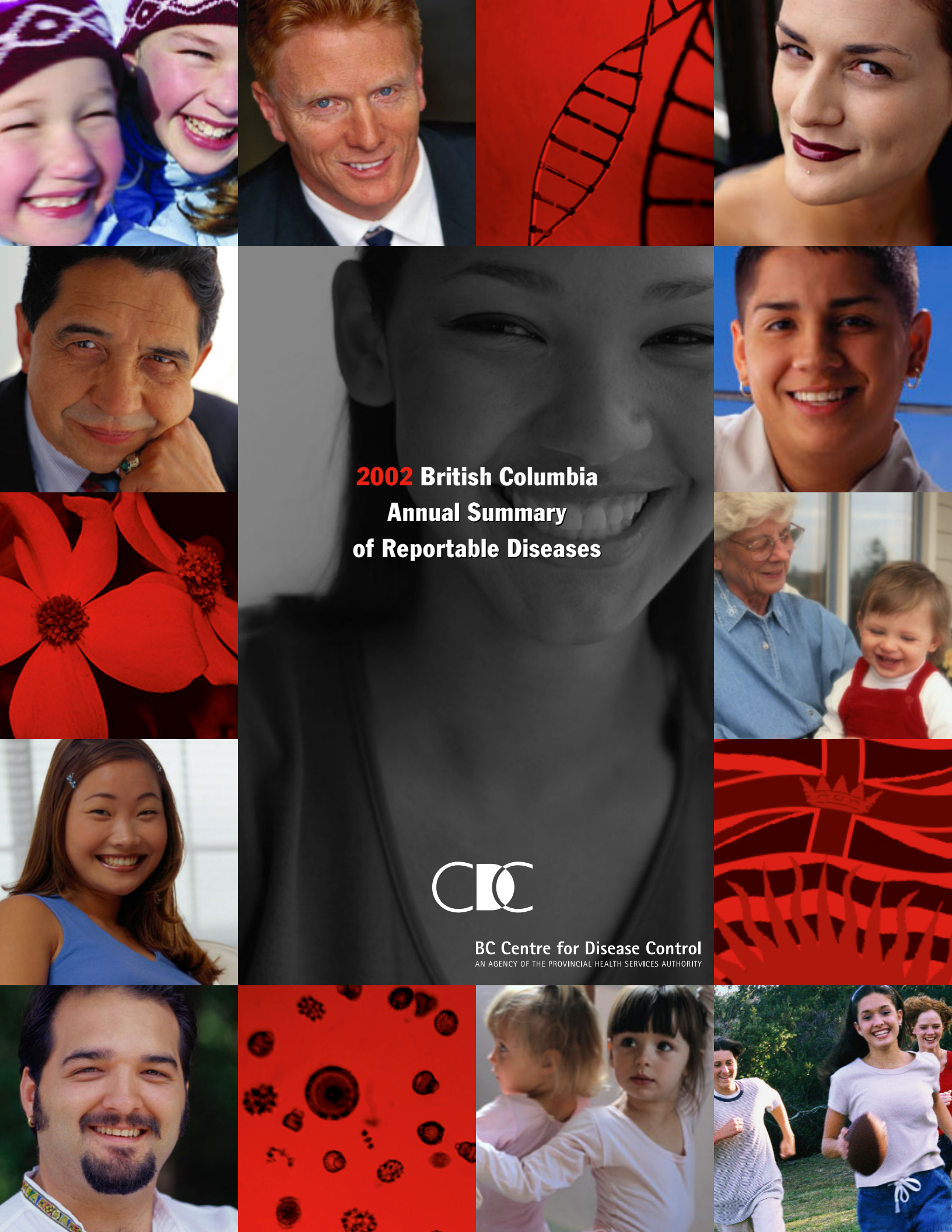


2002 British Columbia Annual Summary of Reportable Diseases

BC Centre for Disease Control

AN AGENCY OF THE PROVINCIAL HEALTH SERVICES AUTHORITY

BC Centre for Disease Control
AN AGENCY OF THE PROVINCIAL HEALTH SERVICES AUTHORITY

Above photo: BC Centre for Disease Control - 655 West 12th Avenue, Vancouver BC, V5Z 4R4
Date of publication: January 19, 2004

Contents

2002

Executive Summary

Three services at BCCDC collaborate with laboratories in tracking communicable diseases. Communicable Disease Epidemiology Services, STD/HIV Control and TB Control have contributed to this combined report. Reportable diseases are organized under the heading of vaccine preventable diseases, invasive bacterial diseases, sexually transmitted and blood borne pathogens and enteric, zoonotic and vector-borne diseases.

Vaccine Preventable Diseases

Seven cases of invasive ***Haemophilus influenzae*** **type b (Hib)** disease were reported in 2002. Rates have been low since the introduction of the infant conjugate Hib vaccine program in 1993. Three of the cases occurred in children under 5 years of age: one in a one month old infant and two in older unimmunized infants.

The rate of acute **hepatitis B** in British Columbia fell to 1.8 per 100,000 population in 2002. 2002 was the second year during which no cases of acute hepatitis B were reported in the 12-20 year age-group.

Influenza:

- The peak of ILI activity occurred later than expected, possibly because of milder weather conditions.
- Eight ILI outbreaks in long term care facilities and 231 outbreaks in schools were reported during the season. Only one outbreak in a LTCF was confirmed influenza A and several ILI outbreaks in schools were confirmed influenza B.
- Of 2191 respiratory specimens received up to week 29, 9.8% tested positive for influenza B, 8.2% for influenza A, 8.7% for RSV and 1.5% for other viruses.
- All viruses identified were closely related to the season's vaccine strains.

A total of 5 confirmed cases of **measles** were reported through the enhanced surveillance program. No cases were recognized to be associated with other Canadian cases.

Six cases of **mumps** were reported in 2002 for a rate of 0.2 per 100,000, the lowest rate recorded in BC and one-quarter of the national rate reported for that year.

The rate of reporting of **pertussis** in 2002 was virtually identical to that of the year before at 15.5 per 100,000 population. The previously noted pattern of excess rates in 10 – 14 year olds was again observed in 2002, suggesting that we are still dealing with a cohort of preadolescent children with poor protection from production lots of vaccine in use during their infancy.

Only two cases of **rubella** were reported in BC in 2002, consistent with trends since 1997. Congenital rubella syndrome was reported in an infant born in 2002.

There were 32 reports of **invasive meningococcal disease** in BC during 2002 for a rate of 0.8 per 100,000 population. Most (26) occurred in people over the age of 14. Serogrouping of the 32 isolates revealed that 17 (53%) were serogroup B, 8 (25%) serogroup C, 6 (19%) serogroup Y and 1 (3%) serogroup W135. This represents a decline in serogroup C contribution from the 45-50% range seen in 2000 and 2001.

In 2002, British Columbia reported 343 cases of **invasive pneumococcal disease** (IPD), for a rate of 8.3 per 100,000 population. The preponderance of IPD continues to be seen in infants and children less than 5 years of age. In 2003, public health efforts will be directed toward the implementation of a new pneumococcal conjugate vaccine program.

Blood Borne Pathogens and Sexually Transmitted Infections

The rate of reporting of new cases of **HIV** remained the same between 2002 and 2003 at 10.7 per 100,000.

The BC rate of **AIDS** reporting continued to decline to 0.9 per 100,000 population in 1992. The distribution of male cases has shifted with a drop in the 30-39 age group and an increase in the 25-29 age group.

The BC rate per 100,000 population for reported **chlamydia** cases in 2002 was 184.2. This is a 29% increase from the rate of 143.2 in 2001.

The BC rate per 100,000 population of reported **gonorrhea** cases in 2002 increased to 17.3 from 14.6 the previous year.

The rate per 100,000 population of infectious **syphilis** increased from 4.3 in 2001 to 4.5 in 2002 as numbers of cases increased from 178 to 186. Syphilis cases are concentrated in the Vancouver and lower mainland regions.

The rate of reporting of new positive tests for **hepatitis C** has remained stable over the last three years. Four thousand six hundred and twenty-five new reports were received in 2002 for a rate of 112 per 100,000 population.

Executive Summary (cont'd)

Invasive Bacterial Infections and Antibiotic Resistant Organisms

One hundred and fifty six cases of **invasive group A streptococcal (GAS)** disease were reported in 2002, an increase of thirty-nine percent from the previous year and about twice the reported Canadian rate. Necrotizing fasciitis was reported in 21 (14%) of cases and streptococcal toxic shock syndrome in 12 (8%) of cases.

In 2002 there were 303 cases of reported **tuberculosis** for a rate of 7.3 per 100,000 in British Columbia, a 23% decrease in the number and rate of reported cases compared to 2001.

This report includes a section on laboratory based surveillance for **Methicillin Resistant *Staphylococcus aureus*** and **Vancomycin Resistant Enterococci**.

Enteric, Vector-borne and Zoonotic Infections

The rate of **amebiasis** in British Columbia has remained fairly constant for a decade.

One confirmed case of **botulism** was reported in 2002 in an infant.

Annual reporting of **campylobacteriosis** has continued to decline to its lowest level since 1992 to 2045 reports or a rate of 49.5 cases per 100,000. This decline is likely an artifact as it coincides with the introduction of a provincial protocol that reduces the number of stool tests ordered by physicians.

One hundred and twenty-seven cases of **cryptosporidiosis** were reported during 2002 corresponding to a provincial rate of infection of 3.1 cases per 100,000. No outbreaks were identified in 2002 although reporting exceeded expected levels during several non-consecutive weeks in the spring.

Reporting of ***Cyclospora cayetanensis*** fell to 27 cases in 2002 from 39 cases in 2001. Most cases of cyclosporiasis are related to travel to regions of the world where the disease is endemic.

There were 140 cases of **verotoxigenic *E. coli* infection** reported in 2002 for an annual rate of 3.4 cases per 100,000. In April and May, 10 cases with the same PFGE pattern occurred as part of a national outbreak. A common source was not confirmed.

The annual rate of **giardiasis** in BC has been falling for the last ten years, from 38.4 cases per 100,000 in 1993 to 17.0 cases per 100,000 in 2002.

Hepatitis A reporting remained stable from the previous year at 80 cases, or 1.9 cases per 100,000. These are the lowest rates documented in BC, and are lower than the average national reporting rate.

Two large outbreaks of **listeriosis** occurred in 2002. Both were associated with the consumption of soft, mould-ripened, pasteurized milk cheese made by two separate producers on Vancouver Island.

Reporting of **salmonellosis** has continued a slight upward trend since 1997, and reached 711 cases in 2002, for a rate of 17.2 cases per 100,000. An outbreak of *Salmonella* Oranienberg affected BC and other provinces in January 2002. Twenty five cases were identified in the province. Despite a comprehensive national investigation, a source could not be identified. BC was also affected by an international outbreak of *Salmonella Poona* in April/May 2002. The outbreak was associated with consumption of imported cantaloupe.

The provincial rate of **shigellosis** reached a ten year low in 2002 with one hundred and seventy-one cases contributing to a provincial rate of 4.1 cases per 100,000 population. Two outbreaks were identified, one in the lower mainland among men who have sex with men (MSM) and the second among individuals eating or handling locally produced spinach.

Twenty-one cases of **typhoid fever** were reported in 2002. Rates are highest in the spring when travelers return from Christmas holidays on the Indian subcontinent and parts of Asia.

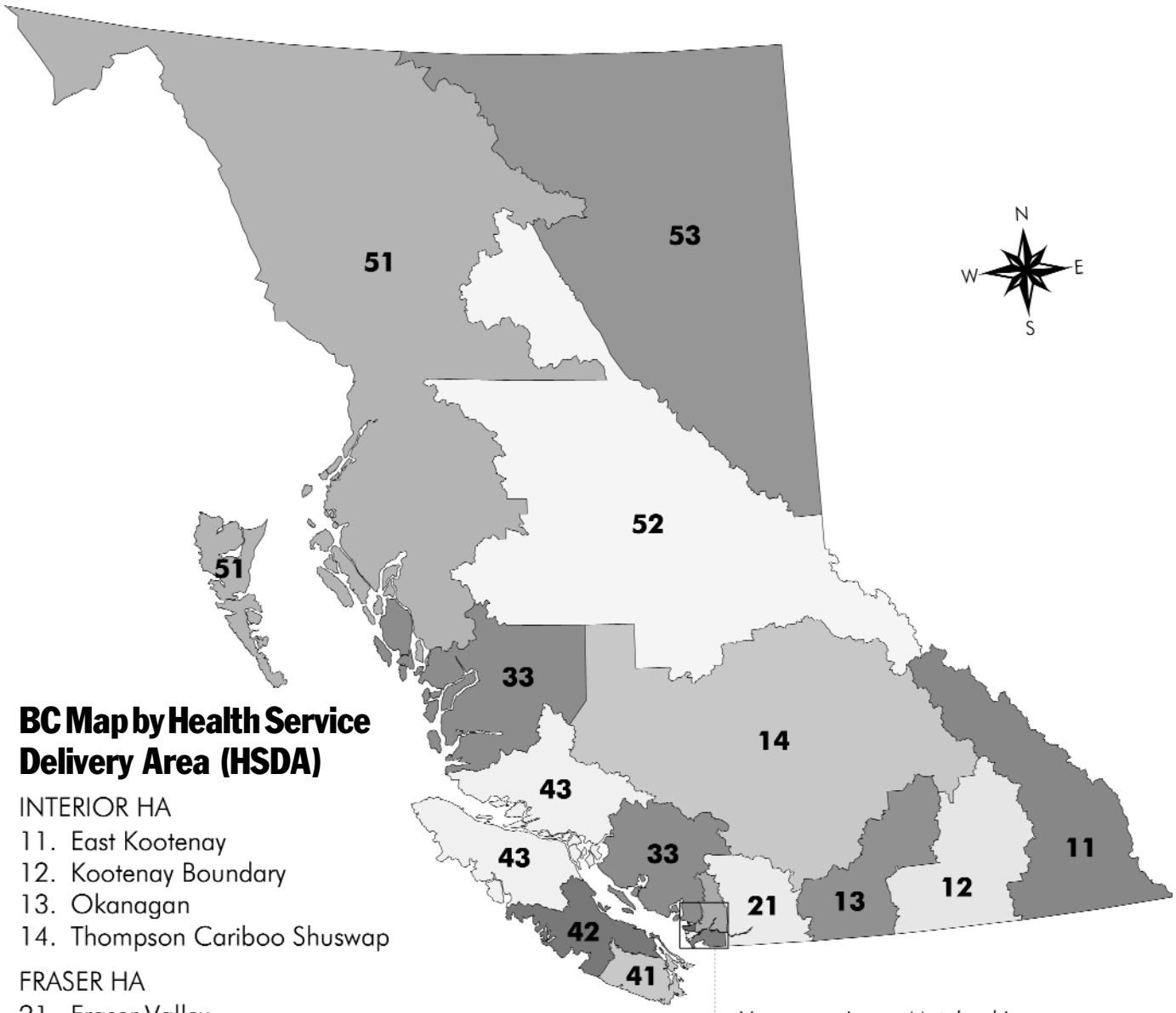
Vibrio parahaemolyticus gastroenteritis reporting rose in 2002 to 26 cases. Nine cases were related to eating raw bivalve shellfish purchased in local restaurants or stores.

The provincial rate of **yersiniosis** has been falling over the last two years, from 25.1 cases per 100,000 in 2000 to 14.5 cases per 100,000 in 2002. Rates of reporting were highest in regions served by laboratories performing cold enrichment on stool specimens.

One case of **Hantavirus Pulmonary Syndrome** was reported from the Okanagan during 2002. This is the first reported case in BC since 1996. This case was exposed to rodent droppings during clean-up activities in a disused portion of a barn.

Four cases of **Lyme** disease were reported in 2002. One case was associated with exposure on Vancouver Island.

Malaria reporting has remained low for the past 5 years following a peak in the years 1995 through 1997. In 2002, forty cases were reported for a rate of less than one case per 100,000 population.



BC Map by Health Service Delivery Area (HSDA)

INTERIOR HA
11. East Kootenay
12. Kootenay Boundary
13. Okanagan
14. Thompson Cariboo Shuswap

FRASER HA
21. Fraser Valley
22. Simon Fraser
23. South Fraser

VANCOUVER COASTAL HA
31. Richmond
32. Vancouver
33. North Shore/Coast Garibaldi

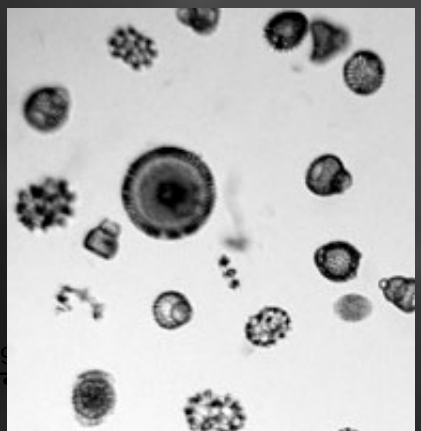
VANCOUVER ISLAND HA
41. South Vancouver Island
42. Central Vancouver Island
43. North Vancouver Island

NORTHERN HA
51. Northwest
52. Northern Interior
53. Northeast

Vancouver Lower Mainland Inset

2002

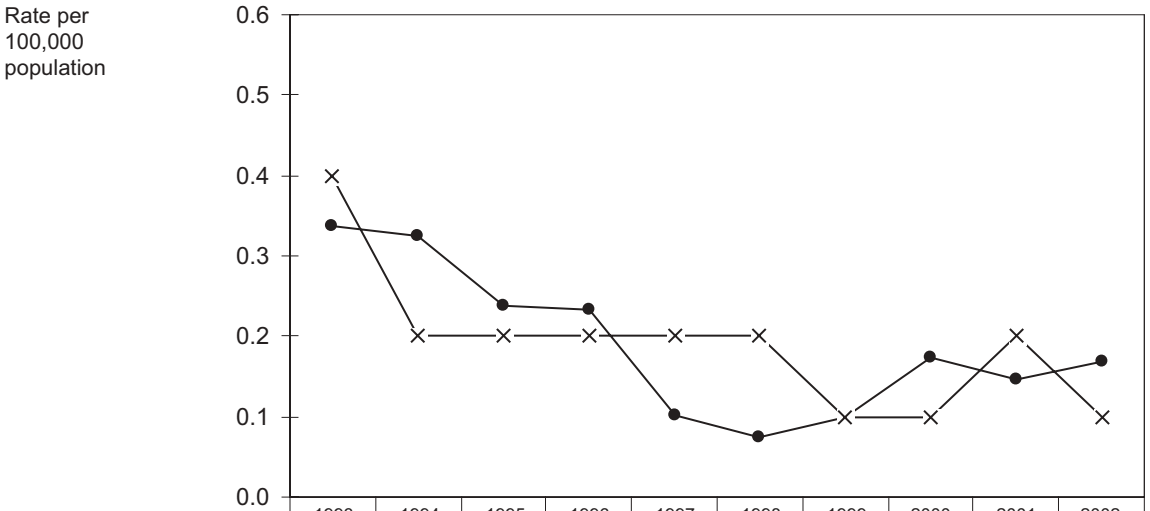
Diseases Preventable by Vaccination



Haemophilus influenzae type b (Hib), invasive

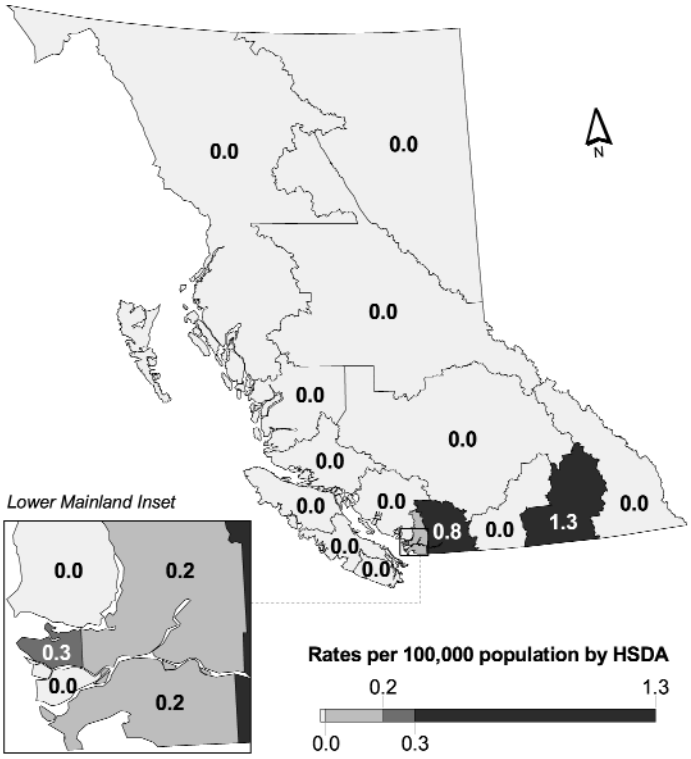
Seven cases of invasive *Haemophilus influenzae* type b (Hib) disease were reported in 2002. Rates have been low since the introduction of the infant conjugate Hib vaccine program in 1993. Three of the cases were in children under 5 years of age, and the rest were in adults over 30. One infant case was a month old, an age too young for vaccination, and died. The second infant was 10 months old and survived; this infant was unimmunized. The third child was one year of age and was unimmunized.

1.1 *Haemophilus influenzae* type b (invasive) Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Invasive Hib Reports	12	12	9	9	4	3	4	7	6	7
—●— BC Invasive Hib Rate	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2
—×— Canadian Hib Rate	0.4	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1

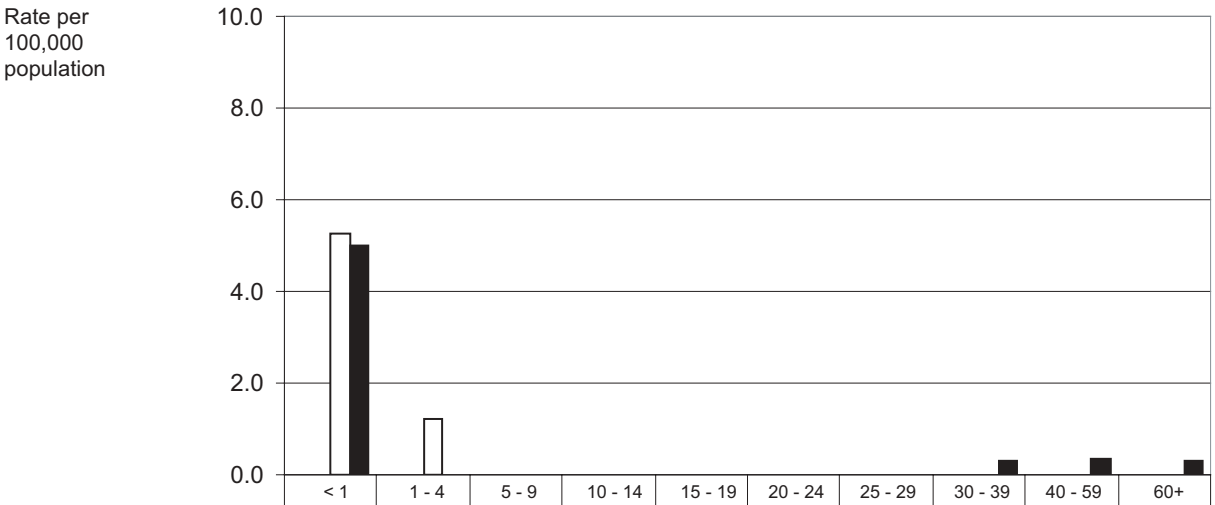
1.2 *Haemophilus influenzae* type b (Hib), invasive Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	1	1.3
13	Okanagan	0	0.0
14	Thompson Cariboo Shuswap	0	0.0
21	Fraser Valley	2	0.8
22	Simon Fraser	1	0.2
23	South Fraser	1	0.2
31	Richmond	0	0.0
32	Vancouver	2	0.3
33	North Shore/Coast Garibaldi	0	0.0
41	South Vancouver Island	0	0.0
42	Central Vancouver Island	0	0.0
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

Note: Map classification by Jenks natural breaks method.

1.3 *Haemophilus influenzae* type b (invasive) Rates by Age Group and Sex, 2002

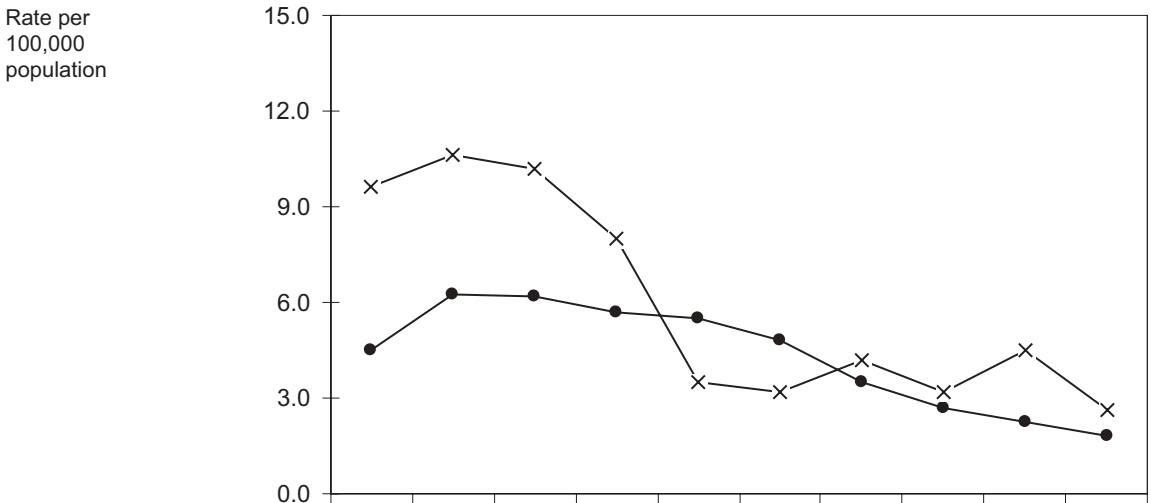


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Invasive Hib Reports - Female	1	1	0	0	0	0	0	0	0	0
Invasive Hib Reports - Male	1	0	0	0	0	0	0	1	2	1
Invasive Hib Rate - Female	5.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Invasive Hib Rate - Male	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3

Hepatitis B

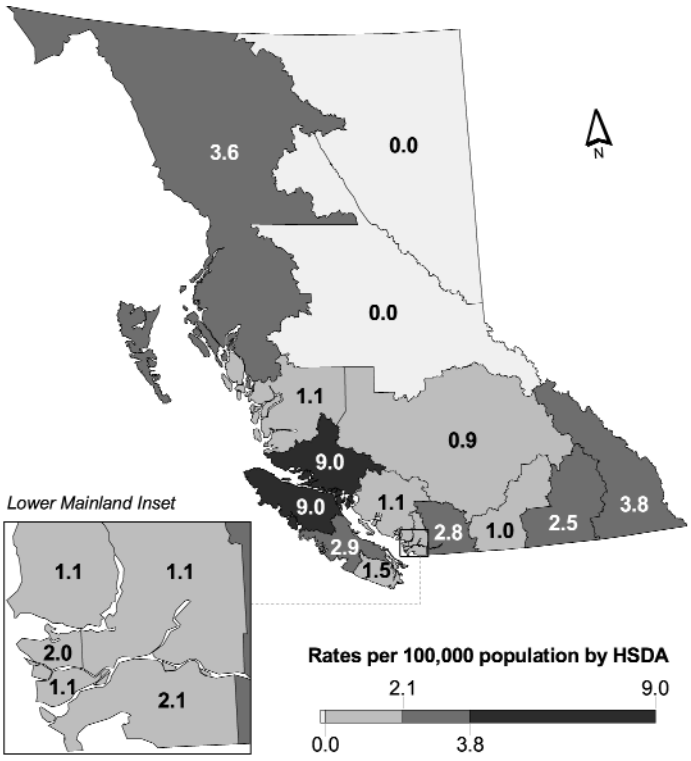
The rate of acute hepatitis B in British Columbia continues to plummet most probably as a result of the grade 6 immunization program introduced in 1992 together with programs for the immunization of high-risk adults. The rate has fallen from a high of 6.3 per 100,000 population in 1994 to 1.8 per 100,000 population in 2002. While there were 74 cases in BC in 2002, 2002 was the second year running in BC during which no cases of acute hepatitis B were reported in the 12-20 year age group.

2.1 Acute Hepatitis B Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Hepatitis B: Acute Reports	161	230	233	221	219	192	142	109	93	74
BC Hepatitis B: Acute Rate	4.5	6.3	6.2	5.7	5.5	4.8	3.5	2.7	2.3	1.8
Canadian Hepatitis B Rate	9.6	10.6	10.2	8.0	3.5	3.2	4.2	3.2	4.5	2.6

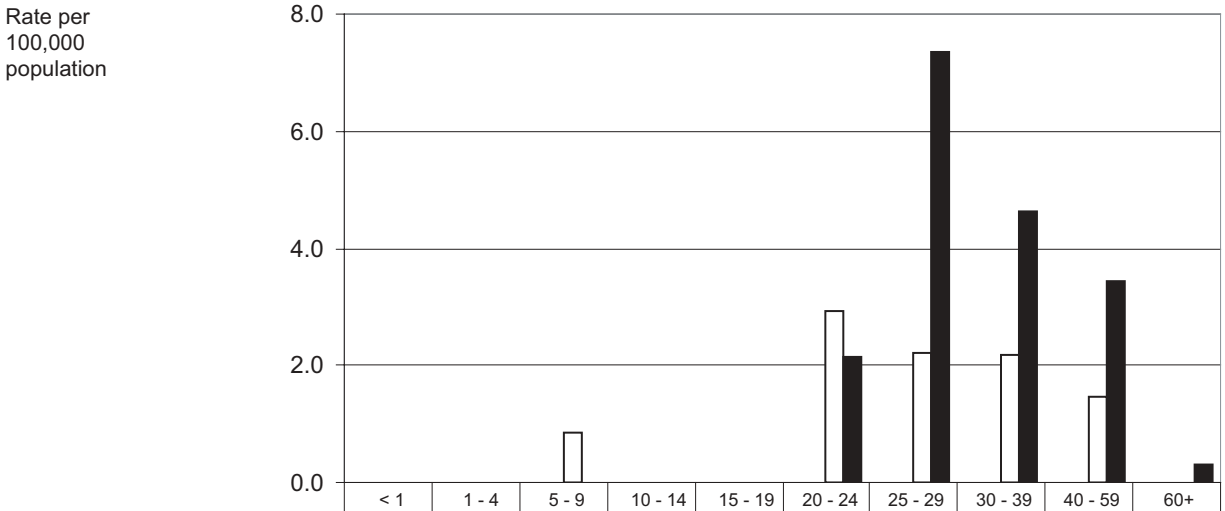
2.2 Acute Hepatitis B Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	3	3.8
12	Kootenay Boundary	2	2.5
13	Okanagan	3	1.0
14	Thompson Cariboo Shuswap	2	0.9
21	Fraser Valley	7	2.8
22	Simon Fraser	6	1.1
23	South Fraser	13	2.1
31	Richmond	2	1.1
32	Vancouver	12	2.0
33	North Shore/Coast Garibaldi	3	1.1
41	South Vancouver Island	6	1.5
42	Central Vancouver Island	7	2.9
43	North Vancouver Island	5	9.0
51	Northwest	3	3.6
52	Northern Interior	0	0.0
53	Northeast	0	0.0

Note: Map classification by Jenks natural breaks method.

2.3 Acute Hepatitis B Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Hepatitis B: Acute Reports - Female	0	0	1	0	0	4	3	7	9	0
Hepatitis B: Acute Reports - Male	0	0	0	0	0	3	10	15	21	1
Hepatitis B: Acute Rate - Female	0.0	0.0	0.8	0.0	0.0	2.9	2.2	2.2	1.5	0.0
Hepatitis B: Acute Rate - Male	0.0	0.0	0.0	0.0	0.0	2.1	7.4	4.6	3.4	0.3

Influenza

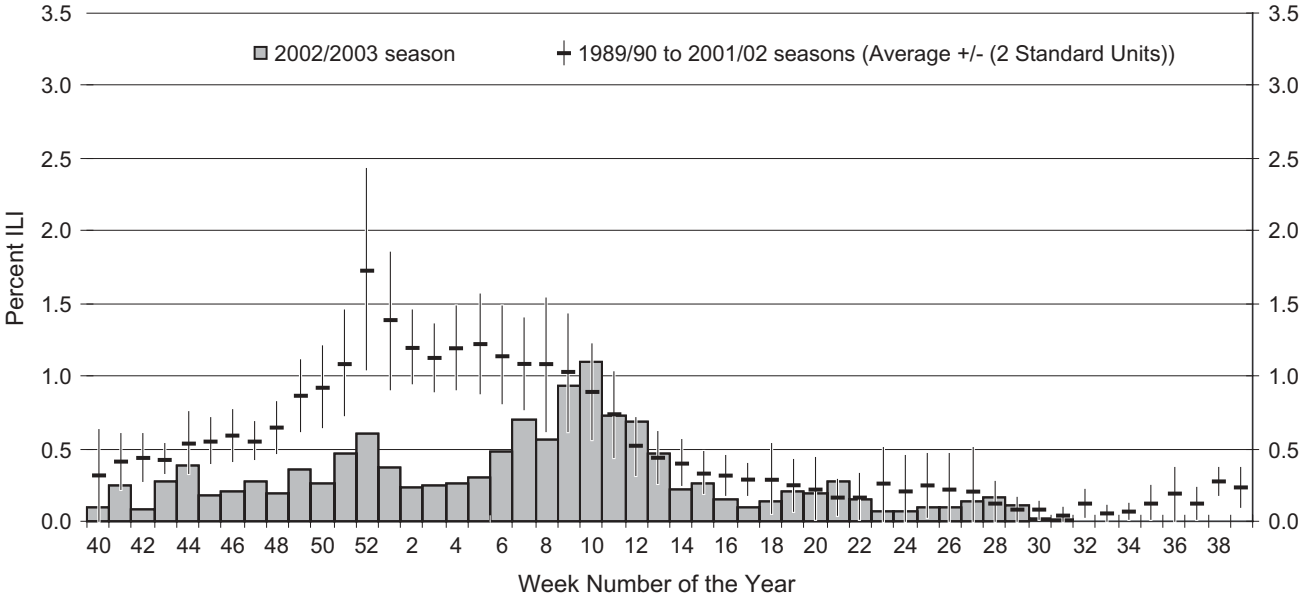
Influenza surveillance in BC is an annual program that collects, analyses and distributes information to those who need to know, with emphasis from October to April each year. A network of health agencies and professionals provides vital information for the assessment of respiratory illness activities in the community in order to develop and evaluate strategies to protect public health.

The influenza surveillance program in BC uses a combination of information sources and types. Volunteer sentinel physicians are recruited yearly to provide reports on the proportion and demographic characteristics of patient visits due to influenza-like illness (ILI). Sentinel physicians also collect specimens for testing of respiratory pathogens from patients presenting with acute ILI symptoms.

Outbreaks of ILI in institutions such as long-term-care-facilities (LCTF) and hospitals and absenteeism greater than 10 percent due to ILI in schools and worksites are reported. The Laboratory Services, BCCDC participate in enhanced surveillance and specification of respiratory viruses during the influenza season. BCCDC, Epidemiology Services requests that all laboratories report influenza activity when identified.

The Laboratory Services and Epidemiologists at BCCDC also participate in the national influenza surveillance activities (FluWatch) providing weekly feedback regarding ILI activities in the province. The Epidemiologists research other sources of influenza activity reports and information. Common sites for influenza information include FluWatch in Ottawa, CDC in Atlanta, Washington State, European Influenza Surveillance System and the World Health Organization (WHO). A surveillance report is produced regularly; it is circulated and also posted at the BCCDC web site.

3.1 **Proportion of Patient Visits due to Influenza Like Illness (ILI) per Week Number Compared to Average Proportion of ILI Visits for the Past 13 Seasons Sentinel Physicians, 2002-2003, British Columbia**

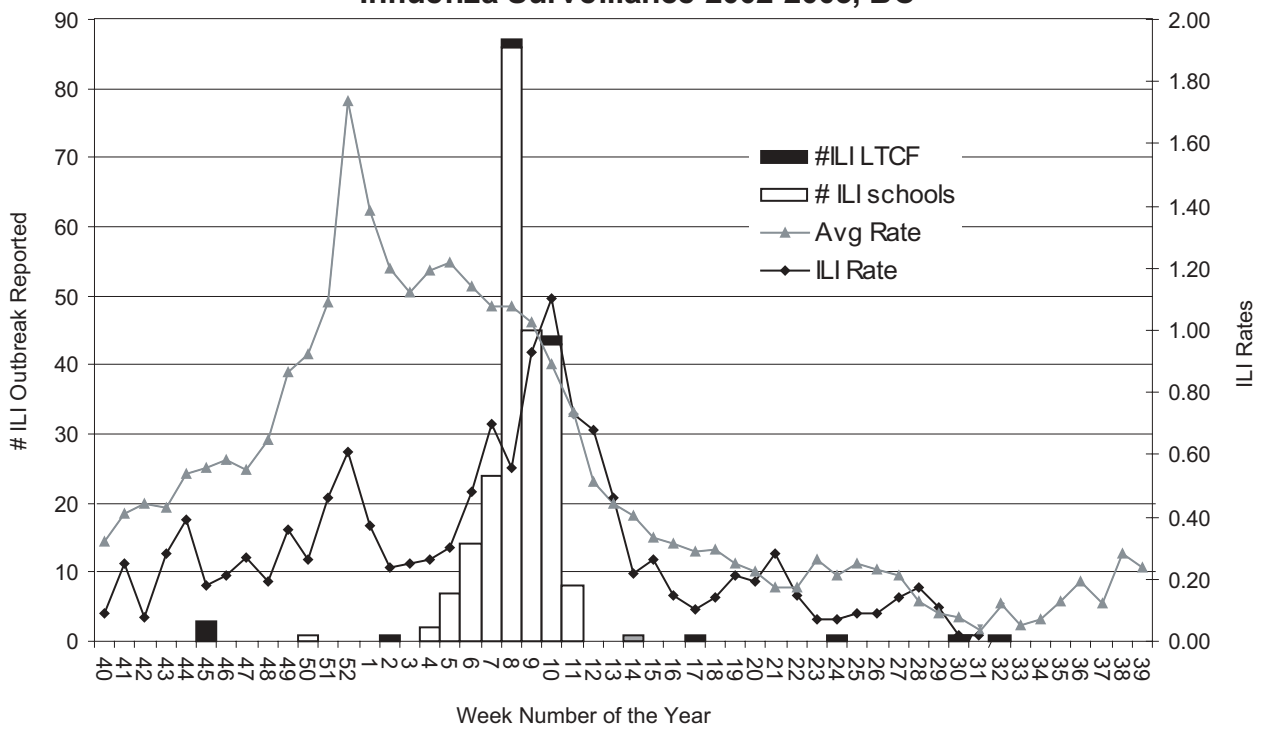


A total of 56 sentinel physicians in BC participated in the influenza surveillance program during the 2002-2003 influenza season as compared to 48 during the 2001-2002 and 40 during the 2000-2001 seasons. Forty-four sentinel physicians remained active during the continued surveillance activity through the summer months.

The proportion of physician visits due to ILI was well below the previous 13 season historical average until week 10 (March 2 to 8, 2003) at which time the proportion of visits due to ILI peaked (figure 3.1). The peak of ILI activity this season occurred later than the expected, possibly because of milder weather conditions.

Eight ILI outbreaks in LTCF and 231 outbreaks in schools were reported during the season (figure 3.2). Only one outbreak in a LTCF was laboratory confirmed influenza A and several ILI outbreaks in schools were confirmed influenza B. Other pathogens identified with illnesses in schools included pertussis, respiratory syncytial virus (RSV), and norovirus. This compares to 42 ILI outbreaks in LTCF/hospital during 2001-2002, when 90% were caused by influenza A.

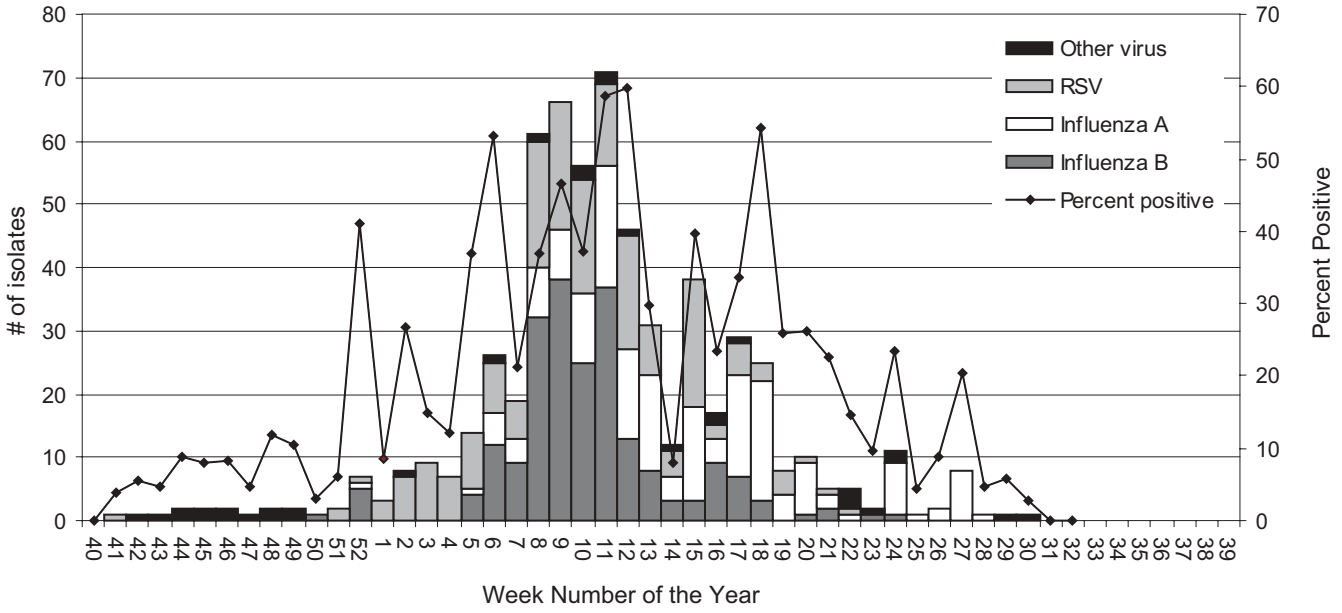
3.2 Number of ILI Outbreaks Reported, ILI Rates and Average ILI for past 13 years, per Week Number
Influenza Surveillance 2002-2003, BC



Up to week 29, there were a total of 2191 specimens tested for respiratory pathogens (figure 3.3). Of these, 214 (9.8%) were influenza B, 179 (8.2%) influenza A, 191 (8.7%) RSV and 32 (1.5%) other viruses. All viruses identified to date were closely related to the season's vaccine strains.

