TORONTO STAFF REPORT

February 9, 2006

To: Board of Health

From: Dr. David McKeown, Medical Officer of Health

Subject: Communicable Diseases in Toronto, 2004

Purpose:

This report provides updated trends in reportable communicable diseases in Toronto for 2004.

Financial Implications and Impact Statement:

There are no financial implications stemming directly from this report.

Recommendation:

It is recommended that the Board of Health receive this report for information.

Background:

The attached report entitled "Communicable Diseases in Toronto 2004" (see Appendix 1) summarizes 2004 data for diseases designated as "reportable" and "communicable" under the Health Protection and Promotion Act (HPPA) and associated regulations. Laboratories, physicians, hospitals, schools, and long-term care facilities are required to report communicable diseases to the Medical Officer of Health so that the appropriate public health action may be taken. Surveillance and case management data were stored and maintained in the provincially mandated Reportable Disease Information System (RDIS), which was replaced by the new integrated Public Health Information System (iPHIS) at the end of 2005.

Comments:

The data in this report represent updates to the two previous reports on Communicable Diseases in Toronto: "Communicable Diseases in Toronto, 2002 and Trends 1992 to 2002" and "Communicable Diseases in Toronto, 2003". The focus of this report is the annual trends for communicable diseases in 2004. This information complements weekly and monthly communicable disease bulletins posted on the Toronto Public Health (TPH) website, to allow a

broader understanding of how communicable diseases affect particular subpopulations in Toronto and how trends have recently evolved. Comparisons of Toronto data with the rest of Ontario and Canada also highlight the ways in which Toronto is uniquely affected by the burden of communicable diseases. These data continue to inform the ongoing development of Toronto Public Health's communicable disease prevention and control strategies.

Disease surveillance is an important component of TPH's preparedness and planning for pandemic influenza. The early recognition of increased influenza-like illness in the community relies heavily on robust historical baseline data against which comparisons can be made.

The most notable communicable disease highlights for 2004 in Toronto include:

(1) Discovery that a previous outbreak strain of Tuberculosis (TB) was actively being transmitted in Toronto's shelter system. TPH responded by conducting a massive case finding clinic and screening program that reached over 4,500 residents, staff and volunteers in the shelter system. As a result, a total of 11 new active cases of TB were detected.

(2) Confirmation of Toronto's first cases of Lymphogranuloma Venereum (LGV), an acute, invasive, and disfiguring strain of the sexually transmitted bacteria Chlamydia trachomatis. These cases were almost all among men who have sex with men (MSM) in Toronto, and resembled outbreaks recently described in large urban cities elsewhere (e.g. the Netherlands).

(3) Reports of infectious syphilis cases primarily among Toronto's MSM continued, as the outbreak that began in late 2002 grew to 371 cases reported in 2004 (compared to 327 cases in 2003).

(4) The circulation of influenza virus strains not included in the influenza vaccine for the 2004/05 season was associated with one of the highest number of cases reported during the previous 11 years (941 cases). Several associated outbreaks were reported in long-term care homes.

(5) Two years after the provincially-funded meningitis C vaccine program was made available, rates and numbers of invasive meningococcal disease (IMD) continue to drop. There was only one case of serotype C detected in Toronto compared with an average of six cases per year in the previous decade. This was the first year in the surveillance period without the report of a serotype B case.

(6) After an atypically high number of measles cases was reported in 2003, only four reports of measles, mumps and rubella combined were made in 2004. Three of these cases had involved recent travel.

(7) Rates of HIV among women have been increasing steadily since 1999. Acquiring the infection while living or visiting an endemic country is the main risk factor for women, an increasing concern given Toronto's growing and changing immigrant profile.

(8) Reports of chickenpox cases were the highest on record for the 11-year surveillance period. This underscores the need to promote the publicly funded vaccine available to previously uninfected children under five years of age.

This report will be posted to the TPH website, and its availability will be announced through letters to the Ministry of Health and Long-term Care, Public Health Agency of Canada, Ontario Public Health Units, Toronto hospitals, laboratories, school boards and universities, the Association of Local Public Health Agencies (aLPHa), the Association of Public Health Epidemiologists in Ontario (APHEO), the Association of Supervisors of Public Health Inspectors of Ontario (ASPHIO), the Institute for Clinical Evaluative Sciences (ICES) and the Ontario Public Health Association (OPHA).

