus (HBV). 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; risk is also increased in immunocompromised individuals.[8] HBV may be transmitted sexually, through household contact with an infected individual, perinatally from mother to infant, through injection drug use, and through nosocomial exposure.[5]

The incidence of acute HBV has declined since 1996 to less than one case per 100,000 in 2005 (Figure 38). All cases in 2005 were diagnosed in individuals 25 years of age or older. Chronic HBV peaked at 5.4 cases per 100,000 in 1999 and declined to a rate of 2.2 cases per 100,000 by 2005 (Figure 39).

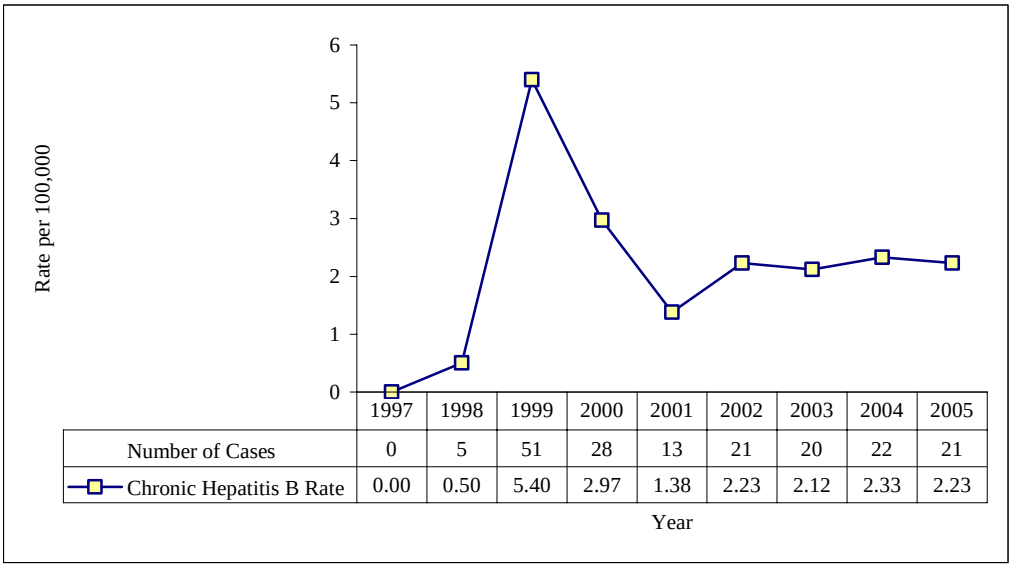
In some populations (e.g., health care workers), the risk of infection may be reduced by providing HBV vaccine. Publicly funded vaccine programs are now offered in all provinces/territories to provide universal immunization against HBV. The age at which children and adolescents are offered the vaccine varies between jurisdictions (Nova Scotia has a school-based program for Grade 4 students).[8]

Figure 38: Incidence of Acute Hepatitis B, Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of cases	47	28	41	21	13	16	9	14	10	8
Acute Hepatitis B Rate	4.99	2.97	4.35	2.23	1.38	1.70	0.95	1.49	1.06	0.85

Figure 39: Incidence of Chronic Hepatitis B, Nova Scotia, 1997–2005



	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	0	5	51	28	13	21	20	22	21
Chronic Hepatitis B Rate	0.00	0.50	5.40	2.97	1.38	2.23	2.12	2.33	2.23

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; however, it is far less efficient than the parenteral route.[5]

Between 1996 and 2005, 3105 cases of HCV were reported in Nova Scotia. As with testing for HIV, 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. The rapid increase in rates in the mid-1990's may reflect the outcome of increased testing through programs implemented in Nova Scotia to identify, contact and advise the recipients of blood and blood products of their potential risk for disease. Since 1997, the number of positive test reports has continued to show an apparent decline to 255 cases reported in 2005 (Figure 40). Sixty-nine percent of cases reported over this 10-year period were diagnosed in males (females 30% and unidentified gender in 1%). The greatest number of positive tests (90) was reported for males 40-59 years of age in 2005 (Figure 41). District Health Authorities 7 and 8 (Eastern) had the highest age-standardized rate of positive test reports in 2005 at 47.5 per 100,000 population (Figure 42).

Sixty four percent of reported cases during 1996-2005 had follow-up risk factor information provided. Of these 1989 cases, injection drug use (IDU) was identified as a risk factor in 60%, receipt of tattoos in 38%, blood transfusion in 24% and sharing needles was reported as a risk factor in 34% of cases. Sexual risk factors were not included in this analysis. Risk factors are not mutually exclusive with many cases reporting more than one risk factor.