3.3

Virus Isolates and Percentage Positive of All Respiratory Virus Specimens Submitted to BC Provincial Laboratory, per Week Number. Influenza Surveillance 2002-2003



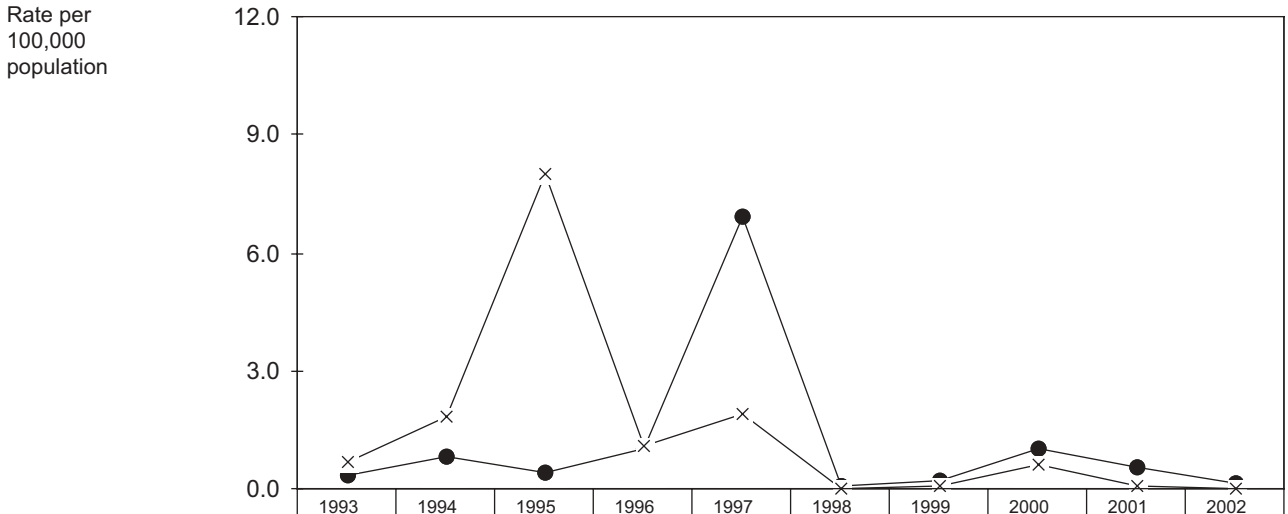
FluWatch received 46 reports Canada-wide of outbreaks of laboratory-confirmed influenza in LTCF. The most recent outbreak was in a long-term care facility in Vancouver during weeks 24 through 26. This was laboratory confirmed as influenza A in week 27. The National Microbiology Laboratory has antigenically characterised 529 influenza viruses to date; all viruses identified to date were closely related to the season's vaccine strains.

Measles

A total of 5 confirmed cases of measles were reported through the enhanced surveillance program in 2002, a substantial reduction from 23 cases in 2001. No cases were secondary or recognized to be associated with outbreaks of measles. Three cases were reported from Fraser Health Authority but dates of onset were not suggestive of ongoing transmission. One case was reported from the Interior and one from Vancouver. Only one of the 5 cases was a child, aged 0.9 years. This child had a classical measles clinical syndrome, and had no travel history. One case was 17 years old and had recently traveled from Poland and the Netherlands. Three cases were young adults aged 25-29. One of these was a visitor from South Africa, and another was a student from Taiwan. The third adult had no history of travel. Immunization status of the adolescent and adult cases was unknown. All laboratory confirmations were by IgM serology. One case also demonstrated IgM reactivity to Parvovirus B19.

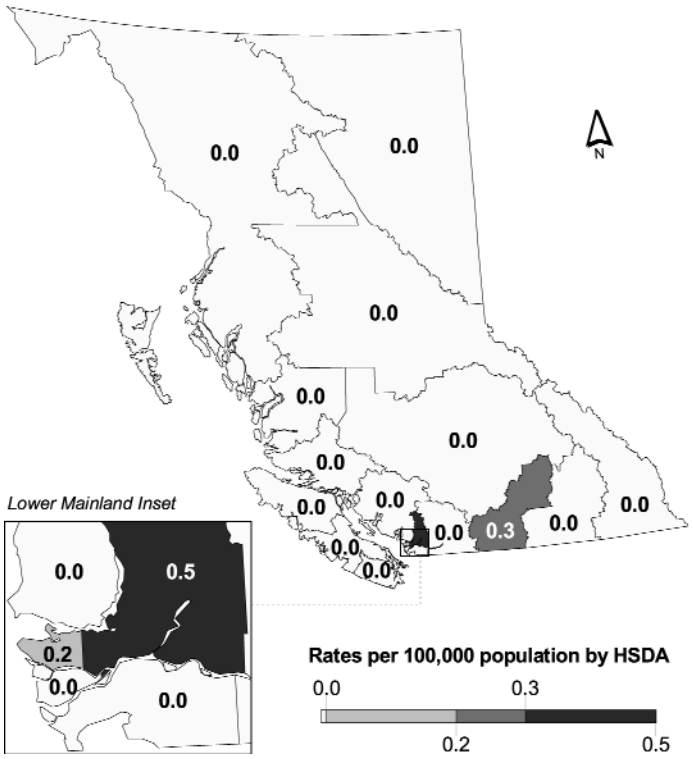
Collection of blood for acute and convalescent serology for IgG is encouraged in Canada for diagnosis of all cases without a link to a confirmed measles case. This is because the reliability of IgM testing has declined due to the uncommon occurrence of measles.

4.1 Measles Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Measles Reports	12	30	15	39	273	2	8	42	22	5
—●— BC Measles Rate	0.3	0.8	0.4	1.0	6.9	0.1	0.2	1.0	0.5	0.1
—×— Canadian Measles Rate	0.7	1.8	8.0	1.1	1.9	0.0	0.1	0.6	0.1	0.0

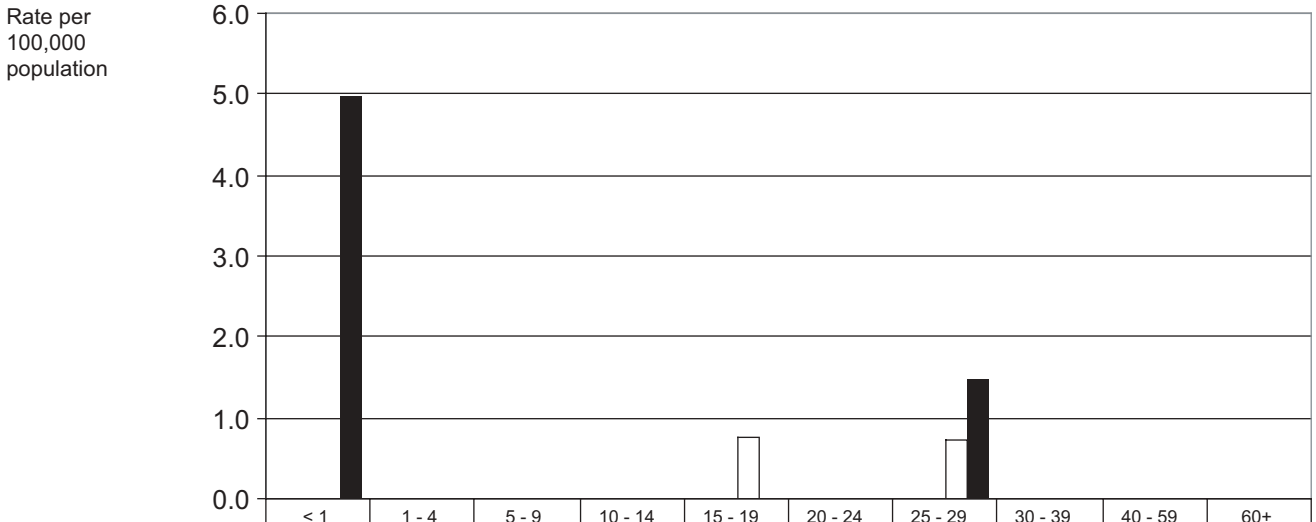
4.2 Measles Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	0	0.0
13	Okanagan	1	0.3
14	Thompson Cariboo Shuswap	0	0.0
21	Fraser Valley	0	0.0
22	Simon Fraser	3	0.5
23	South Fraser	0	0.0
31	Richmond	0	0.0
32	Vancouver	1	0.2
33	North Shore/Coast Garibaldi	0	0.0
41	South Vancouver Island	0	0.0
42	Central Vancouver Island	0	0.0
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

Note: Map classification by Jenks natural breaks method.

4.3 Measles Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Measles Reports - Female	0	0	0	0	1	0	1	0	0	0
Measles Reports - Male	1	0	0	0	0	0	2	0	0	0
□ Measles Rate - Female	0.0	0.0	0.0	0.0	0.8	0.0	0.7	0.0	0.0	0.0
■ Measles Rate - Male	5.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0

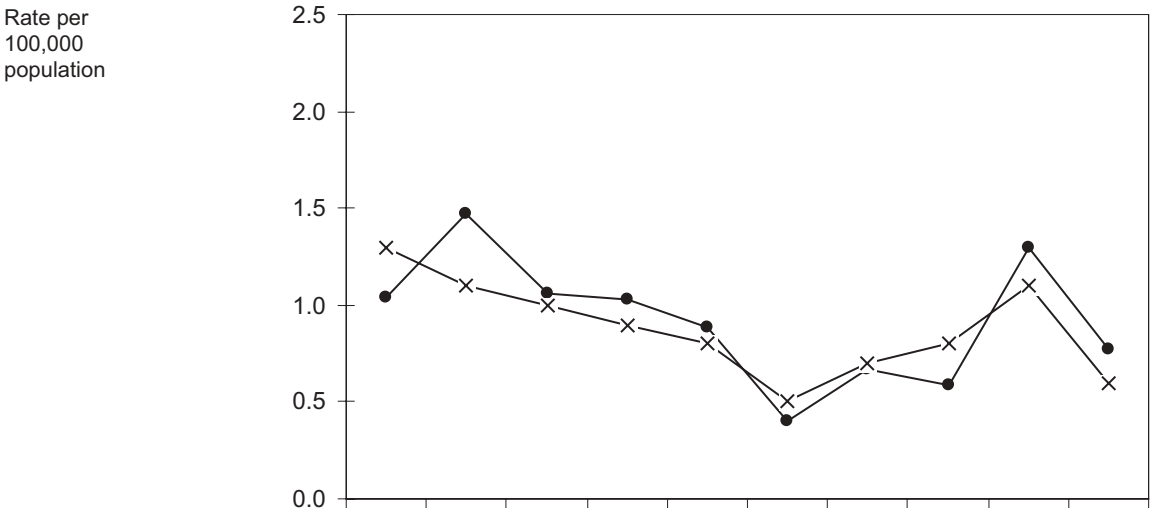
Meningococcal Disease (invasive)

There were 32 reports of invasive meningococcal disease in BC during 2002 for a rate of 0.8 per 100,000 population. Four cases occurred in children under the age of one so that infants had the highest rate. However, the bulk of the cases (26) occurred in people over the age of 14. In contrast to the year before, there was no significant geographic clustering.

Serogrouping of the 32 isolates revealed that 17 (53%) were serogroup B, 8 (25%) serogroup C, 6 (19%) serogroup Y and 1 (3%) serogroup W135. This represents a decline in the contribution of serogroup C from the 45-50% range seen in 2000 and 2001.

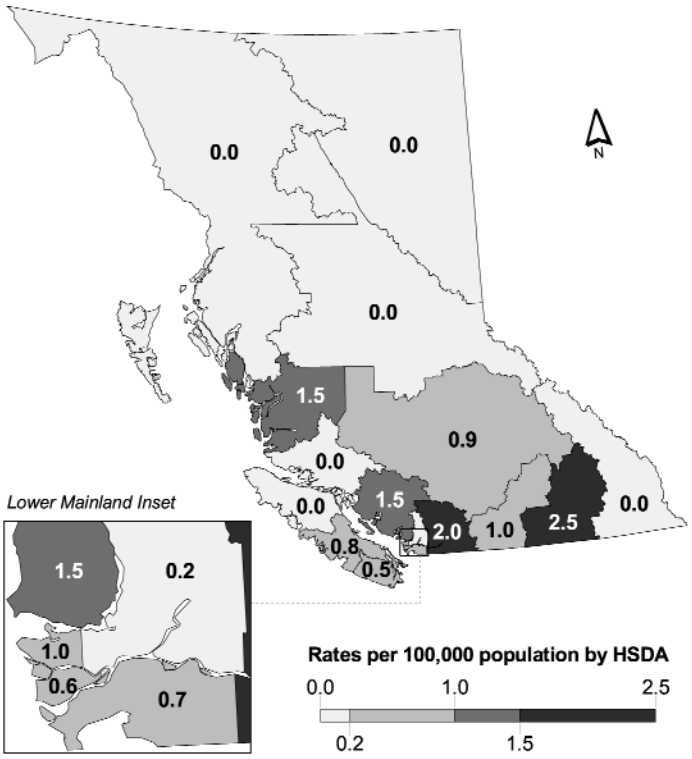
In 2003, routine childhood vaccination against serogroup C disease was introduced in BC.

5.1 Meningococcal Disease (invasive) Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Meningococcal Reports	37	54	40	40	35	16	27	24	53	32
—●— BC Meningococcal Rate	1.0	1.5	1.1	1.0	0.9	0.4	0.7	0.6	1.3	0.8
—×— Canadian Meningococcal Rate	1.3	1.1	1.0	0.9	0.8	0.5	0.7	0.8	1.1	0.6

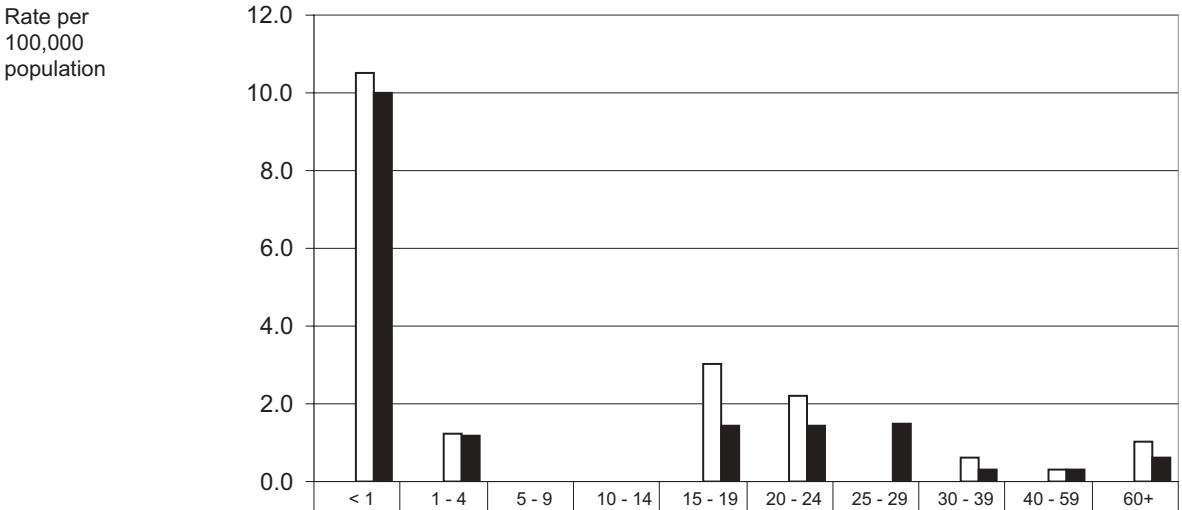
5.2 Meningococcal Disease (invasive) Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	2	2.5
13	Okanagan	3	1.0
14	Thompson Cariboo Shuswap	2	0.9
21	Fraser Valley	5	2.0
22	Simon Fraser	1	0.2
23	South Fraser	4	0.7
31	Richmond	1	0.6
32	Vancouver	6	1.0
33	North Shore/Coast Garibaldi	4	1.5
41	South Vancouver Island	2	0.5
42	Central Vancouver Island	2	0.8
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

Note: Map classification by Jenks natural breaks method.

5.3 Meningococcal Disease (invasive) Rates by Age Group and Sex, 2002

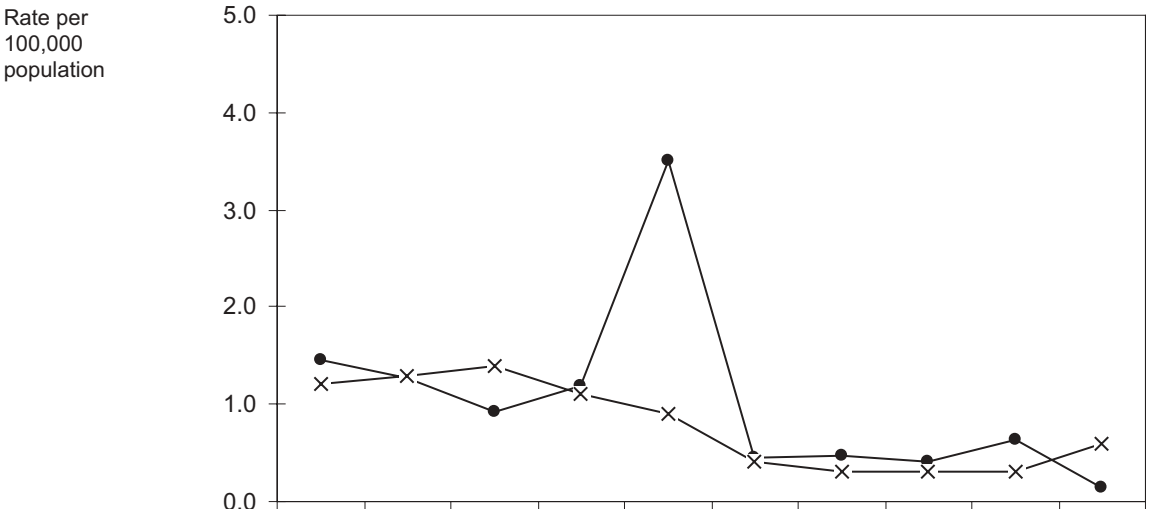


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Meningococcal Reports - Female	2	1	0	0	4	3	0	2	2	4
Meningococcal Reports - Male	2	1	0	0	2	2	2	1	2	2
□ Meningococcal Rate - Female	10.5	1.2	0.0	0.0	3.0	2.2	0.0	0.6	0.3	1.0
■ Meningococcal Rate - Male	10.0	1.2	0.0	0.0	1.4	1.4	1.5	0.3	0.3	0.6

Mumps

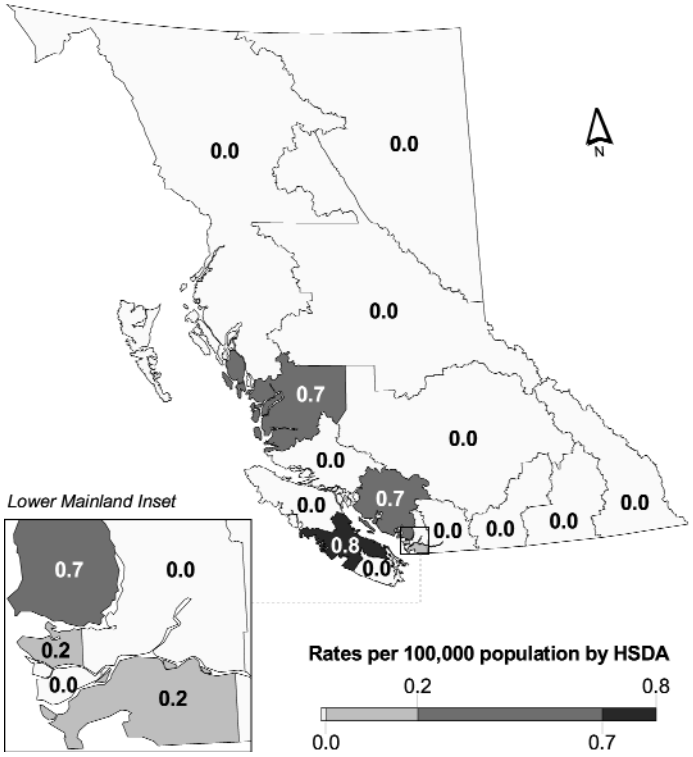
Six cases of mumps were reported in 2002 for a rate of 0.2 per 100,000, the lowest rate recorded in BC and one-quarter of the national rate. Four of the cases were in children under 15 years, and 2 were in adults over 40 years. This disease is likely underreported as one-third of cases have no salivary gland swelling and mumps may not be considered in the differential diagnosis. However, despite an outbreak in 1997, the downward trend in the past decade in BC is in keeping with the expected epidemiology of the disease. This has been affected by the introduction of a second dose of mumps vaccine given as measles-mumps-rubella vaccine beginning in 1996 as part of measles elimination efforts.

6.1 Mumps Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Mumps Reports	52	47	35	46	139	18	19	17	26	6
BC Mumps Rate	1.5	1.3	0.9	1.2	3.5	0.5	0.5	0.4	0.6	0.2
Canadian Mumps Rate	1.2	1.3	1.4	1.1	0.9	0.4	0.3	0.3	0.3	0.6

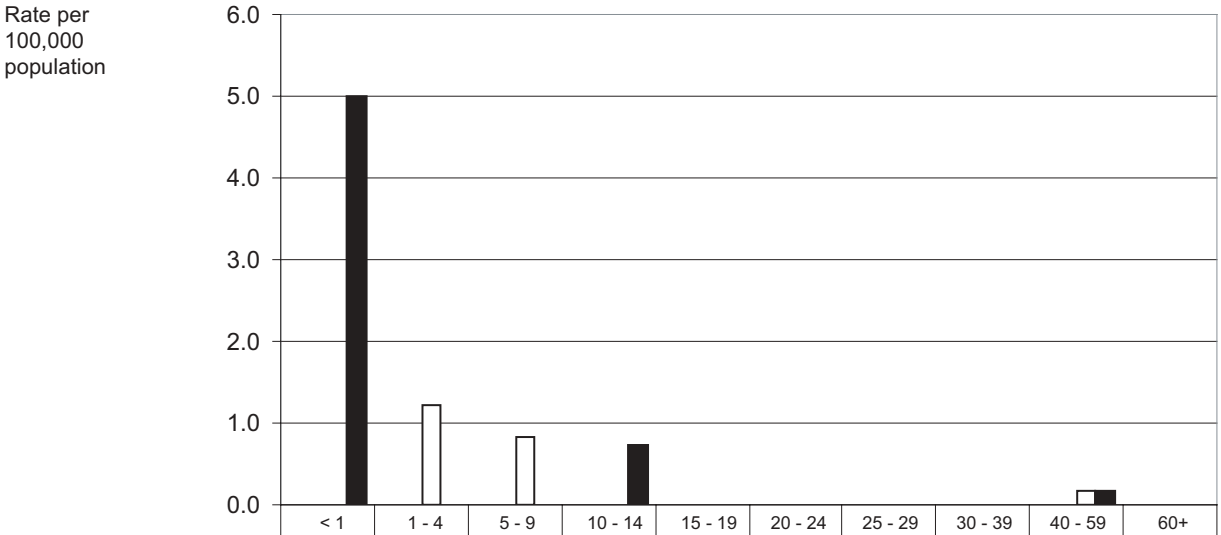
6.2 Mumps Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	0	0.0
13	Okanagan	0	0.0
14	Thompson Cariboo Shuswap	0	0.0
21	Fraser Valley	0	0.0
22	Simon Fraser	0	0.0
23	South Fraser	1	0.2
31	Richmond	0	0.0
32	Vancouver	1	0.2
33	North Shore/Coast Garibaldi	2	0.7
41	South Vancouver Island	0	0.0
42	Central Vancouver Island	2	0.8
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

Note: Map classification by Jenks natural breaks method.

6.3 Mumps Rates by Age Group and Sex, 2002

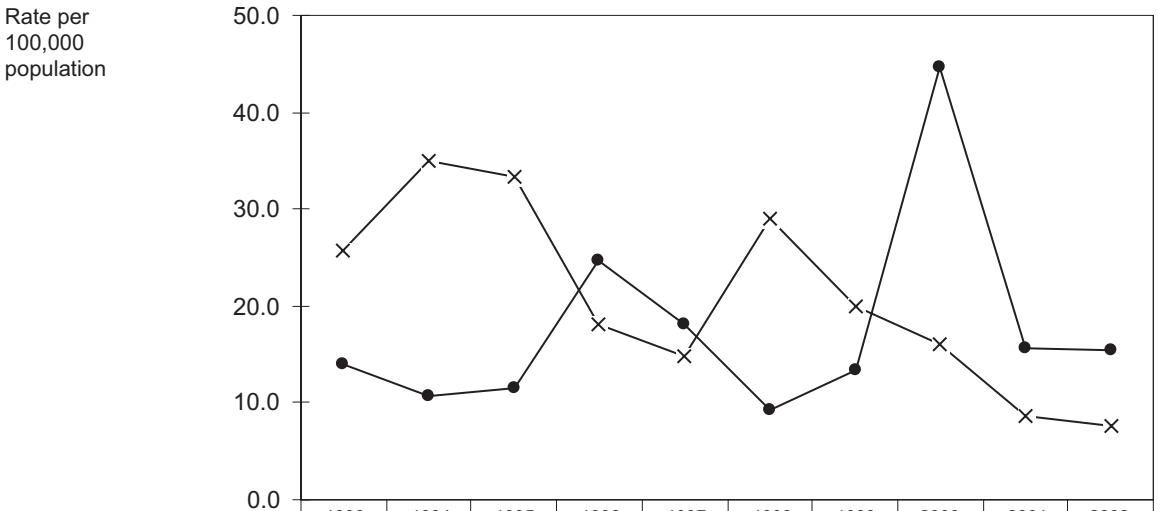


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Mumps Reports - Female	0	1	1	0	0	0	0	0	1	0
Mumps Reports - Male	1	0	0	1	0	0	0	0	1	0
□ Mumps Rate - Female	0.0	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.2	0.0
■ Mumps Rate - Male	5.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.2	0.0

Pertussis

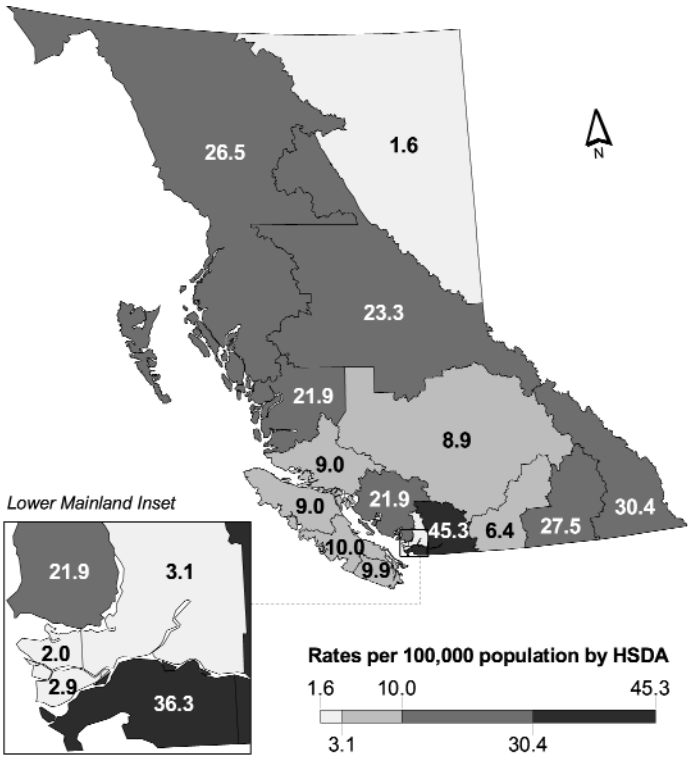
The rate of reporting of pertussis in 2002 was virtually identical to that of the year before at 15.5 per 100,000 population. However, the previously noted pattern of excess rates in 10-14 year olds was again observed in 2002, suggesting that we are still dealing with a cohort of preadolescent children with poor protection from manufactured lots of vaccine in use during their infancy. As expected, infants also experience a high rate of pertussis. The highest regional rates of reporting in 2002 came from the Fraser Valley.

7.1 Pertussis Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Pertussis Reports	502	395	438	960	720	369	541	1812	643	642
BC Pertussis Rate	14.1	10.7	11.6	24.7	18.2	9.2	13.4	44.6	15.7	15.5
Canadian Pertussis Rate	25.8	35.0	33.4	18.2	14.8	29.1	20.0	16.1	8.6	7.7

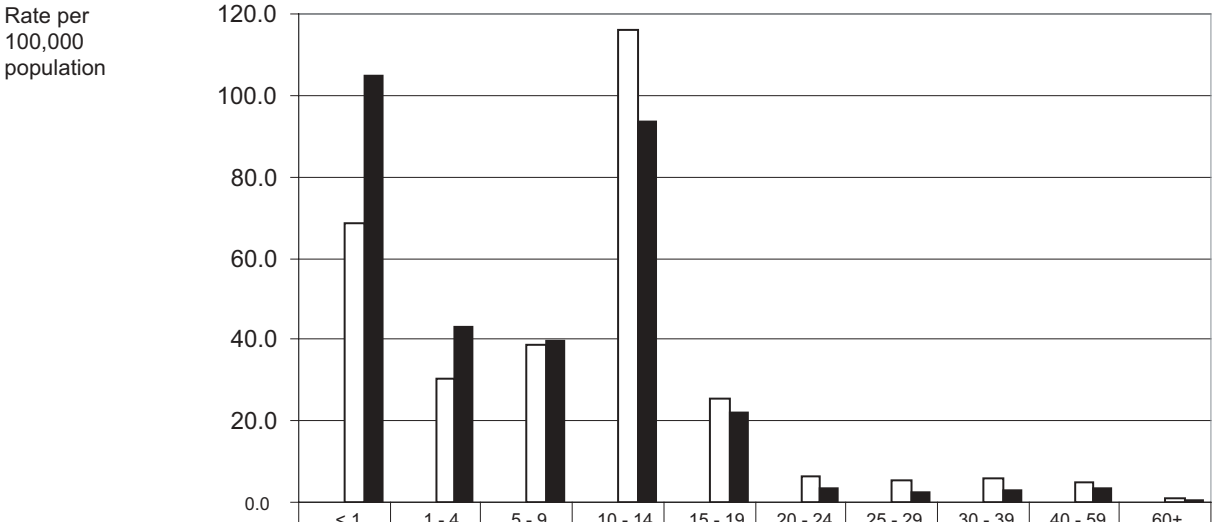
7.2 Pertussis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	24	30.4
12	Kootenay Boundary	22	27.5
13	Okanagan	20	6.4
14	Thompson Cariboo Shuswap	19	8.9
21	Fraser Valley	114	45.3
22	Simon Fraser	17	3.1
23	South Fraser	223	36.3
31	Richmond	5	2.9
32	Vancouver	12	2.0
33	North Shore/Coast Garibaldi	59	21.9
41	South Vancouver Island	40	9.9
42	Central Vancouver Island	24	10.0
43	North Vancouver Island	5	9.0
51	Northwest	22	26.5
52	Northern Interior	35	23.3
53	Northeast	1	1.6

Note: Map classification by Jenks natural breaks method.

7.3 Pertussis Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Pertussis Reports - Female	13	25	46	148	34	9	7	19	31	3
Pertussis Reports - Male	21	37	50	126	31	5	3	10	22	2
□ Pertussis Rate - Female	68.5	30.4	38.5	115.8	25.7	6.6	5.2	5.9	5.1	0.8
■ Pertussis Rate - Male	104.7	43.2	39.6	93.5	22.2	3.6	2.2	3.1	3.6	0.6

Pneumococcal Disease (invasive)

In 2002, British Columbia reported 343 cases of invasive pneumococcal disease (IPD), for a rate of 8.3 per 100,000 population. This is almost double that of 2001 (4.5/100,000) and more than double the 2002 national rate of 3.8/100,000.

In July 2000, the case definition was broadened from "Pneumococcal Meningitis (Invasive)" to include "Pneumococcal Other (Invasive)". This latter category includes septicemia, sinusitis, and pneumonia with bacteremia. The change in case definition is responsible for the marked increase in reporting over the past two years. In 2001 and 2002 respectively, the "Pneumococcal Other (Invasive)" reporting code accounted for 91.4% and 93% of the IPD reports.

The preponderance of IPD continues to be seen in infants and children less than 5 years of age. The incidence of IPD in infants is similar for males and females, with 10 and 9 cases reported respectively. For the 1 to 4 year age group, the incidence in males is slightly higher than in females, with 52 and 42 cases reported, respectively.

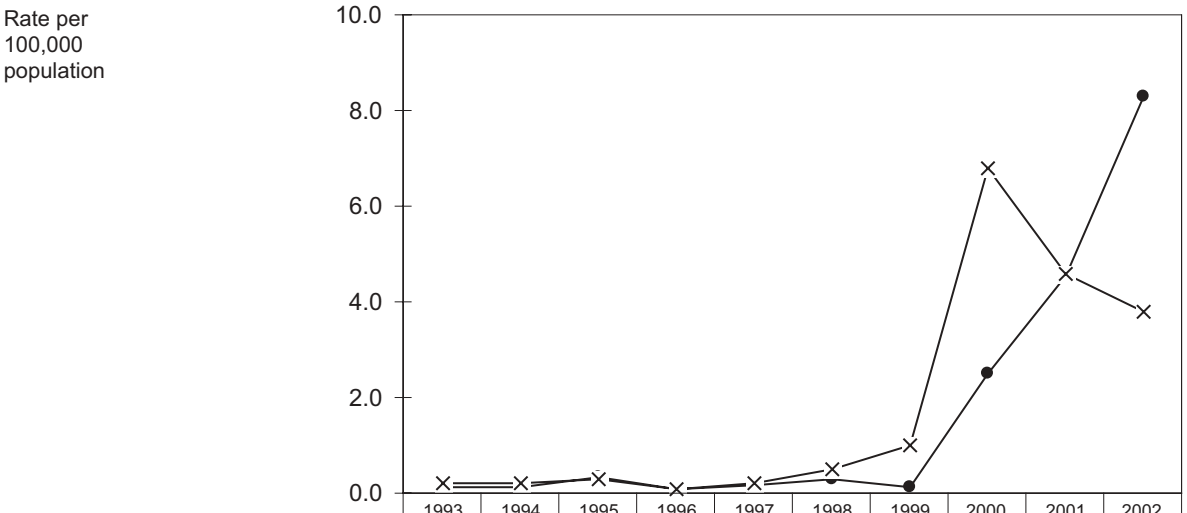
The age group of 60 years and over continues to have the next highest rate of IPD at 14.1/100,000 for both males and females.

Health Service Delivery Areas reporting the highest rates of IPD were Vancouver (13.3/100,000), Northern Interior (12.6/100,000), and South Vancouver Island (11.9/100,000). Northern Interior and South Vancouver Island were two of the three highest reporting areas in 2001 as well.

In 2002, numerous initiatives were undertaken to increase immunization in high-risk groups. It is estimated that immunization coverage increased by 5% over the previous year.

In 2003, public health efforts will be directed toward the implementation of a new pneumococcal conjugate vaccine program. This program will target infants starting at 2 months of age and high risk and aboriginal children aged 2 years to 59 months.

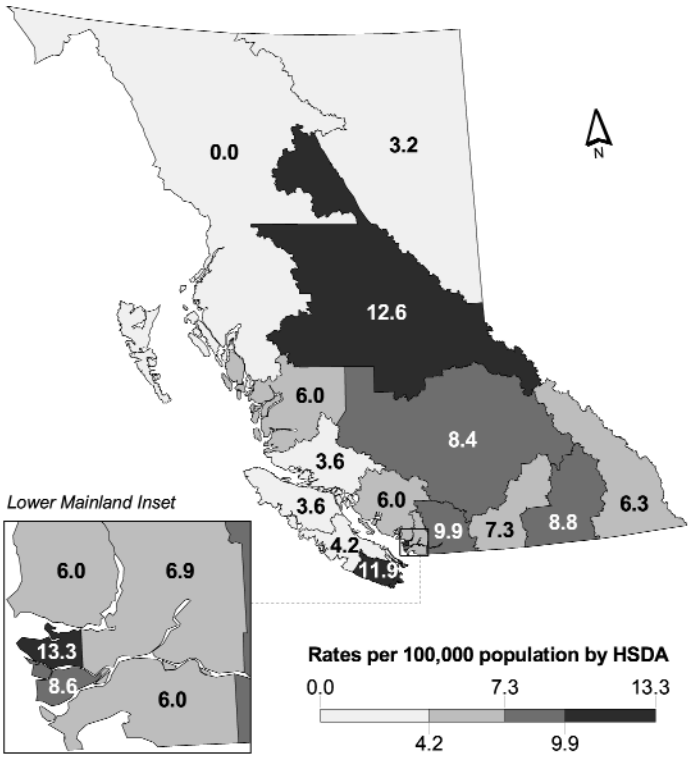
8.1 Pneumococcal Disease (invasive) Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Invasive Pneumococcal Reports	5	4	13	4	6	12	5	102	186	343
BC Invasive Pneumococcal Rate	0.1	0.1	0.3	0.1	0.2	0.3	0.1	2.5	4.5	8.3
Canadian Invasive Pneumococcal Rate	0.2	0.2	0.3	0.1	0.2	0.5	1.0	6.8	4.6	3.8

Note: Reporting of Pneumococcal Meningitis was expanded to Invasive Pneumococcal Disease in January 2000

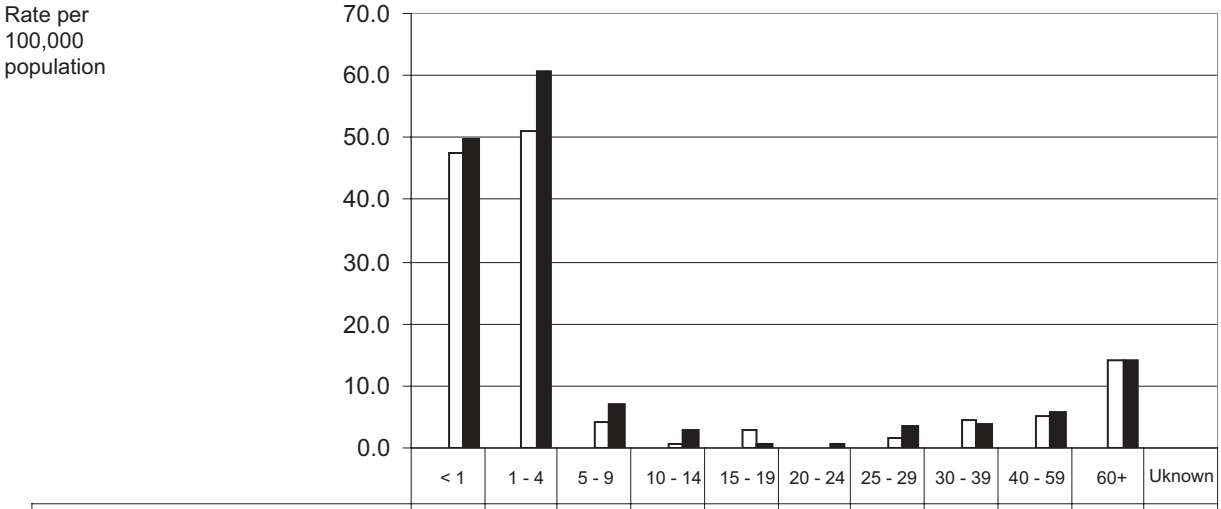
8.2 Pneumococcal Disease (invasive) Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	5	6.3
12	Kootenay Boundary	7	8.8
13	Okanagan	23	7.3
14	Thompson Cariboo Shuswap	18	8.4
21	Fraser Valley	25	9.9
22	Simon Fraser	38	6.9
23	South Fraser	37	6.0
31	Richmond	15	8.6
32	Vancouver	78	13.3
33	North Shore/Coast Garibaldi	16	6.0
41	South Vancouver Island	48	11.9
42	Central Vancouver Island	10	4.2
43	North Vancouver Island	2	3.6
51	Northwest	0	0.0
52	Northern Interior	19	12.6
53	Northeast	2	3.2

Note: Map classification by Jenks natural breaks method.