Conclusions:

Preparing for emerging threats like pandemic influenza requires good baseline data characterizing disease trends in our city. Any changes to rates of diseases can help identify priority groups and facilitate timely and targeted interventions. The 2004 annual report of reportable communicable diseases in Toronto provides an update of the most current descriptive epidemiology for these diseases. The report identifies areas of progress from the past, and priority areas for further improvement. Ongoing vigilance in monitoring, detecting and controlling communicable diseases in Toronto continues to be a priority.

Contacts:

Effie Gournis, Manager, Communicable Disease Surveillance Unit
Tel: 416-338-7926
Fax: 416-392-0047
Email: egourni@toronto.ca

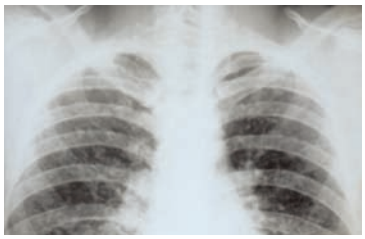
Dr. Barbara Yaffe,
Director, Communicable Disease Control & Associate Medical Officer of Health
Tel: 416-392-7405
Fax: 416-392-0713
Email: byaffe@toronto.ca

Dr. David McKeown
Medical Officer of Health

List of Attachments:

Appendix 1: Communicable Diseases in Toronto, 2004

Communicable Diseases in Toronto 2004



Dr. David McKeown
Medical Officer of Health

February 2006

Toronto Public Health

Communicable Diseases in Toronto 2004

Dr. David McKeown
Medical Officer of Health

February 2006

TORONTO Public Health

Reference:

Toronto Public Health. *Communicable Diseases in Toronto 2004.* City of Toronto: Toronto, Canada. February 2006.

Acknowledgements:

We wish to extend a general message of appreciation to all Toronto Public Health Communicable Disease Control program staff for their ongoing work in collecting the data contained in this report. Specific acknowledgement for contributing to the production of this report is extended to:

- **Communicable Disease Control program staff:** Jo-Ann Ackery, Dr. Lisa Berger, Dr. Michael Finkelstein, Abimbola Forde, Jann Houston, Rise Kogan, Marg Mulholland, Geri Nephew, Marjolyn Pritchard, Dr. Rita Shahin and Rebecca Stuart

- **Policy and Planning staff:** Dr. Fran Scott, Gene Long, Rick Travaglini and Heidi Weninger

We also acknowledge the Public Health Agency of Canada and the Ministry of Health and Long-Term Care for making their data available.

Lead Authors:

Communicable Diseases in Toronto, 2004 was written by Communicable Disease Surveillance Unit's epidemiology team that includes the following members:

Manager: Effie Gournis

Epidemiologists: Camille Achonu, Yemi Kadri, Leslie Shulman

Health Information Analysts: Diane Green, Eleni Kefalas, Nicole Whittingham

Director, Communicable Disease Control:

Dr. Barbara Yaffe

Medical Officer of Health:

Dr. David McKeown

Distribution:

Copies of this document are available at http://www.toronto.ca/health/cdc/communicable_disease_surveillance/statistics_and_reports/annual_reports/

or from:

Communicable Disease Surveillance Unit
Toronto Public Health
277 Victoria St., 10th Floor
Toronto, ON M5B 1W2

Tel: 416-392-7411
Fax: 416-392-0047
e-mail: CDSU@toronto.ca

Table of Contents

Executive Summary

This summary of reportable communicable diseases in the City of Toronto for 2004 is the third in a series of annual reports describing trends in our city. A baseline picture of the major factors that play a role in how Toronto is affected by communicable diseases emerged through two previous summaries. Our city is home to a population that is both ethnically and culturally diverse, and one that is significantly affected by global health threats and issues. The data for 2004 events highlight significant trends in the transmission of communicable diseases in Toronto.

The most notable communicable disease story in 2004 involved the homeless population. A strain of tuberculosis (TB) that had infected and killed a number of homeless persons from 2000 to 2002 reappeared in a large downtown Toronto shelter in fall of 2004. Toronto Public Health responded by conducting a massive case-finding clinic and screening program that reached over 4500 residents, staff, and volunteers in the shelter system. Eleven active cases of tuberculosis were detected through this effort, confirming that susceptibility to preventable diseases is a fact of life for those living in conditions of crowding, poverty and poor nutrition.

A closer look at other key communicable disease issues in 2004 indicates a number of areas of concern and evidence of progress in curbing transmission of some diseases.