Figure 40: Number of Hepatitis C positive test reports, Nova Scotia, 1996-2005

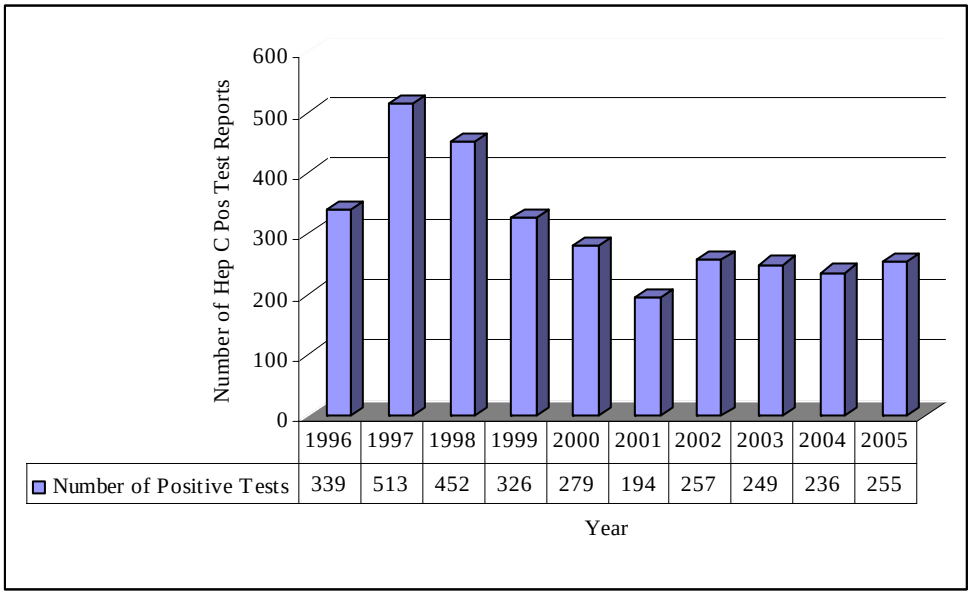
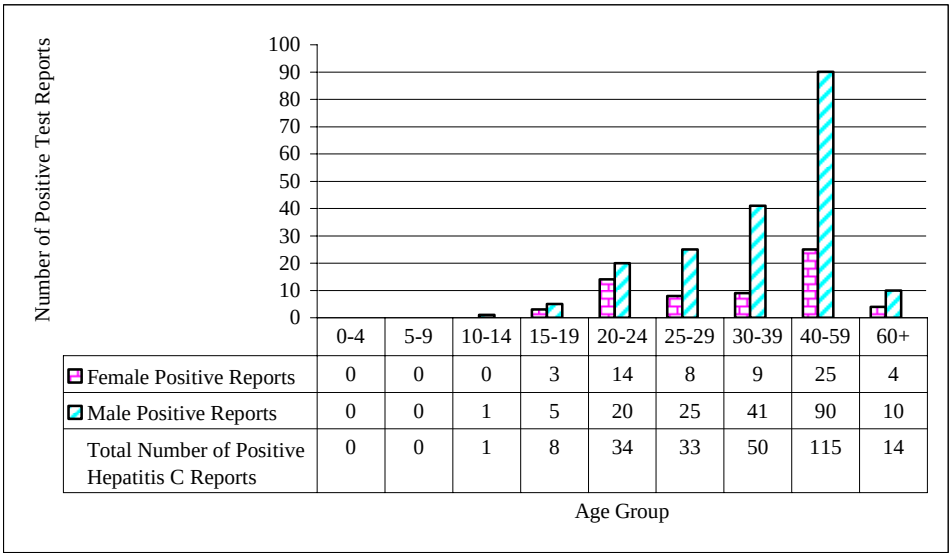
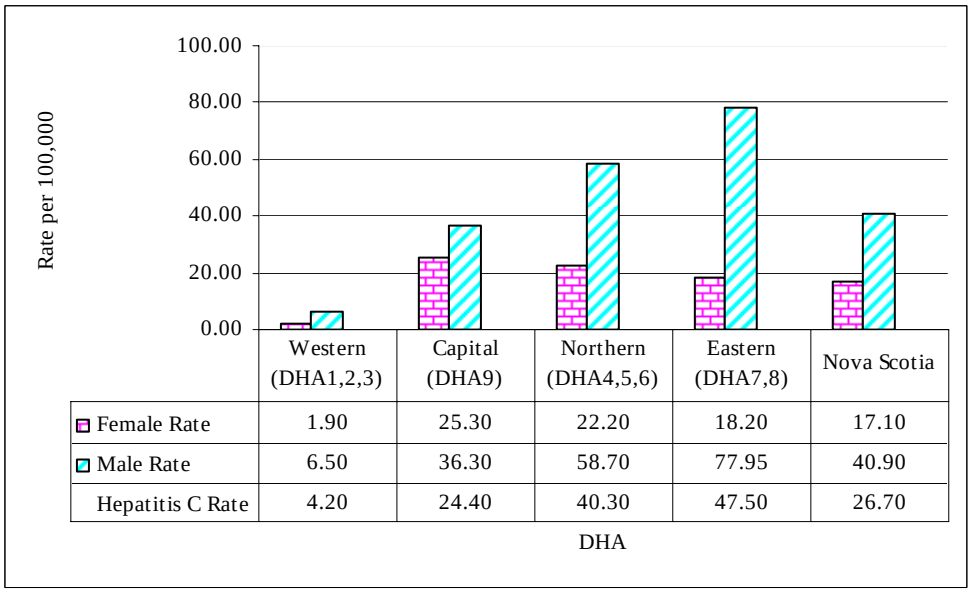


Figure 41: Number of Hepatitis C positive test reports by age group and gender, Nova Scotia, 2005



	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Female Positive Reports	0	0	0	3	14	8	9	25	4
Male Positive Reports	0	0	1	5	20	25	41	90	10
Total Number of Positive Hepatitis C Reports	0	0	1	8	34	33	50	115	14

Figure 42: Age standardized rate of Hepatitis C positive test reports by District Health Authority (DHA), Nova Scotia, 2005



	Western (DHA1,2,3)	Capital (DHA9)	Northern (DHA4,5,6)	Eastern (DHA7,8)	Nova Scotia
Female Rate	1.90	25.30	22.20	18.20	17.10
Male Rate	6.50	36.30	58.70	77.95	40.90
Hepatitis C Rate	4.20	24.40	40.30	47.50	26.70

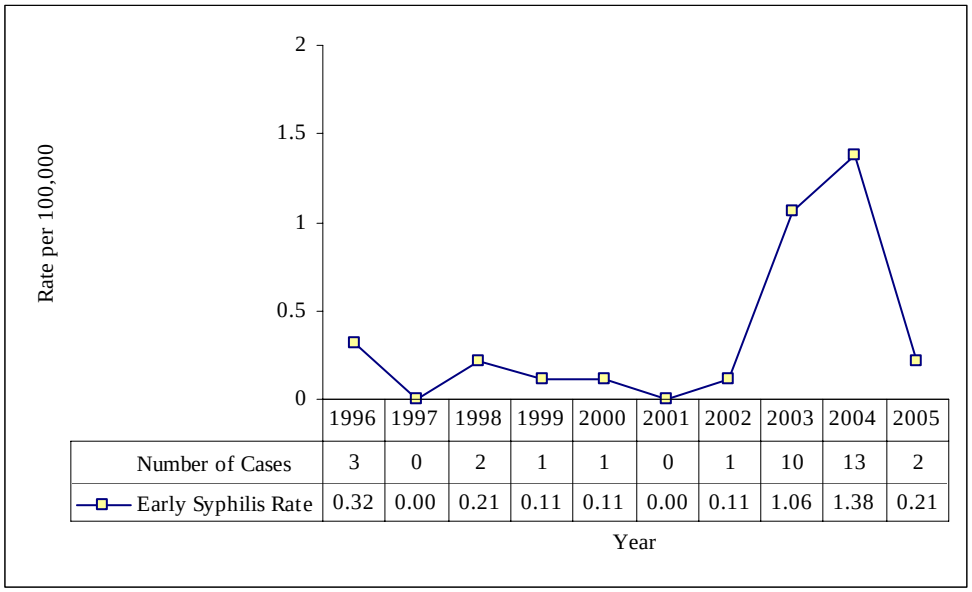
Syphilis

Syphilis is a bacterial infection that may be acute or chronic 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 incidence of early syphilis (primary and secondary syphilis) between 1996 and 2005 in Nova Scotia was relatively stable at less than one case per 100,000 population, with the exception of 2003 and 2004. Other parts of Canada were experiencing similar trends. Most outbreaks have been related to the sex trade and in men who have sex with men. The decline in 2005 may be due in part to the extensive efforts put forward by public health with key partners.[19]