8.3 Pneumococcal Disease (invasive) Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	Uknown
Invasive Pneumococcal Reports - Female	9	42	5	1	4	0	2	14	32	56	1
Invasive Pneumococcal Reports - Male	10	52	9	4	1	1	5	12	36	47	0
□ Invasive Pneumococcal Reports - Female	47.4	51.1	4.2	0.8	3.0	0.0	1.5	4.3	5.2	14.1	
■ Invasive Pneumococcal Reports - Male	49.9	60.7	7.1	3.0	0.7	0.7	3.7	3.7	5.9	14.1	

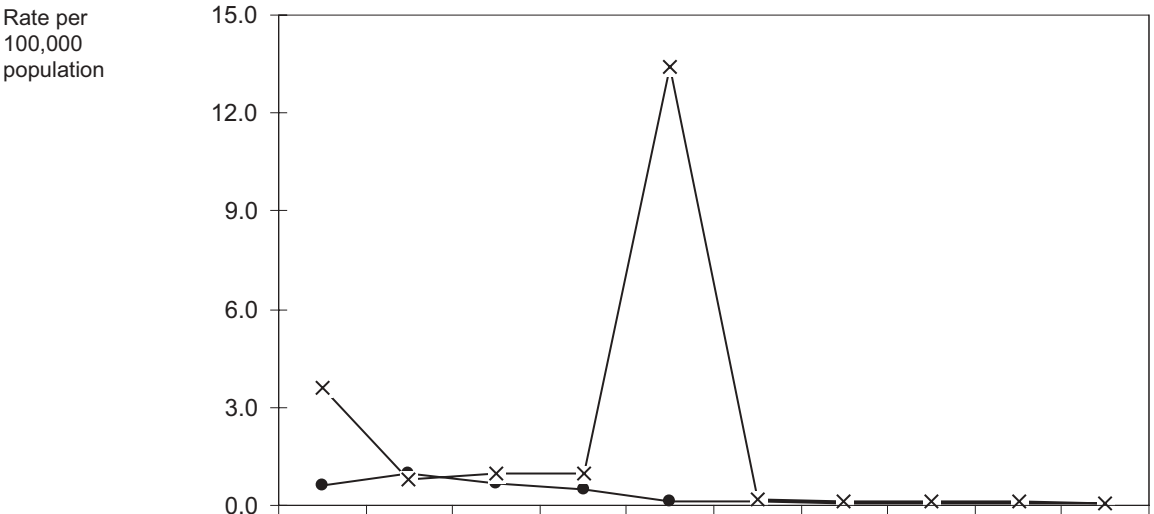
Rubella

Only two cases of rubella were reported in BC in 2002, consistent with trends since 1997. Rates appear to have declined in relation to the introduction of the two-dose measles-mumps-rubella vaccine program in 1996. No cases were reported among women of child-bearing age. However, their susceptibility is highlighted by the recognition of two cases of rubella in adult males aged 30-39. Husbands or partners have been known to be the source of infection for susceptible pregnant women.

Congenital rubella syndrome was reported in an infant born in 2002 with eye and cardiac anomalies consistent with the syndrome and with reactive rubella IgM. The mother had two previous live births and had a non-protective anti-rubella antibody titre when tested shortly prior to the affected pregnancy. Although she had noted no clinically apparent illness during her pregnancy, she had traveled to India during the first trimester and it is likely that she acquired rubella there and had a subclinical infection.

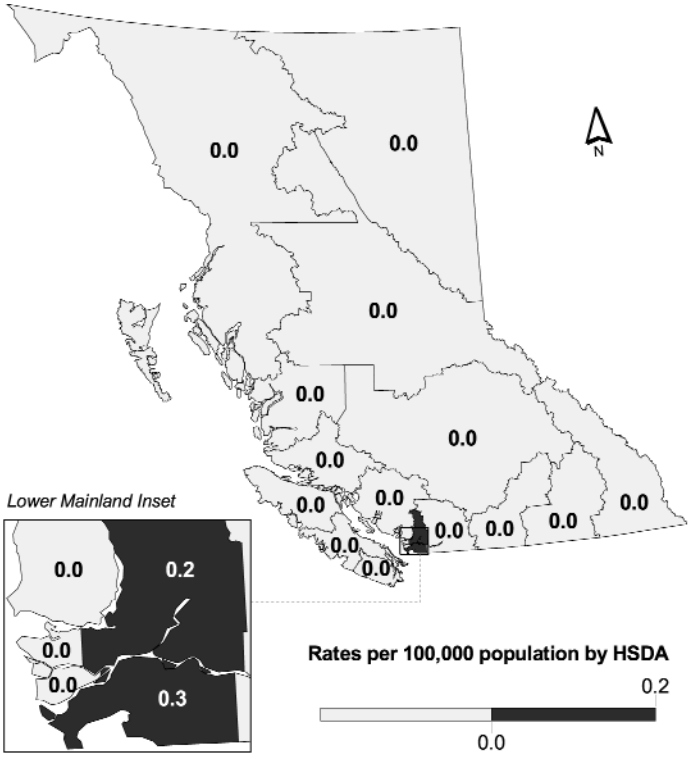
Ensuring rubella immunization of women of child-bearing age, prenatal screening for rubella immunity, and post-partum vaccination of rubella susceptible women with rubella vaccine given as measles-mumps-rubella vaccine continues to be important in the prevention of congenital rubella syndrome.

9.1 Rubella Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Rubella Reports	22	36	26	19	5	4	3	2	2	2
BC Rubella Rate	0.6	1.0	0.7	0.5	0.1	0.1	0.1	0.1	0.1	0.1
Canadian Rubella Rate	3.6	0.8	1.0	1.0	13.4	0.2	0.1	0.1	0.1	0.1

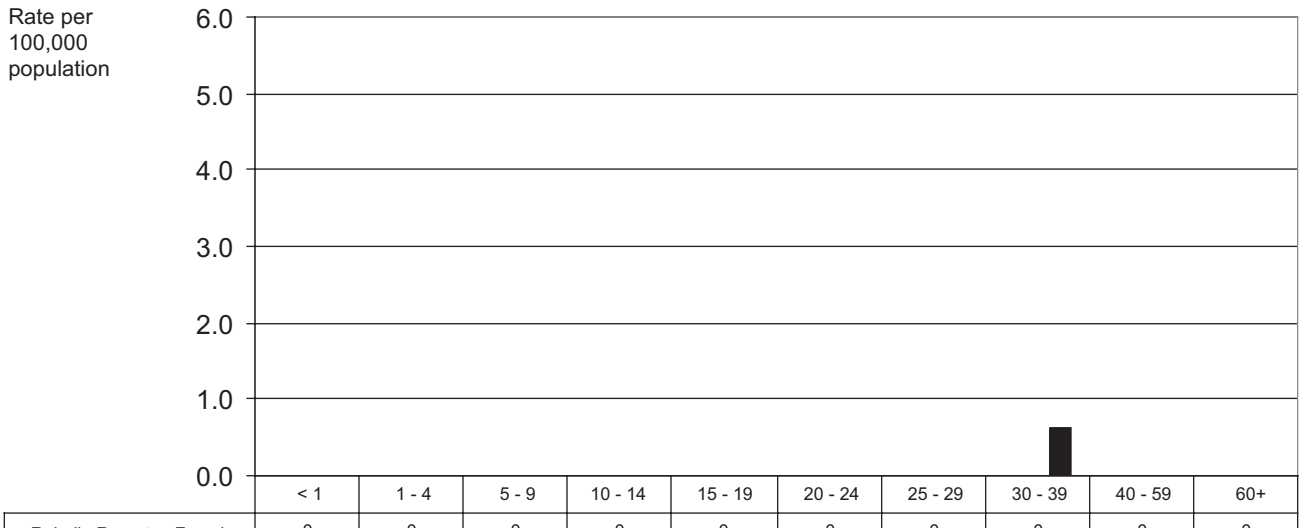
9.2 Rubella Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	0	0.0
13	Okanagan	0	0.0
14	Thompson Cariboo Shuswap	0	0.0
21	Fraser Valley	0	0.0
22	Simon Fraser	1	0.2
23	South Fraser	1	0.2
31	Richmond	0	0.0
32	Vancouver	0	0.0
33	North Shore/Coast Garibaldi	0	0.0
41	South Vancouver Island	0	0.0
42	Central Vancouver Island	0	0.0
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

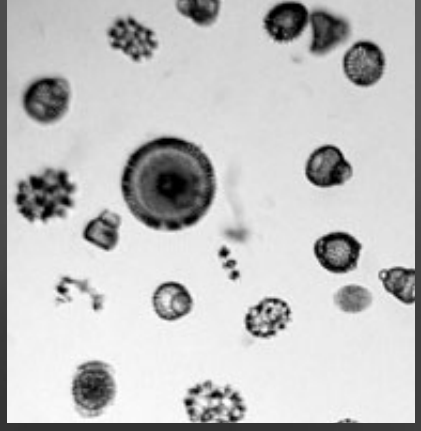
Note: Map classification by Jenks natural breaks method.

9.3 Rubella Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Rubella Reports - Female	0	0	0	0	0	0	0	0	0	0
Rubella Reports - Male	0	0	0	0	0	0	0	2	0	0
□ Rubella Rate - Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
■ Rubella Rate - Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0

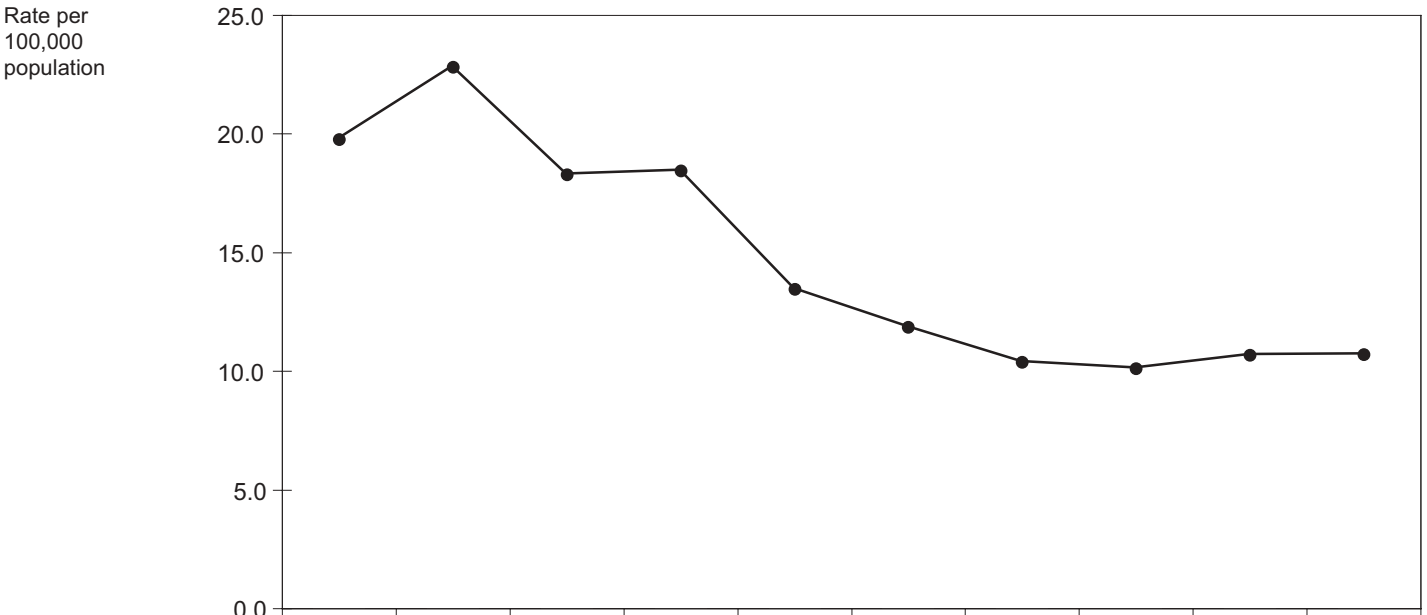
Sexually Transmitted and Bloodborne Pathogens



HIV

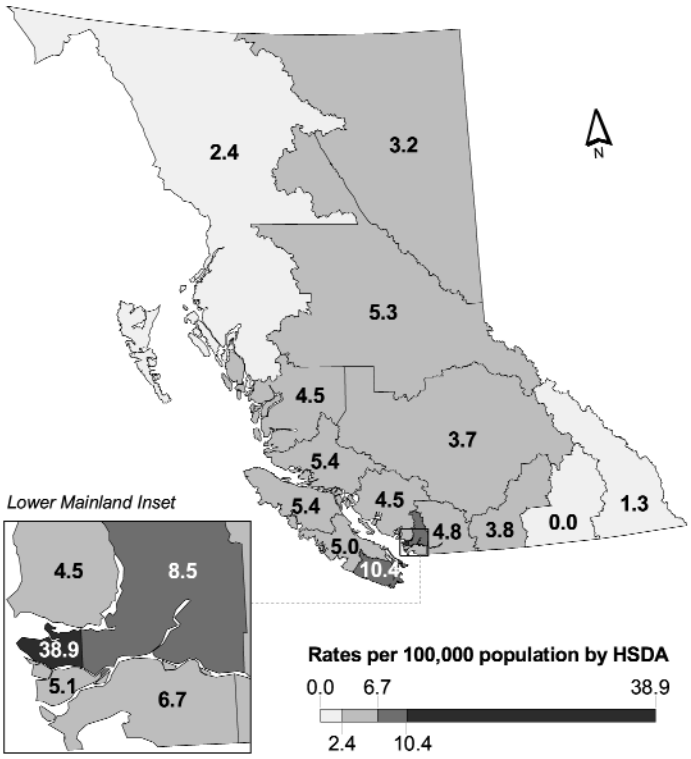
The rate per 100,000 population of persons testing newly positive for HIV remained the same for 2002 as the 2001 rate of 10.7 The age groups of 15-29 in both males and females had rates that were slightly lower than previous years. The age groups of 30-59 in both genders had slightly increased rates. The distribution of cases around the province remains similar to 2001 with the greatest concentration in the lower mainland of the province.

10.1 HIV Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
HIV Reports	706	840	692	716	533	476	420	411	438	442
BC HIV Rate	19.8	22.8	18.3	18.4	13.5	11.9	10.4	10.1	10.7	10.7
Not notifiable nationally										

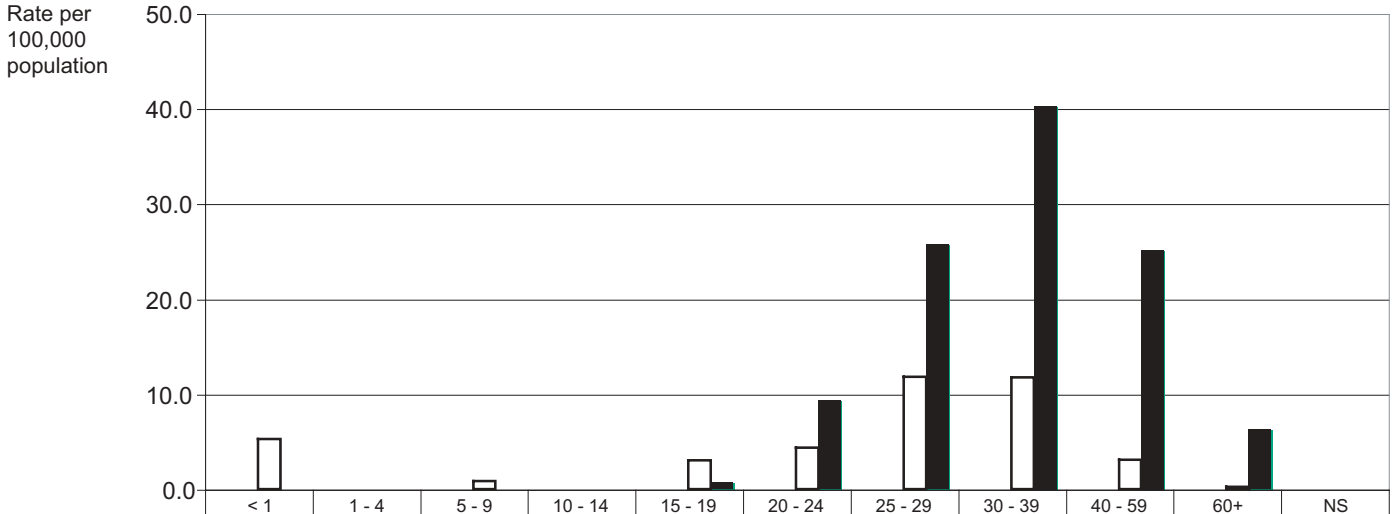
10.2 HIV Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	1	1.3
12	Kootenay Boundary	0	0.0
13	Okanagan	12	3.8
14	Thompson Cariboo Shuswap	8	3.7
21	Fraser Valley	12	4.8
22	Simon Fraser	47	8.5
23	South Fraser	41	6.7
31	Richmond	9	5.1
32	Vancouver	229	38.9
33	North Shore/Coast Garibaldi	12	4.5
41	South Vancouver Island	42	10.4
42	Central Vancouver Island	12	5.0
43	North Vancouver Island	3	5.4
51	Northwest	2	2.4
52	Northern Interior	8	5.3
53	Northeast	2	3.2

Note: Map classification by Jenks natural breaks method.

10.3 HIV Rates by Age Group and Sex, 2002

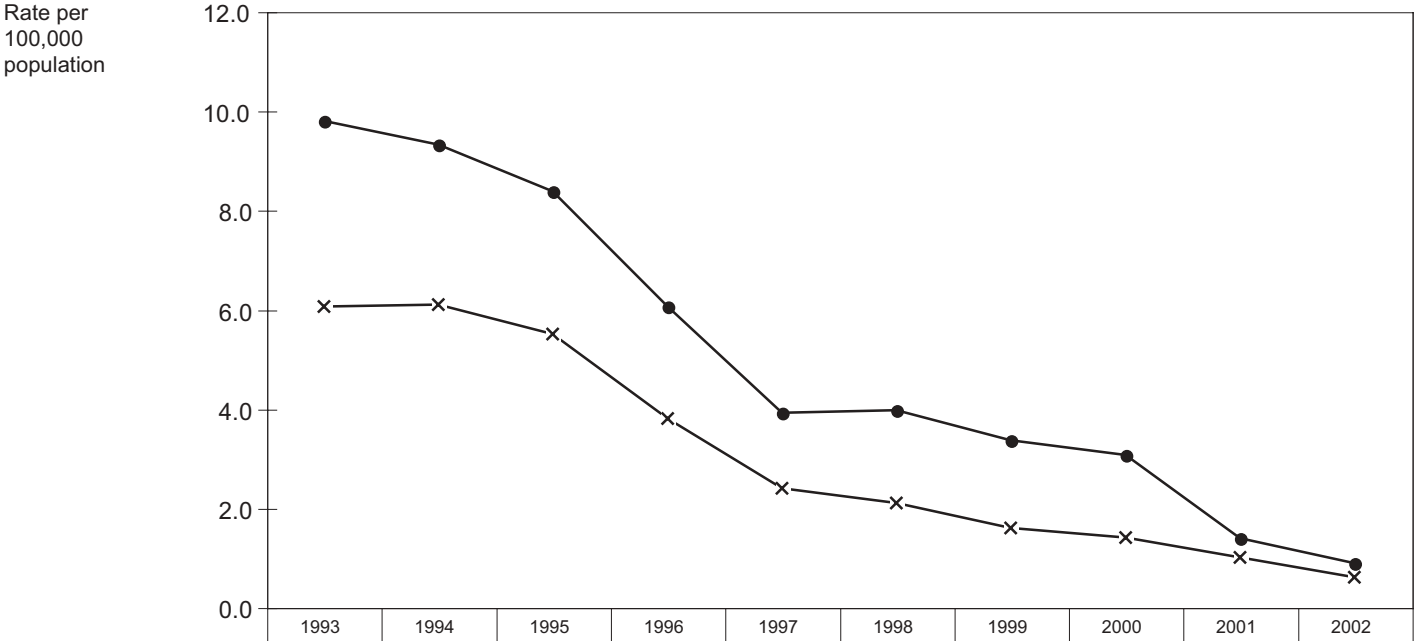


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	NS
HIV Reports - Female	1	0	1	0	4	6	16	38	19	1	0
HIV Reports - Male	0	0	0	0	1	13	35	130	153	21	1
☐ HIV Rate - Female	5.3	0.0	0.8	0.0	3.0	4.4	11.8	11.8	3.1	0.3	
■ HIV Rate - Male	0.0	0.0	0.0	0.0	0.7	9.3	25.7	40.3	25.1	6.3	

AIDS

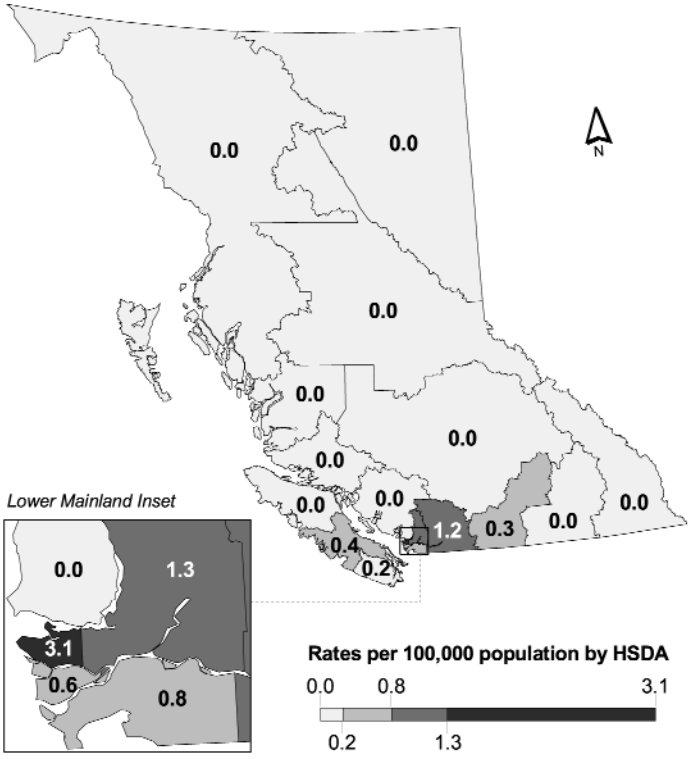
The BC rate per 100,000 population of newly reported cases of AIDS continues to decline along with the Canadian rate per 100,000 population. The region with the largest number of newly reported cases of AIDS (18)and the highest rate per 100,000 population (3.1) was Vancouver. There was only one female newly diagnosed with AIDS in 2002. The distribution of male cases has shifted somewhat with a drop in the 30-39 age group and an increase in the 25-29 age group.

11.1 AIDS Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
AIDS Reports	350	343	317	235	155	159	136	125	57	37
BC AIDS Rate	9.8	9.3	8.4	6.1	3.9	4.0	3.4	3.1	1.4	0.9
Canadian AIDS Rate	6.1	6.1	5.5	3.8	2.4	2.1	1.6	1.4	1.0	0.6

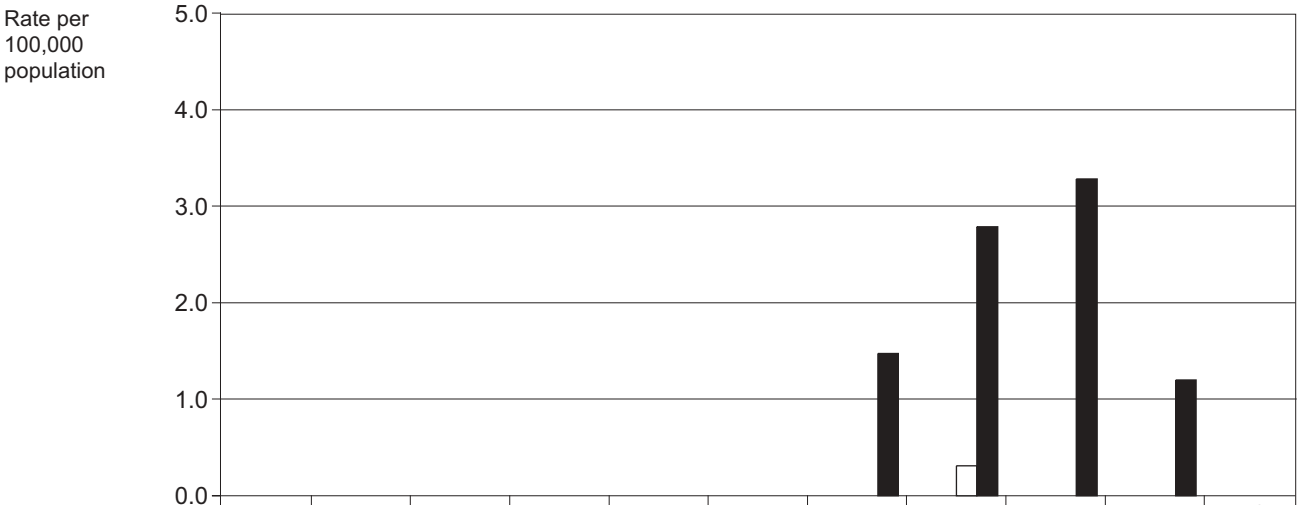
11.2 AIDS Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	0	0.0
13	Okanagan	1	0.3
14	Thompson Cariboo Shuswap	0	0.0
21	Fraser Valley	3	1.2
22	Simon Fraser	7	1.3
23	South Fraser	5	0.8
31	Richmond	1	0.6
32	Vancouver	18	3.1
33	North Shore/Coast Garibaldi	0	0.0
41	South Vancouver Island	1	0.2
42	Central Vancouver Island	1	0.4
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

Note: Map classification by Jenks natural breaks method.

11.3 AIDS Rates by Age Group and Sex, 2002

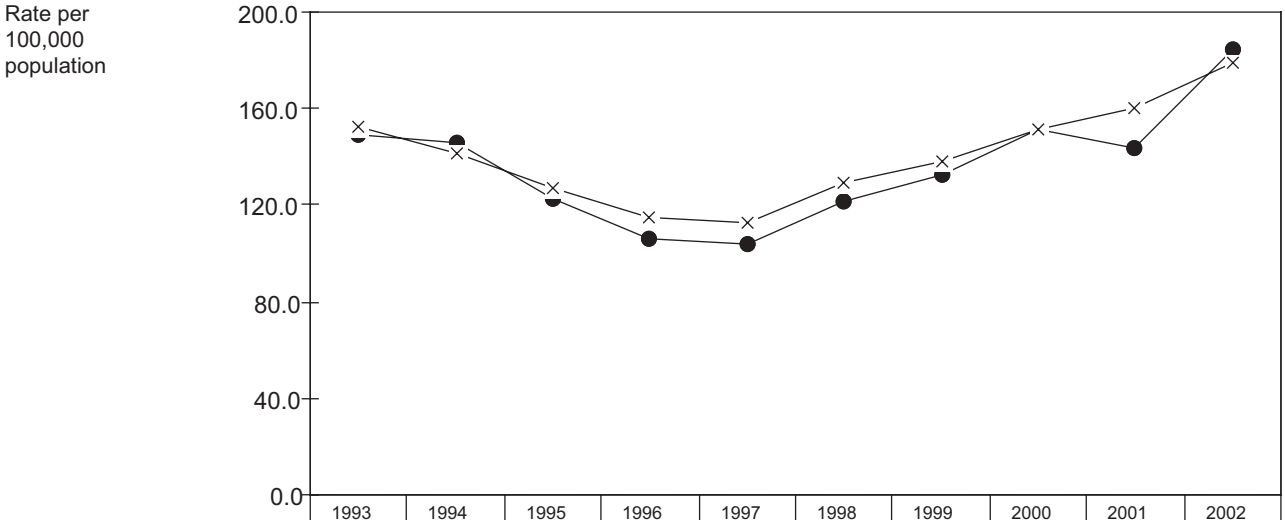


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	NS
AIDS Reports - Female	0	0	0	0	0	0	0	1	0	0	0
AIDS Reports - Male	0	0	0	0	0	0	2	9	20	4	0
□ AIDS Rate - Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	
■ AIDS Rate - Male	0.0	0.0	0.0	0.0	0.0	0.0	1.5	2.8	3.3	1.2	

Genital Chlamydia

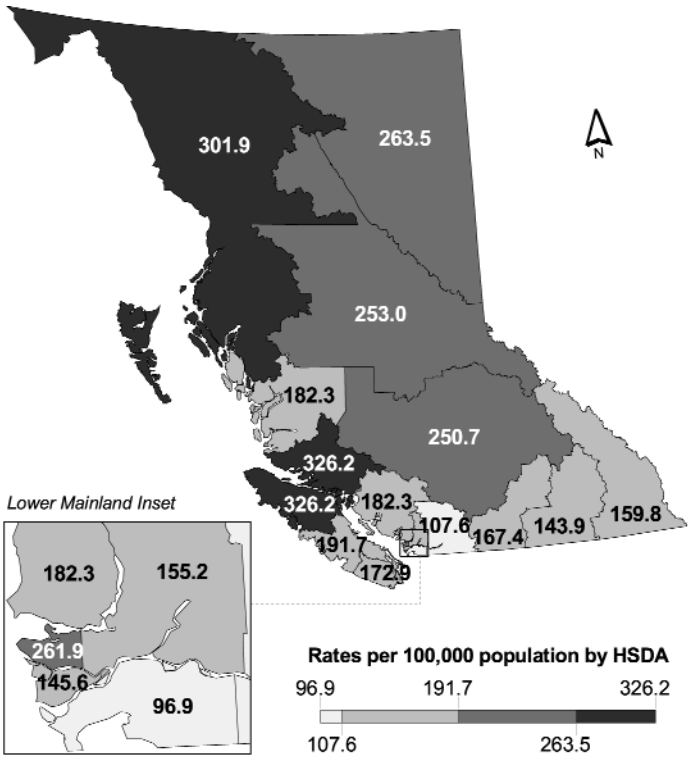
The BC rate per 100,000 population for reported chlamydia cases in 2002 was 184.2. This is a 29% increase from the rate of 143.2 in 2001. It is also a slightly higher rate than the Canadian rate of 179.0 for 2002. Most health areas had increases with the greatest increase in Simon Fraser, from 65.7 to 155.2 (136%) per 100,000 population. Other health areas with significant increases were Northeast from 125.4 to 263.5 and Fraser Valley from 52.7 to 107.6. North Vancouver Island's increase from 183.9 to 362.2 was likely a result of changes to it's boundaries. Age distribution was much the same as previous years with increases in all age and gender groups.

12.1 Chlamydia Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Chlamydia Reports	5,321	5,366	4,660	4,116	4,116	4,878	5351	6166	5868	7613
—●— BC Chlamydia Rate	149.0	145.7	123.1	106.0	104.0	121.6	132.3	151.6	143.2	184.2
—×— Canadian Chlamydia Rate	152.1	141.0	126.8	114.8	112.7	128.8	138.2	151.1	160.5	179.0

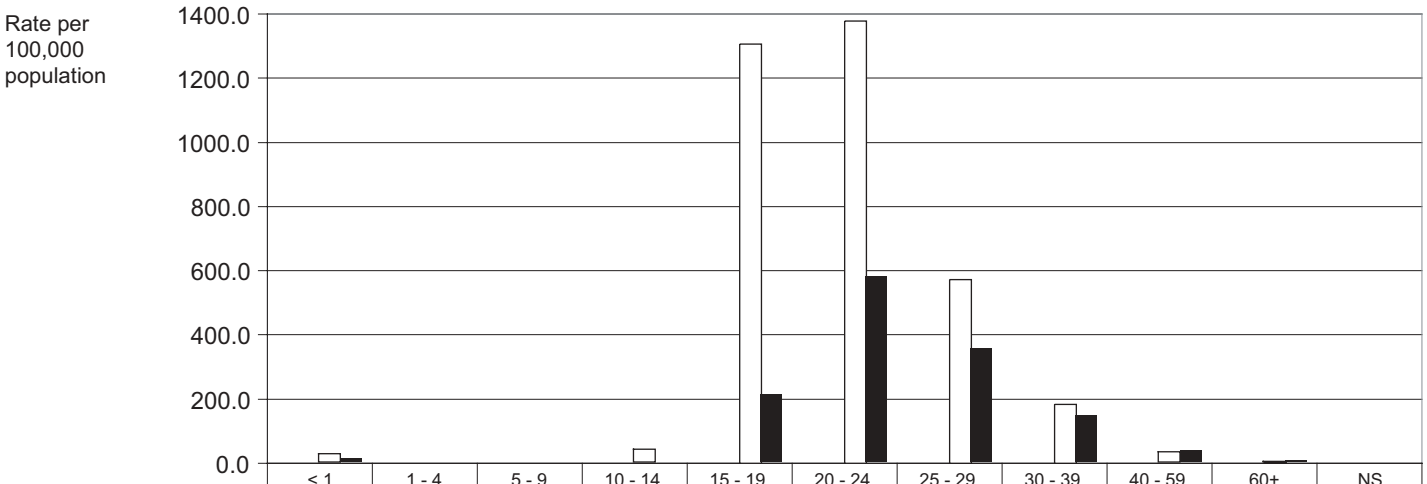
12.2 Genital Chlamydia Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	126	159.8
12	Kootenay Boundary	115	143.9
13	Okanagan	527	167.4
14	Thompson Cariboo Shuswap	537	250.7
21	Fraser Valley	271	107.6
22	Simon Fraser	856	155.2
23	South Fraser	595	96.9
31	Richmond	255	145.6
32	Vancouver	1541	261.9
33	North Shore/Coast Garibaldi	490	182.3
41	South Vancouver Island	697	172.9
42	Central Vancouver Island	461	191.7
43	North Vancouver Island	181	326.2
51	Northwest	251	301.9
52	Northern Interior	380	253.0
53	Northeast	167	263.5

Note: Map classification by Jenks natural breaks method.

12.3 Chlamydia Rates by Age Group and Sex, 2002

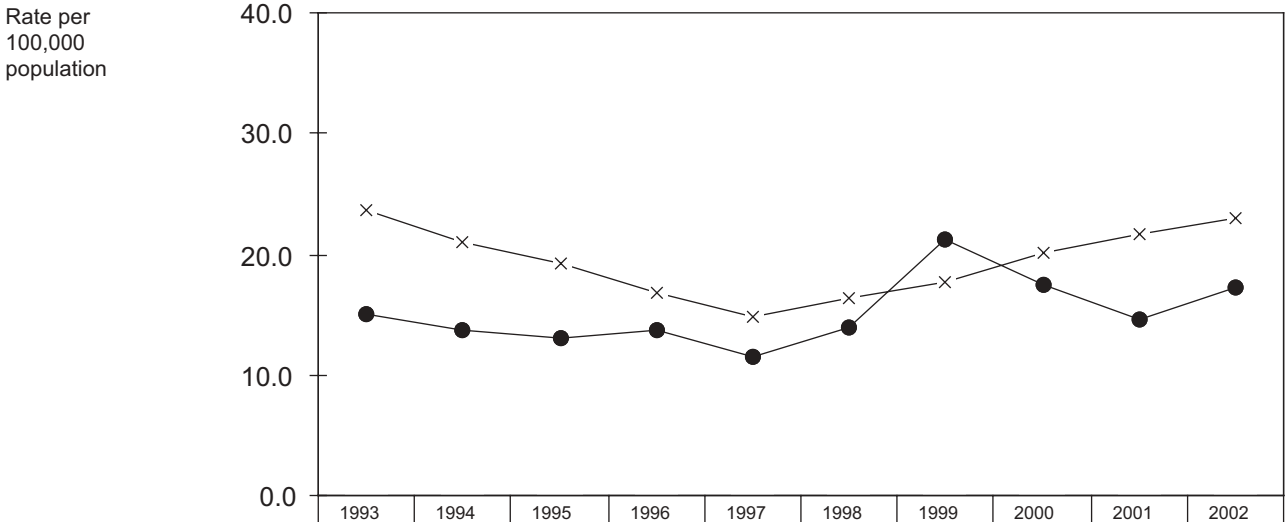


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	NS
Chlamydia Reports - Female	5	0	0	51	1729	1889	772	595	194	5	50
Chlamydia Reports - Male	2	0	0	0	295	809	480	472	224	21	19
□ Chlamydia Rate - Female	26.3	0.0	0.0	39.9	1307.5	1377.8	571.0	184.3	31.7	1.3	
■ Chlamydia Rate - Male	10.0	0.0	0.0	0.0	210.8	579.0	353.1	146.2	36.7	6.3	

Gonorrhea

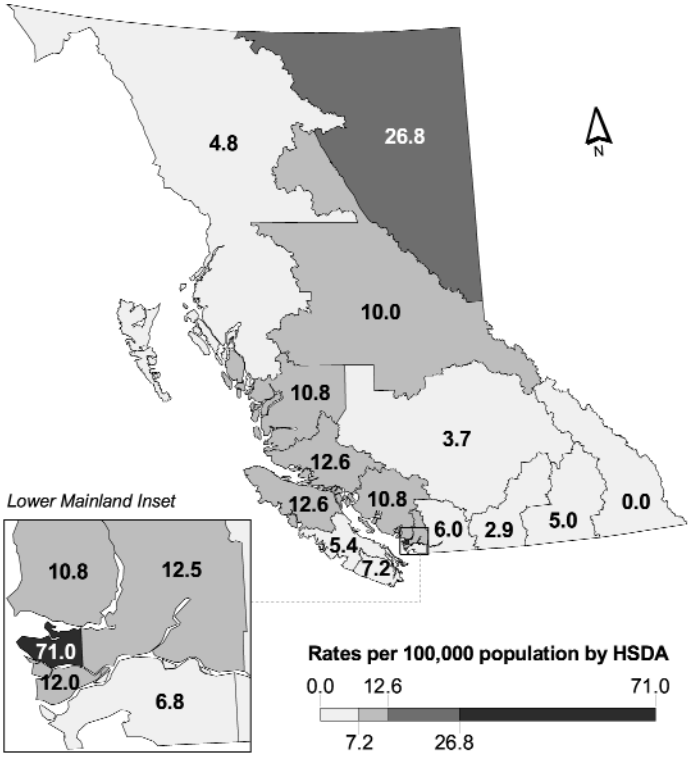
The BC rate per 100,000 population of reported gonorrhea cases in 2002 increased to 17.3 from 14.6 the previous year. The rate in BC continues to be below the Canadian rate of 23.0 per 100,000 population. Northeast had an increase in rate from 11.8 to 26.8 per 100,000, from 8 cases to 17 cases. The rate increase in North Vancouver Island was a result of boundary changes. The rate in all age groups for females decreased except the 25-29 age group which increased from 12.6 to 20.8 per 100,000 population. The rate for all groups of males increased except the 15-19 age group.

13.1 Gonorrhea Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Gonorrhea Reports	540	504	492	536	456	558	858	707	599	713
—●— BC Gonorrhea Rate	15.1	13.7	13.0	13.8	11.5	13.9	21.2	17.4	14.6	17.3
—×— Canadian Gonorrhea Rate	23.6	21.1	19.3	16.8	14.9	16.4	17.6	20.2	21.6	23.0

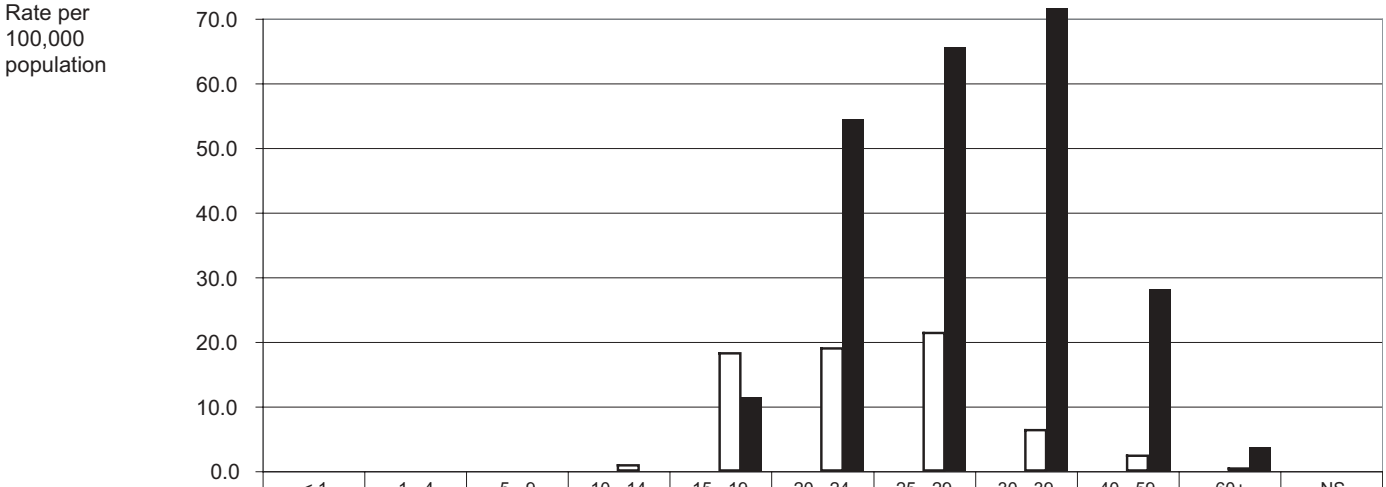
13.2 Gonorrhea Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	4	5.0
13	Okanagan	9	2.9
14	Thompson Cariboo Shuswap	8	3.7
21	Fraser Valley	15	6.0
22	Simon Fraser	69	12.5
23	South Fraser	42	6.8
31	Richmond	21	12.0
32	Vancouver	418	71.0
33	North Shore/Coast Garibaldi	29	10.8
41	South Vancouver Island	29	7.2
42	Central Vancouver Island	13	5.4
43	North Vancouver Island	7	12.6
51	Northwest	4	4.8
52	Northern Interior	15	10.0
53	Northeast	17	26.8

Note: Map classification by Jenks natural breaks method.