Highlights of communicable disease areas of concern in 2004 include:

- Confirmation of Toronto's first cases of Lymphogranuloma venereum (LGV), an acute, invasive, and disfiguring strain of the sexually transmitted bacteria *Chlamydia trachomatis*. These cases were almost all among men who have sex with men (MSM) in Toronto, and resembled outbreaks recently experienced in large urban cities elsewhere (e.g. the Netherlands).
- Reports of infectious syphilis cases primarily among Toronto's MSM continued, as the outbreak that began in late 2002 grew to 371 cases reported in 2004 (compared to 327 cases in 2003).
- Rates of HIV among women have been increasing steadily since 1999. Acquiring the infection while living or visiting an endemic country is the main risk factor for women, an increasing concern given Toronto's growing and changing immigrant profile.
- Reports of chickenpox cases were the highest on record for the 11-year surveillance period. This underscores the need to promote the publicly funded vaccine available to previously uninfected children under five years of age.
- The reports of a case of congenital rubella and an infant with acute Hepatitis B infection were both preventable events.
- The circulation of influenza virus strains not included in the influenza vaccine for the 2004/05 season was associated with one of the highest number of cases reported during the previous 11 years (941 cases). Several associated outbreaks were reported in long term care homes.

Highlights of progress in communicable disease control in 2004 include:

- After an atypically high number of measles cases was reported in 2003, only four reports of measles, mumps, and rubella combined were made in 2004. Three of these cases had involved recent travel.
- Two years after the provincially-funded meningitis C vaccine program was made available, rates and numbers of invasive meningococcal disease (IMD) continue to drop. There was only one case of serotype C detected in Toronto compared with an average of six cases per year in the previous decade. This was the first year in the surveillance period without the report of a serotype B case.
- Rates of chlamydia in Toronto had been steadily rising from 1997 to 2002. Although a drop in rates is desirable, it is noteworthy that this is the second year in a row that rates stayed level.
- The six West Nile virus cases reported was a further drop from the decreases since the outbreak year of 2002. Active surveillance and intervention strategies targeting mosquito

breeding habitats early in the season may have contributed to this decline.

- As with 2003, reports of most of the widespread enteric diseases were down again. These included amebiasis, *Campylobacter* enteritis, salmonellosis, and yersiniosis. Reports of giardiasis and hepatitis A virus remained at levels that were nearly the lowest on record.

As the focus of public attention and government health planning involves preparedness for the arrival of the next pandemic strain of influenza, communicable disease surveillance reports become more relevant and useful. Baseline rates and characteristics of communicable disease infections are needed to recognize and respond to new or emerging trends.

Toronto Public Health adopted the new provincial communicable disease information system (the integrated Public Health Information System – iPHIS) to track and manage cases of reportable diseases in late 2005. Ongoing disease surveillance, combined with good planning and collaboration across health and other sectors, will facilitate the prevention and control of communicable diseases and contribute to a healthier Toronto. ❑

List of Figures

Sexually Transmitted and Bloodborne Diseases

Enteric, Food and Waterborne Diseases

Diseases Preventable by Routine Vaccination

Diseases Transmitted by Direct Contact and Respiratory Routes

Vectorborne and Zoonotic Diseases

Encephalitis/Meningitis

Outbreaks

List of Tables

Diseases Transmitted by Direct Contact and Respiratory Routes

Vectorborne and Zoonotic Diseases

Encephalitis/Meningitis

Rare Diseases

Outbreaks

Overview

Communicable Diseases in Toronto

2004

TORONTO Public Health

Introduction to Report

This is the third in a series of annual reports that summarize descriptive data for reportable communicable diseases in the City of Toronto. These reports deal specifically with diseases designated *reportable* and *communicable* under the *Health Protection and Promotion Act* and associated regulations and focuses on those cases reported for 2004. Descriptive data were extracted from the Ministry of Health and Long-term Care (MOHLTC)-mandated Reportable Disease Information System (RDIS), which is used to manage and store surveillance and case management data in Ontario. This report builds upon the previous two communicable disease reports. These data can be used to understand current and historical communicable disease trends in Toronto.

The report's descriptive format is designed for use by several audiences. Toronto Public Health can continue to use the new information to further guide prevention, promotion and control efforts, resource allocation and policy decisions. Regional, provincial and national counterparts may use the report to add to their understanding of the burden of communicable diseases in larger urban centers. As with all of our surveillance reports, we hope colleagues throughout the health sector and in academia find value in these data for further development of targeted interventions and strategies for communicable disease control in Toronto.

Key observations for 2004 data and trends are highlighted for each disease. Rare diseases are only mentioned to provide a basic appreciation of the frequency of their occurrence. Data for 2004 reportable disease incidents are the most current available for a summary, taking into account the lag in reporting associated with several diseases and the amount of time required to verify annual data for over 50,000 reports of disease (including outbreaks).