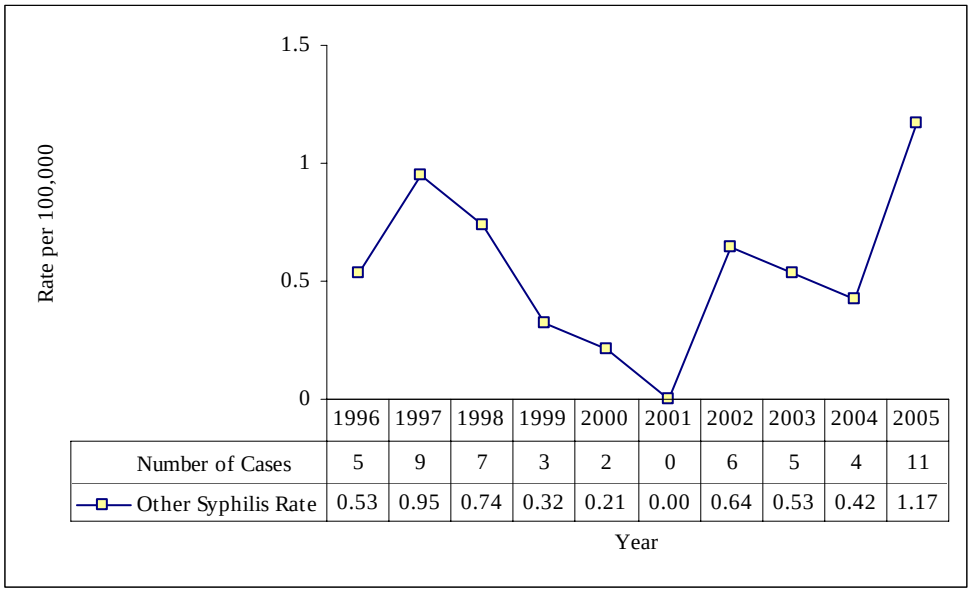
The incidence of "other" syphilis was low at less than one case per 100,000 between 1996 and 2004 (Figure 44). In 2005, the rate was 1.2 cases per 100,000 population (Figure 44).

Figure 43: Incidence of Early Syphilis, Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	3	0	2	1	1	0	1	10	13	2
Early Syphilis Rate	0.32	0.00	0.21	0.11	0.11	0.00	0.11	1.06	1.38	0.21

Figure 44: Incidence of Syphilis (Other), Nova Scotia 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	5	9	7	3	2	0	6	5	4	11
Other Syphilis Rate	0.53	0.95	0.74	0.32	0.21	0.00	0.64	0.53	0.42	1.17

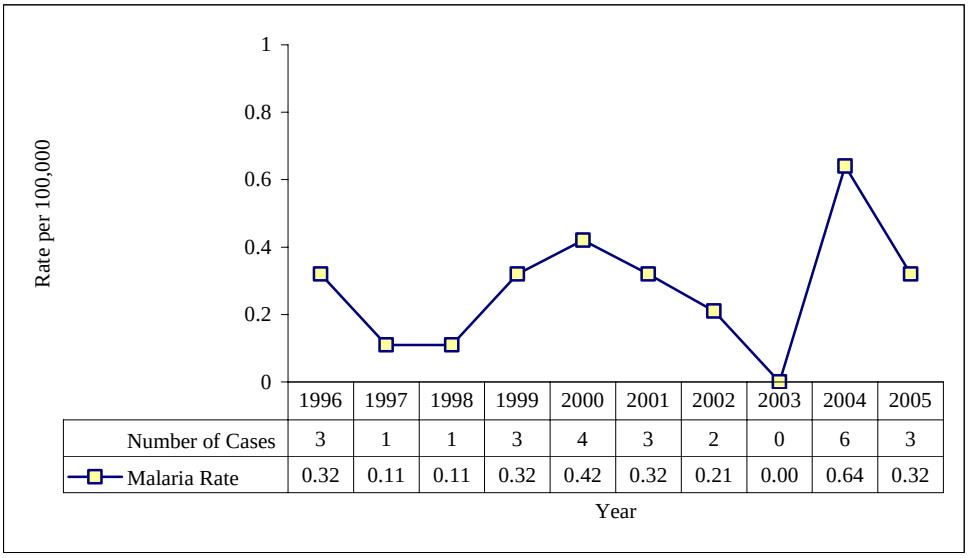
Section V: Vectorborne and Other Zoonotic Diseases

Malaria

Malaria is a parasitic disease caused by four human malarial parasites: *Plasmodium vivax*, *P. malariae*, *P. falciparum* and *P. ovale*. The most serious infection is falciparum malaria; the other forms 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 the use of contaminated needles or syringes (injection drug users) may also transmit the infection. Although congenital transmission is rare, stillbirth from mothers who have been infected is common.[5]

Incidence of malaria in Nova Scotia has been exceedingly low with less than one case per 100,000 population between 1996 and 2005. These cases were travel-related (Figure 45).

Figure 45: Incidence of Malaria, Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	3	1	1	3	4	3	2	0	6	3
Malaria Rate	0.32	0.11	0.11	0.32	0.42	0.32	0.21	0.00	0.64	0.32

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 from months to years.[5]

There have been four cases of Lyme disease in Nova Scotia that were likely acquired in the province. Two of these cases were reported in 2002, the third in 2004, and the fourth in 2005, all from Lunenburg County. Cases have also been reported that were acquired during travel. There were five such reported cases in 2004, acquired in Europe or New England.

West Nile Virus

The West Nile Virus (WNv) is transmitted by mosquitoes that become infected by feeding on the blood of birds carrying the virus. The virus was initially isolated in 1937 in the West Nile province of Uganda and outbreaks have occurred in areas 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 the 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]

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. In 2004, although surveillance activities were similar to those conducted in 2003, no WNv was detected in the province (testing of humans, dead birds, horses and mosquitoes). In 2005, all dead birds, mosquito pools, and horses tested for WNv were negative. Four human specimens were confirmed to be WNv positive but only one was a resident of Nova Scotia and was believed to have acquired the infection as a result of travel outside of the province. The other three positives were not Nova Scotians and were likely exposed in their home provinces/states.

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 and Manitoba. 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 2005, however a cat positive for rabies was reported in 2003.[16]

Despite the large numbers of cases of animal rabies, 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]