13.3 Gonorrhea Rates by Age Group and Sex, 2002

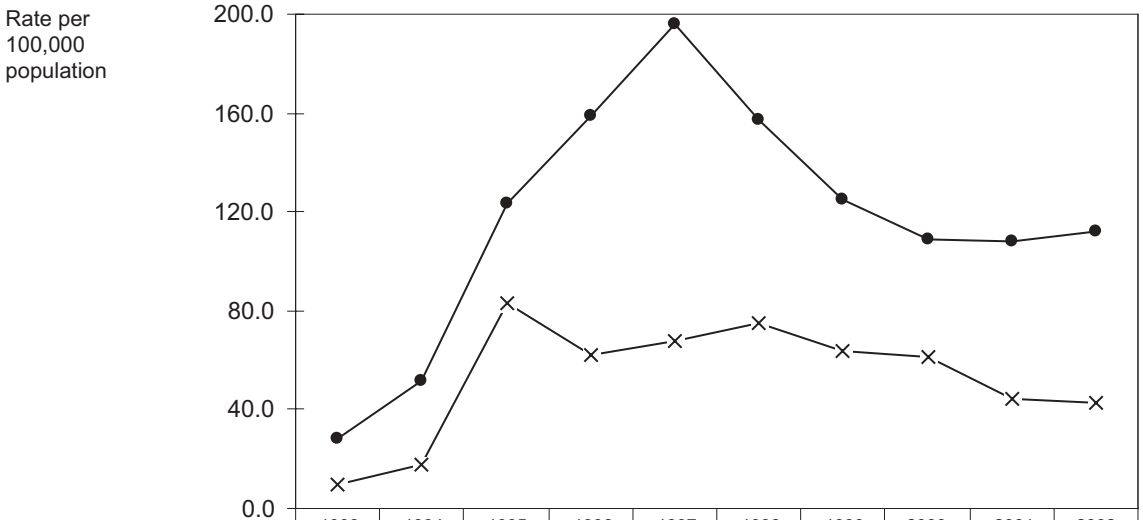


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	NS
Gonorrhea Reports - Female	0	0	0	1	24	25	28	20	14	1	2
Gonorrhea Reports - Male	0	0	0	0	16	75	91	230	173	12	1
Gonorrhea Rate - Female	0.0	0.0	0.0	0.8	18.1	18.2	20.7	6.2	2.3	0.3	
Gonorrhea Rate - Male	0.0	0.0	0.0	0.0	11.4	53.7	66.9	71.2	28.4	3.6	

Hepatitis C

The rate of reporting of new positive tests for hepatitis C has remained relatively stable over the last three years. Four thousand six hundred and twenty-five new reports were received in 2002 for a rate of 112 per 100,000 population. BC continues to have a higher prevalence of hepatitis C than other provinces because of a higher burden of injection drug use per capita. It is hoped that ongoing enhanced surveillance efforts will yield some meaningful statistics on the rate of and risk factors for newly acquired or acute hepatitis C over the next year or two.

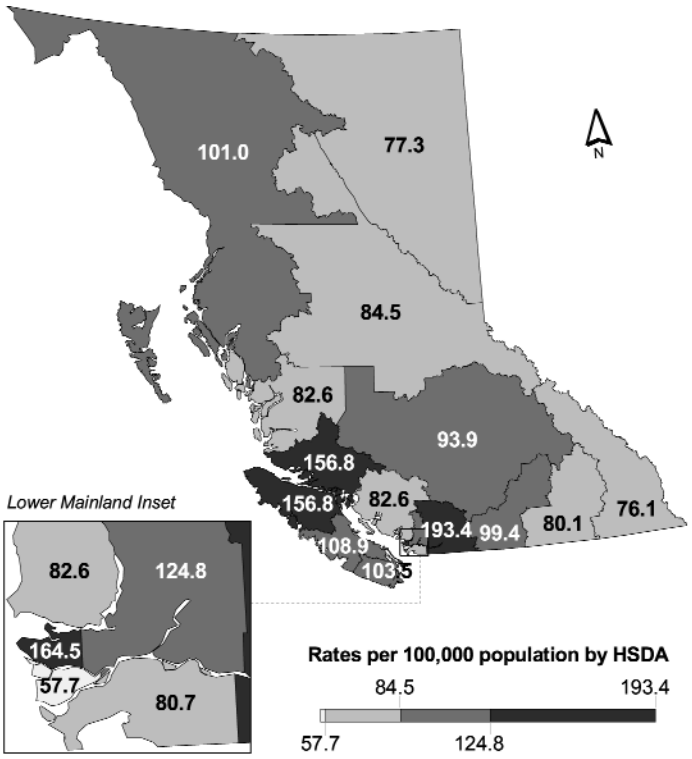
14.1 Hepatitis C Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Hepatitis C Reports	1002	1910	4658	6165	7747	6292	5041	4410	4423	4625
BC Hepatitis C Rate	28.1	51.9	123.1	158.8	195.7	157.4	125.2	108.7	1080.0	112.0
Canadian Hepatitis C Rate	9.8	18.0	82.8	62.2	67.8	75.2	63.6	61.1	44.4	42.8

Note: Canadian rates are based on reporting from selected provinces and territories

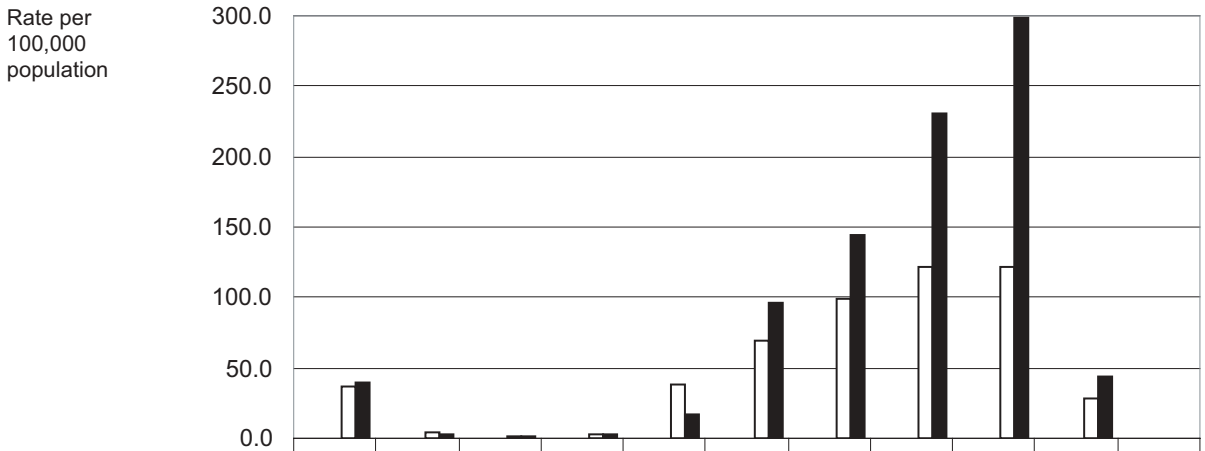
14.2 Hepatitis C Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	60	76.1
12	Kootenay Boundary	64	80.1
13	Okanagan	313	99.4
14	Thompson Cariboo Shuswap	201	93.9
21	Fraser Valley	487	193.4
22	Simon Fraser	688	124.8
23	South Fraser	495	80.7
31	Richmond	101	57.7
32	Vancouver	968	164.5
33	North Shore/Coast Garibaldi	222	82.6
41	South Vancouver Island	417	103.5
42	Central Vancouver Island	262	108.9
43	North Vancouver Island	87	156.8
51	Northwest	84	101.0
52	Northern Interior	127	84.5
53	Northeast	49	77.3

Note: Map classification by Jenks natural breaks method.

14.3 Hepatitis C Rates by Age Group and Sex, 2002

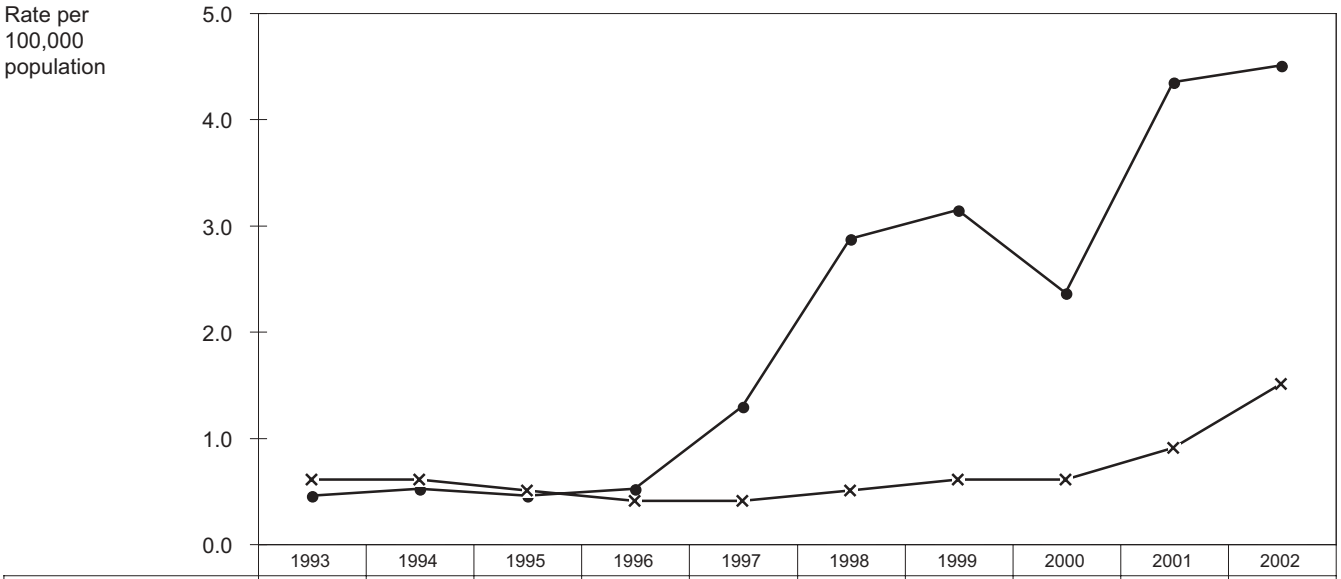


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	Unknown
Hepatitis C Reports - Female	7	3	2	3	50	95	134	393	742	110	4
Hepatitis C Reports - Male	8	3	2	3	23	135	196	745	1819	145	0
Hepatitis C Reports - Unknown	0	0	0	0	0	0	0	1	2	0	0
□ Hepatitis C Rate - Female	36.9	3.7	1.7	2.3	37.8	69.3	99.1	121.7	121.4	27.7	
■ Hepatitis C Rate - Male	39.9	3.5	1.6	2.2	16.4	96.6	144.2	230.7	298.4	43.4	

Infectious Syphilis

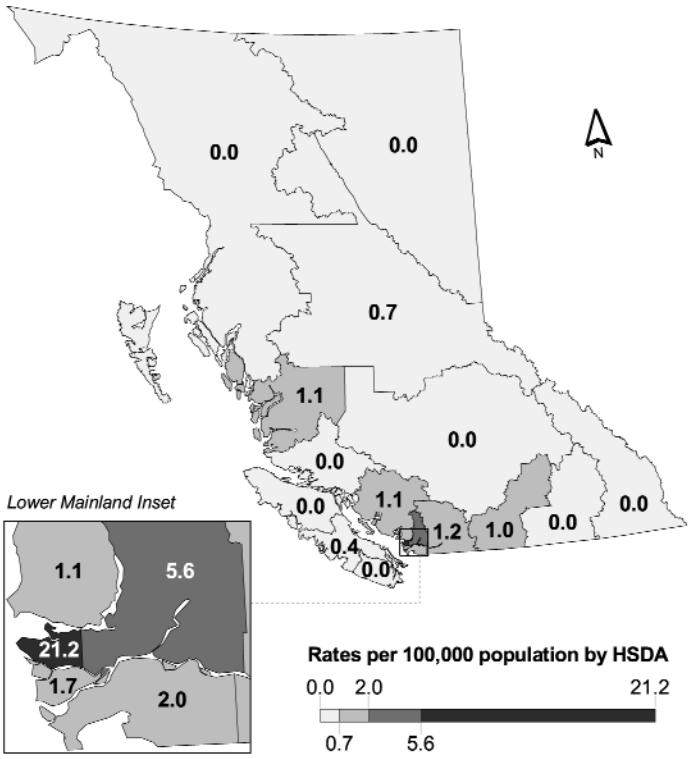
The rate per 100,000 population of infectious syphilis increased from 4.3 in 2001 to 4.5 in 2002 as numbers of cases increased from 178 to 186. The rate in BC is well above the Canadian rate of 1.5. Syphilis cases are concentrated in the Vancouver and lower mainland regions. All female age groups had declines in rate per 100,000 population except the 25-29 and the 30-39 group which had small increases. The male age group with a significant increase was the 30-39 age group.

15.1 Syphilis Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Syphilis Reports	16	19	17	20	51	115	127	96	178	186
BC Syphilis Rate	0.4	0.5	0.4	0.5	1.3	2.9	3.1	2.4	4.3	4.5
Canadian Syphilis Rate	0.6	0.6	0.5	0.4	0.4	0.5	0.6	0.6	0.9	1.5

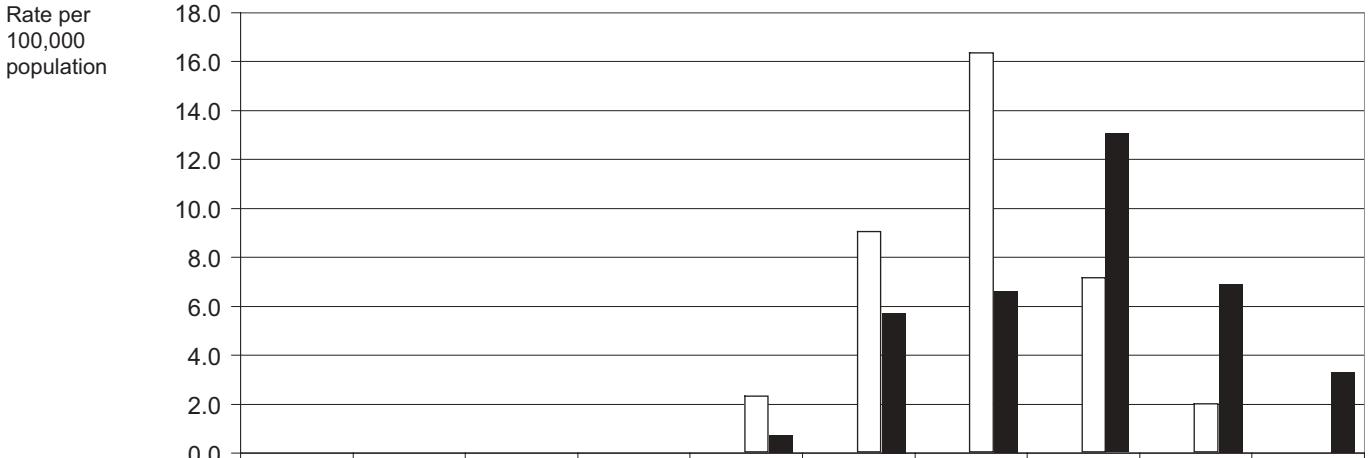
15.2 Infectious Syphilis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	0	0.0
13	Okanagan	3	1.0
14	Thompson Cariboo Shuswap	0	0.0
21	Fraser Valley	3	1.2
22	Simon Fraser	31	5.6
23	South Fraser	12	2.0
31	Richmond	3	1.7
32	Vancouver	125	21.2
33	North Shore/Coast Garibaldi	3	1.1
41	South Vancouver Island	0	0.0
42	Central Vancouver Island	1	0.4
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	1	0.7
53	Northeast	0	0.0

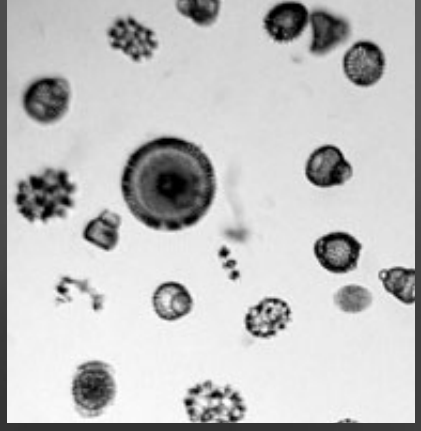
Note: Map classification by Jenks natural breaks method.

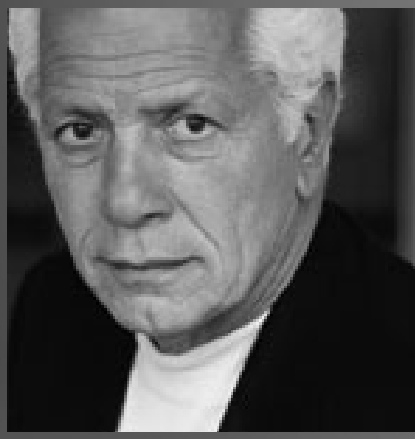
15.3 Syphilis Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Syphilis Reports - Female	0	0	0	0	3	12	22	23	12	0
Syphilis Reports - Male	0	0	0	0	1	8	9	42	42	11
☐ Syphilis Rate - Female	0.0	0.0	0.0	0.0	2.3	8.8	16.3	7.1	2.0	0.0
■ Syphilis Rate - Male	0.0	0.0	0.0	0.0	0.7	5.7	6.6	13.0	6.9	3.3

Diseases Transmitted by Direct Contact and Respiratory Routes



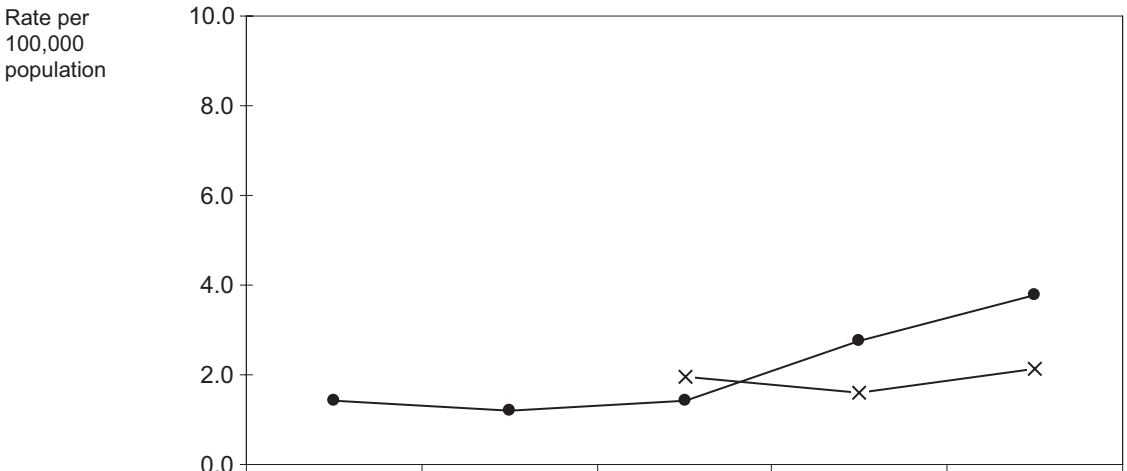


Streptococcal Disease, (invasive), Group A

One hundred and fifty six cases of invasive group A streptococcal (GAS) disease were reported in 2002, an increase of thirty-nine percent from the previous year and about twice the reported Canadian rate. Fifty-six percent of the cases were male. The highest rates were in children under 5 years of age and adults over sixty. There was an increase in infants, but this represented an absolute increase of four cases from only one last year. No secondary cases were reported. Necrotizing fasciitis was reported in 21 (14%) cases and streptococcal toxic shock syndrome in 12 (8%) cases. The less severe clinical presentations were cellulitis in 34%, pneumonia in 18%, and septic arthritis in 8%. Two cases were pregnancy related with five cases occurring in the puerperal period. The reported risk factors included a wound in 30% and surgery in 5%. Nineteen percent of cases had no reported risk factors. Eleven percent of reported cases were fatal. Seventy-eight percent of reported cases were confirmed by isolation of GAS from blood, while in 19% GAS was isolated from tissue. Vancouver reported 26% of reported cases followed by South Fraser (17%) and South Vancouver Island (10%).

Several Health Service Delivery Areas had sizeable increases in reported GAS compared to 2001. Central Vancouver Island more than doubled the number of cases to 13, from 5 in 2001. Kootenay Boundary went from no cases in 2001 to six in 2002. South Fraser increased from 17 to 26. Vancouver went from 25 last year to 40 for 2002.

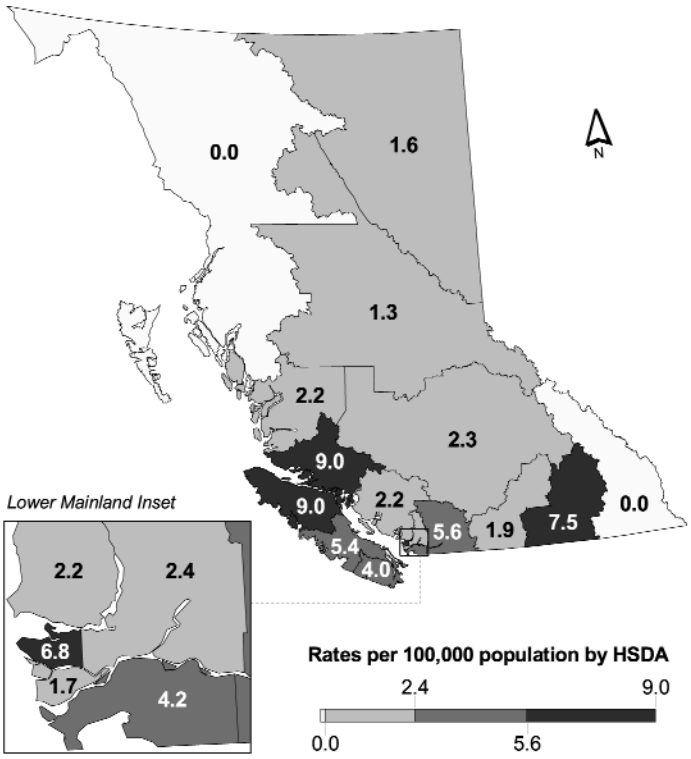
16.1 Streptococcus Disease (invasive) Group A Rates by Year, 1998-2002



	1998	1999	2000	2001	2002
BC GAS Reports	57	49	58	113	156
BC GAS Rate	1.4	1.2	1.4	2.8	3.8
Canadian GAS Rate			2.0	1.6	2.1

Note: Invasive Streptococcal Group A Disease became nationally notifiable in January 2000

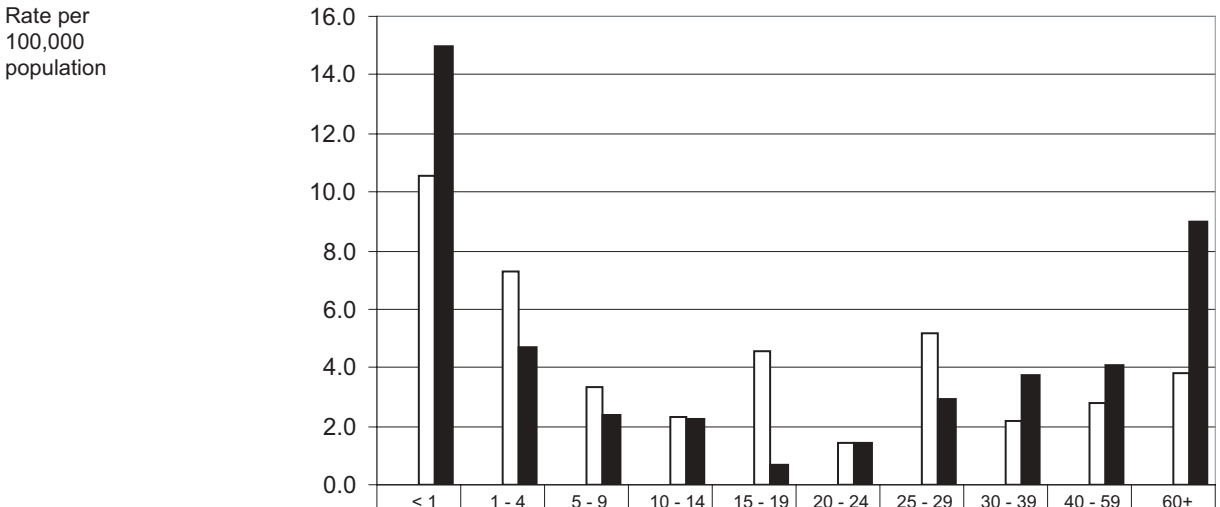
16.2 Streptococcus Disease (invasive) Group A Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	6	7.5
13	Okanagan	6	1.9
14	Thompson Cariboo Shuswap	5	2.3
21	Fraser Valley	14	5.6
22	Simon Fraser	13	2.4
23	South Fraser	26	4.2
31	Richmond	3	1.7
32	Vancouver	40	6.8
33	North Shore/Coast Garibaldi	6	2.2
41	South Vancouver Island	16	4.0
42	Central Vancouver Island	13	5.4
43	North Vancouver Island	5	9.0
51	Northwest	0	0.0
52	Northern Interior	2	1.3
53	Northeast	1	1.6

Note: Map classification by Jenks natural breaks method.

16.3 Streptococcus Disease (invasive) Group A Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Invasive Strep Group A Reports - Female	2	6	4	3	6	2	7	7	17	15
Invasive Strep Group A Reports - Male	3	4	3	3	1	2	4	12	25	30
□ Invasive Strep Group A Rate - Female	10.5	7.3	3.3	2.3	4.5	1.5	5.2	2.2	2.8	3.8
■ Invasive Strep Group A Rate - Male	15.0	4.7	2.4	2.2	0.7	1.4	2.9	3.7	4.1	9.0

Tuberculosis

In 2002 there were 303 cases of reported tuberculosis for a rate of 7.3 per 100,000 in British Columbia, a 23% decrease in the number and rate of reported cases compared to 2001.

The rate of tuberculosis in 2001 was the highest since 1997. However, a part of that increase was due to the recent changes in the reporting system. After adjusting for these changes, the decline in the incidence rate compared to 2001 would be about 16%.

Rates for various health regions vary across the province. The Vancouver, Richmond, North Vancouver Island and Simon Fraser health service delivery areas have rates exceeding the provincial rate (7.3/100,000 population). The highest incidence rate was observed in Vancouver and Richmond (21.8 and 13.1/100,000 population respectively) while the lowest incidence rate was observed in Interior Health Authority (1.0/100,000 population).

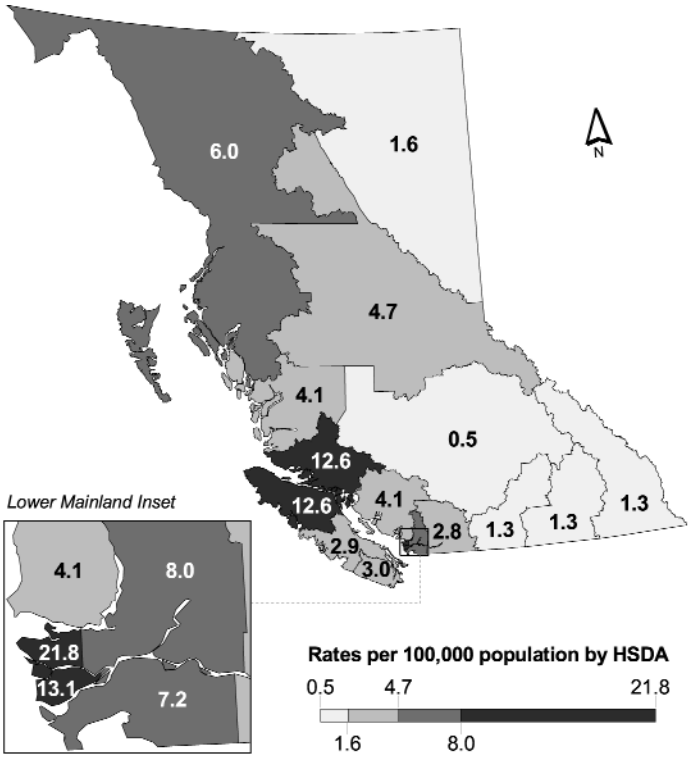
Compared to 2001, the rate of tuberculosis decreased in all regions except North Vancouver Island. The decrease in TB rates was most pronounced for Thompson Cariboo Shuswap (5.6 vs 0.5), South Fraser (12.1 vs 7.2), Northeast (5.9 vs 1.6) and Fraser Valley (6.1 vs 2.8).

The age specific rates are shown in figure 17.3. Overall, the tuberculosis rate was significantly higher in men than women (8.3 vs 6.4, P-value=0.03).

17.1 Tuberculosis Rates by Year, 1993-2002

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Tuberculosis Cases	346.0	332.0	312.0	323.0	413.0	337.0	332.0	290.0	391.0	303.0
—●— BC Tuberculosis Rate	9.7	9.0	8.2	8.3	10.4	8.4	8.3	7.1	9.5	7.3
—×— Canadian Tuberculosis Rate	7.0	7.1	6.6	6.3	6.6	5.9	5.9	5.5	5.5	

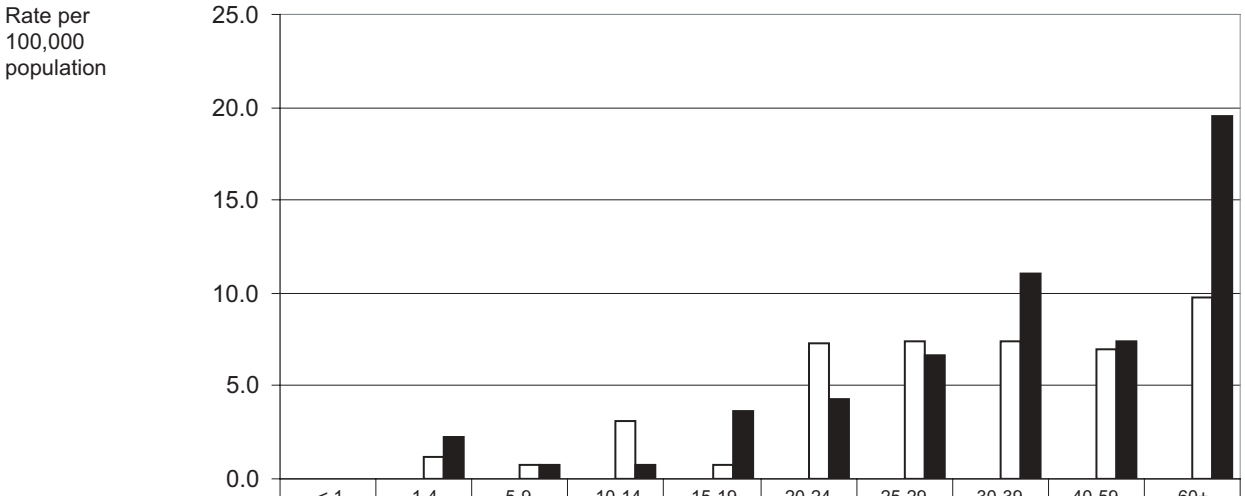
17.2 Tuberculosis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	1	1.3
12	Kootenay Boundary	1	1.3
13	Okanagan	4	1.3
14	Thompson Cariboo Shuswap	1	0.5
21	Fraser Valley	7	2.8
22	Simon Fraser	44	8.0
23	South Fraser	44	7.2
31	Richmond	23	13.1
32	Vancouver	128	21.8
33	North Shore/Coast Garibaldi	11	4.1
41	South Vancouver Island	12	3.0
42	Central Vancouver Island	7	2.9
43	North Vancouver Island	7	12.6
51	Northwest	5	6.0
52	Northern Interior	7	4.7
53	Northeast	1	1.6

Note: Map classification by Jenks natural breaks method.

17.3 Tuberculosis Rates by Age Group and Gender, 2002

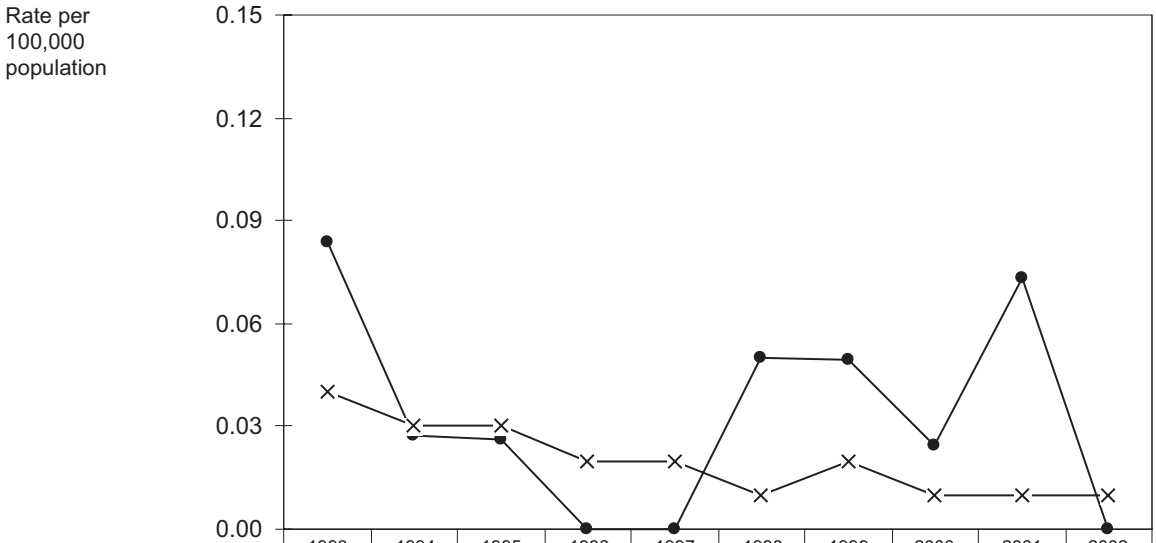


	< 1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-59	60+
Tuberculosis Cases - Female	0.0	1.0	1.0	4.0	1.0	10.0	10.0	24.0	43.0	39.0
Tuberculosis Cases - Male	0.0	2.0	1.0	1.0	5.0	6.0	9.0	36.0	45.0	65.0
□ Tuberculosis Rate-Female	0.0	1.2	0.8	3.1	0.8	7.3	7.4	7.4	7.0	9.8
■ Tuberculosis Rate-Male	0.0	2.3	0.8	0.7	3.6	4.3	6.6	11.1	7.4	19.5

Leprosy

Leprosy is not endemic to BC There were no new reports during 2002.

18.1 Leprosy Rates by Year, 1993-2002

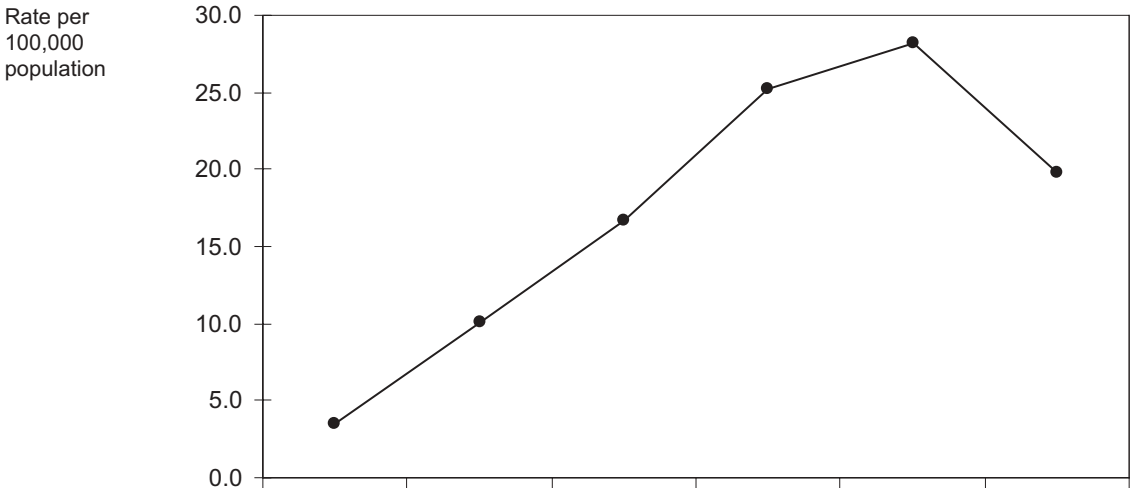


	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Leprosy Reports	3	1	1	0	0	2	2	1	3	0
BC Leprosy Rate	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0
Canadian Leprosy Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Methicillin Resistant *Staphylococcus aureus*

The number and rate of reports of MRSA fell from 2001 to 2002. However, this is most likely a result of reduced reporting by health authorities due to the emergence of alternate laboratory based approaches to tracking the problem. For further MRSA information refer to ARO Surveillance in BC (page 52).

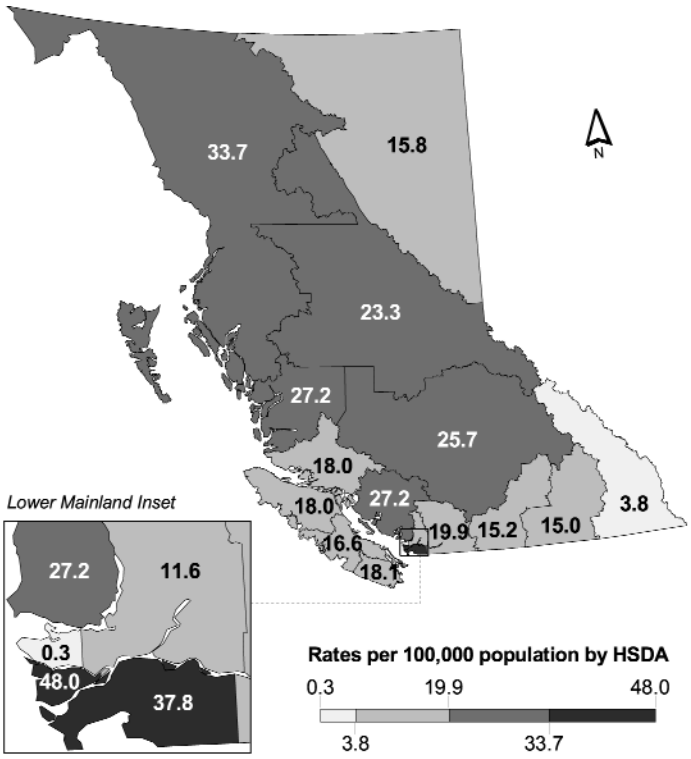
19.1 Methicillin Resistant *Staphylococcus aureus* Rates by Year, 1997-2002



	1997	1998	1999	2000	2001	2002
BC MRSA Reports	139	402	671	1023	1157	819
BC MRSA Rate	3.5	10.1	16.7	25.2	28.3	19.8

Note: MRSA was made reportable in BC in 1999, and is not notifiable nationally

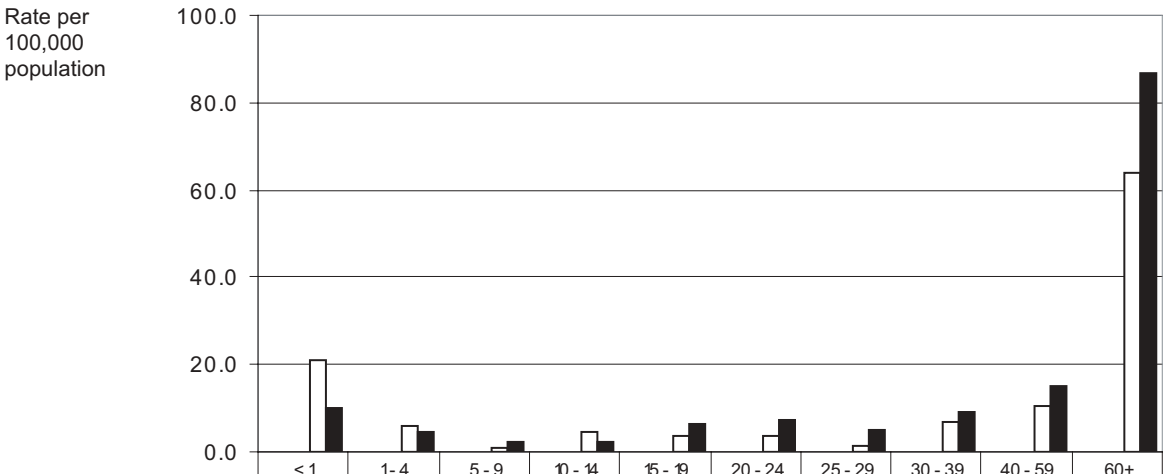
19.2 Methicillin Resistant *Staphylococcus aureus* Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	3	3.8
12	Kootenay Boundary	12	15.0
13	Okanagan	48	15.2
14	Thompson Cariboo Shuswap	55	25.7
21	Fraser Valley	50	19.9
22	Simon Fraser	64	11.6
23	South Fraser	232	37.8
31	Richmond	84	48.0
32	Vancouver	2	0.3
33	North Shore/Coast Garibaldi	73	27.2
41	South Vancouver Island	73	18.1
42	Central Vancouver Island	40	16.6
43	North Vancouver Island	10	18.0
51	Northwest	28	33.7
52	Northern Interior	35	23.3
53	Northeast	10	15.8

Note: Map classification by Jenks natural breaks method.