Accurate use of and extrapolation from the data in this report require understanding of the limitations and technical issues outlined in the appendices. The general format used in each disease summary is described and then applied to each disease, grouped in chapters reflecting the major modes of transmission. Disease groups are presented in an order reflecting their relative burden in Toronto. Within each disease grouping, diseases are presented in alphabetical order. ❑

Standard Report Format

Data in this report are derived and summarized as indicated below. The relevant measures and headings were included only where they were applicable and sufficient data were available.

Summary Data Table

Number of reported cases: For most diseases, this reflects cases of the disease with an episode date in the given time period (2004, most recent previous 5-year mean for 1999-2003, and overall previous 10-year mean for 1994-2003).

Incidence rates (reported as period rates per 100,000):

Overall: Number of all new cases in a time period divided by the Toronto population for that time period, multiplied by 100,000.

Male: Number of new male cases in a time period divided by the Toronto male population for that time period, multiplied by 100,000.

Female: Number of new female cases in a time period divided by the Toronto female population for that time period, multiplied by 100,000.

Mean age: Arithmetic mean age of all cases in the given time period.

Median age: The age that represents the midpoint of the sequence of all case ages for the given time period.

Age range: The age of the youngest and oldest cases in the given time period. With the exception of neonatal group B streptococcal reports, for cases under one year of age, less than one (<1) was used.

Case fatality rate (where applicable): The number of deaths in cases with the reportable disease in a given time period divided by the total number of reported cases with that disease for the same time period. This is expressed as a percentage. Note that deaths can occur a year or more after the disease was acquired. Deaths are counted in the year of the disease episode to capture the proportion of cases reported in a given year whose death was associated with the disease.

Hospitalization rate (where applicable): The number of cases with the reportable disease treated in a hospital (both in-patients and out-patients) divided by the total number of incident cases within the same time period. This is expressed as a percentage. Hospitalizations are counted in the year of the disease episode to capture the proportion of cases reported in a given year who were hospitalized because of their illness.

Outbreak-associated cases (where applicable): The number of cases with the reportable disease that were identified as being related to or part of an outbreak divided by the total number of incident cases within the same time period. This is expressed as a percentage.

Highlights

The report primarily focuses on 2004 data and highlights the significance of any changes for that year. Key observations and notable changes in trends for each disease are mentioned. Potential explanations of any significant changes or notable trends are offered when available. Several years of data are combined when reporting rates for disease with few reports, as described below.

Figures and Tables

In general, data presented in figures and tables for each disease focus on the following attributes:

Regional comparisons: An illustration of incidence rates in Toronto, the rest of Ontario and Canada over the entire surveillance period. Rates for 'Ontario less Toronto' were calculated by dividing the number of cases in the rest of Ontario (Ontario cases – Toronto cases) by the population in the rest of Ontario (Ontario population – Toronto population).

Age and sex: Where data were available and sufficient to allow division of cases into different sexes for each age group, the age-sex specific rates were reported along with the overall age-specific rate. Where the annual number of cases for the more common diseases (such as chlamydia or salmonellosis) was large enough, age-specific rates were provided for the most

current year of data (2004). For diseases with low annual numbers of cases (e.g. hepatitis B and legionellosis), age-specific rates were based on combined data for all years starting in 1994 (or the earliest date that disease data were available, for those diseases not designated reportable until a few years into the surveillance period).

Several factors shaped the determination of the age categories used in this report. Age categories were created to have cell sizes with more than 5 observations. Every attempt was also made to report standard age groups within disease chapters (e.g. all STIs) to facilitate comparisons between diseases.

Sex: For diseases that tend to be differentially reported by sex and where there are many cases, an illustration of the sex-specific incidence rates for 1994 to 2004 was provided. These data were primarily presented for sexually transmitted infections and enteric diseases (e.g. Amebiasis, Shigellosis, Giardiasis) for which a large proportion of infections are transmitted via sexual contact.

Risk factors, risk settings and source of infection: Where applicable, the proportion of cases reporting specific risk factors, sources of infection, and risk settings was presented. Categories used are those available in RDIS, which vary by disease and time period. In some circumstances, which have been noted, categories were combined.

Month: Where applicable, the number of cases that occurred during each month of 2004, compared to the previous 10-year (1994-2003 or the longest period available) mean and 95% confidence interval was presented. Given the small numbers that could be reported in any given month, confidence intervals were used as a means to ascertain whether reports for any single month of the current year were notably high or low.