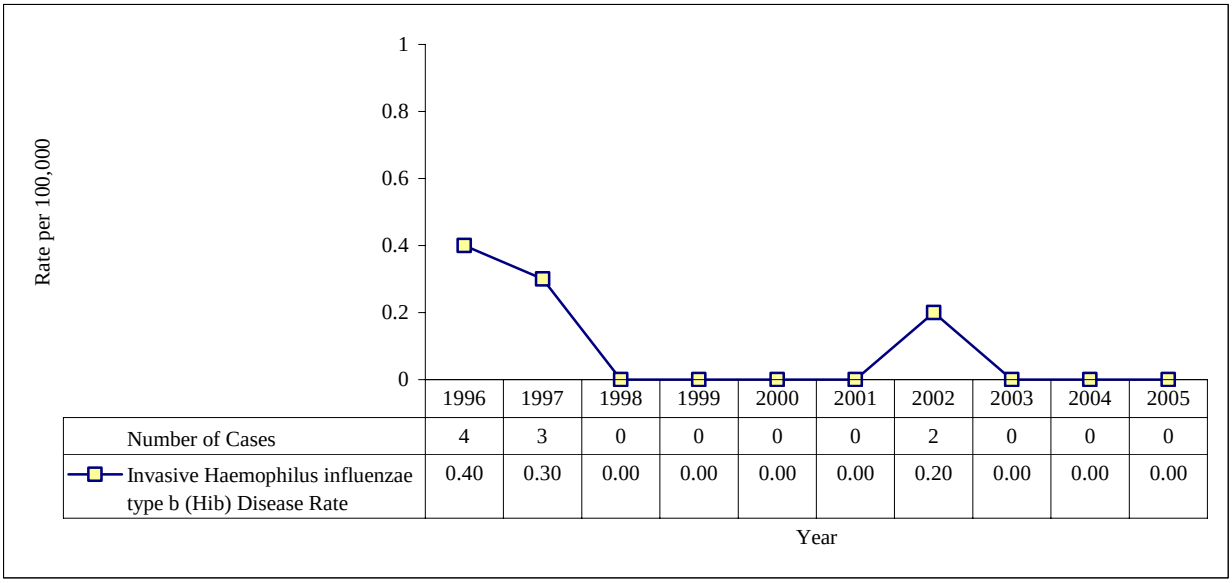
Section VI: Diseases Preventable by Routine Vaccination

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% to 65% of those children affected had meningitis while 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. An estimated 2000 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]

Since 1996, the rate of *Haemophilus influenzae* b has been extremely low at less than one case per 100,000 population (Figure 46).

Figure 46: Incidence of Invasive *Haemophilus influenza* type b (Hib) disease, Nova Scotia, 1996-2005



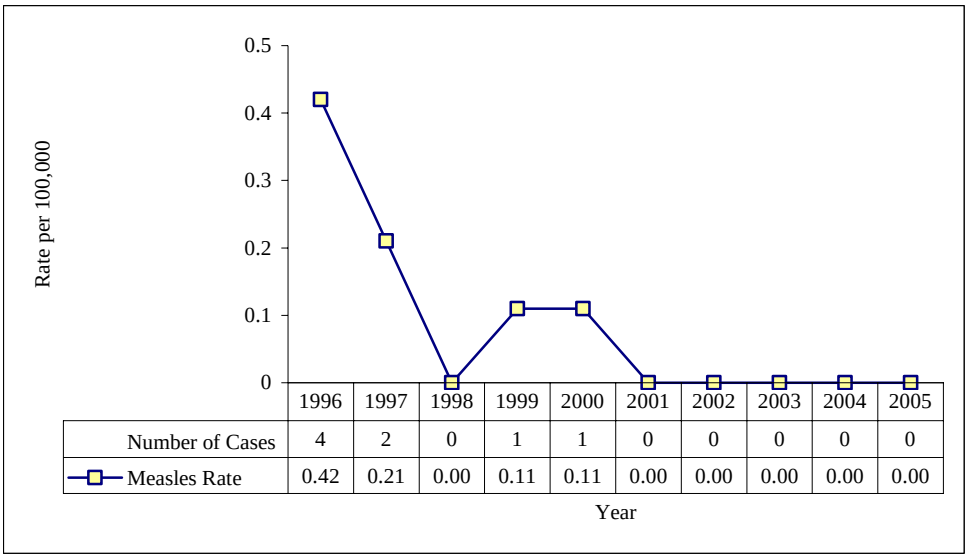
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	4	3	0	0	0	0	2	0	0	0
Invasive Haemophilus influenzae type b (Hib) Disease Rate	0.40	0.30	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00

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. The occurrence was cyclical with the incidence increasing every two to three years. Immunization for measles in Canada will continue to be necessary until the disease has been eliminated globally.[8]

The incidence of measles in Nova Scotia since 1996 has been very low with less than one case per 100,000 population reported (Figure 47). No cases were reported in 1998 and between 2001 and 2005.

Figure 47: Incidence of Measles, Nova Scotia, 1996-2005



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	4	2	0	1	1	0	0	0	0	0
Measles Rate	0.42	0.21	0.00	0.11	0.11	0.00	0.00	0.00	0.00	0.00

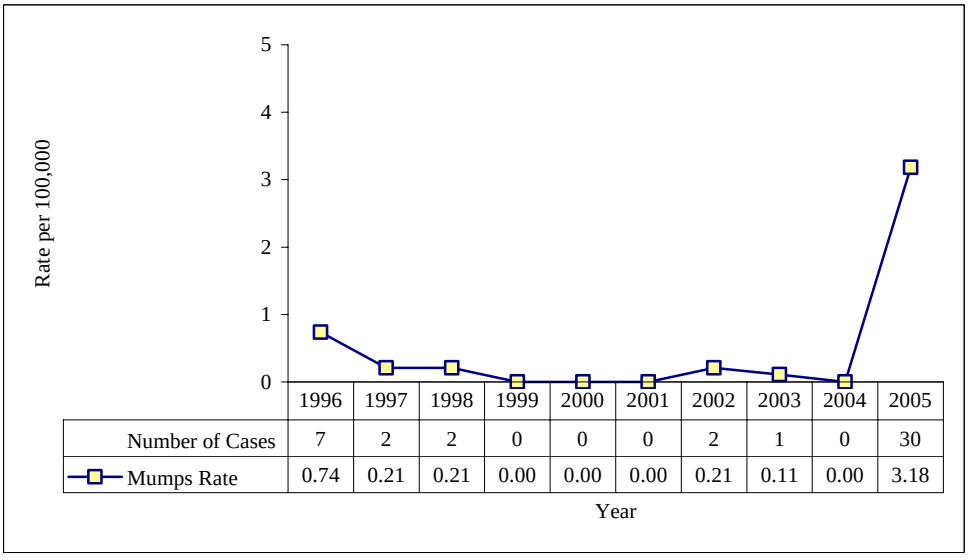
Mumps

Mumps or infectious parotitis is an acute viral disease transmitted through the air, by droplet spread or 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]

Less than one case of mumps per 100,000 population was reported between 1996 and 2004 with no cases reported between 1999 and 2001 (Figure 48). In 2005, there was a rapid increase in the incidence of mumps to a rate of 3.2 cases per 100,000 population. This was the result of two mumps outbreaks reported in the Capital District Health Authority (Halifax, Nova Scotia) between May 2005 and January 2006. The first reported outbreak occurred between May and 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 had received two doses of MMR while four had received only one dose.