19.3 Methicillin Resistant *Staphylococcus aureus* Rates by Age Group and Sex, 2002

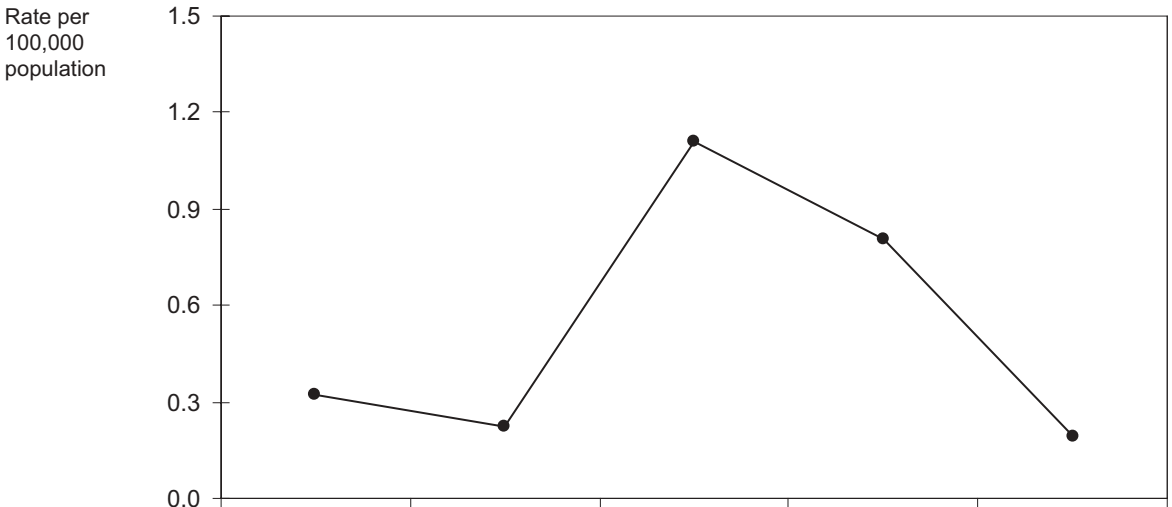


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
MRSA Reports - Female	4	5	1	6	5	5	2	22	64	253
MRSA Reports - Male	2	4	3	3	9	10	7	29	91	290
MRSA Reports - Unknown	0	0	0	0	0	0	0	0	1	3
MRSA Rate - Female	21.1	6.1	0.8	4.7	3.8	3.6	1.5	6.8	10.5	63.8
MRSA Rate - Male	10.0	4.7	2.4	2.2	6.4	7.2	5.1	9.0	14.9	86.8

Vancomycin Resistant Enterococci

The number and rate of reports of VRE fell from 2001 to 2002. However, this is most likely a result of reduced reporting by health authorities due to the emergence of alternate laboratory based approaches to tracking the problem. For further VRE information refer to ARO Surveillance in BC (page 52).

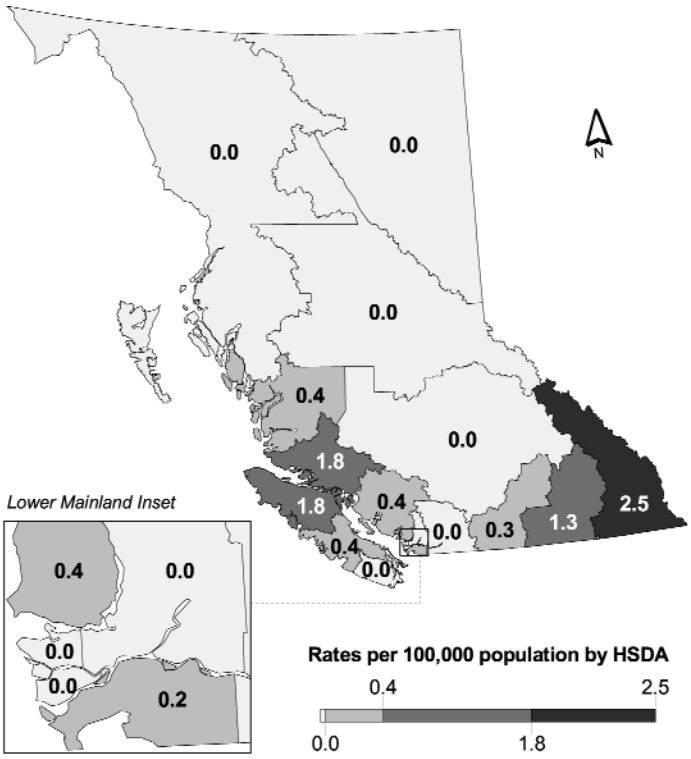
20.1 Vancomycin Resistant Enterococci Rates by Year, 1998-2002



	1998	1999	2000	2001	2002
BC VRE Reports	13	9	45	33	8
BC VRE Rate	0.3	0.2	1.1	0.8	0.2

Note: VRE was made reportable in BC in 1999, and is not notifiable nationally

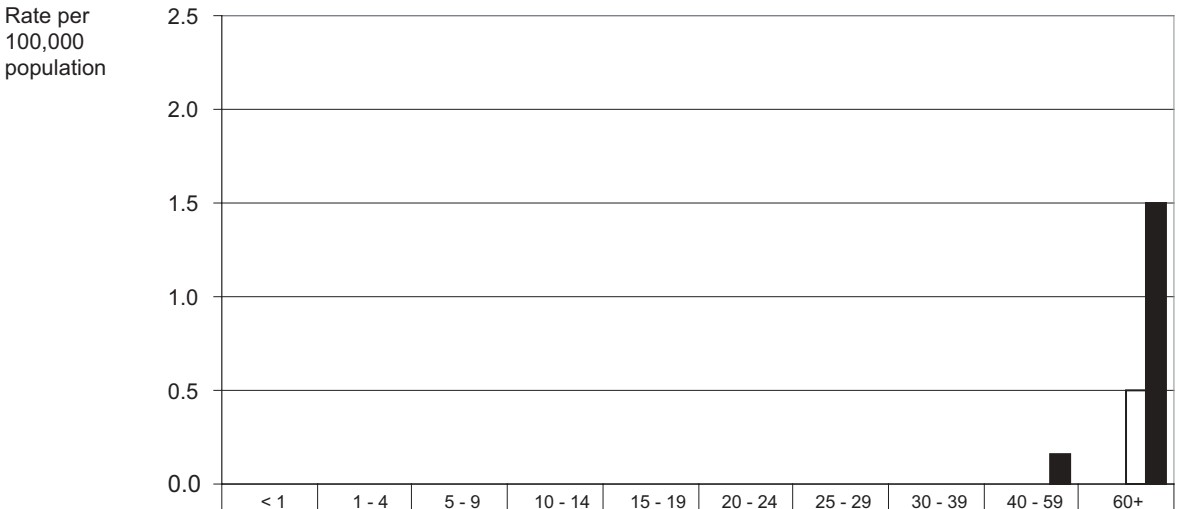
20.2 Vancomycin Resistant Enterococci Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	2	2.5
12	Kootenay Boundary	1	1.3
13	Okanagan	1	0.3
14	Thompson Cariboo Shuswap	0	0.0
21	Fraser Valley	0	0.0
22	Simon Fraser	0	0.0
23	South Fraser	1	0.2
31	Richmond	0	0.0
32	Vancouver	0	0.0
33	North Shore/Coast Garibaldi	1	0.4
41	South Vancouver Island	0	0.0
42	Central Vancouver Island	1	0.4
43	North Vancouver Island	1	1.8
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

Note: Map classification by Jenks natural breaks method.

20.3 Vancomycin Resistant Enterococci Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
VRE Reports - Female	0	0	0	0	0	0	0	0	0	2
VRE Reports - Male	0	0	0	0	0	0	0	0	1	5
☐ VRE Rate - Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
■ VRE Rate - Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.5

ARO Surveillance in British Columbia

BCCAMM — BCALP Microbiology Science Section

The Medical Microbiologists of British Columbia (BCCAMM) have established a network for gathering meaningful information about antibiotic resistant organisms in British Columbia. Participation in this project is broadly representative of the population of British Columbia, and includes data from laboratories serving both the in-patient and out-patient settings. The fifteen participating laboratories are listed at the end of this report. BCCAMM agreed that after collection, the data would be combined to prevent the identification of sites and/or patients. Following review and approval of this report by BCCAMM and all participants, it would be made available to Epidemiology Services, BCCDC (Dr. David Patrick), and any use or further dissemination would acknowledge BCCAMM.

Following review and approval of this report by BCCAMM and all participants, it would be made available to Epidemiology, BCCDC (Dr. David Patrick), and any use or further dissemination would acknowledge BCCAMM.

This is the second report from this group, with cumulative data to June 30, 2003. With this report, new sites have been recruited to participate in the data collection. Some previously reported data have been adjusted to reflect new information received back to the beginning of the project, as the new sites provided retrospective data. Interpretation of these statistics must be done with an understanding of its limitations as further discussed in the next section. Details are provided in the attached Tables.

21.1 MRSA reported by BCCAMM ARO Surveillance Project

Time period	Total new MRSA patients[a]	Total *S. aureus* isolates[b]	Approx % MRSA Total *S. aureus*[b]	Approx % MRSA Range[b,c]	Approx % MRSA Median[b]
Jan 1-Jun 30, '02	1,332	14,131	9.4%	1.5%-62.7%	6.0%
Jul 1-Dec 31, '02	1,172	13,510	8.6%	1.3-40.7%	7.7%
Totals 2002	2,504	27,641	9.1%	1.3-62.7%	
Jan 1-Jun 30, '03*	1,103	12,479	8.8%	2-40.9%	9.3%

[a] See limitation 1

[b] See limitation 2

[c] The range of up to 62.7% is high, representing probable repeat counting of the same patient having multiple positive specimens submitted for testing

* Fourteen sites reporting, data to be amended

21.2 VRE reported by BCCAMM ARO Surveillance Project

Time period	Total new VRE patients[a]	Estimate of VRE as % of all enterococci[c]
Jan 1-Jun 30, '02	35	<1%
Jul 1-Dec 31, '02	8	<1%
Total 2002	43	<1%
Jan 1-Jun 30, '03*	5	<< 1%

[a] See limitation 1

[c] See limitation 3

*Fourteen sites reporting, data to be amended

It is the intent that these data will be collected every six months, with extension to other surveillance information and other laboratories as is possible or needed. While it would be desirable to collect additional demographic or clinical data, this would require additional resources.

Within the limitations of the data as stated, it is interesting to note the consistency of the number of patients newly identified to carry MRSA and the total number of *S. aureus* isolates tested in each six month period. During the 18-month period of this project, the approximate % of MRSA/total *S. aureus* has remained fairly constant at around 9%. The median % MRSA/total *S. aureus* also approximates this number. It is recognized that under this system patients may be counted more than once if presenting at different hospitals or community laboratories, and therefore the absolute numbers may over-represent the problem (see footnote "c" under Table 1). What is important is the trend over time, and it is fair to say that in British Columbia we do not have an escalating problem with MRSA, despite some small local outbreaks. With respect to VRE, it is also encouraging that this organism continues to be very uncommonly isolated from our patients.

ARO Surveillance in British Columbia (cont'd)

Limitations

1. **Number of MRSA and VRE patients:** The patient numbers submitted are those identified at each participating laboratory, each patient counted only once at each site. However, patients may be counted more than once if they submitted cultures to more than one of the participating laboratories. The degree of error introduced by this is not felt to be significant.

2. **Number of isolates:** The number of isolates reported is generated by laboratory information systems. Laboratories use a variety of approaches to count isolates, some of which are chosen according to local need and some of which are dictated by the constraints of the laboratory information system. For example, some laboratories re-test every isolate on a patient (and thus re-count every isolate), while some laboratories have policies which require that the same isolate be re-tested (and thus re-counted) only every four or seven days, depending on the source of the isolate, or the location of the patient. Thus any calculation using the number of isolates tested, e.g. #MRSA/total MRSA tested, is subject to a degree of error.

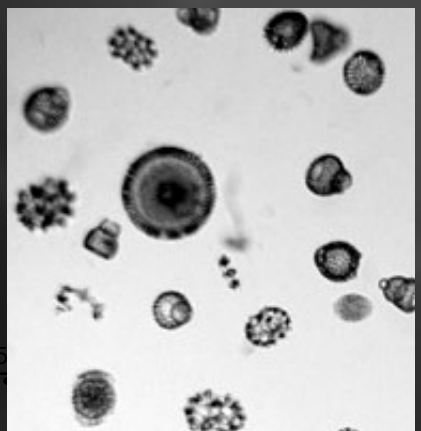
3. **Number of enterococci:** Denominator data for enterococci is not provided, as the degree of resistance would be largely over-estimated. This is due to the fact that enterococci are common colonizers, or are present with other more virulent pathogens. They therefore are not subject to susceptibility testing and are not counted in laboratory information systems. Or to state it another way, the search for VRE is much more vigilant than the testing and reporting of enterococci in general. The same is not as much of a problem for *S. aureus*, since when *S. aureus* is present in a specimen it is usually considered a pathogen, subjected to susceptibility testing, and is counted. Having said this, it is still fair to estimate that VRE represent less than 1% of all enterococci isolated in BC

4. **Community versus hospital incidence:** Further epidemiologic investigation is required to meaningfully separate the isolates as arising from the community or arising in the hospital setting. Breaking the numbers down into those reported by community laboratories and those reported by in-patient settings would not necessarily reflect acquisition in the community, but could be provided if of interest.

5. **Time Period:** Laboratories may differ on the periods used for counting, some counting on calendar months, and others using "periods" within a fiscal year. The data collected were requested for the 6 calendar months or "periods" which best reflect those months. This is not felt to introduce significant error into these statistics, as it will be the trend of this data that is most useful.

Please refer to the Sources section (page 100) for the author of this report and the list of participating laboratories for this study.

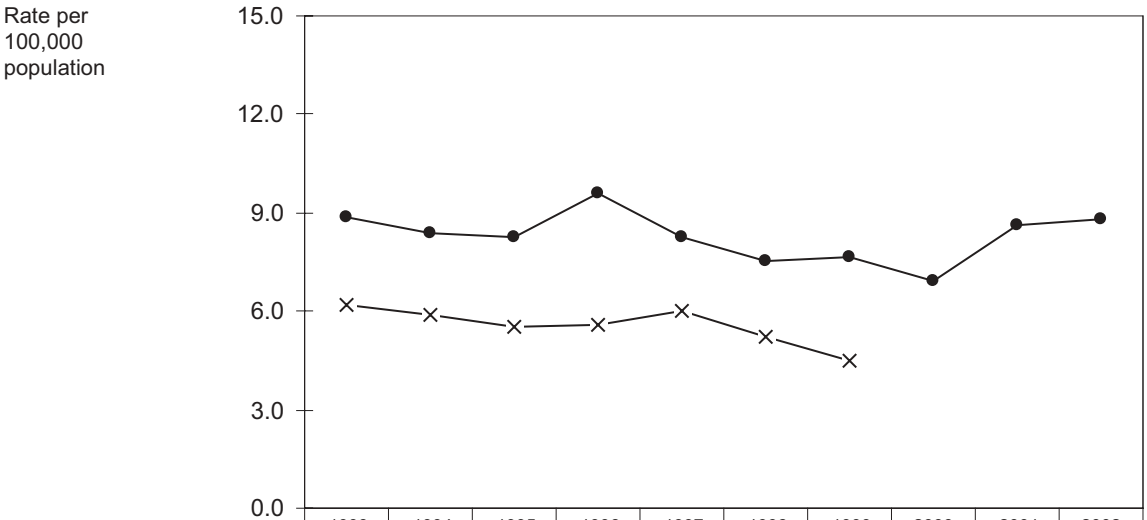
Enteric, Food and Waterborne Diseases



Amebiasis

Throughout the last ten years, the rate of amebiasis in British Columbia has remained fairly constant. A seasonal pattern is not obvious. During 2002, reporting was highest among males aged 30 to 59 years of age. Vancouver experienced a higher rate (34.5 cases per 100,000 population) than other health authorities. The location of a large screening program for persons new to Canada in Vancouver partially accounts for heightened levels of reporting.

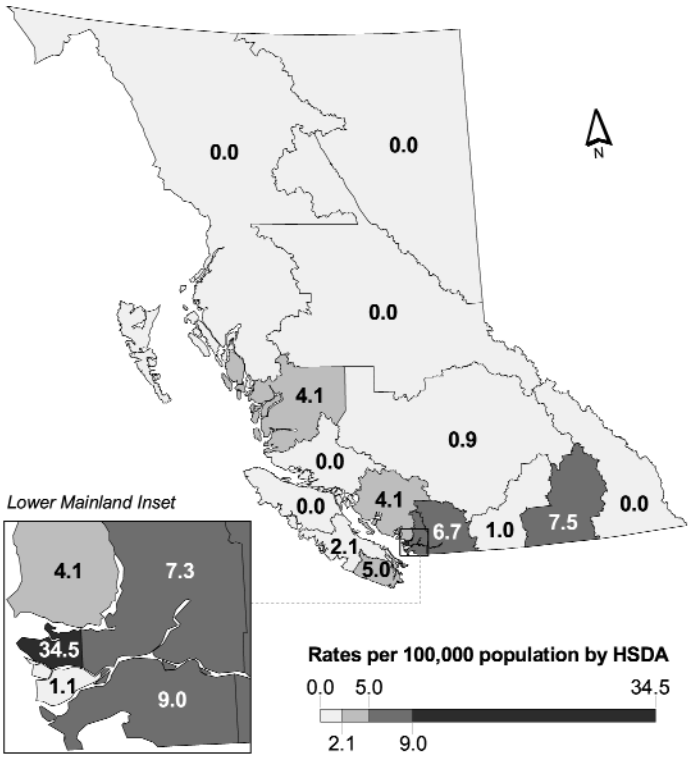
22.1 Amebiasis Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Amebiasis Reports	316	308	313	372	327	302	307	280	352	364
BC Amebiasis Rate	8.9	8.4	8.3	9.6	8.3	7.6	7.6	6.9	8.6	8.8
Canadian Amebiasis Rate	6.2	5.9	5.5	5.6	6.0	5.2	4.5			

Note: Amebiasis was removed from national surveillance in January 2000

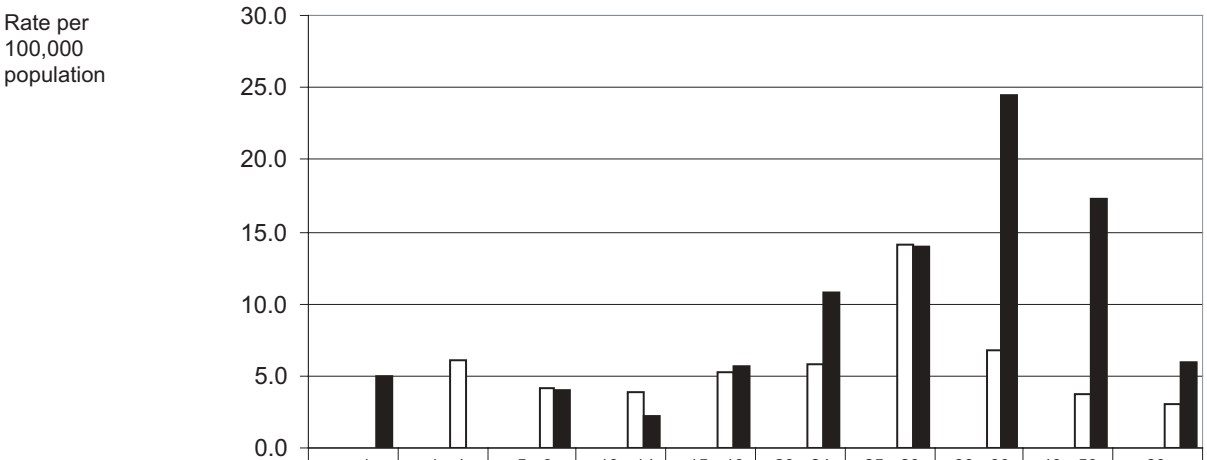
22.2 Amebiasis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	6	7.5
13	Okanagan	3	1.0
14	Thompson Cariboo Shuswap	2	0.9
21	Fraser Valley	17	6.7
22	Simon Fraser	40	7.3
23	South Fraser	55	9.0
31	Richmond	2	1.1
32	Vancouver	203	34.5
33	North Shore/Coast Garibaldi	11	4.1
41	South Vancouver Island	20	5.0
42	Central Vancouver Island	5	2.1
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

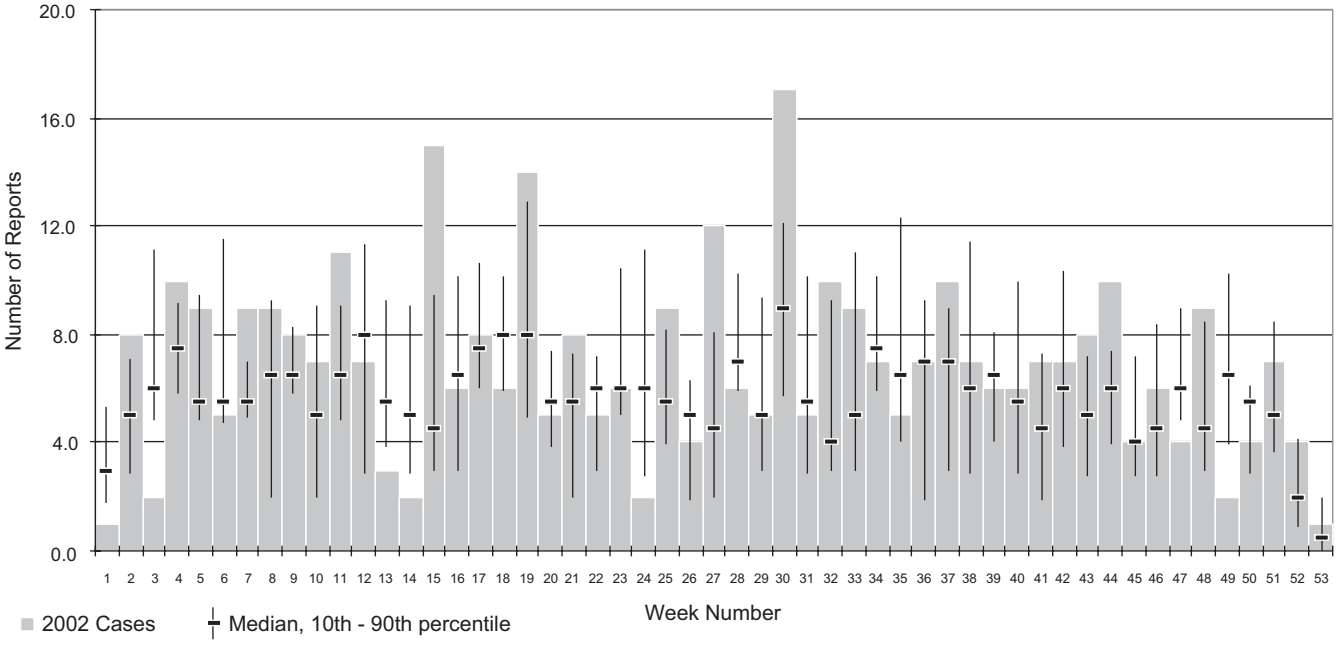
Note: Map classification by Jenks natural breaks method.

22.3 Amebiasis Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Amebiasis Reports - Female	0	5	5	5	7	8	19	22	23	12
Amebiasis Reports - Male	1	0	5	3	8	15	19	79	105	20
Amebiasis Reports - Unknown	0	0	0	0	0	0	2	0	0	1
□ Amebiasis Rate - Female	0.0	6.1	4.2	3.9	5.3	5.8	14.1	6.8	3.8	3.0
■ Amebiasis Rate - Male	5.0	0.0	4.0	2.2	5.7	10.7	14.0	24.5	17.2	6.0

22.4 2002 Amebiasis Reports Compared to Historical Numbers from 1992 to 2001



Botulism

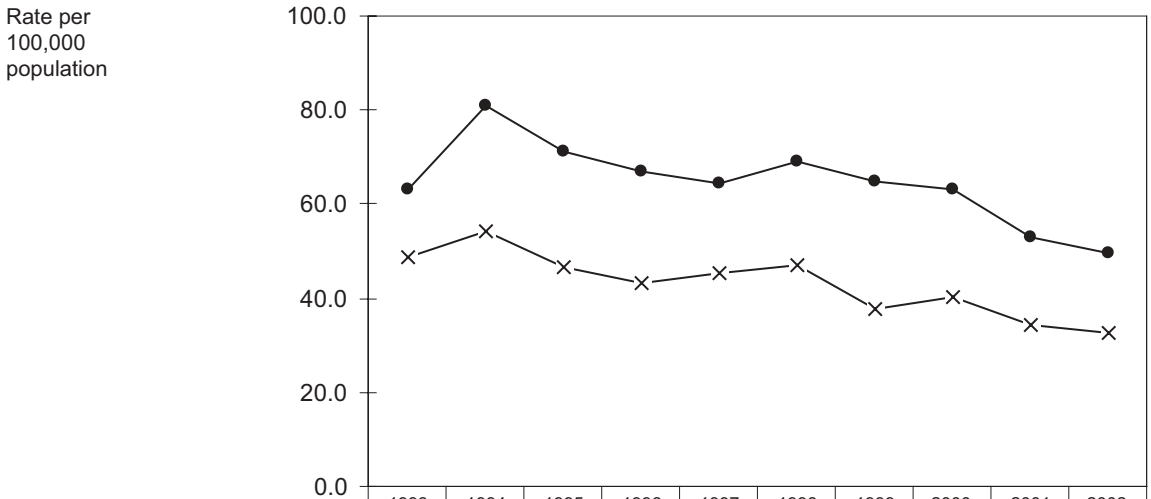
One confirmed case of botulism was reported in 2002 in a four month old resident of South Vancouver Island.

Campylobacteriosis

Annual reporting has continued to decline to its lowest level since 1992. This decline is likely an artifact as it coincides with the introduction of a provincial protocol that reduces the number of stool tests ordered by physicians. In 2002, there were 2045 reports for a rate of 49.5 cases per 100,000. Reporting was highest during the summer (weeks 22 through 37).

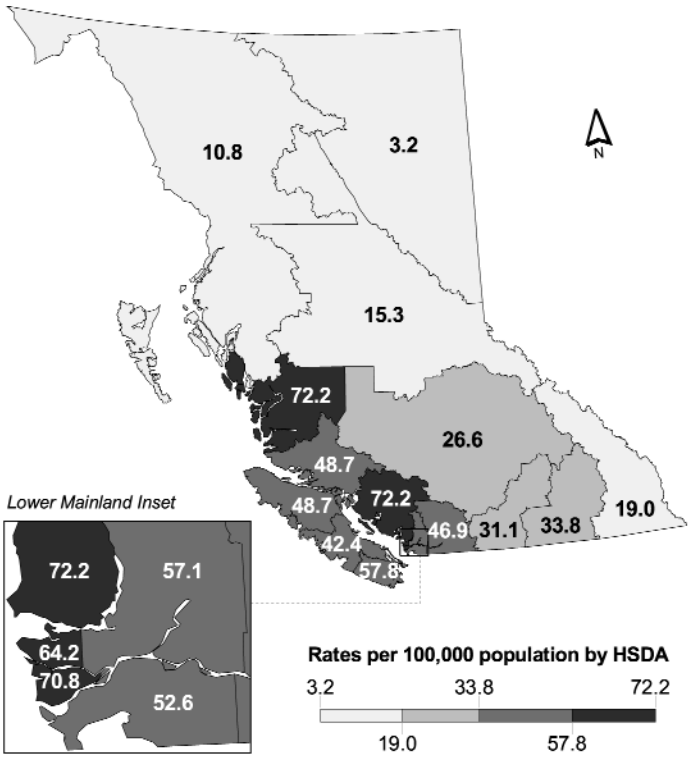
The age distribution of cases followed an expected bimodal distribution, with peak reporting rates in the less than 5 year age group, and the 20 to 29 year age group. The highest reporting rates were generally seen in the Lower Mainland and on Vancouver Island.

23.1 Campylobacteriosis Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Campylobacteriosis Reports	2249	2982	2699	2591	2550	2765	2614	2565	2178	2045
BC Campylobacteriosis Rate	63.0	81.0	71.3	66.7	64.4	69.2	64.9	63.2	53.2	49.5
Canadian Campylobacteriosis Rate	48.7	54.1	46.6	43.1	45.2	47.1	37.7	40.1	34.2	32.7

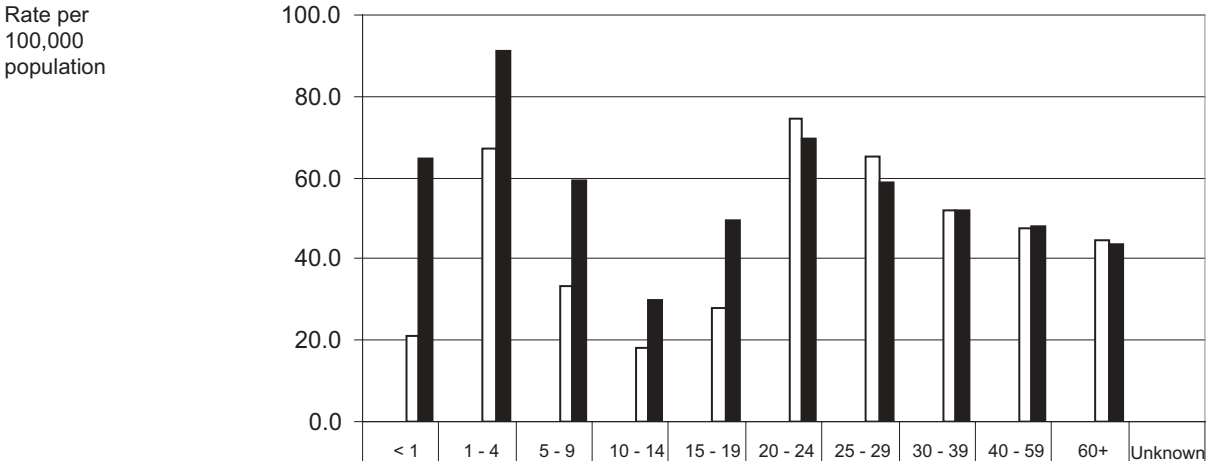
23.2 Campylobacteriosis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	15	19.0
12	Kootenay Boundary	27	33.8
13	Okanagan	98	31.1
14	Thompson Cariboo Shuswap	57	26.6
21	Fraser Valley	118	46.9
22	Simon Fraser	315	57.1
23	South Fraser	323	52.6
31	Richmond	124	70.8
32	Vancouver	378	64.2
33	North Shore/Coast Garibaldi	194	72.2
41	South Vancouver Island	233	57.8
42	Central Vancouver Island	102	42.4
43	North Vancouver Island	27	48.7
51	Northwest	9	10.8
52	Northern Interior	23	15.3
53	Northeast	2	3.2

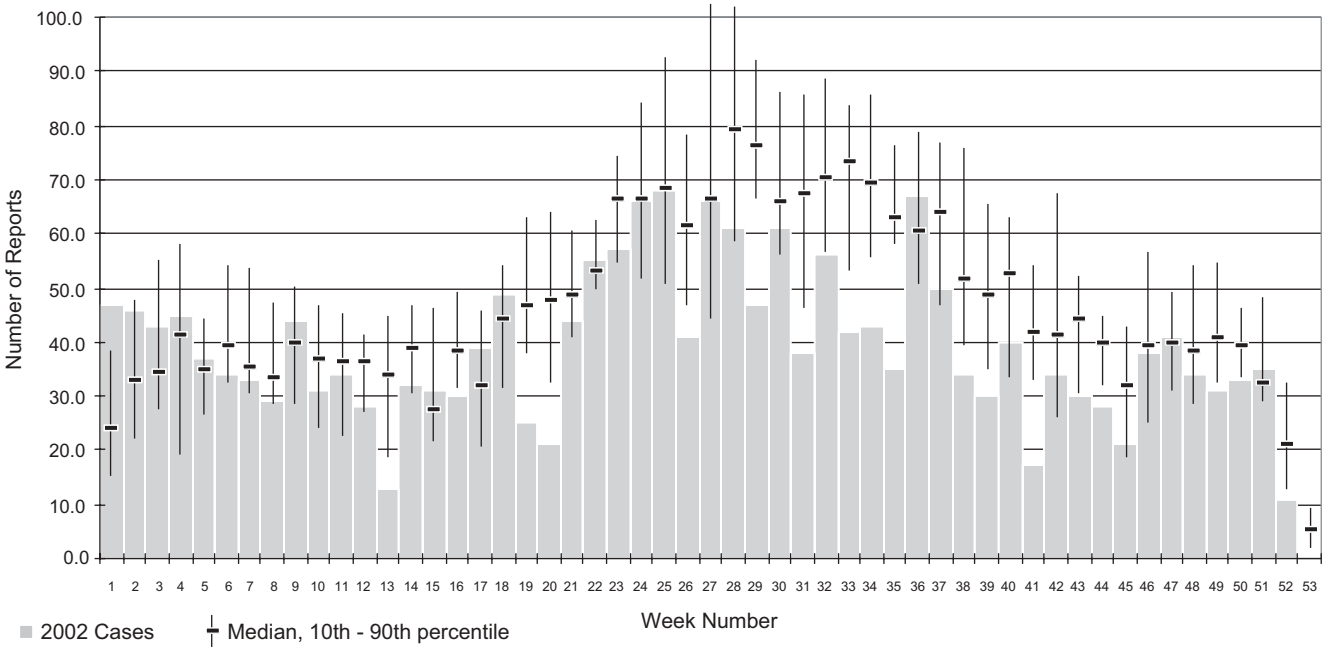
Note: Map classification by Jenks natural breaks method.

23.3 Campylobacteriosis Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	Unknown
Campylobacteriosis Reports - Female	4	55	40	23	37	102	88	167	292	177	0
Campylobacteriosis Reports - Male	13	78	75	40	69	97	80	168	293	145	1
Campylobacteriosis Reports - Unknown	0	0	0	0	0	1	0	0	0	0	0
□ Campylobacteriosis Rate - Female	21.1	66.9	33.5	18.0	28.0	74.4	65.1	51.7	47.8	44.6	
■ Campylobacteriosis Rate - Male	64.8	91.0	59.3	29.7	49.3	69.4	58.8	52.0	48.1	43.4	

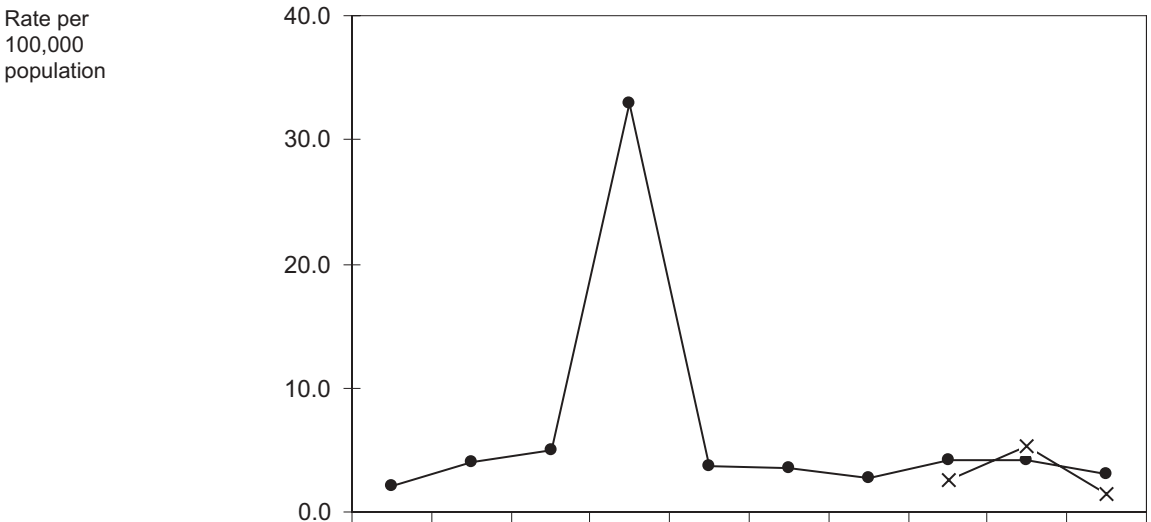
23.4 2002 Campylobacteriosis Reports Compared to Historical Numbers from 1992 to 2001



Cryptosporidiosis

One hundred and twenty-seven cases were reported during 2002 corresponding to a provincial rate of 3.1 cases per 100,000. The provincial rate of cryptosporidiosis has remained relatively stable since a peak in 1996 when four outbreaks occurred. No outbreaks were identified in 2002 although reporting exceeded expected levels during several non-consecutive weeks in the spring. Peak reporting was seen, as expected, in the under 5 age group as levels of immunity are higher in older age groups. Males accounted for 56% of cases. The highest reporting levels were in North East and Fraser Valley with 12.6 and 9.1 cases per 100,000 respectively.

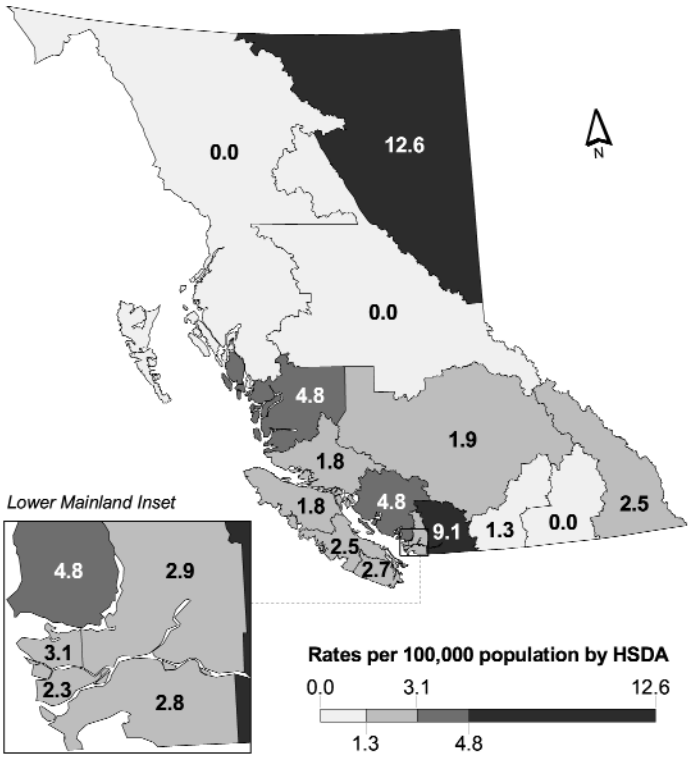
24.1 Cryptosporidiosis Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Cryptosporidiosis Reports	74	149	188	1278	144	139	109	167	173	127
—●— BC Cryptosporidiosis Rate	2.1	4.1	5.0	33.0	3.6	3.5	2.7	4.1	4.2	3.1
—×— Canadian Cryptosporidiosis Rate								2.6	5.3	1.5

Note: Cryptosporidiosis became nationally notifiable in January 2000

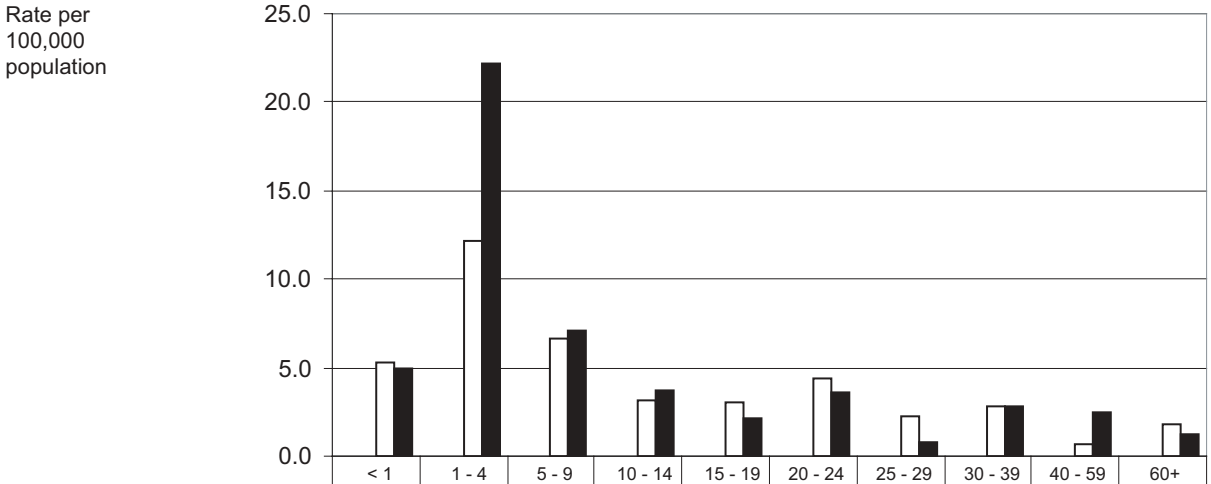
24.2 Cryptosporidiosis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	2	2.5
12	Kootenay Boundary	0	0.0
13	Okanagan	4	1.3
14	Thompson Cariboo Shuswap	4	1.9
21	Fraser Valley	23	9.1
22	Simon Fraser	16	2.9
23	South Fraser	17	2.8
31	Richmond	4	2.3
32	Vancouver	18	3.1
33	North Shore/Coast Garibaldi	13	4.8
41	South Vancouver Island	11	2.7
42	Central Vancouver Island	6	2.5
43	North Vancouver Island	1	1.8
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	8	12.6

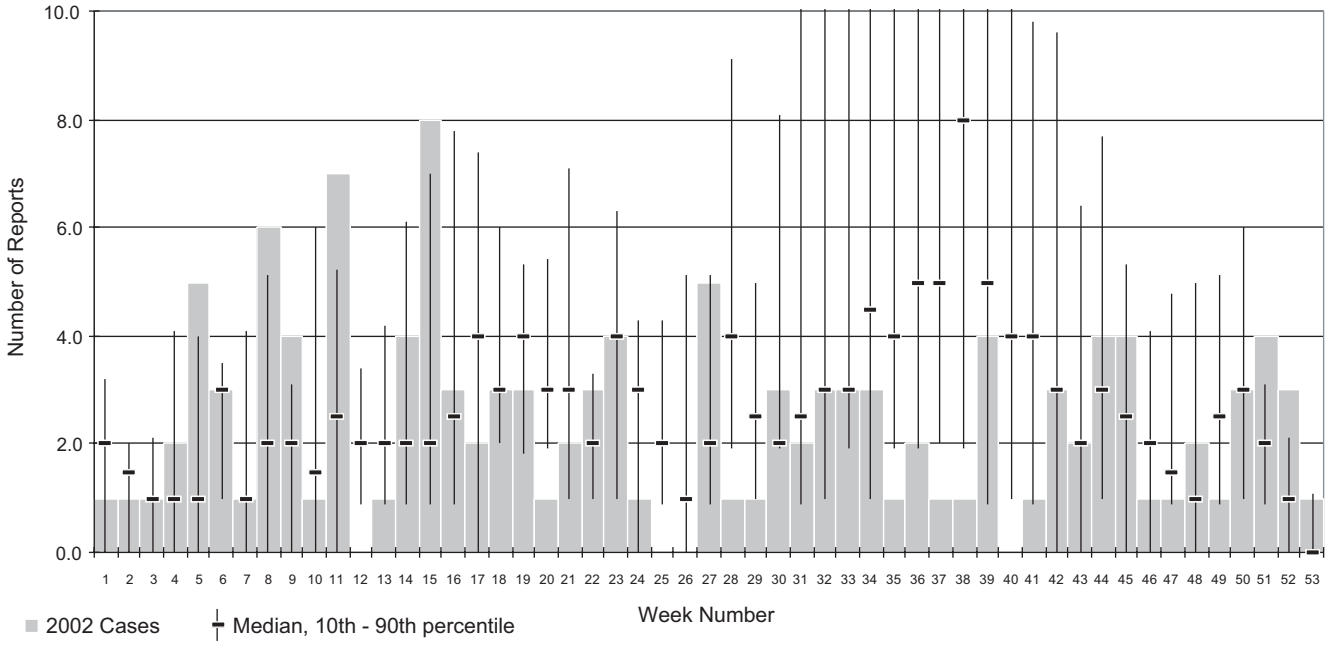
Note: Map classification by Jenks natural breaks method.