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

Figure 48: Incidence of Mumps, Nova Scotia, 1996-2005



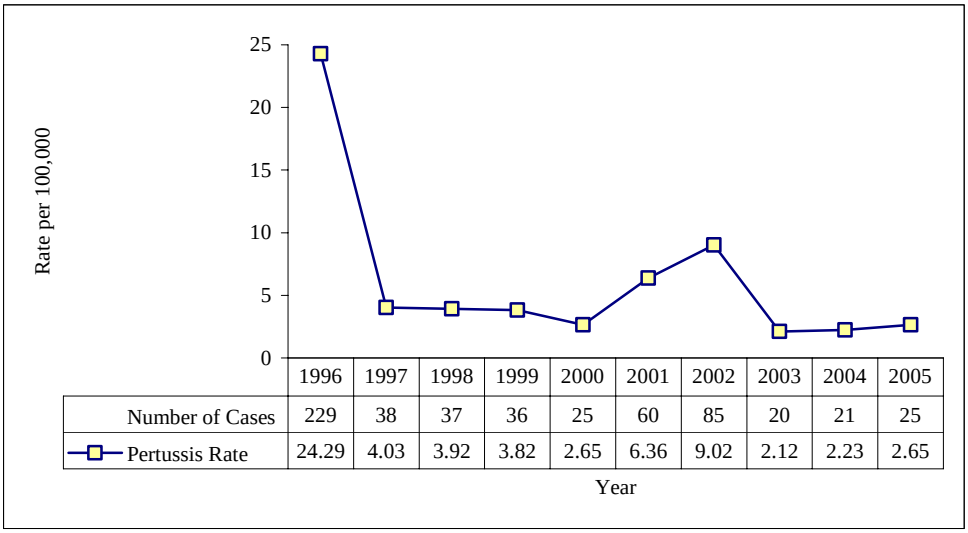
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	7	2	2	0	0	0	2	1	0	30
Mumps Rate	0.74	0.21	0.21	0.00	0.00	0.00	0.21	0.11	0.00	3.18

Pertussis

Pertussis or whooping cough is a communicable acute bacterial respiratory infection caused by *Bordetella pertussis*. Transmission is commonly by airborne 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 among young infants. The reduction of incidence and morbidity of the infection among young children, therefore, is important. Although the incidence has declined by more than 90% in Canada, outbreaks still occur.[8]

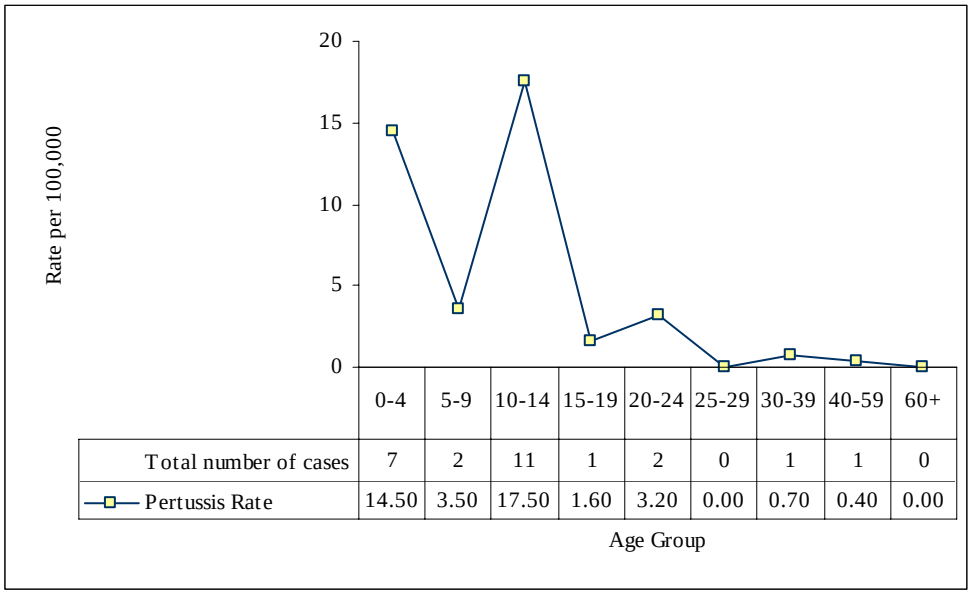
Following a peak in incidence in 1995 (43 cases per 100,000), the rate of newly diagnosed cases of pertussis in NS has declined dramatically (Figure 49). In 2005, 80% percent of reported cases were in children 14 years of age and less and the highest age-specific incidence was in children 0-4 and 10-14 years of age (Figure 50). The highest age-standardized incidence occurred in Capital District Health Authority (DHA 9) (Figure 51).

Figure 49: Incidence of Pertussis, Nova Scotia, 1996-2005



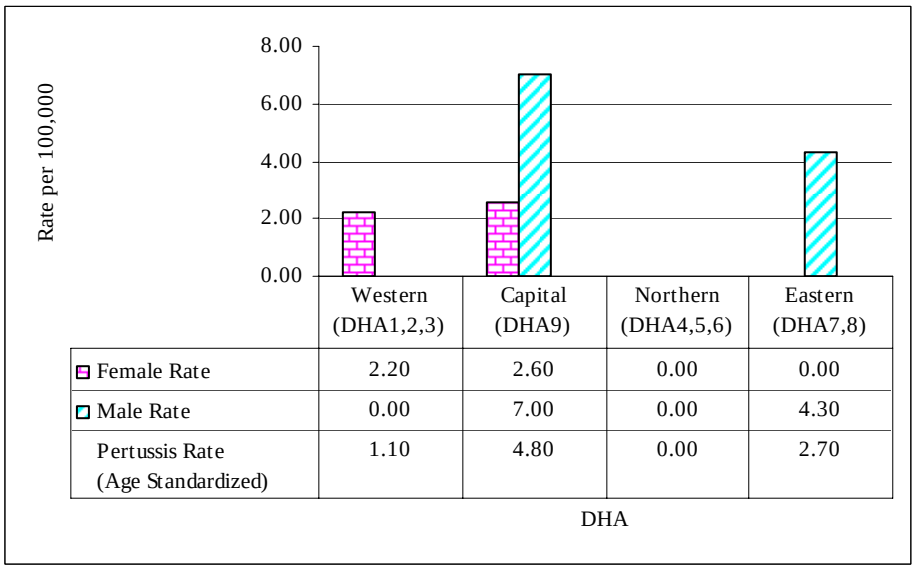
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	229	38	37	36	25	60	85	20	21	25
Pertussis Rate	24.29	4.03	3.92	3.82	2.65	6.36	9.02	2.12	2.23	2.65

Figure 50: Age Specific incidence of Pertussis cases by age group, Nova Scotia, 2005



	0-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Total number of cases	7	2	11	1	2	0	1	1	0
Pertussis Rate	14.50	3.50	17.50	1.60	3.20	0.00	0.70	0.40	0.00

Figure 51: Age Standardized incidence of Pertussis by District Health Authority (DHA), Nova Scotia, 2005



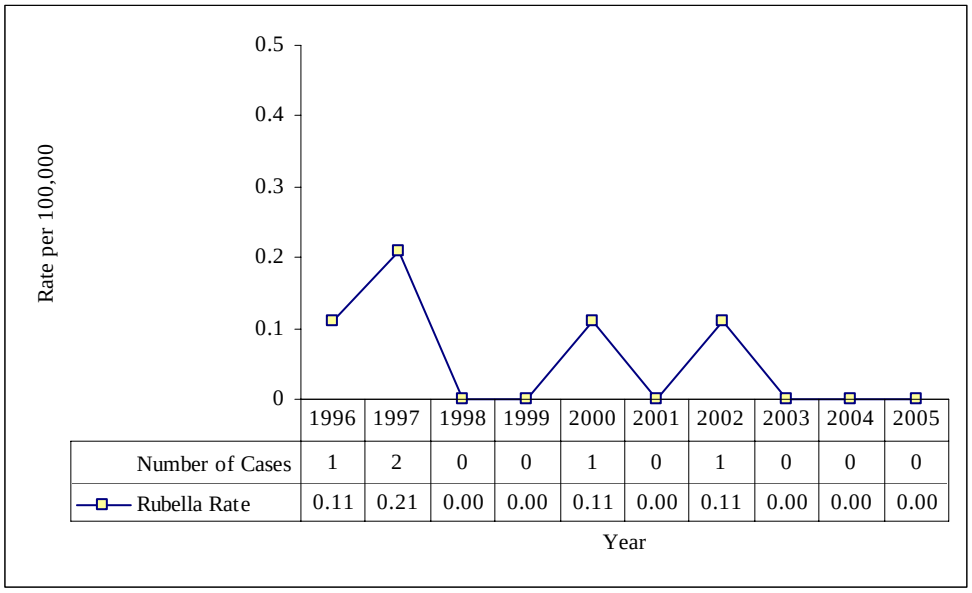
	Western (DHA1,2,3)	Capital (DHA9)	Northern (DHA4,5,6)	Eastern (DHA7,8)
Female Rate	2.20	2.60	0.00	0.00
Male Rate	0.00	7.00	0.00	4.30
Pertussis Rate (Age Standardized)	1.10	4.80	0.00	2.70

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 at infants was introduced in Canada in April 1983. The main goal of rubella immunization is the prevention of infection in pregnancy and thus, the prevention of congenital rubella syndrome (CRS).[5,8]

The incidence of rubella in Nova Scotia since 1996 has remained below one case per 100,000 population. No new cases were reported between 2003 and 2005 (Figure 52).

Figure 52: Incidence of Rubella, Nova Scotia, 1996-2005



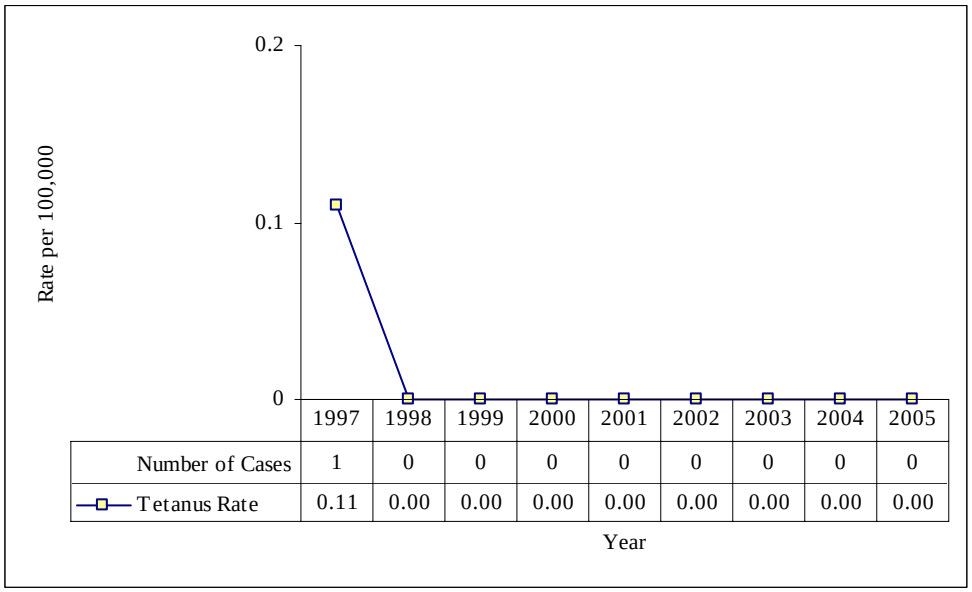
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	1	2	0	0	1	0	1	0	0	0
Rubella Rate	0.11	0.21	0.00	0.00	0.11	0.00	0.11	0.00	0.00	0.00

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. Although it is worldwide in occurrence, it is sporadic and usually uncommon in industrialized countries. 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]

No cases of tetanus have been reported in Nova Scotia since 1997 (Figure 53).

Figure 53: Incidence of Tetanus, Nova Scotia, 1997-2005



	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	1	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

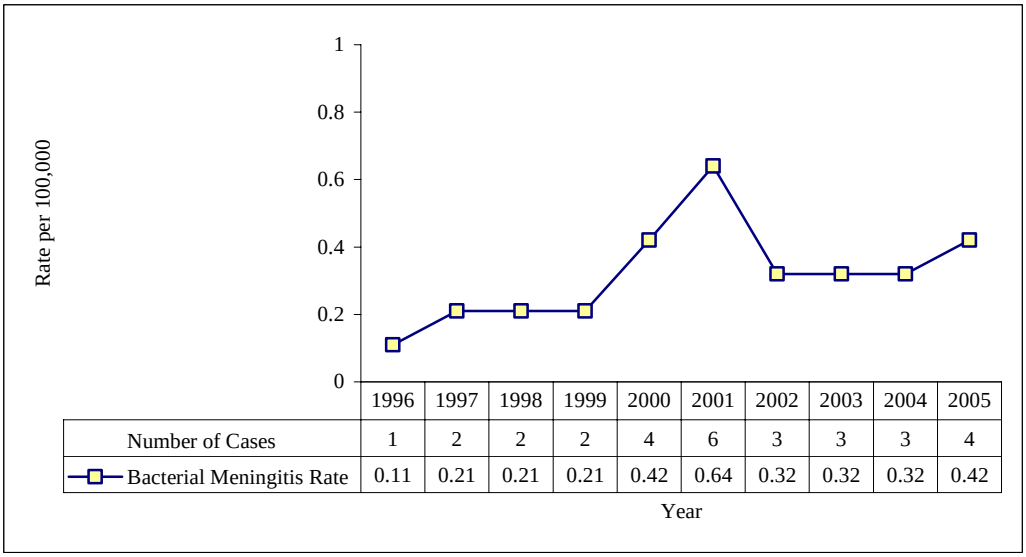
Section VII: Other Diseases

Bacterial Meningitis

The most common agents causing bacterial meningitis as of the late 1990s were *Neisseria meningitidis* and *Streptococcus pneumoniae*. In the United States, *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]

The incidence of bacterial meningitis (caused by other than *N. meningitidis, S. pneumoniae,* and *Haemophilus influenzae* b) has remained consistently low in Nova Scotia since 1996 at less than one case per 100,000 population (Figure 54).