24.3 Cryptosporidiosis Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Cryptosporidiosis Reports - Female	1	10	8	4	4	6	3	9	4	7
Cryptosporidiosis Reports - Male	1	19	9	5	3	5	1	9	15	4
Cryptosporidiosis Rate - Female	5.3	12.2	6.7	3.1	3.0	4.4	2.2	2.8	0.7	1.8
Cryptosporidiosis Rate - Male	5.0	22.2	7.1	3.7	2.1	3.6	0.7	2.8	2.5	1.2

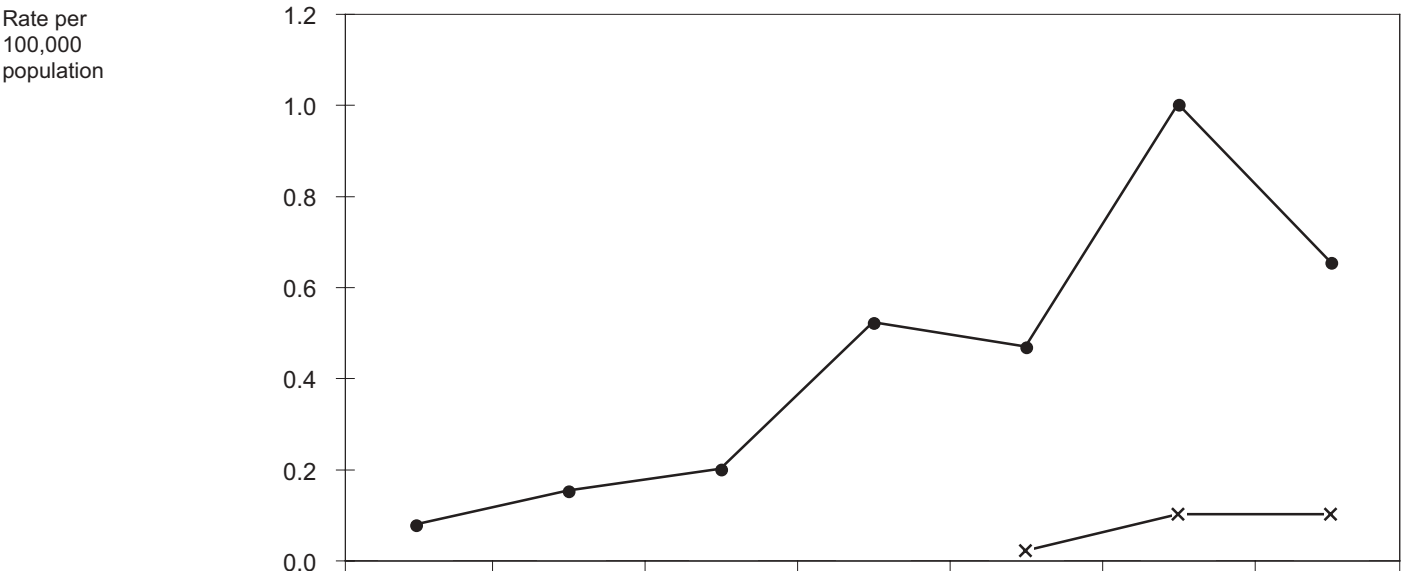
24.4 2002 Cryptosporidiosis Reports Compared to Historical Numbers from 1992 to 2001



Cyclosporiasis

Reporting of *Cyclospora cayetanensis* infections fell to 27 cases in 2002 from 39 cases in 2001. Most cases of cyclosporiasis are related to travel to regions of the world where the disease is endemic. Most cases are reported among young adults in the lower mainland. No outbreaks were identified in 2002.

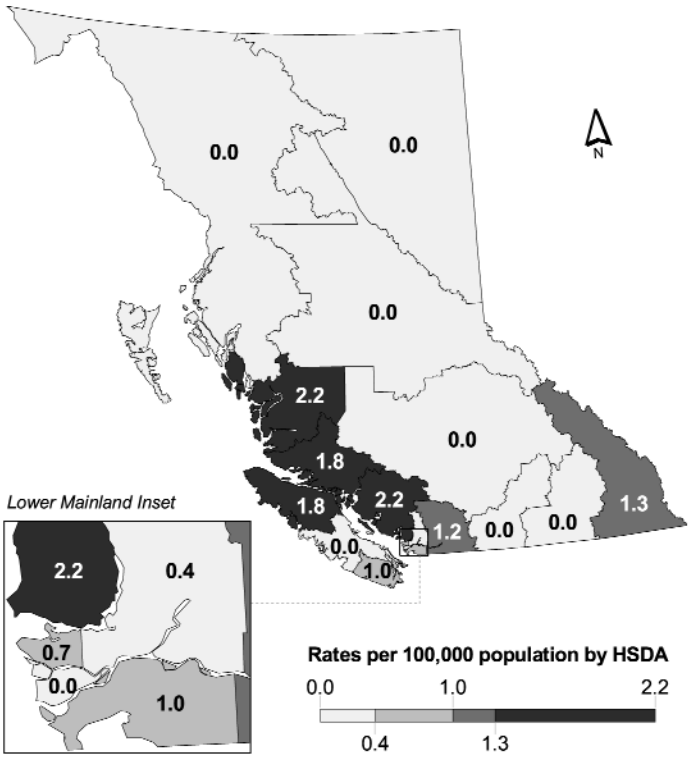
25.1 Cyclosporiasis Rates by Year, 1993-2002



	1996	1997	1998	1999	2000	2001	2002
BC Cyclosporiasis Reports	3	6	8	21	19	41	27
BC Cyclosporiasis Rate	0.1	0.2	0.2	0.5	0.5	1.0	0.7
Canadian Cyclosporiasis Rate					0.0	0.1	0.1

Note: Cyclosporiasis became nationally notifiable in January 2000

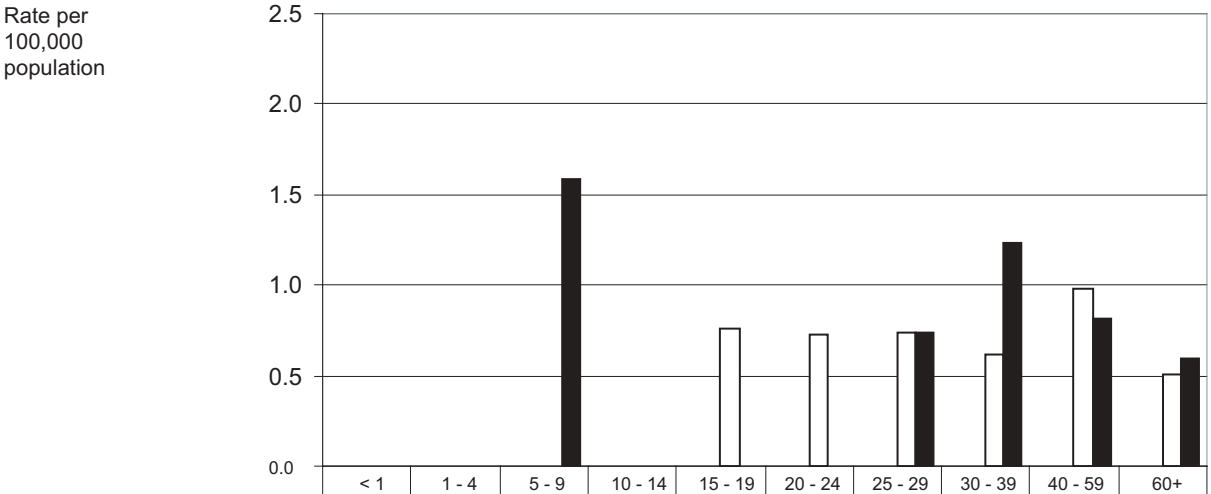
25.2 Cyclosporiasis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	1	1.3
12	Kootenay Boundary	0	0.0
13	Okanagan	0	0.0
14	Thompson Cariboo Shuswap	0	0.0
21	Fraser Valley	3	1.2
22	Simon Fraser	2	0.4
23	South Fraser	6	1.0
31	Richmond	0	0.0
32	Vancouver	4	0.7
33	North Shore/Coast Garibaldi	6	2.2
41	South Vancouver Island	4	1.0
42	Central Vancouver Island	0	0.0
43	North Vancouver Island	1	1.8
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

Note: Map classification by Jenks natural breaks method.

25.3 Cyclosporiasis Rates by Age Group and Sex, 2002



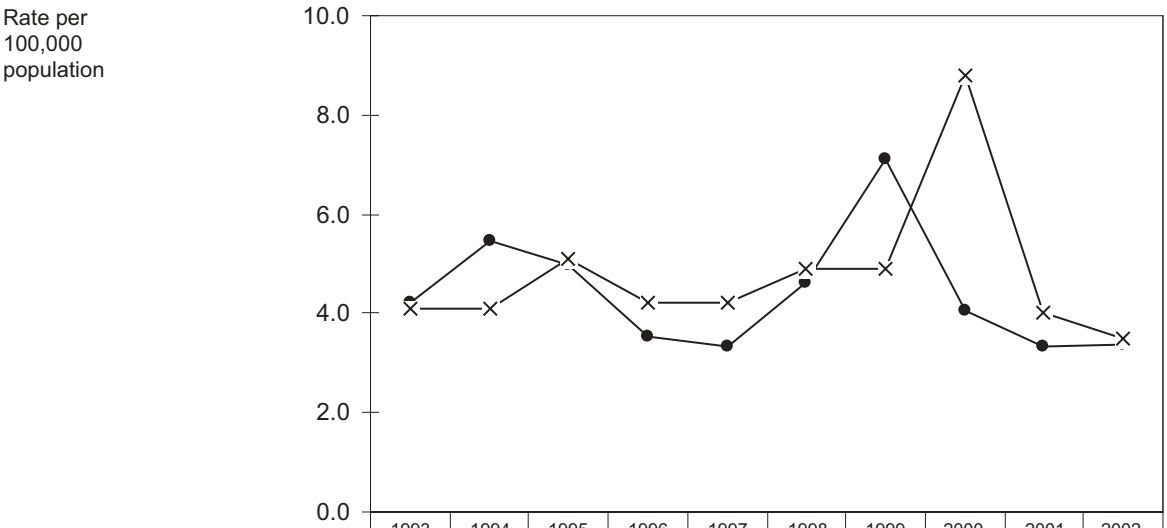
	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Cyclosporiasis Reports - Female	0	0	0	0	1	1	1	2	6	2
Cyclosporiasis Reports - Male	0	0	2	0	0	0	1	4	5	2
□ Cyclosporiasis Rate - Female	0.0	0.0	0.0	0.0	0.8	0.7	0.7	0.6	1.0	0.5
■ Cyclosporiasis Rate - Male	0.0	0.0	1.6	0.0	0.0	0.0	0.7	1.2	0.8	0.6

Verotoxigenic *E. coli* (VTEC) Infection

There were 140 cases reported in 2002 for an annual rate of 3.4 cases per 100,000. This changed little from the preceding year. The provincial rate is slightly lower than the national VTEC reporting rate (3.8 cases/100,000). The highest regional reporting rates were seen in East Kootenay and Fraser Valley. Children under 5 had the highest reporting rate.

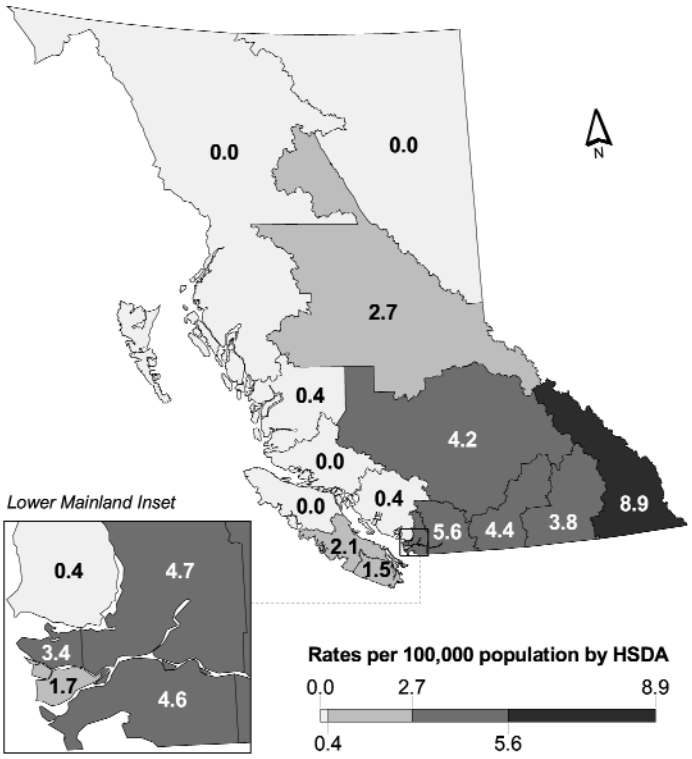
In April and May, 10 cases of *E. coli* O157:H7 infections with the same PFGE pattern occurred as part of a national outbreak. A common source was not confirmed.

26.1 Verotoxigenic *E. coli* Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Verotoxigenic E. coli Reports	150	201	188	137	132	185	287	164	137	140
—●— BC Verotoxigenic E. coli Rate	4.2	5.5	5.0	3.5	3.3	4.6	7.1	4.0	3.3	3.4
—×— Canadian Verotoxigenic E. coli Rate	4.1	4.1	5.1	4.2	4.2	4.9	4.9	8.8	4.0	3.5

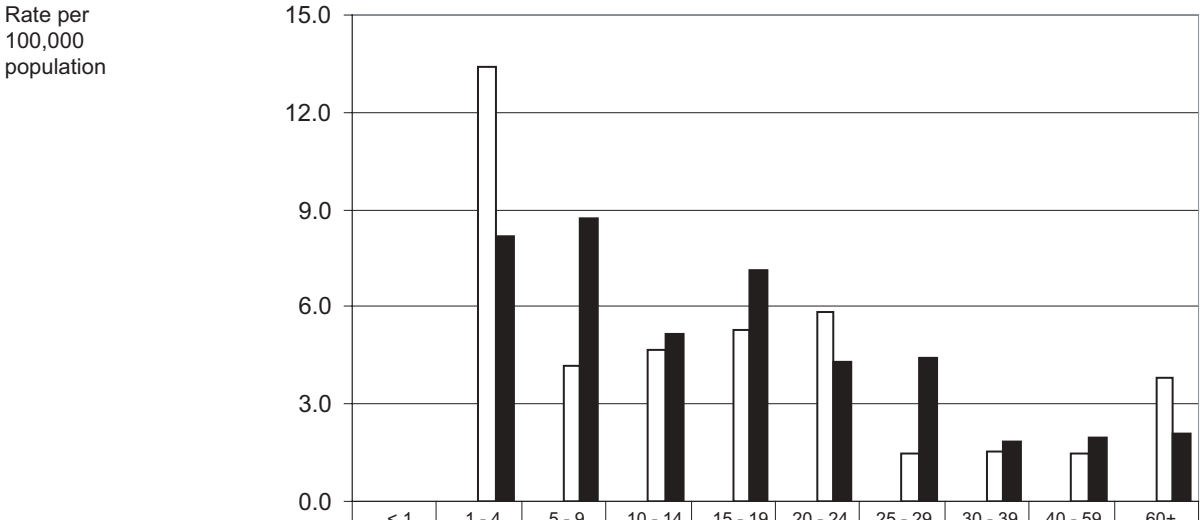
26.2 Verotoxigenic *E. coli* Infection Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	7	8.9
12	Kootenay Boundary	3	3.8
13	Okanagan	14	4.4
14	Thompson Cariboo Shuswap	9	4.2
21	Fraser Valley	14	5.6
22	Simon Fraser	26	4.7
23	South Fraser	28	4.6
31	Richmond	3	1.7
32	Vancouver	20	3.4
33	North Shore/Coast Garibaldi	1	0.4
41	South Vancouver Island	6	1.5
42	Central Vancouver Island	5	2.1
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	4	2.7
53	Northeast	0	0.0

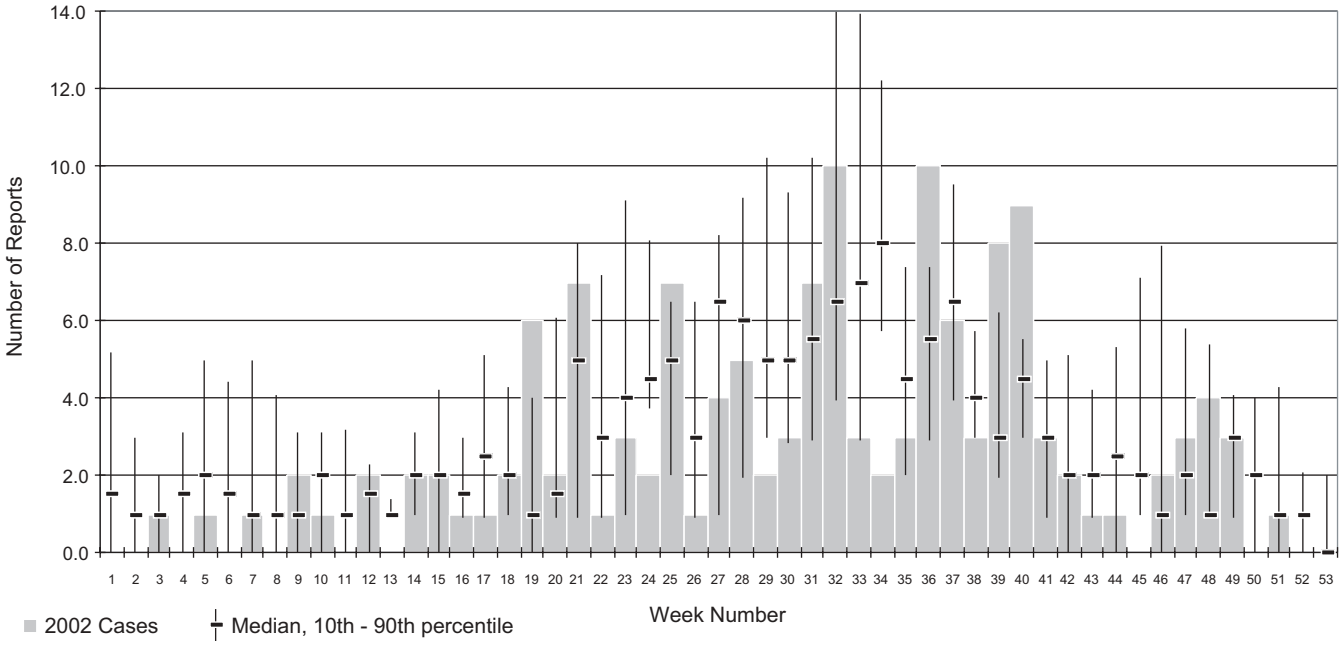
Note: Map classification by Jenks natural breaks method.

26.3 Verotoxigenic *E. coli* Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Verotoxigenic E. coli Reports - Female	0	11	5	6	7	8	2	5	9	15
Verotoxigenic E. coli Reports - Male	0	7	11	7	10	6	6	6	12	7
□ Verotoxigenic E. coli Rate - Female	0.0	13.4	4.2	4.7	5.3	5.8	1.5	1.5	1.5	3.8
■ Verotoxigenic E. coli Rate - Male	0.0	8.2	8.7	5.2	7.1	4.3	4.4	1.9	2.0	2.1

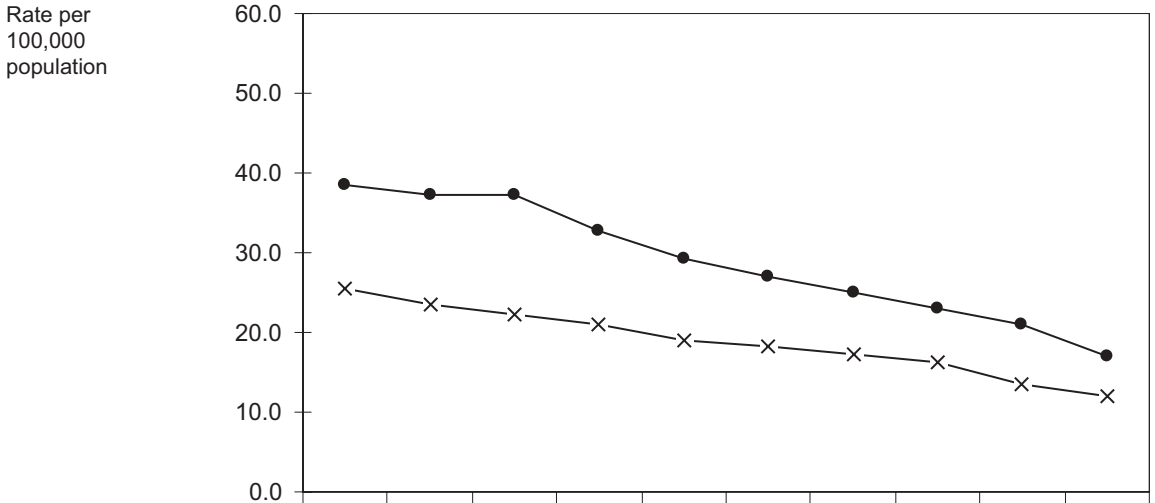
26.4 2002 Verotoxigenic *E.coli* Reports Compared to Historical Numbers from 1992 to 2001



Giardiasis

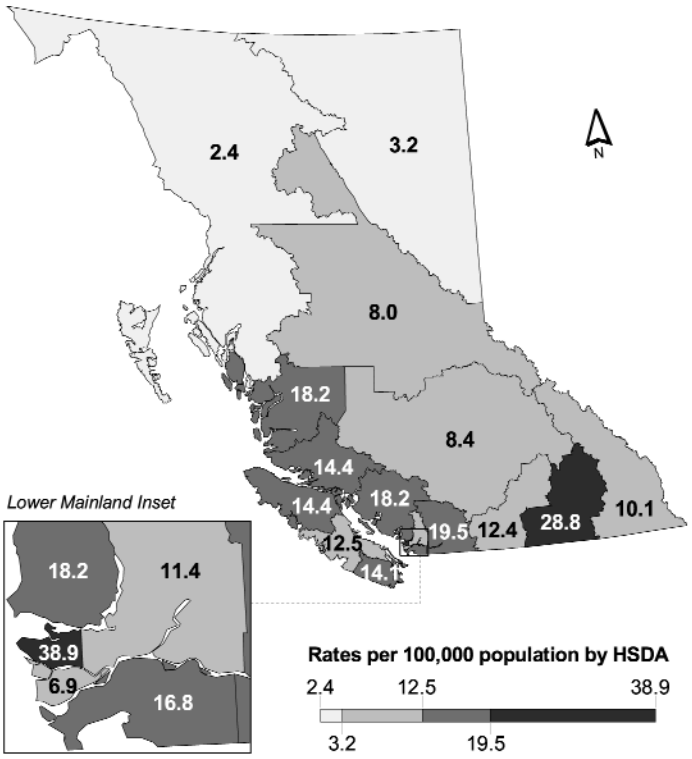
The annual rate of giardiasis in BC has been falling for the last ten years. In 2002, sixty-one percent of cases occurred among males. Rates were highest in children aged one to four and among males aged 25 to 39. Geographically, Vancouver and Kootenay Boundary experienced the highest rates at 38.9 and 28.8 cases per 100,000 population respectively. No water-borne outbreaks were identified.

27.1 Giardiasis Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Giardiasis Reports	1371	1368	1409	1274	1159	1076	1009	936	856	704
BC Giardiasis Rate	38.2	37.2	37.2	32.8	29.3	26.9	25.1	23.1	20.9	17.0
Canadian Giardiasis Rate	25.6	23.4	22.3	21.1	18.9	18.2	17.2	16.3	13.6	12.1

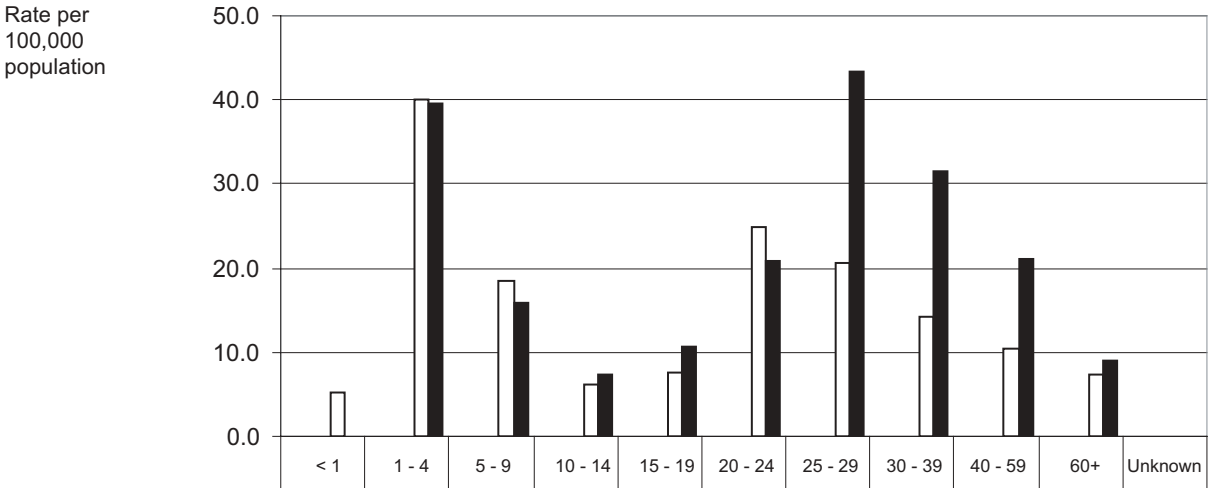
27.2 Giardiasis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	8	10.1
12	Kootenay Boundary	23	28.8
13	Okanagan	39	12.4
14	Thompson Cariboo Shuswap	18	8.4
21	Fraser Valley	49	19.5
22	Simon Fraser	63	11.4
23	South Fraser	103	16.8
31	Richmond	12	6.9
32	Vancouver	229	38.9
33	North Shore/Coast Garibaldi	49	18.2
41	South Vancouver Island	57	14.1
42	Central Vancouver Island	30	12.5
43	North Vancouver Island	8	14.4
51	Northwest	2	2.4
52	Northern Interior	12	8.0
53	Northeast	2	3.2

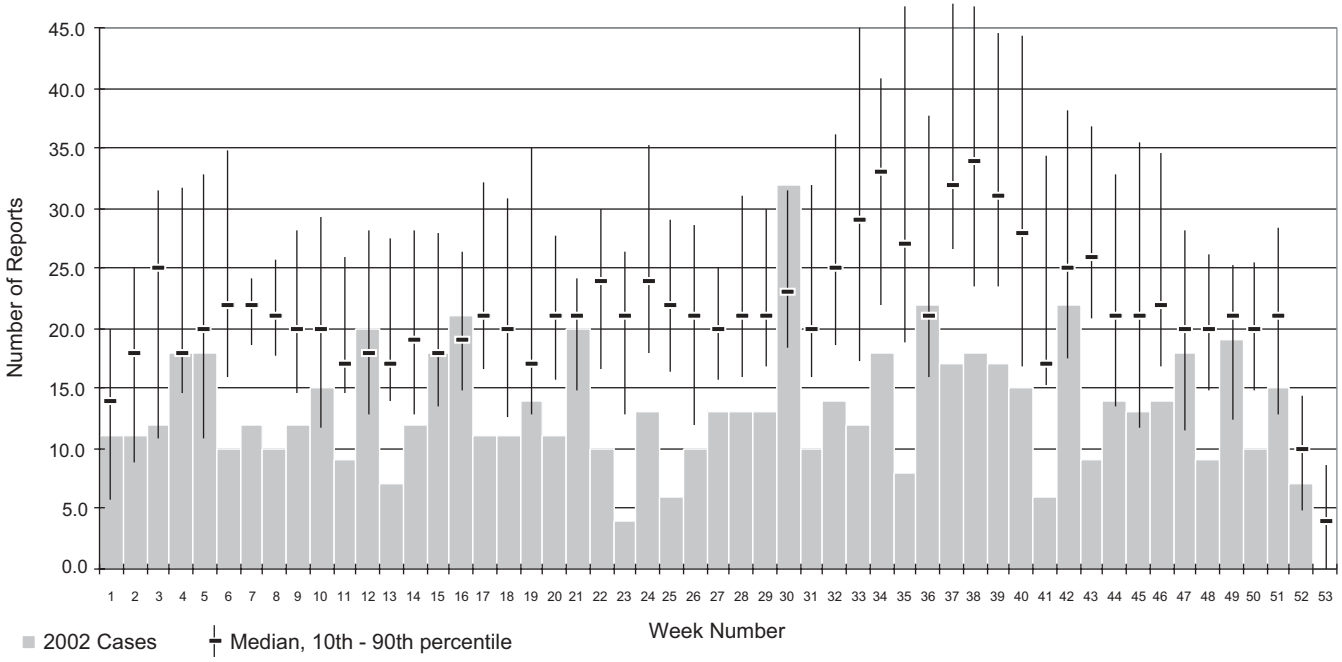
Note: Map classification by Jenks natural breaks method.

27.3 Giardiasis Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	Unknown
Giardiasis Reports - Female	1	33	22	8	10	34	28	46	64	29	1
Giardiasis Reports - Male	0	34	20	10	15	29	59	102	128	30	0
Giardiasis Reports - Unknown	0	1	0	0	0	0	0	0	0	0	0
□ Giardiasis Rate - Female	5.3	40.2	18.4	6.3	7.6	24.8	20.7	14.2	10.5	7.3	
■ Giardiasis Rate - Male	0.0	39.7	15.8	7.4	10.7	20.8	43.4	31.6	21.0	9.0	

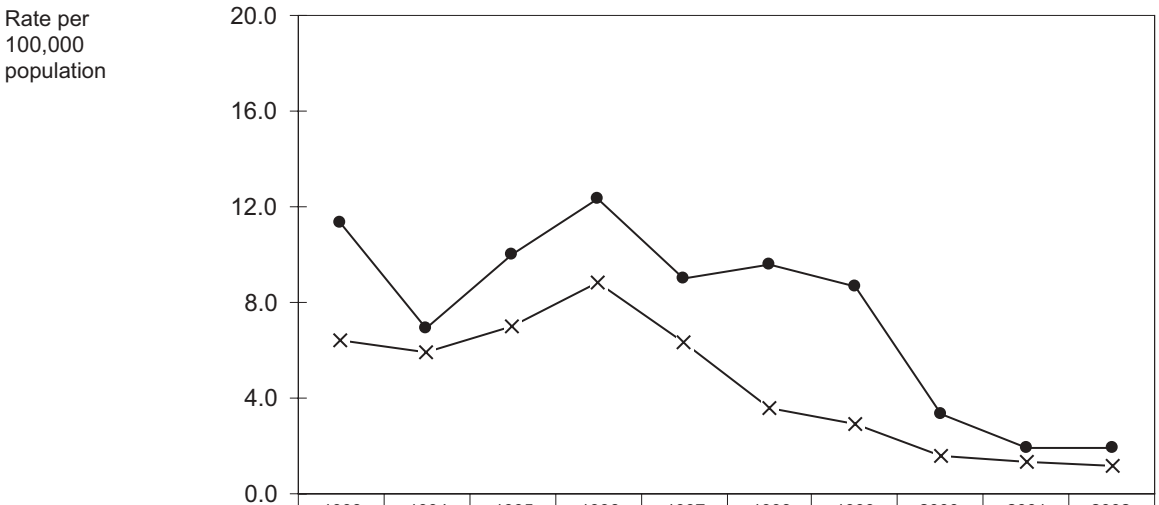
27.4 2002 Giardiasis Reports Compared to Historical Numbers from 1992 to 2001



Hepatitis A

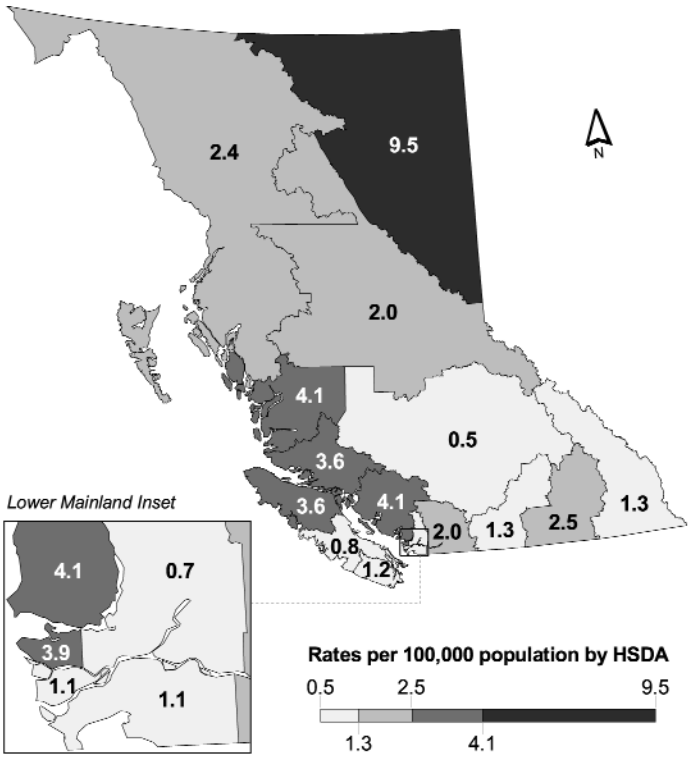
Hepatitis A reporting remained stable from the previous year at 80 cases, or 1.9 cases per 100,000. These are the lowest rates documented in BC, and are lower than the average national reporting rate. The highest rate was seen in males age 20-25. The highest rates were seen in Northeast (9.5 cases per 100,000) and North Shore/Coast Garibaldi (4.1 cases per 100,000).

28.1 Hepatitis A Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Hepatitis A Reports	405	256	378	479	357	383	348	136	79	80
—●— BC Hepatitis A Rate	11.3	7.0	10.0	12.3	9.0	9.6	8.6	3.4	1.9	1.9
—×— Canadian Hepatitis A Rate	6.4	5.9	7.0	8.8	6.3	3.6	2.9	1.6	1.3	1.2

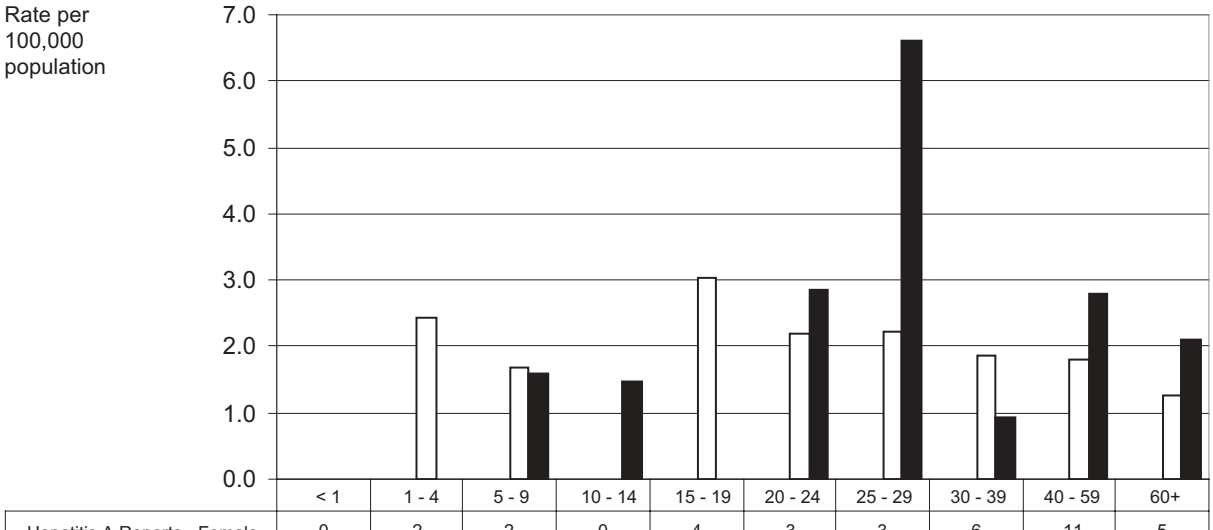
28.2 Hepatitis A Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	1	1.3
12	Kootenay Boundary	2	2.5
13	Okanagan	4	1.3
14	Thompson Cariboo Shuswap	1	0.5
21	Fraser Valley	5	2.0
22	Simon Fraser	4	0.7
23	South Fraser	7	1.1
31	Richmond	2	1.1
32	Vancouver	23	3.9
33	North Shore/Coast Garibaldi	11	4.1
41	South Vancouver Island	5	1.2
42	Central Vancouver Island	2	0.8
43	North Vancouver Island	2	3.6
51	Northwest	2	2.4
52	Northern Interior	3	2.0
53	Northeast	6	9.5

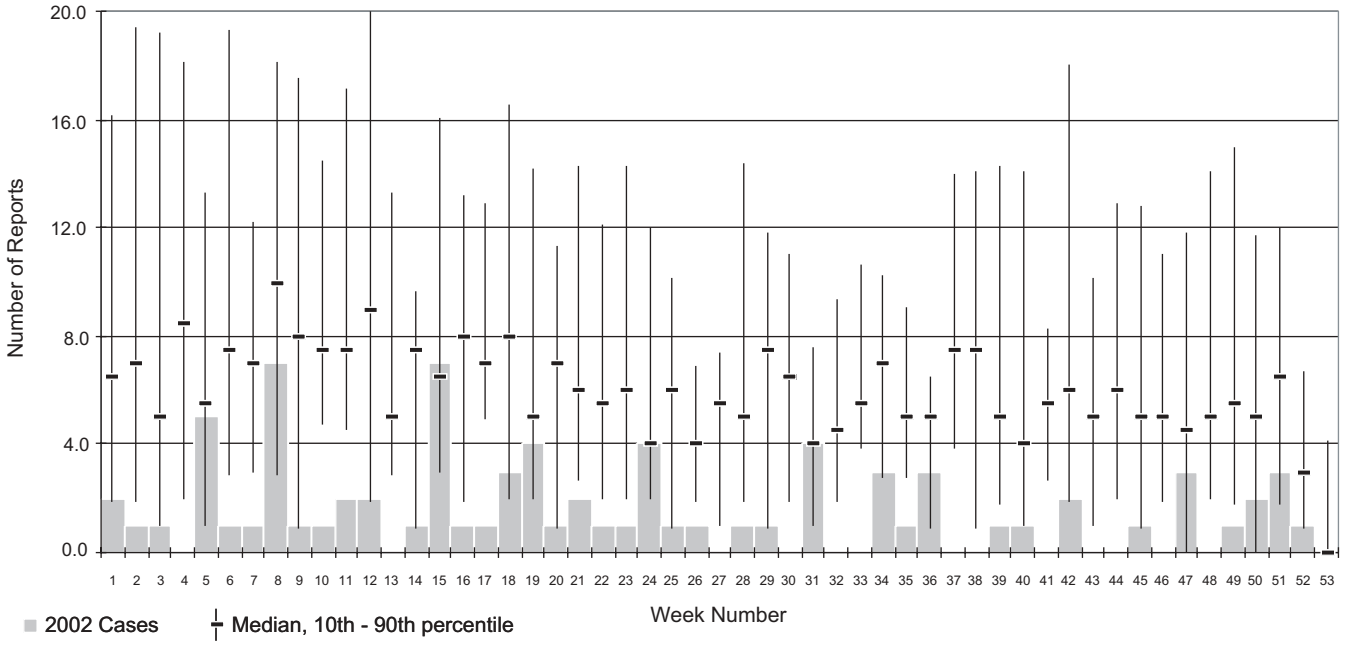
Note: Map classification by Jenks natural breaks method.