Figure 54: Incidence of Bacterial Meningitis, Nova Scotia, 1996-2005



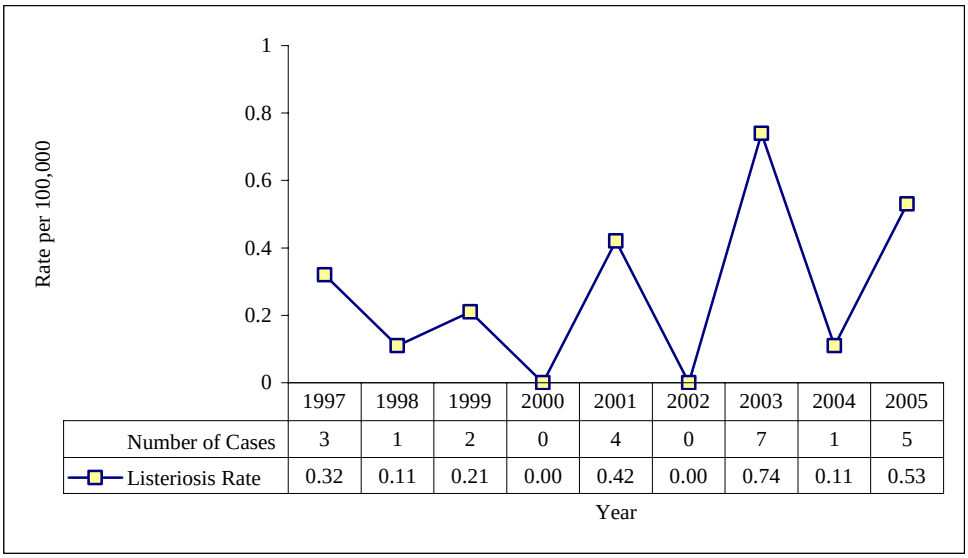
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	1	2	2	2	4	6	3	3	3	4
Bacterial Meningitis Rate	0.11	0.21	0.21	0.21	0.42	0.64	0.32	0.32	0.32	0.42

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 delivery 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 55).

Figure 55: Incidence of Listeriosis, Nova Scotia, 1997-2005



	1997	1998	1999	2000	2001	2002	2003	2004	2005
Number of Cases	3	1	2	0	4	0	7	1	5
Listeriosis Rate	0.32	0.11	0.21	0.00	0.42	0.00	0.74	0.11	0.53

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Appendices

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

Table 12: Number of reported cases, crude and age standardized rates for Campylobacteriosis by District Health Authority (DHA), Nova Scotia, 2005

	Campylobacteriosis			
DHA	**Number of Reported Cases**	**% of Total for Nova Scotia**	**Crude Rate***	**Age-Standardized Rate****
1,2,3 (Western)	34	27.2	16.1	15.6
4,5,6 (Northern)	17	13.6	10.9	10.9
7,8 (Eastern)	17	13.6	9.3	8.3
9 (Capital)	57	45.6	14.6	14.5
Nova Scotia	125	100.0	13.3	13.1

*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 13: Number of reported cases, crude, and age standardized rates for Salmonellosis by District Health Authority (DHA), Nova Scotia, 2005

	Salmonellosis			
DHA	**Number of Reported Cases**	**% of Total for Nova Scotia**	**Crude Rate***	**Age-Standardized Rate****
1,2,3 (Western)	40	33.0	18.9	19.7
4,5,6 (Northern)	14	11.6	9.0	9.1
7,8 (Eastern)	22	18.2	12.0	12.3
9 (Capital)	45	37.2	11.5	11.8
Nova Scotia	121	100.0	12.8	12.9

*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 14: Number of reported cases, crude, and age standardized rates for Giardiasis by District Health Authority (DHA), Nova Scotia, 2005

	Giardiasis			
DHA	**Number of Reported Cases**	**% of Total for Nova Scotia**	**Crude Rate***	**Age-Standardized Rate****
1,2,3 (Western)	17	15.7	8.1	8.0
4,5,6 (Northern)	9	8.3	5.8	5.6
7,8 (Eastern)	17	15.8	9.3	8.5
9 (Capital)	65	60.2	16.6	16.4
Nova Scotia	108	100.0	11.5	11.3

*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 15: Number of reported cases, crude, and age standardized rates for Verotoxigenic *E. coli* infection by District Health Authority (DHA), Nova Scotia, 2005

	Verotoxigenic *E. coli*			
DHA	**Number of Reported Cases**	**% of Total for Nova Scotia**	**Crude Rate***	**Age-Standardized Rate****
1,2,3 (Western)	2	14.3	0.9	0.9
4,5,6 (Northern)	7	50.0	4.5	4.3
7,8 (Eastern)	-	-	-	-
9 (Capital)	5	35.7	1.3	1.3
Nova Scotia	14	100.0	1.5	1.5

*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 16: Number of reported cases of Methicillin Resistant *Staphylococcus aureus* (MRSA) by age group and gender, Nova Scotia, 2005.

	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+	N.S*	Total
Female	0	2	0	6	5	4	4	19	49	278	2	369
Male	0	1	1	2	9	4	7	14	59	289	1	387
Unknown	0	0	0	0	0	0	0	0	0	3	0	3
Total	0	3	1	8	14	8	11	33	108	570	3	759

* Age not specified

Table 17: Number of reported cases, crude, and age standardized rates for Methicillin Resistant *Staphylococcus aureus* (MRSA) by District Health Authority (DHA), Nova Scotia, 2005.

	MRSA			
DHA	Number of Reported Cases	% of Total for Nova Scotia	Crude Rate*	Age-Standardized Rate**
1,2,3 (Western)	148	19.5	70.1	60.6
4,5,6 (Northern)	175	23.1	111.9	102.3
7,8 (Eastern)	75	9.9	40.8	38.1
9 (Capital)	361	47.5	92.2	103.0
Nova Scotia	759	100.00	80.5	78.2

*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 18: Number of reported HIV positive reports, Nova Scotia and Prince Edward Island, 1985-2005 [4]

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

Nova Scotia and Prince Edward Island	1985-1999	2000	2001	2002	2003	2004	2005	Total
	575	16	15	16	19	33	16	690

Table 19: Number of reported HIV positive test reports by gender, Nova Scotia and Prince Edward Island, November 1, 1985 to December 31, 2005 [4]

(Total includes test reports for which age-group not reported).