28.3 Hepatitis A Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Hepatitis A Reports - Female	0	2	2	0	4	3	3	6	11	5
Hepatitis A Reports - Male	0	0	2	2	0	4	9	3	17	7
□ Hepatitis A Rate - Female	0.0	2.4	1.7	0.0	3.0	2.2	2.2	1.9	1.8	1.3
■ Hepatitis A Rate - Male	0.0	0.0	1.6	1.5	0.0	2.9	6.6	0.9	2.8	2.1

28.4 2002 Hepatitis A Reports Compared to Historical Numbers from 1992 to 2001



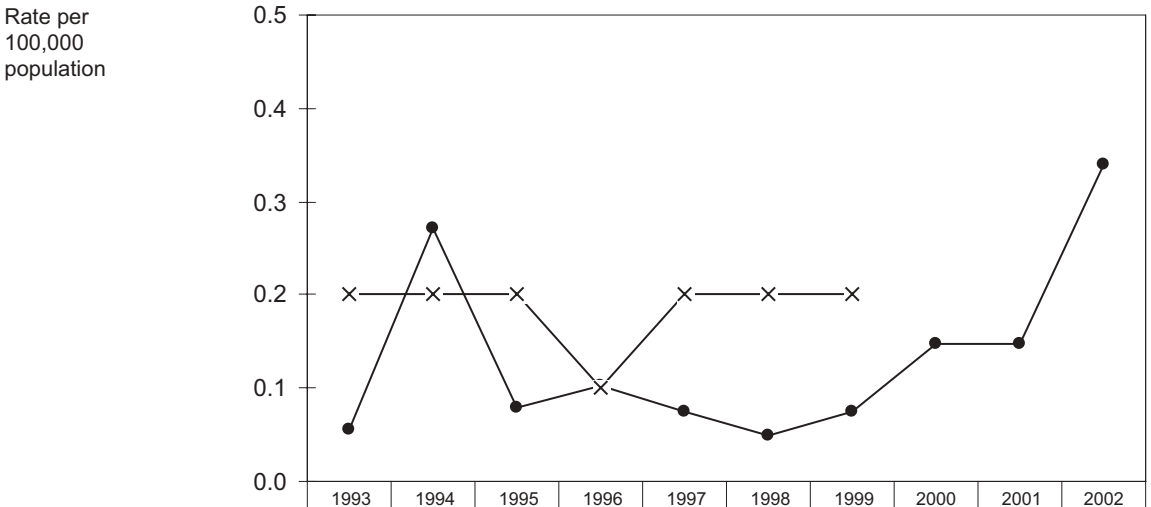
Listeriosis

Two large outbreaks of listeriosis occurred in 2002. Both were associated with the consumption of soft, mould-ripened, pasteurized milk cheese made by two separate producers on Vancouver Island.

The first outbreak was recognized in February following the diagnosis of meningitis due to *L. monocytogenes* in two adults. A total of 48 cases were identified, most with onset of illness in February. The most prominent clinical syndrome was febrile gastroenteritis. Five of the cases were confirmed invasive disease (3 meningitis and 2 bacteremia in pregnancy with miscarriage), 6 had clinical illness and identification of the outbreak strain of the organism in the stool, and the remaining 37 cases had clinical illness following the putative exposure, including one case associated with a first trimester pregnancy loss. All confirmed cases had *L. monocytogenes* serotype 4b, identical by pulse field gel electrophoresis by two enzymes, and also found in implicated cheese and several environmental specimens from the plant.

The second outbreak occurred in September with the initial recognition of a cluster of 5 cases with a febrile gastroenteritis syndrome. Enhanced surveillance identified a total of 82 clinical cases of febrile gastroenteritis following the consumption of cheese from a single plant. None of the cases had confirmed invasive disease. Two cases had illness during pregnancy but without known adverse outcome. *L. monocytogenes* serotype 4b, identical by pulse field gel electrophoresis by two enzymes but different from the strain in the first outbreak, was identified in the stool of 14 of 28 cases from whom specimens were received for testing. The same strain was identified in the cheese produced by the plant.

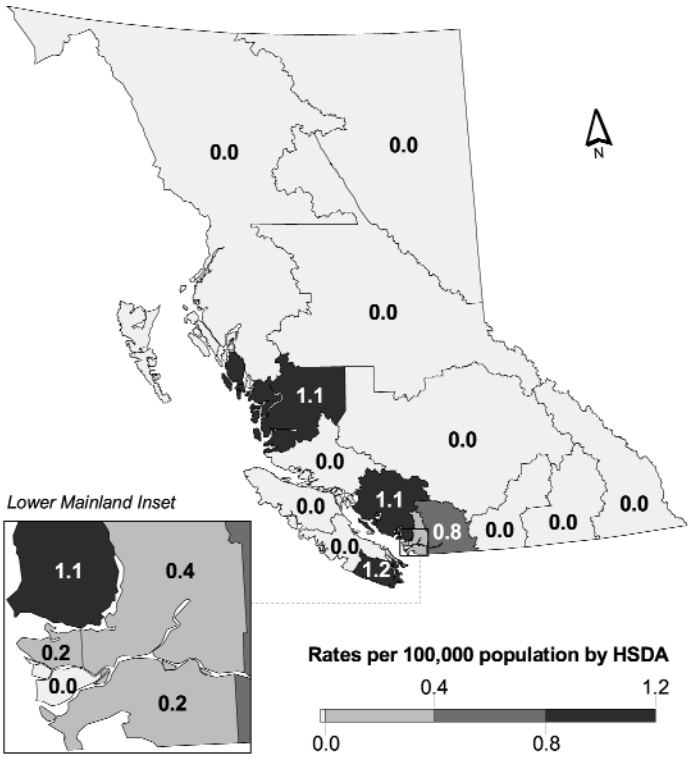
29.1 Listeriosis Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Listeriosis Reports	2	10	3	4	3	2	3	6	6	14
BC Listeriosis Rate	0.0	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3
Canadian Listeriosis Rate	0.2	0.2	0.2	0.1	0.2	0.2	0.2			

Note: Listeriosis was removed from national surveillance in January 2000.
Only invasive cases are reportable and shown here.

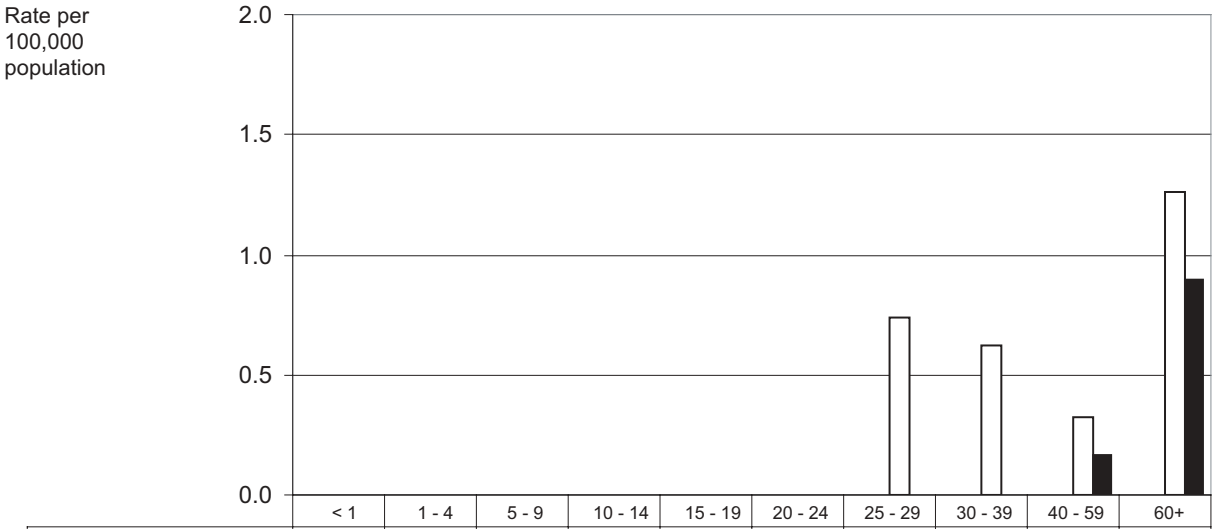
29.2 Listeriosis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	0	0.0
13	Okanagan	0	0.0
14	Thompson Cariboo Shuswap	0	0.0
21	Fraser Valley	2	0.8
22	Simon Fraser	2	0.4
23	South Fraser	1	0.2
31	Richmond	0	0.0
32	Vancouver	1	0.2
33	North Shore/Coast Garibaldi	3	1.1
41	South Vancouver Island	5	1.2
42	Central Vancouver Island	0	0.0
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

Note: Map classification by Jenks natural breaks method.

29.3 Listeriosis Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Listeriosis Reports - Female	0	0	0	0	0	0	1	2	2	5
Listeriosis Reports - Male	0	0	0	0	0	0	0	0	1	3
□ Listeriosis Rate - Female	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.6	0.3	1.3
■ Listeriosis Rate - Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.9

Salmonellosis

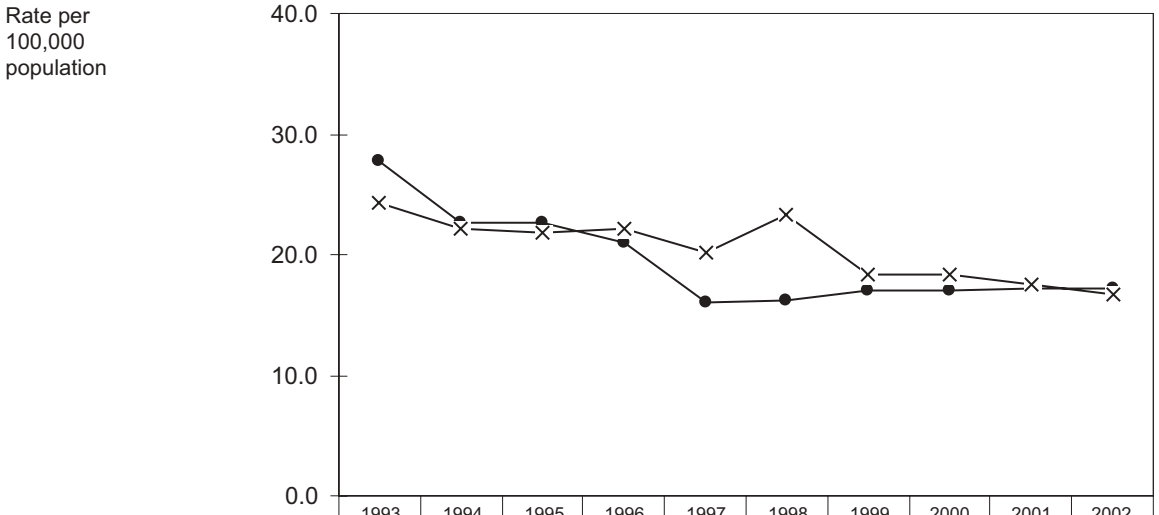
Reporting has continued a slight upward trend since 1997, and reached 711 cases in 2002, for a rate of 17.2 cases per 100,000. Reporting was highest in children under the age of 10 years. Reporting was highest on Vancouver Island, in the lower mainland, and in Fraser.

For details on Salmonella serotypes identified during the year, please see the BCCDC Laboratory Services annual report.

An outbreak of Salmonella Oranienberg affected BC and other provinces in January 2002. Twenty five cases were identified in the province. Despite a comprehensive national investigation, a source could not be identified.

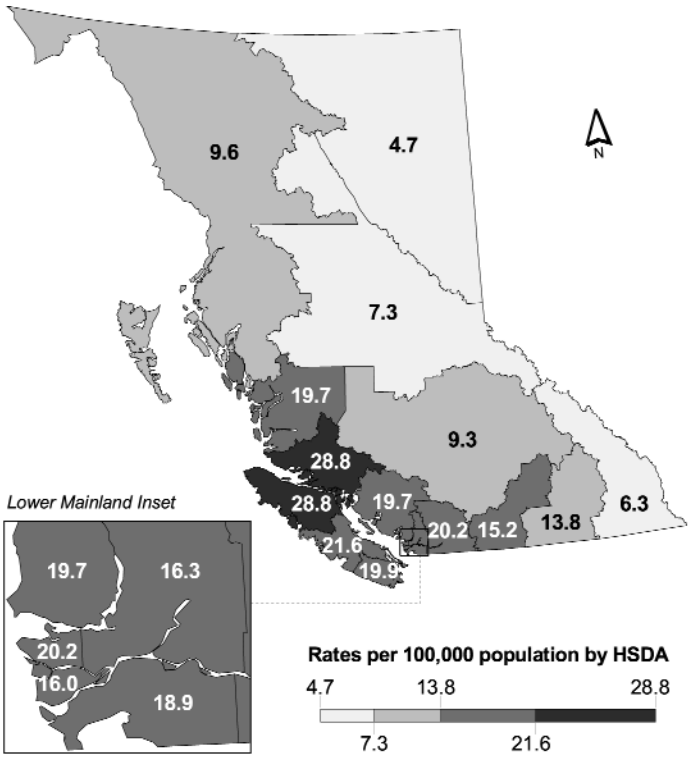
BC was also affected by an international outbreak of Salmonella Poona in April/May 2002. The outbreak was associated with consumption of imported cantaloupe. Four cases related to this outbreak were confirmed in BC.

30.1 Salmonellosis Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Salmonellosis Reports	989	836	857	814	637	648	684	688	706	711
—●— BC Salmonellosis Rate	27.7	22.7	22.7	21.0	16.1	16.2	17.0	17.0	17.2	17.2
—×— Canadian Salmonellosis Rate	24.3	22.2	21.8	22.2	20.1	23.3	18.4	18.4	17.5	16.7

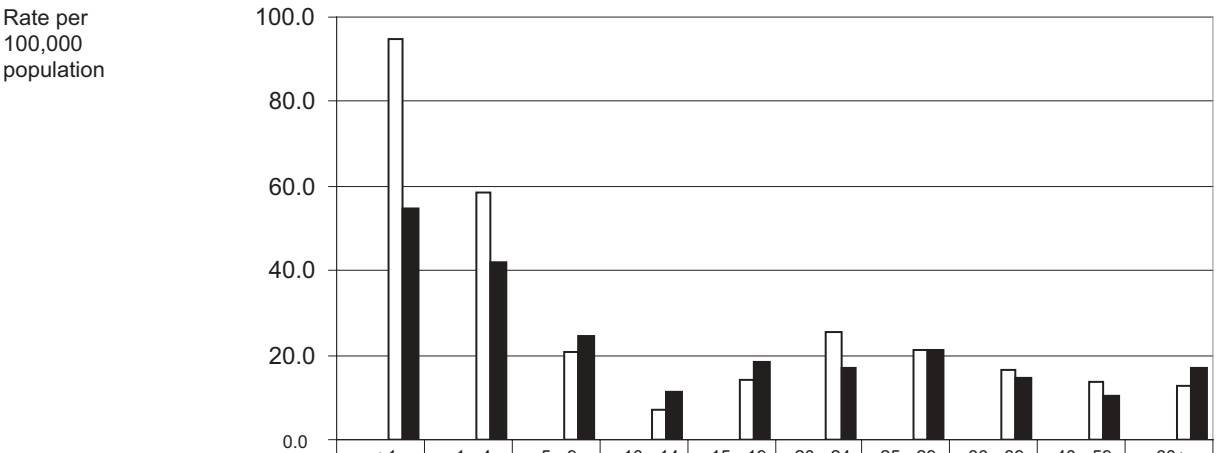
30.2 Salmonellosis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	5	6.3
12	Kootenay Boundary	11	13.8
13	Okanagan	48	15.2
14	Thompson Cariboo Shuswap	20	9.3
21	Fraser Valley	51	20.2
22	Simon Fraser	90	16.3
23	South Fraser	116	18.9
31	Richmond	28	16.0
32	Vancouver	119	20.2
33	North Shore/Coast Garibaldi	53	19.7
41	South Vancouver Island	80	19.9
42	Central Vancouver Island	52	21.6
43	North Vancouver Island	16	28.8
51	Northwest	8	9.6
52	Northern Interior	11	7.3
53	Northeast	3	4.7

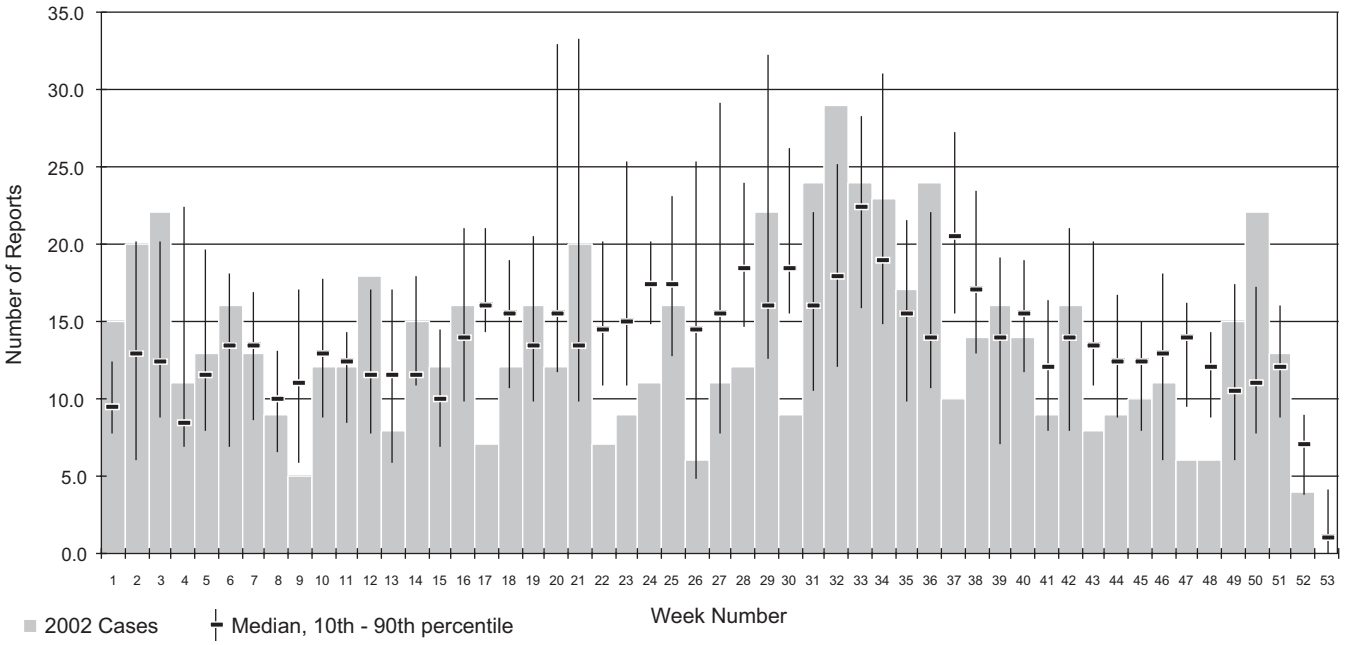
Note: Map classification by Jenks natural breaks method.

30.3 Salmonellosis Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Salmonellosis Reports - Female	18	48	25	9	19	35	29	53	84	51
Salmonellosis Reports - Male	11	36	31	15	26	24	29	47	64	56
Salmonellosis Reports - Unknown	0	0	0	0	0	0	0	0	0	1
□ Salmonellosis Rate - Female	94.8	58.4	20.9	7.0	14.4	25.5	21.4	16.4	13.7	12.9
■ Salmonellosis Rate - Male	54.9	42.0	24.5	11.1	18.6	17.2	21.3	14.6	10.5	16.8

30.4 2002 Salmonellosis Reports Compared to Historical Numbers from 1992 to 2001

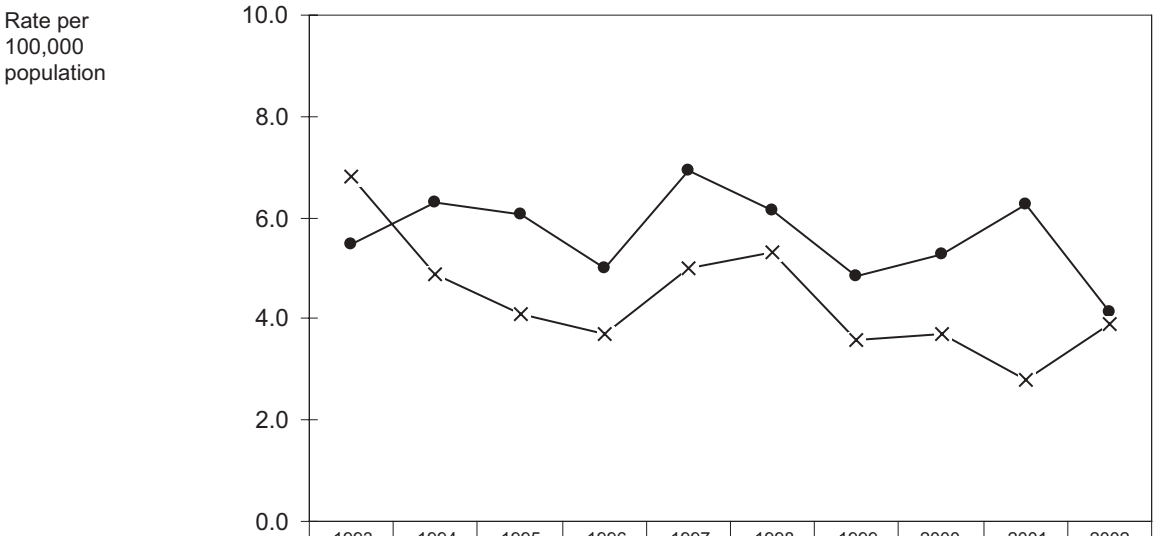


Shigellosis

The provincial rate of shigellosis reached a ten year low in 2002 with one hundred and seventy-one cases for a rate of 4.14 cases per 100,000 population. No outbreaks were identified. Vancouver had the highest rate at 11.7 cases per 100,000 population, more than double the provincial average. A bimodal age distribution is evident for both males and females with peaks in children less than five years and again in adults.

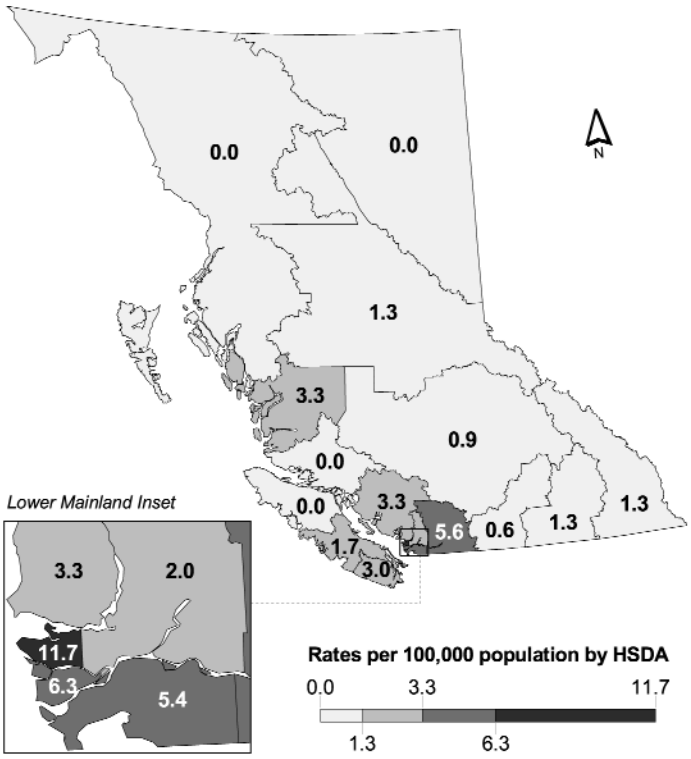
While most infections are travel-related, in 2001, two outbreaks of shigella infections not related to travel were identified. One outbreak in the lower mainland was associated with high-risk sexual practices of men who have sex with men (MSM) and the second was related to individuals eating or handling locally produced spinach.

31.1 Shigellosis Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Shigellosis Reports	196	232	230	194	275	246	195	214	256	171
BC Shigellosis Rate	5.5	6.3	6.1	5.0	7.0	6.2	4.8	5.3	6.3	4.1
Canadian Shigellosis Rate	6.8	4.9	4.1	3.7	5.0	5.3	3.6	3.7	2.8	3.9

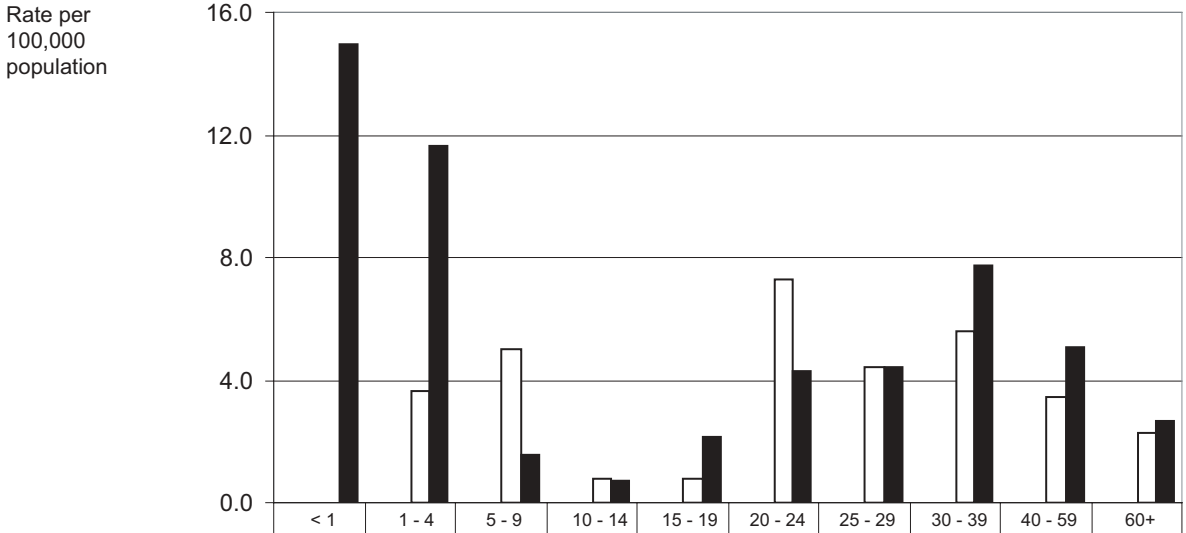
31.2 Shigellosis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	1	1.3
12	Kootenay Boundary	1	1.3
13	Okanagan	2	0.6
14	Thompson Cariboo Shuswap	2	0.9
21	Fraser Valley	14	5.6
22	Simon Fraser	11	2.0
23	South Fraser	33	5.4
31	Richmond	11	6.3
32	Vancouver	69	11.7
33	North Shore/Coast Garibaldi	9	3.3
41	South Vancouver Island	12	3.0
42	Central Vancouver Island	4	1.7
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	2	1.3
53	Northeast	0	0.0

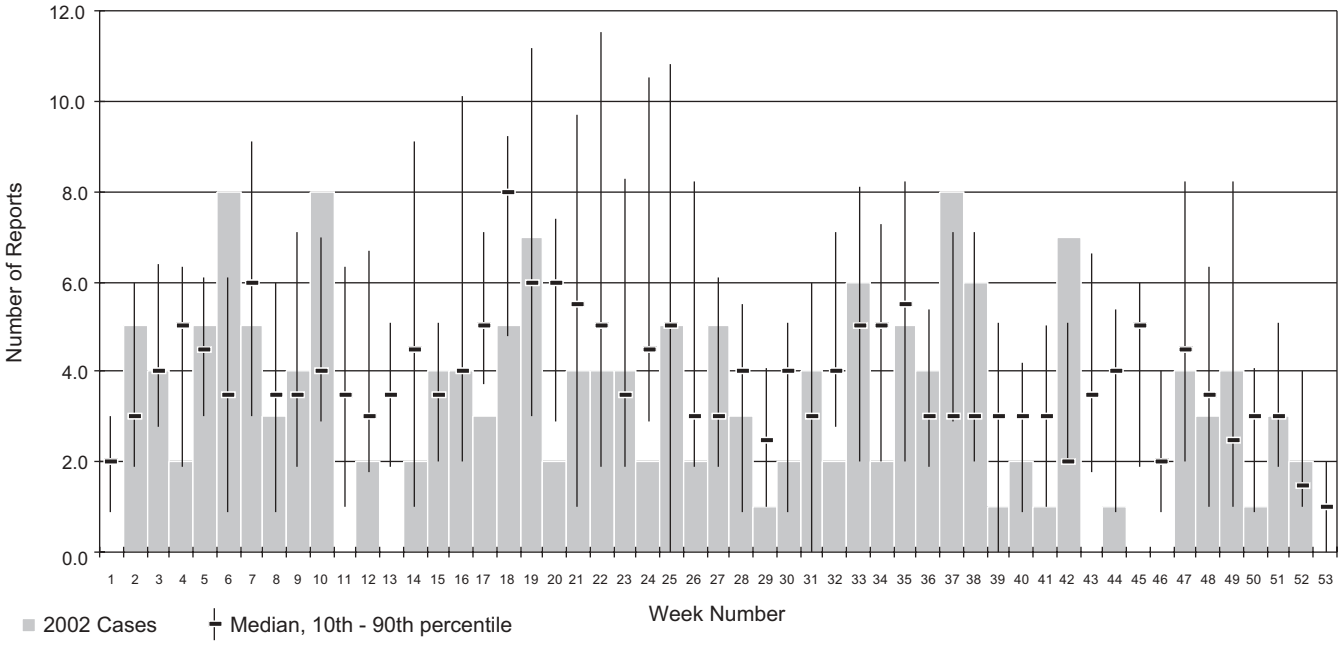
Note: Map classification by Jenks natural breaks method.

31.3 Shigellosis Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Shigellosis Reports - Female	0	3	6	1	1	10	6	18	21	9
Shigellosis Reports - Male	3	10	2	1	3	6	6	25	31	9
Shigellosis Rate - Female	0.0	3.7	5.0	0.8	0.8	7.3	4.4	5.6	3.4	2.3
Shigellosis Rate - Male	15.0	11.7	1.6	0.7	2.1	4.3	4.4	7.7	5.1	2.7

31.4 2002 Shigellosis Reports Compared to Historical Numbers from 1992 to 2001



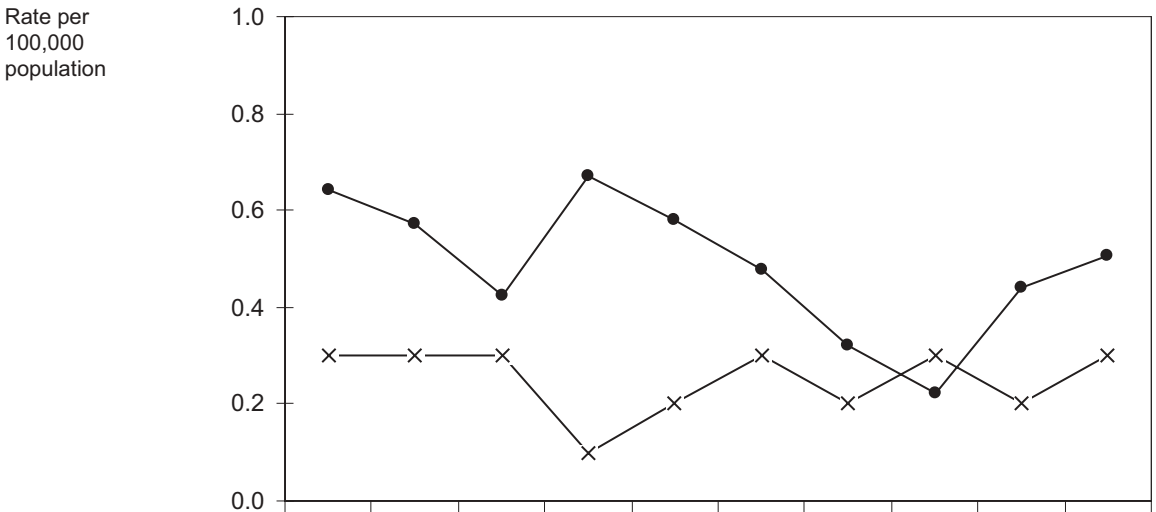
Trichinosis

No cases were reported in 2002.

Typhoid Fever

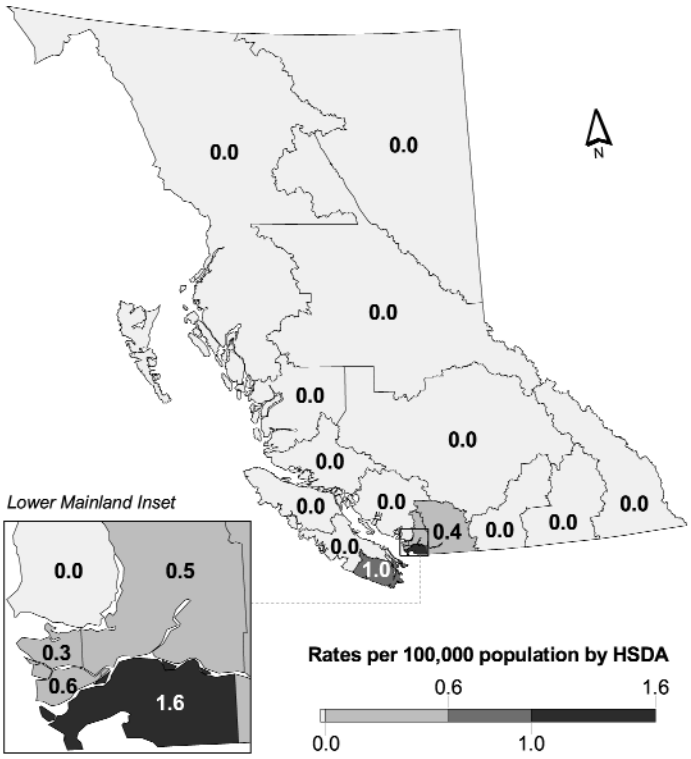
Twenty-one cases were reported in 2002. The provincial rate of typhoid fever has been increasing since 2000 when reported cases dropped to a ten-year low. Rates are highest in the spring when travelers return from winter holidays on the Indian subcontinent and parts of Asia. No outbreaks of domestically acquired typhoid fever were reported.

32.1 Typhoid Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Typhoid Reports	23	21	16	26	23	19	13	9	18	21
—●— BC Typhoid Rate	0.6	0.6	0.4	0.7	0.6	0.5	0.3	0.2	0.4	0.5
—×— Canadian Typhoid Rate	0.3	0.3	0.3	0.1	0.2	0.3	0.2	0.3	0.2	0.3

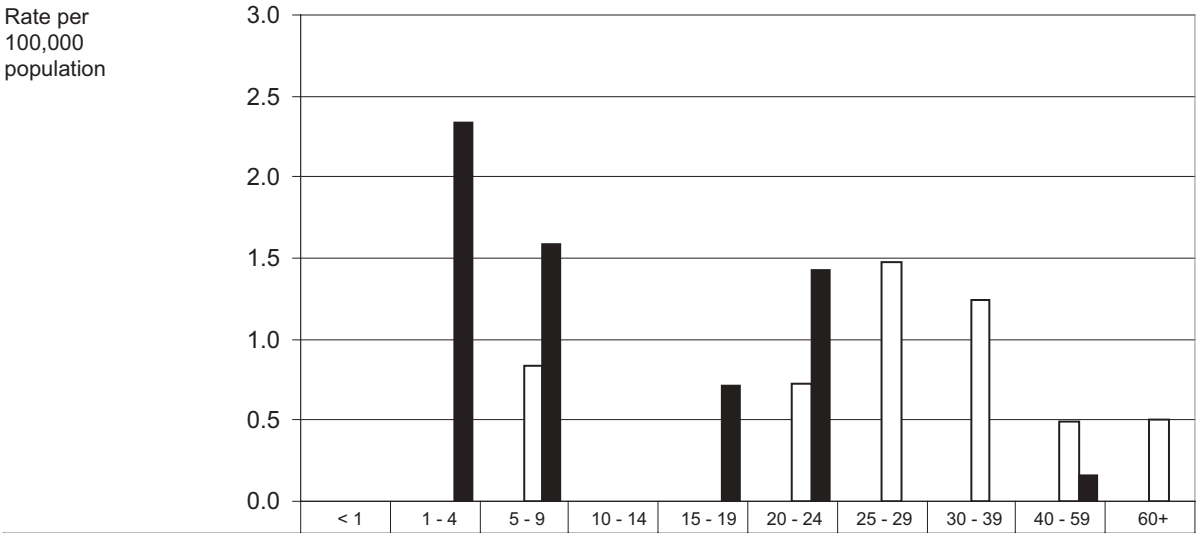
32.2 Typhoid Fever Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	0	0.0
13	Okanagan	0	0.0
14	Thompson Cariboo Shuswap	0	0.0
21	Fraser Valley	1	0.4
22	Simon Fraser	3	0.5
23	South Fraser	10	1.6
31	Richmond	1	0.6
32	Vancouver	2	0.3
33	North Shore/Coast Garibaldi	0	0.0
41	South Vancouver Island	4	1.0
42	Central Vancouver Island	0	0.0
43	North Vancouver Island	0	0.0
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

Note: Map classification by Jenks natural breaks method.

32.3 Typhoid Fever Rates by Age Group and Sex, 2002

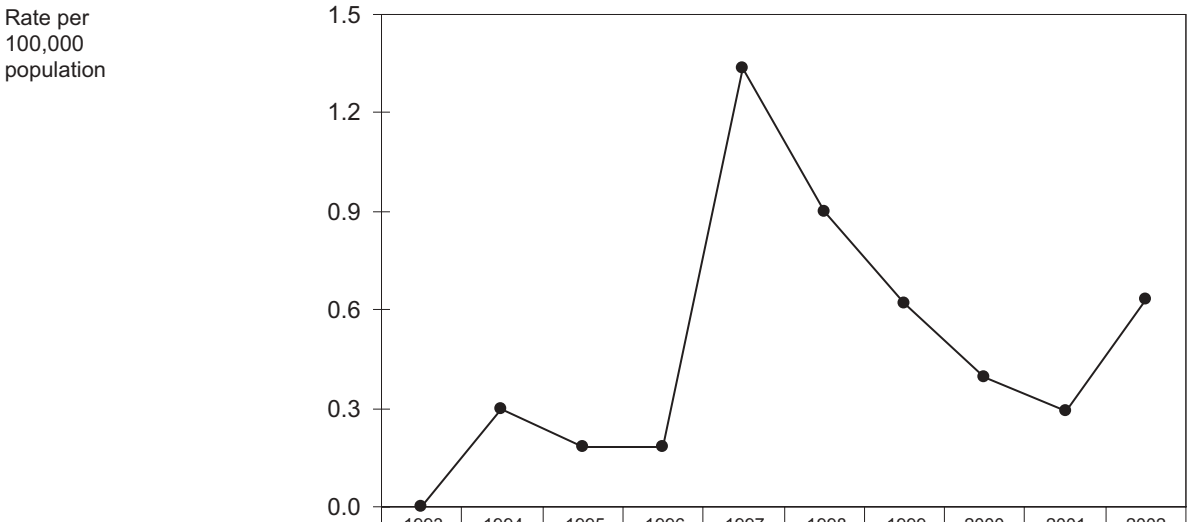


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Typhoid Fever Reports - Female	0	0	1	0	0	1	2	4	3	2
Typhoid Fever Reports - Male	0	2	2	0	1	2	0	0	1	0
□ Typhoid Fever Rate - Female	0.0	0.0	0.8	0.0	0.0	0.7	1.5	1.2	0.5	0.5
■ Typhoid Fever Rate - Male	0.0	2.3	1.6	0.0	0.7	1.4	0.0	0.0	0.2	0.0

Vibrio parahaemolyticus

***Vibrio parahaemolyticus* gastroenteritis reporting rose in 2002 to 26 cases.** All cases were in adults 20 years of age and older. Nine cases were related to eating raw bivalve shellfish purchased in local restaurants or stores.