Nova Scotia and Prince Edward Island	Number of HIV-Positive Tests		
	Male	Female	Total
	580	98	678

Table 20: Number of reported HIV positive test reports, by exposure category, Nova Scotia and Prince Edward Island, January 1, 2005 to December 31, 2005

Exposure Category	Nova Scotia and Prince Edward Island
MSM	7
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	1
b) sexual contact with person at risk	1
c) NIR-Het: no identified risk heterosexual	1
Perinatal Transmission	0
Other	0
NIR: no identified risk	1
Not Reported	0
Total	**16**

Table 21: Number of reported AIDS cases, Nova Scotia and Prince Edward Island, 1979-2005[4]

	1979-1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
Nova Scotia and Prince Edward Island	234	19	11	12	11	9	4	6	7	8	5	326

Table 22: Number of reported AIDS cases by gender, Nova Scotia and Prince Edward Island, 1979-2005 [4]

	Number of Reported AIDS Cases		
Nova Scotia and Prince Edward Island	Male	Female	Total
	299	27	326

Table 23: Number of reported AIDS cases by exposure category, Nova Scotia and Prince Edward Island, January 1, 2005 to December 31, 2005

Exposure Category	Nova Scotia and Prince Edward Island
MSM	231
MSM/IDU	11
IDU	17
Recipient of Blood/Blood Products	
a) Recipient of Blood	10
b) Recipient of Clotting Factor	9
Heterosexual Contact	
a) origin from HIV-Endemic country	11
b) sexual contact with person at risk	27
c) NIR-Het: no identified risk heterosexual	7
Occupational Exposure	0
Perinatal Transmission	0
Other	0
NIR: no identified risk	3
Total	326

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 24: Reported number of new cases of *Chlamydia trachmatis* by age, gender, District Health Authority (DHA), Nova Scotia, 2005

DHA	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	85	31	16	4	0	0	222
	Male	0	0	0	14	31	16	10	3	0	1	75
	Total	0	0	0	100	116	47	26	7	0	1	**297**
4,5,6 (Northern)	Female	0	0	3	53	67	17	11	1	2	0	154
	Male	0	0	0	11	15	12	3	2	0	1	44
	Total	0	0	3	64	82	29	14	3	2	1	**198**
7,8 (Eastern)	Female	0	0	0	69	77	20	9	1	0	1	177
	Male	0	0	0	7	25	5	7	1	0	0	45
	Total	0	0	0	76	102	25	16	2	0	1	**222**
9 (Capital)	Female	1	1	5	203	317	127	44	12	0	1	711
	Male	0	0	0	41	134	70	48	11	1	1	306
	Unkn	0	0	0	2	0	0	0	0	0	9	11
	Total	1	1	5	246	451	197	92	23	1	11	**1028**
Nova Scotia	Female	1	1	8	411	546	195	80	18	2	2	1264
	Male	0	0	0	73	205	103	68	17	1	3	470
	Unkn	0	0	0	2	0	0	0	0	0	9	11
	Total	1	1	8	486	751	298	148	35	3	14	**1745**

(N.SP. = not specified; Unkn=unknown)

Table 25: Age and gender specific, crude and age standardized* rates per 100,000 of *Chlamydia trachomatis* by District Health Authority (DHA), Nova Scotia, 2005

*Rates adjusted to the age distribution of the 2001 census population of Canada.

	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	0.0	0.0	1239.2	1300.7	541.5	104.0	13.0	0.0	207.5	217.5
	Male	0..0	0.0	0.0	194.9	464.9	276.0	63.4	9.8	0.0	72.0	75.2
	Total	0.0	0.0	0.0	708.0	878.6	407.9	83.5	11.4	0.0	140.7	147.6
4,5,6 (Northern)	Female	0.0	0.0	59.9	989.7	1402.7	347.4	97.7	4.5	11.7	194.2	209.9
	Male	0.0	0.0	0.0	186.9	284.3	258.4	27.1	8.7	0.0	57.1	55.5
	Total	0.0	0.0	28.9	569.3	815.5	304.1	62.7	6.6	6.6	126.6	126.0
7,8 (Eastern)	Female	0.0	0.0	0.0	1008.3	1189.7	399.8	74.2	3.7	0.0	187.7	179.2
	Male	0.0	0.0	0.0	96.8	393.3	97.4	61.4	3.7	0.0	50.3	49.9
	Total	0.0	0.0	0.0	540.0	795.1	246.6	68.0	3.7	0.0	120.8	115.9
9 (Capital)	Female	9.5	8.5	39.6	1687.0	2361.9	802.7	128.7	20.9	0.0	354.7	340.5
	Male	0.0	0.0	0	321.4	1027.0	457.5	144.0	19.9	4.1	160.2	149.4
	Total	4.6	4.1	19.2	992.4	1703.9	633.0	136.3	20.4	1.7	262.6	248.0
Nova Scotia	Female	4.2	3.6	26.1	1318.5	1749.6	620.2	109.7	13.0	2.1	262.8	261.8
	Male	0.0	0.0	0.0	220.8	653.9	333.6	95.0	12.5	1.4	101.8	99.2
	Total	2.1	1.8	12.7	756.7	1200.5	478.2	102.4	12.8	1.8	**185.1**	**181.1**

Gonorrhea

Table 26: Reported number cases of Gonorrhea by gender and age group, Nova Scotia, 2005

	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+	N.S*	Total
Female	0	0	0	0	12	21	10	6	0	0	1	50
Male	0	0	0	0	8	14	9	17	4	0	1	53
Unspecified	0	0	0	0	1	0	0	0	0	0	0	1
Total	0	0	0	0	21	35	19	23	4	0	2	**104**

*** Age not specified**

Table 27: Reported number cases of Gonorrhea, crude and age standardized rates by District Health Authority (DHA), Nova Scotia, 2005

DHA	Number of Reported Cases	% of Total for Nova Scotia	Crude Rate *	Age-Standardized Rate **
1, 2, 3 (Western)	7	6.7	3.3	3.5
4, 5, 6 (Northern)	5	4.8	3.2	2.6
7, 8 (Eastern)	3	2.9	1.6	1.5
9 (Capital)	89	85.6	22.7	21.1
Nova Scotia	**104**	100.0	11.0	10.7

*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 28: Reported number cases of Hepatitis C by age group and gender, Nova Scotia, 2005

	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+	Total
Female	-	-	-	-	3	14	8	9	25	4	63
Male	-	-	-	1	5	20	25	41	90	10	192
Total	-	-	-	1	8	34	33	50	115	14	255

Table 29: Reported number cases of Hepatitis C, crude, age standardized rates by District Health Authority (DHA), Nova Scotia, 2005

	Hepatitis C			
DHA	Number of Reported Cases	% of Total for Nova Scotia	Crude Rate*	Age-Standardized Rate**
1, 2, 3 (Western)	9	3.5	4.3	4.2
4, 5, 6 (Northern)	62	24.3	39.6	40.3
7, 8 (Eastern)	85	33.3	46.3	47.5
9 (Capital)	99	38.9	25.3	24.4
Nova Scotia	255	100	27.1	26.7

*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.