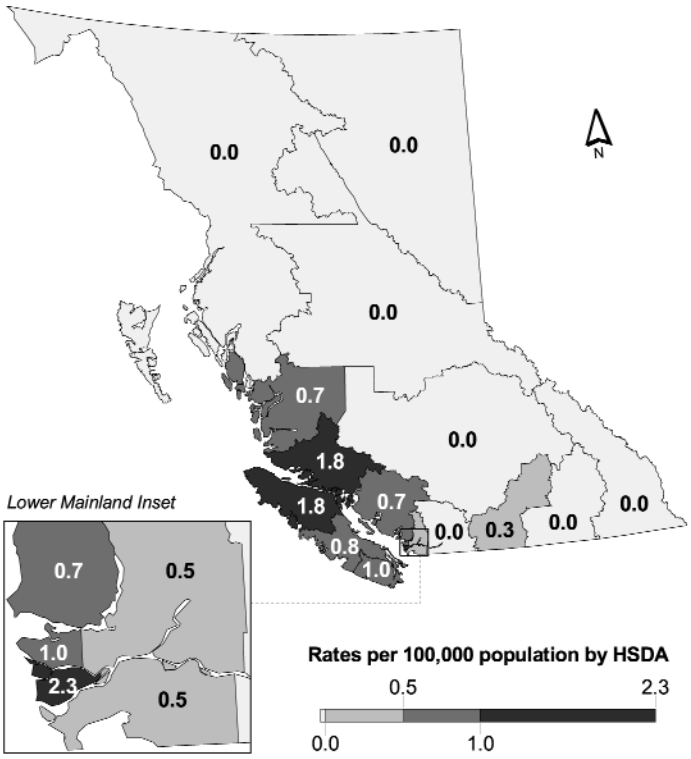
33.1 *Vibrio parahaemolyticus* Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Vibrio parahaemolyticus Reports	0	11	7	7	53	36	25	16	12	26
BC Vibrio parahaemolyticus Rate	0.0	0.3	0.2	0.2	1.3	0.9	0.6	0.4	0.3	0.6

Note: *Vibrio parahaemolyticus* is not notifiable nationally

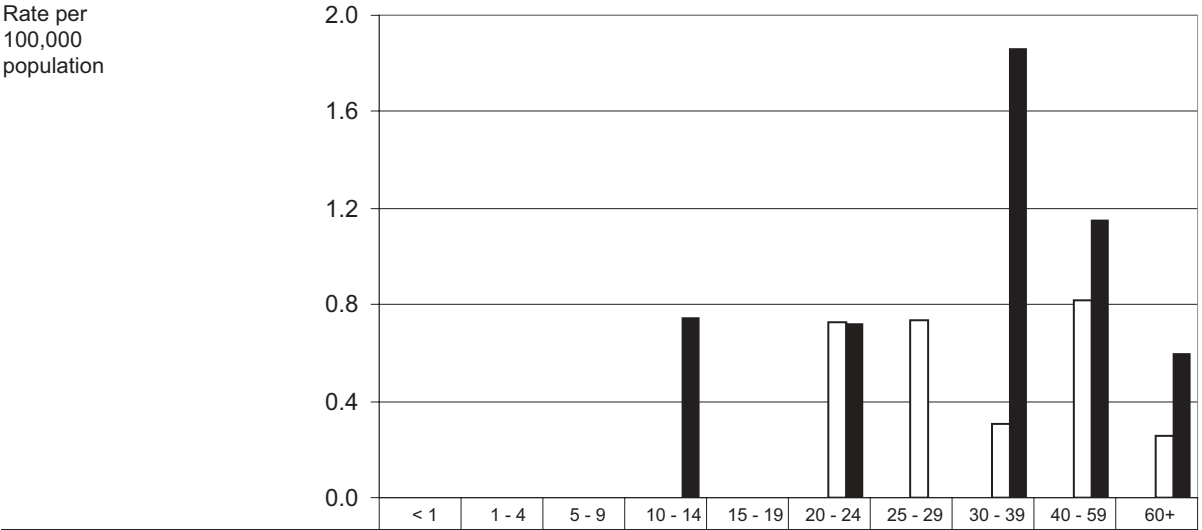
33.2 *Vibrio parahaemolyticus* Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	0	0.0
13	Okanagan	1	0.3
14	Thompson Cariboo Shuswap	0	0.0
21	Fraser Valley	0	0.0
22	Simon Fraser	3	0.5
23	South Fraser	3	0.5
31	Richmond	4	2.3
32	Vancouver	6	1.0
33	North Shore/Coast Garibaldi	2	0.7
41	South Vancouver Island	4	1.0
42	Central Vancouver Island	2	0.8
43	North Vancouver Island	1	1.8
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	0	0.0

Note: Map classification by Jenks natural breaks method.

33.3 *Vibrio parahaemolyticus* Rates by Age Group and Sex, 2002

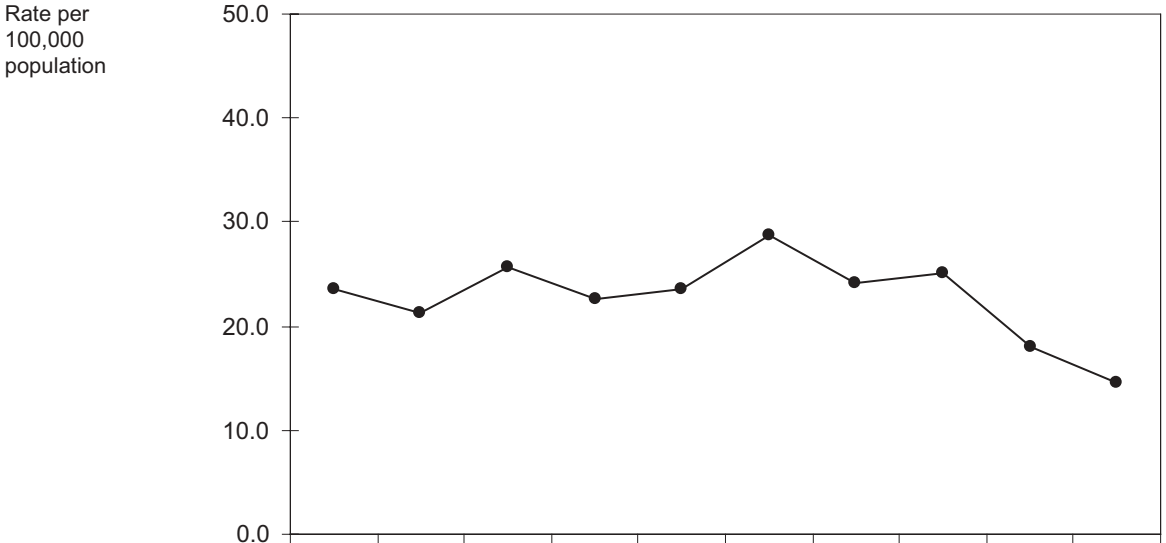


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Vibrio parahaemolyticus Reports - Female	0	0	0	0	0	1	1	1	5	1
Vibrio parahaemolyticus Reports - Male	0	0	0	1	0	1	0	6	7	2
□ Vibrio parahaemolyticus Rate - Female	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.3	0.8	0.3
■ Vibrio parahaemolyticus Rate - Male	0.0	0.0	0.0	0.7	0.0	0.7	0.0	1.9	1.1	0.6

Yersiniosis

The provincial rate of yersiniosis has been falling over the last two years. *Yersinia enterocolitica* accounts for the majority of cases reported. Rates peaked in children less than five years old and again in adults between the age of 20 and 60 years. Rates of reporting were highest in North Shore/Coast Garibaldi, South Vancouver Island, Richmond and Vancouver with 38.3, 30.0, 29.7 and 26.0 cases per 100,000 population, respectively. These regions (North Shore, Richmond and Vancouver) are served primarily by an outpatient laboratory that performs cold enrichment on stool specimens.

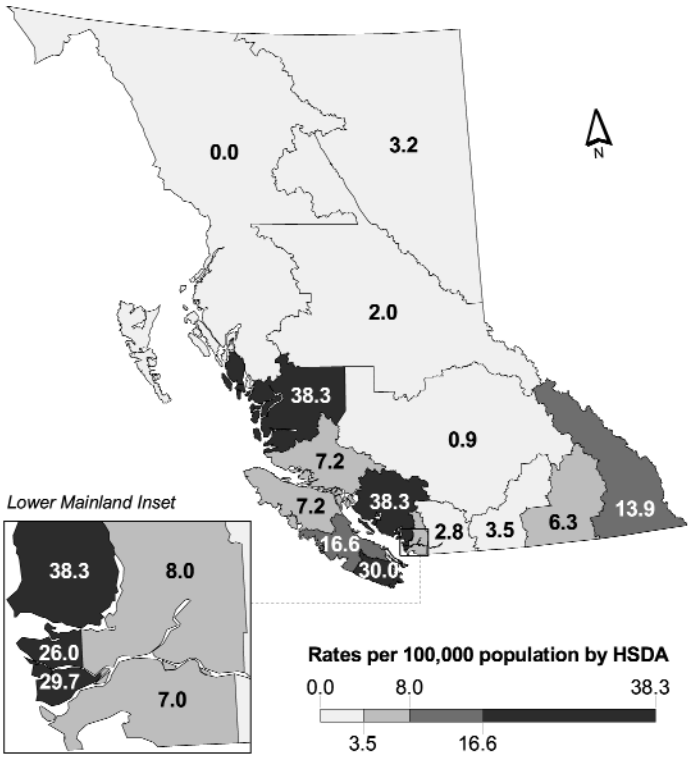
34.1 Yersiniosis Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Yersiniosis Reports	841	780	970	879	935	1145	972	1018	737	601
BC Yersiniosis Rate	23.6	21.2	25.6	22.6	23.6	28.7	24.1	25.1	18.0	14.5

Note: Yersiniosis is not notifiable nationally

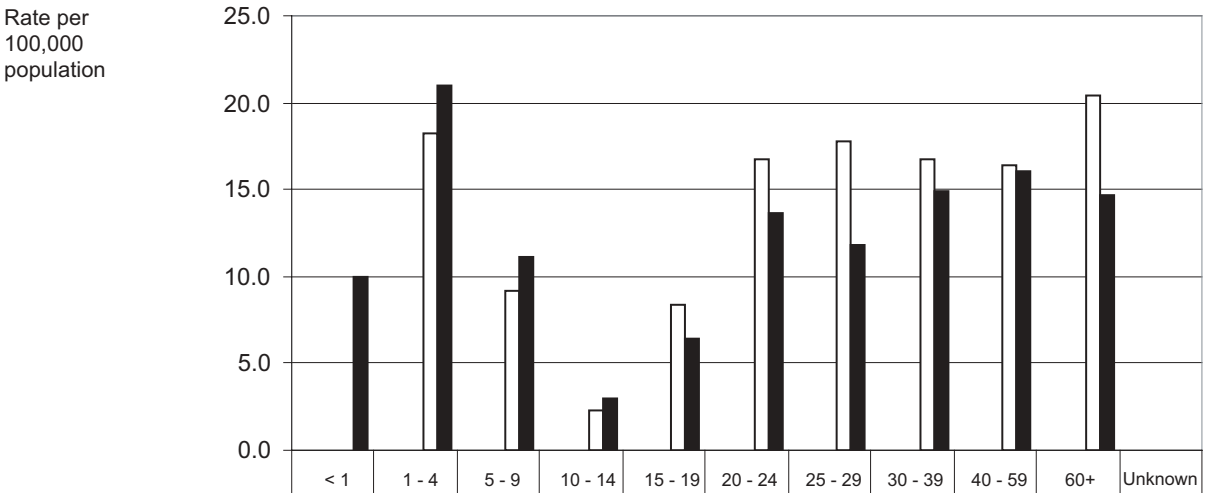
34.2 Yersiniosis Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	11	13.9
12	Kootenay Boundary	5	6.3
13	Okanagan	11	3.5
14	Thompson Cariboo Shuswap	2	0.9
21	Fraser Valley	7	2.8
22	Simon Fraser	44	8.0
23	South Fraser	43	7.0
31	Richmond	52	29.7
32	Vancouver	153	26.0
33	North Shore/Coast Garibaldi	103	38.3
41	South Vancouver Island	121	30.0
42	Central Vancouver Island	40	16.6
43	North Vancouver Island	4	7.2
51	Northwest	0	0.0
52	Northern Interior	3	2.0
53	Northeast	2	3.2

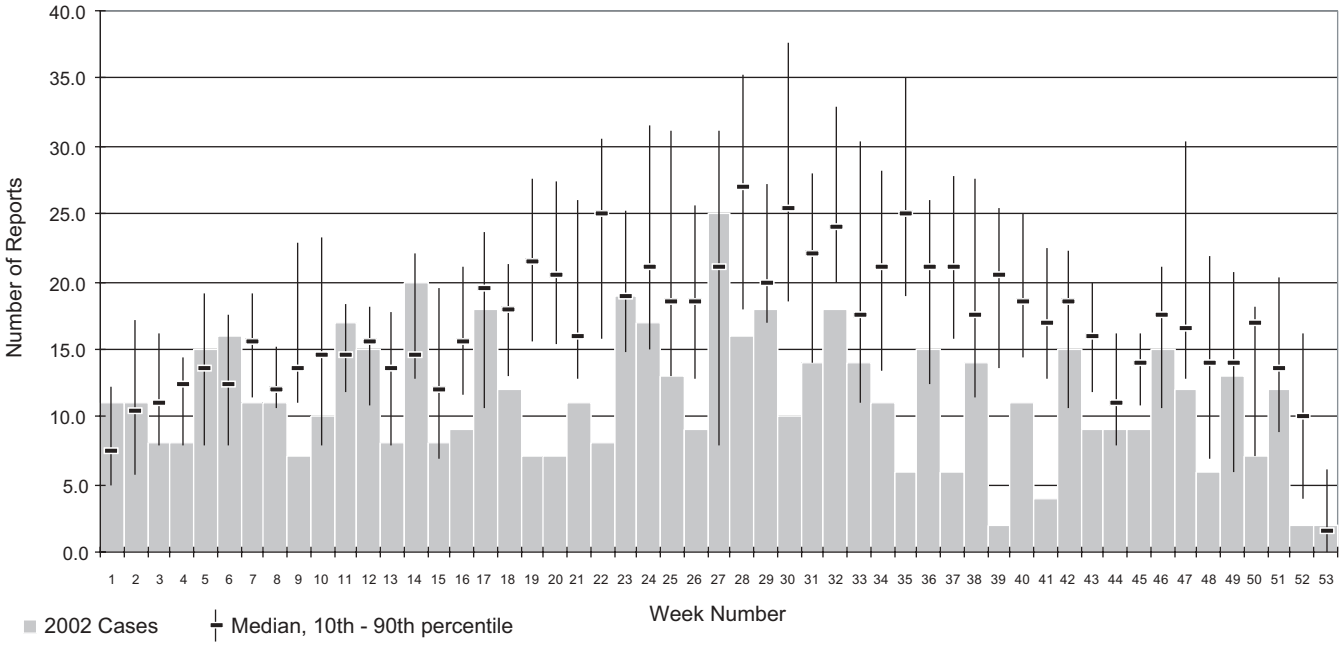
Note: Map classification by Jenks natural breaks method.

34.3 Yersiniosis Rates by Age Group and Sex, 2002

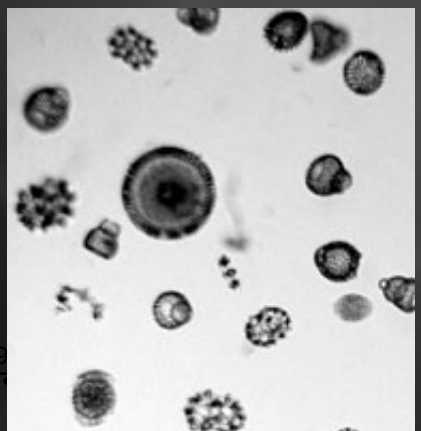


	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+	Unknown
Yersiniosis Reports - Female	0	15	11	3	11	23	24	54	100	81	1
Yersiniosis Reports - Male	2	18	14	4	9	19	16	48	98	49	0
Yersiniosis Reports - Unknown	0	0	0	0	0	0	0	0	1	0	0
□ Yersiniosis Rate - Female	0.0	18.3	9.2	2.3	8.3	16.8	17.7	16.7	16.4	20.4	
■ Yersiniosis Rate - Male	10.0	21.0	11.1	3.0	6.4	13.6	11.8	14.9	16.1	14.7	

34.4 2002 Yersiniosis Reports Compared to Historical Numbers from 1992 to 2001



Vectorborne and Other Zoonotic Diseases



Hantavirus Pulmonary Syndrome

One case of Hantavirus Pulmonary Syndrome was reported from North Okanagan during 2002. This is the first reported case in BC since 1996. This case was exposed to rodent droppings during clean-up activities in a disused portion of a barn.

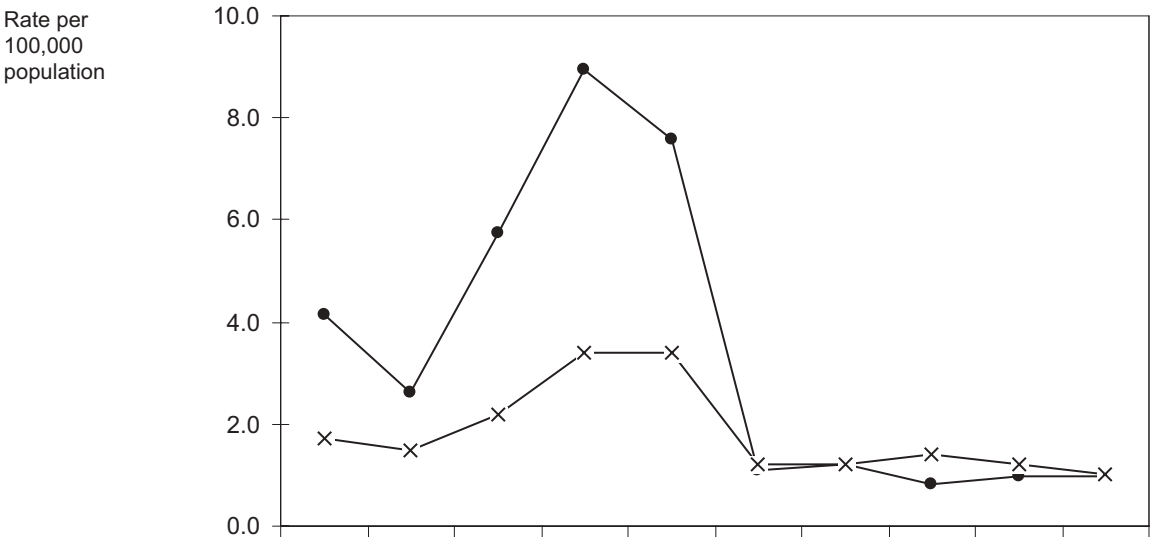
Lyme Disease

Four cases of Lyme disease were reported in 2002. One case was associated with exposure on Vancouver Island.

Malaria

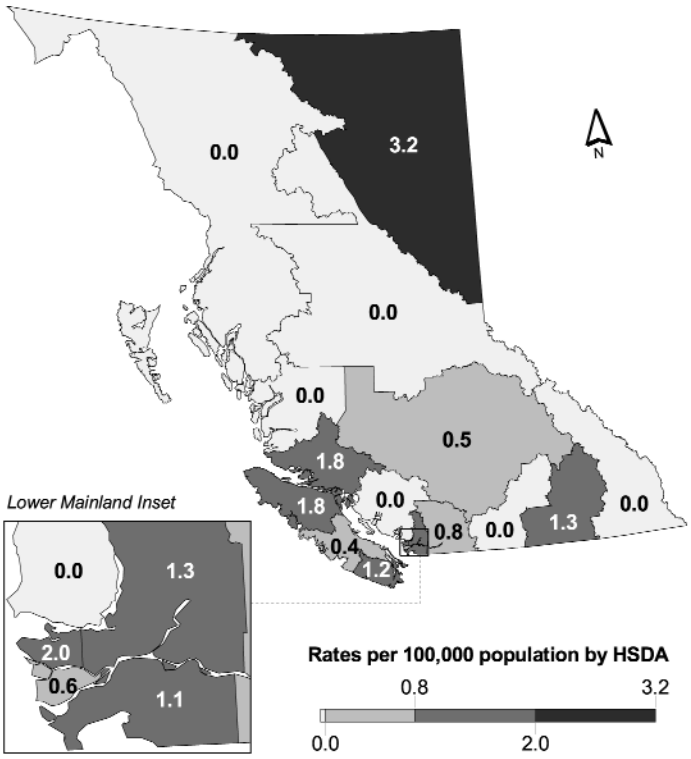
Malaria reporting has remained low for the past 5 years following a peak in the years 1995 through 1997. In 2002, forty cases were reported for a rate of less than one case per 100,000 population. Adult males had higher rates than females in all age groups except 20-24 years of age.

35.1 Malaria Rates by Year, 1993-2002



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
BC Malaria Reports	148	96	217	348	300	44	49	33	40	40
BC Malaria Rate	4.1	2.6	5.7	9.0	7.6	1.1	1.2	0.8	1.0	1.0
Canadian Malaria Rate	1.7	1.5	2.2	3.4	3.4	1.2	1.2	1.4	1.2	1.0

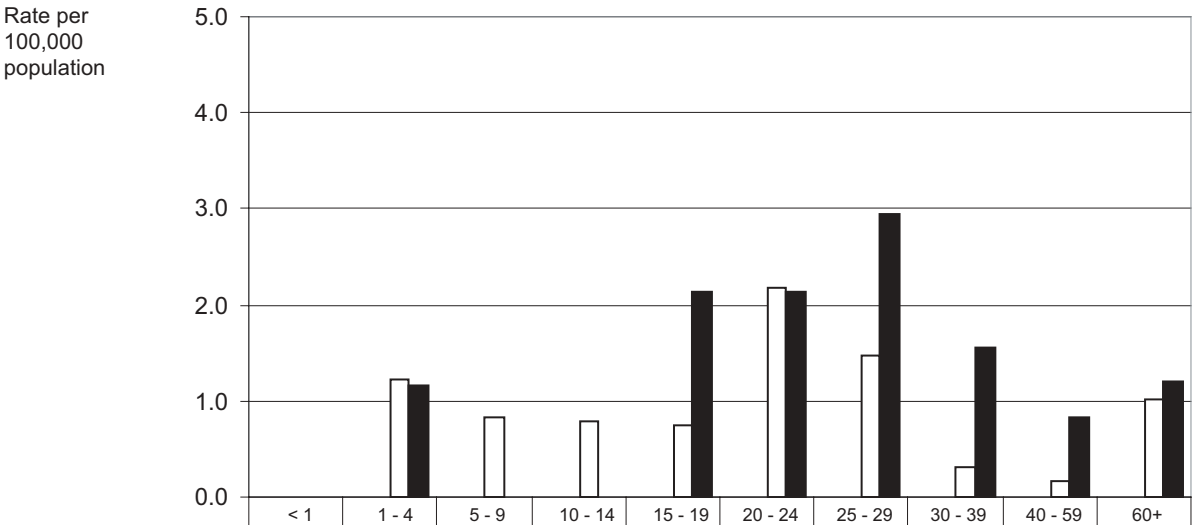
35.2 Malaria Rates by HSDA, 2002



HSDA	Health Service Delivery Area	Cases	Rate
11	East Kootenay	0	0.0
12	Kootenay Boundary	1	1.3
13	Okanagan	0	0.0
14	Thompson Cariboo Shuswap	1	0.5
21	Fraser Valley	2	0.8
22	Simon Fraser	7	1.3
23	South Fraser	7	1.1
31	Richmond	1	0.6
32	Vancouver	12	2.0
33	North Shore/Coast Garibaldi	0	0.0
41	South Vancouver Island	5	1.2
42	Central Vancouver Island	1	0.4
43	North Vancouver Island	1	1.8
51	Northwest	0	0.0
52	Northern Interior	0	0.0
53	Northeast	2	3.2

Note: Map classification by Jenks natural breaks method.

35.3 Malaria Rates by Age Group and Sex, 2002



	< 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 59	60+
Malaria Reports - Female	0	1	1	1	1	3	2	1	1	4
Malaria Reports - Male	0	1	0	0	3	3	4	5	5	4
□ Malaria Rate - Female	0.0	1.2	0.8	0.8	0.8	2.2	1.5	0.3	0.2	1.0
■ Malaria Rate - Male	0.0	1.2	0.0	0.0	2.1	2.1	2.9	1.5	0.8	1.2

Reportable Communicable Diseases in BC

November 2003

SCHEDULE A: Reportable by all sources, including Laboratories

Anthrax
Acquired Immune Deficiency Syndrome
Botulism
Brucellosis
Cholera
Congenital Infections:
- Toxoplasmosis
- Rubella
- Cytomegalovirus
- Herpes Simplex
- Varicella-Zoster
- Hepatitis B Virus
- Listeriosis and any other congenital infection

Cryptococcal infection
Cryptosporidiosis
Cyclospora infection
Diffuse Lamellar Keratitis
Diphtheria:
- Cases
- Carriers

Encephalitis:
- Post-infectious
- Subacute sclerosing panencephalitis
- Vaccine-related
- Viral

Foodborne illness:
- All causes

Gastroenteritis epidemic:
- Bacterial
- Parasitic
- Viral

Genital Chlamydia Infection
Giardiasis
Haemophilus influenza Disease:
- All Invasive, by Type

Hantavirus Pulmonary Syndrome
Hemorrhagic Viral Fevers
Hemolytic Uremic Syndrome (HUS)
Hepatitis Viral:
- Hepatitis A
- Hepatitis B
- Hepatitis C
- Hepatitis E
- Other Viral Hepatitis

Human Immunodeficiency Virus Infection
Invasive Group A Streptococcal Disease
Invasive *Streptococcus Pneumoniae* Infection
Leprosy
Lyme Disease
Measles
Meningitis: All causes
- (i) Bacterial: Hemophilus
  Pneumococcal
  Other
- (ii) Viral

Meningococcal Disease:
- All Invasive
- Including Primary Meningococcal Pneumonia and Primary Meningococcal Conjunctivitis

Mumps
Neonatal Group B Streptococcal Infection
Pertussis (Whooping Cough)
Paralytic Shellfish Poisoning (PSP)
Plague
Poliomyelitis
Rabies
Reye Syndrome
Rubella
Severe Acute Respiratory Syndrome (SARS)
Smallpox
Syphilis
Tetanus
Transfusion Transmitted Infection
Tuberculosis
Tularemia
Typhoid Fever and Paratyphoid Fever
Venereal Disease:
- Chancroid
- Gonorrhea – all sites

Waterborne Illness:
- All causes

West Nile Virus Infection
Yellow Fever

SCHEDULE B: Reportable by Laboratories only

All specific bacterial and viral stool pathogens:
- (i) Bacterial:
  - *Campylobacter*
  - *Salmonella*
  - *Shigella*
  - *Yersinia*
- (ii) Viral

Amoebiasis
Borrelia burgdorferi infection
Cerebrospinal Fluid Micro-organisms
Chlamydial Diseases, including Psittacosis
Cryptococcal Infection
Herpes Genitalis
Human Immunodeficiency Virus Infection
Influenza
Legionellosis
Leptospirosis
Listeriosis
Malaria
Q Fever
Rickettsial Diseases
Severe Acute Respiratory Syndrome (SARS)
Smallpox
Tularemia
West Nile Virus Infection

For most up to date list of reportable diseases, see http://www.bccdc.org/download.php?item=129

2002 BC Selected Notifiable Disease Case Reports by Health Service Delivery Area

	INTERIOR					FRASER			
	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	**Interior Cases**	Fraser Valley	Simon Fraser	South Fraser	**Fraser Cases**
2002 Population	78860	79903	314777	214161	687701	251867	551489	613736	1417092
AIDS	0	0	1	0	1	3	7	5	15
Amebiasis	0	6	3	2	11	17	40	55	112
Campylobacteriosis	15	27	98	57	197	118	315	323	756
Chlamydia (gential)	126	115	527	537	1305	271	856	595	1722
Cryptosporidiosis	2	0	4	4	10	23	16	17	56
Cyclosporiasis	1	0	0	0	1	3	2	6	11
***E. coli* Verotoxigenic**	7	3	14	9	33	14	26	28	68
Giardiasis	8	23	39	18	88	49	63	103	215
Gonorrhea	0	4	9	8	21	15	69	42	126
***Haemophilus infl.* b (invasive)**	0	1	0	0	1	2	1	1	4
Hepatitis A	1	2	4	1	8	5	4	7	16
Hepatitis B: Acute	3	2	3	2	10	7	6	13	26
Hepatitis B: Chronic	0	1	16	13	30	32	444	248	724
Hepatitis B: Undetermined	1	4	2	1	8	4	73	10	87
Hepatitis C	60	64	313	201	638	487	688	495	1670
HIV	1	0	12	8	21	12	47	41	100
Malaria	0	1	0	1	2	2	7	7	16
Measles	0	0	1	0	1	0	3	0	3
Methicillin Resistant *Staphylococcus aureus*	3	12	48	55	118	50	64	232	346
Meningococcal Disease (invasive)	0	2	3	2	7	5	1	4	10
Mumps	0	0	0	0	0	0	0	1	1
Pertussis	24	22	20	19	85	114	17	223	354
Pneumococcal Disease (invasive)	5	7	23	18	53	25	38	37	100
Rubella	0	0	0	0	0	0	1	1	2
Salmonellosis	5	11	48	20	84	51	90	116	257
Shigellosis	1	1	2	2	6	14	11	33	58
Syphilis	0	0	3	0	3	3	31	12	46
Streptococcal Group A (invasive)	0	6	6	5	17	14	13	26	53
Vancomycin Resistant Enterococci	2	1	1	0	4	0	0	1	1
Vibrio parahaemolyticus	0	0	1	0	1	0	3	3	6
Yersiniosis	11	5	11	2	29	7	44	43	94
LESS COMMON DISEASES									
Botulism	0	0	0	0	0	0	0	0	0
Hantavirus	0	0	0	0	0	0	0	0	0
Leprosy	0	0	0	0	0	0	0	0	0
Listeriosis	0	0	0	0	0	2	2	1	5
Lyme Disease	0	1	0	0	1	0	0	0	0
Trichinosis	0	0	0	0	0	0	0	0	0
Typhoid Fever	0	0	0	0	0	1	3	10	14

	NORTHERN				VANCOUVER COASTAL				VANCOUVER ISLAND				BC TOTAL
	Northeast	Northern Interior	Northwest	**Northern Cases**	North Shore Coast/ Garibaldi	Richmond	Vancouver	**Vancouver Coastal Cases**	Central Vancouver Island	North Vancouver Island	South Vancouver Island	**Vancouver Island Cases**	
	63373	150210	83130	296713	268828	175085	588502	1032415	240490	55494	403012	698996	4132917
	0	0	0	0	0	1	18	19	1	0	1	2	37
	0	0	0	0	11	2	203	216	5	0	20	25	364
	2	23	9	34	194	124	378	696	102	27	233	362	2045
	167	380	251	798	490	255	1541	2286	461	181	697	1339	7613
	8	0	0	8	13	4	18	35	6	1	11	18	127
	0	0	0	0	6	0	4	10	0	1	4	5	27
	0	4	0	4	1	3	20	24	5	0	6	11	140
	2	12	2	16	49	12	229	290	30	8	57	95	704
	17	15	4	36	29	21	418	468	13	7	29	49	713
	0	0	0	0	0	0	2	2	0	0	0	0	7
	6	3	2	11	11	2	23	36	2	2	5	9	80
	0	0	3	3	3	2	12	17	7	5	6	18	74
	2	3	5	10	8	348	1092	1448	27	5	17	49	2261
	4	0	8	12	44	2	0	46	2	0	60	62	215
	49	127	84	260	222	101	968	1291	262	87	417	766	4625
	2	8	2	12	12	9	229	250	12	3	42	57	442
	2	0	0	2	0	1	12	13	1	1	5	7	40
	0	0	0	0	0	0	1	1	0	0	0	0	5
	10	35	28	73	73	84	2	159	40	10	73	123	819
	0	0	0	0	4	1	6	11	2	0	2	4	32
	0	0	0	0	2	0	1	3	2	0	0	2	6
	1	35	22	58	59	5	12	76	24	5	40	69	642
	2	19	0	21	16	15	78	109	10	2	48	60	343
	0	0	0	0	0	0	0	0	0	0	0	0	2
	3	11	8	22	53	28	119	200	52	16	80	148	711
	0	2	0	2	9	11	69	89	4	0	12	16	171
	0	1	0	1	3	3	125	131	1	0	0	1	186
	1	2	0	3	6	3	40	49	13	5	16	34	156
	0	0	0	0	1	0	0	1	1	1	0	2	8
	0	0	0	0	2	4	6	12	2	1	4	7	26
	2	3	0	5	103	52	153	308	40	4	121	165	601
	0	0	0	0	0	0	0	0	0	0	1	1	1
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	3	0	1	4	0	0	5	5	14
	0	0	0	0	1	0	1	2	0	0	1	1	4
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	1	2	3	0	0	4	4	21

2002 BC Selected Notifiable Disease Case Rates by Health Service Delivery Area

	INTERIOR					FRASER			
	East Kootenay	Kootenay Boundary	Okanagan	Thompson Cariboo Shuswap	**Interior Rates**	Fraser Valley	Simon Fraser	South Fraser	**Fraser Rates**
2002 Population	78860	79903	314777	214161	687701	251867	551489	613736	1417092
AIDS	0.0	0.0	0.3	0.0	0.1	1.2	1.3	0.8	1.1
Amebiasis	0.0	7.5	1.0	0.9	1.6	6.7	7.3	9.0	7.9
Campylobacteriosis	19.0	33.8	31.1	26.6	28.6	46.9	57.1	52.6	53.3
Chlamydia (gential)	159.8	143.9	167.4	250.7	189.8	107.6	155.2	96.9	121.5
Cryptosporidiosis	2.5	0.0	1.3	1.9	1.5	9.1	2.9	2.8	4.0
Cyclosporiasis	1.3	0.0	0.0	0.0	0.1	1.2	0.4	1.0	0.8
***E. coli* Verotoxigenic**	8.9	3.8	4.4	4.2	4.8	5.6	4.7	4.6	4.8
Giardiasis	10.1	28.8	12.4	8.4	12.8	19.5	11.4	16.8	15.2
Gonorrhea	0.0	5.0	2.9	3.7	3.1	6.0	12.5	6.8	8.9
***Haemophilus infl.* b (invasive)**	0.0	1.3	0.0	0.0	0.1	0.8	0.2	0.2	0.3
Hepatitis A	1.3	2.5	1.3	0.5	1.2	2.0	0.7	1.1	1.1
Hepatitis B: Acute	3.8	2.5	1.0	0.9	1.5	2.8	1.1	2.1	1.8
Hepatitis B: Chronic	0.0	1.3	5.1	6.1	4.4	12.7	80.5	40.4	51.1
Hepatitis B: Undetermined	1.3	5.0	0.6	0.5	1.2	1.6	13.2	1.6	6.1
Hepatitis C	76.1	80.1	99.4	93.9	92.8	193.4	124.8	80.7	117.8
HIV	1.3	0.0	3.8	3.7	3.1	4.8	8.5	6.7	7.1
Malaria	0.0	1.3	0.0	0.5	0.3	0.8	1.3	1.1	1.1
Measles	0.0	0.0	0.3	0.0	0.1	0.0	0.5	0.0	0.2
Methicillin Resistant *Staphylococcus aureus*	3.8	15.0	15.2	25.7	17.2	19.9	11.6	37.8	24.4
Meningococcal Disease (invasive)	0.0	2.5	1.0	0.9	1.0	2.0	0.2	0.7	0.7
Mumps	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1
Pertussis	30.4	27.5	6.4	8.9	12.4	45.3	3.1	36.3	25.0
Pneumococcal Disease (invasive)	6.3	8.8	7.3	8.4	7.7	9.9	6.9	6.0	7.1
Rubella	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1
Salmonellosis	6.3	13.8	15.2	9.3	12.2	20.2	16.3	18.9	18.1
Shigellosis	1.3	1.3	0.6	0.9	0.9	5.6	2.0	5.4	4.1
Syphilis	0.0	0.0	1.0	0.0	0.4	1.2	5.6	2.0	3.2
Streptococcal Group A (invasive)	0.0	7.5	1.9	2.3	2.5	5.6	2.4	4.2	3.7
Vancomycin Resistant Enterococci	2.5	1.3	0.3	0.0	0.6	0.0	0.0	0.2	0.1
Vibrio parahaemolyticus	0.0	0.0	0.3	0.0	0.1	0.0	0.5	0.5	0.4
Yersiniosis	13.9	6.3	3.5	0.9	4.2	2.8	8.0	7.0	6.6
LESS COMMON DISEASES									
Botulism	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hantavirus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Leprosy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Listeriosis	0.0	0.0	0.0	0.0	0.0	0.8	0.4	0.2	0.4
Lyme Disease	0.0	1.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Trichinosis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Typhoid Fever	0.0	0.0	0.0	0.0	0.0	0.4	0.5	1.6	1.0

	NORTHERN				VANCOUVER COASTAL				VANCOUVER ISLAND				BC TOTAL
	Northeast	Northern Interior	Northwest	**Northern Rates**	North Shore Coast/ Garibaldi	Richmond	Vancouver	**Vancouver Coastal Rates**	Central Vancouver Island	North Vancouver Island	South Vancouver Island	**Vancouver Island Rates**	
	63373	150210	83130	296713	268828	175085	588502	1032415	240490	55494	403012	698996	4132917
	0.0	0.0	0.0	0.0	0.0	0.6	3.1	1.8	0.4	0.0	0.2	0.3	0.9
	0.0	0.0	0.0	0.0	4.1	1.1	34.5	20.9	2.1	0.0	5.0	3.6	8.8
	3.2	15.3	10.8	11.5	72.2	70.8	64.2	67.4	42.4	48.7	57.8	51.8	49.5
	263.5	253.0	301.9	268.9	182.3	145.6	261.9	221.4	191.7	326.2	172.9	191.6	184.2
	12.6	0.0	0.0	2.7	4.8	2.3	3.1	3.4	2.5	1.8	2.7	2.6	3.1
	0.0	0.0	0.0	0.0	2.2	0.0	0.7	1.0	0.0	1.8	1.0	0.7	0.7
	0.0	2.7	0.0	1.3	0.4	1.7	3.4	2.3	2.1	0.0	1.5	1.6	3.4
	3.2	8.0	2.4	5.4	18.2	6.9	38.9	28.1	12.5	14.4	14.1	13.6	17.0
	26.8	10.0	4.8	12.1	10.8	12.0	71.0	45.3	5.4	12.6	7.2	7.0	17.3
	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.2
	9.5	2.0	2.4	3.7	4.1	1.1	3.9	3.5	0.8	3.6	1.2	1.3	1.9
	0.0	0.0	3.6	1.0	1.1	1.1	2.0	1.6	2.9	9.0	1.5	2.6	1.8
	3.2	2.0	6.0	3.4	3.0	198.8	185.6	140.3	11.2	9.0	4.2	7.0	54.7
	6.3	0.0	9.6	4.0	16.4	1.1	0.0	4.5	0.8	0.0	14.9	8.9	5.2
	77.3	84.5	101.0	87.6	82.6	57.7	164.5	125.0	108.9	156.8	103.5	109.6	111.9
	3.2	5.3	2.4	4.0	4.5	5.1	38.9	24.2	5.0	5.4	10.4	8.2	10.7
	3.2	0.0	0.0	0.7	0.0	0.6	2.0	1.3	0.4	1.8	1.2	1.0	1.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.1
	15.8	23.3	33.7	24.6	27.2	48.0	0.3	15.4	16.6	18.0	18.1	17.6	19.8
	0.0	0.0	0.0	0.0	1.5	0.6	1.0	1.1	0.8	0.0	0.5	0.6	0.8
	0.0	0.0	0.0	0.0	0.7	0.0	0.2	0.3	0.8	0.0	0.0	0.3	0.1
	1.6	23.3	26.5	19.5	21.9	2.9	2.0	7.4	10.0	9.0	9.9	9.9	15.5
	3.2	12.6	0.0	7.1	6.0	8.6	13.3	10.6	4.2	3.6	11.9	8.6	8.3
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4.7	7.3	9.6	7.4	19.7	16.0	20.2	19.4	21.6	28.8	19.9	21.2	17.2
	0.0	1.3	0.0	0.7	3.3	6.3	11.7	8.6	1.7	0.0	3.0	2.3	4.1
	0.0	0.7	0.0	0.3	1.1	1.7	21.2	12.7	0.4	0.0	0.0	0.1	4.5
	1.6	1.3	0.0	1.0	2.2	1.7	6.8	4.7	5.4	9.0	4.0	4.9	3.8
	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.4	1.8	0.0	0.3	0.2
	0.0	0.0	0.0	0.0	0.7	2.3	1.0	1.2	0.8	1.8	1.0	1.0	0.6
	3.2	2.0	0.0	1.7	38.3	29.7	26.0	29.8	16.6	7.2	30.0	23.6	14.5
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	1.1	0.0	0.2	0.4	0.0	0.0	1.2	0.7	0.3
	0.0	0.0	0.0	0.0	0.4	0.0	0.2	0.2	0.0	0.0	0.2	0.1	0.1
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.6	0.3	0.3	0.0	0.0	1.0	0.6	0.5

Sources

1) Case reports are collected from the health authorities in British Columbia through the Public Health Information System (PHIS).

2) Population estimates and projections are taken from P.E.O.P.L.E. Projection 27 (Population Extrapolation for Organizational Planning with Less Error). Health Data Warehouse Release Date: September 2002.

3) National rates are provided by Health Canada – Population and Public Health Branch. All published 2001 and 2002 national rates are preliminary numbers and are subject to change. National rates for 2002 cover January to November 2002. Nunavut 2002 numbers are from January to June only. Saskatchewan numbers are from January to August only.

4) Amebiasis, cryptosporidiosis and listeriosis were removed from national surveillance in January 2000. Lyme disease, HIV, methicillin resistant *Staphylococcus aureus*, vancomycin resistant enterococci, *Vibrio parahaemolyticus* and yersiniosis are not nationally notifiable diseases.

5) Data for measles, influenza, invasive meningococcal disease and invasive group A streptococcal disease are collected through enhanced surveillance systems.

6) Data for invasive pneumococcal disease (IPD) 1992-1999 had previously been limited to pneumococcal meningitis. Since July 2000, the case definition now includes all other invasive cases in addition to meningitis.

7) The Jenks Natural Breaks Classification method was used for defining different classifications of disease rates in the maps. This classification method identifies gaps or depressions within the data distribution and creates the categories based on the best fit of the data (i.e., groups based on similarities).

8) Health Service Delivery Area boundaries are taken from BC STATS, Ministry of Management Services.

9) Participating laboratories for the BCCAMM Surveillance Project:

   I. BC Biomedical Laboratories

   II. Capital Health Region (Victoria)

   III. Children's and Women's Hospital (Vancouver)

   IV. Kelowna General Hospital

   V. MDS Metro (Burnaby, Victoria, and Prince George locations)

   VI. Fraser Health East (MSA General, Chilliwack General, Mission Memorial, and Fraser Canyon Hospitals

   VII. Prince George Regional Hospital

   VIII. Providence Health Care

   IX. The Richmond Hospital

   X. Royal Columbian Hospital (New Westminster)

   XI. Royal Inland Hospital (Kamloops)

   XII. Surrey Memorial Hospital

   XIII. Vancouver Hospital and Health Sciences Centre (VGH and UBCH sites)

   Data on MRSA and VRE collected and report prepared by Diane Roscoe, MD, FRCPC, reviewed by BCCAMM September 2003.

10) Numbers in this report were generated in March 2003 and are subject to change due to late reporting and/or data clean up in the delivery areas. This may also explain changes in the number of reported cases in previous years for some diseases.

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