Tuberculosis disease – additional tables and figures: The epidemiology of tuberculosis is best understood with the summary of additional factors and facets of the disease. Disease and case characteristics such as country of origin, anatomical site, treatment outcomes, antibiotic resistance, and medical surveillance numbers were included. ❑

Table 1.0: Number and proportion of cases for all reportable diseases by ranking. Toronto, 2004

Ranking	Reportable disease	Number of cases	Proportion of cases (%)
1	Chlamydia	6287	27
2	Chickenpox	5317	23
3	Hepatitis B carriers	1936	8
4	Gonorrhea	1734	7
5	Hepatitis C	1340	6
6	*Campylobacter* enteritis	975	4
7	Influenza*	941	4
8	Hepatitis B unclassified reports	683	3
9	HIV	567	2
10	Giardiasis	521	2
11	Salmonellosis	481	2
12	Syphilis, infectious	371	2
13	Tuberculosis	358	2
14	Amebiasis	324	1
15	*Streptococcus pneumoniae*, invasive	264	1
16	Syphilis, late latent	142	<1
17	Shigellosis	100	<1
18	AIDS	93	<1
18	Malaria	93	<1
19	Pertussis	92	<1
19	Yersiniosis	92	<1
20	Streptococcal disease, Group A invasive	52	<1
21	Verotoxin-producing *E. coli* infection	50	<1
22	Cryptosporidiosis	49	<1
23	Hepatitis A	48	<1
24	Encephalitis/meningitis: viral	43	<1
25	Hepatitis B cases	38	<1
26	Cyclosporiasis	30	<1
27	Typhoid fever	28	<1
28	Syphilis, other†	17	<1
29	Paratyphoid fever	16	<1
29	Streptococcal disease, Group B neonatal	16	<1
30	Listeriosis	14	<1
31	Encephalitis/meningitis: bacterial	12	<1
32	Encephalitis/meningitis: unclassified	8	<1
33	Encephalitis/meningitis: other	7	<1
34	Meningococcal disease, invasive	6	<1
34	West Nile virus	6	<1
35	Herpes, neonatal	5	<1
36	Lyme disease	4	<1
37	*Haemophilus influenzae* b disease, invasive	3	<1
37	Legionellosis	3	<1
37	Ophthalmia neonatorum	3	<1
38	Botulism	2	<1
38	Brucellosis	2	<1
38	Mumps	2	<1
39	Hepatitis D	1	<1
39	Measles	1	<1
39	Q fever	1	<1
39	Rubella	1	<1
39	Rubella, congenital syndrome	1	<1
39	Syphilis, congenital	1	<1
	Total	**23181**	**100**

*Seasonal year from July to June (e.g. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

†Excludes infectious, late latent and congenital syphilis.

Rare reportable diseases not summarized in this report include anthrax, chancroid, cholera, diphtheria, hantavirus, hemorrhagic fevers, lassa fever, leprosy, plague, poliomyelitis, psittacosis/ornithosis, rabies, severe acute respiratory syndrome (SARS), smallpox, tetanus, transmissible spongiform encephalopathies, trichinosis, tularemia, yellow fever.

Sexually Transmitted and Bloodborne Diseases

Communicable Diseases in Toronto

2004

Toronto Public Health

Sexually Transmitted and Bloodborne Diseases

This section focuses on diseases caused by infectious agents that are found in body fluids such as blood, semen, vaginal secretions, breast milk, and saliva. Transmission occurs primarily from person to person through sexual contact, through other means of direct entry into the blood system such as needle use or transfusions, perinatally from mother to infant or in the case of hepatitis B through household contact. This group of diseases is the most widespread in Toronto. Relative proportions of each disease within this grouping, and their ranking are listed below. In 2004, chlamydia accounted for 48% of reports falling into this category. ❑

Table 1.1: Number and proportion of reported cases of sexually transmitted and bloodborne diseases. Toronto, 2004

Ranking	Reportable disease	Number of cases	Proportion of cases (%)
1	Chlamydia	6287	48
2	Hepatitis B carriers	1936	15
3	Gonorrhea	1734	13
4	Hepatitis C	1340	10
5	Hepatitis B unclassified reports	683	5
6	HIV	567	4
7	Syphilis, infectious	371	3
8	Syphilis, late latent	142	1
9	AIDS	93	<1
10	Hepatitis B cases	38	<1
11	Syphilis, other*	17	<1
12	Herpes, neonatal	5	<1
13	Ophthalmia neonatorum	3	<1
14	Hepatitis D	1	<1
15	Syphilis, congenital	1	<1
	Total	**13218**	**100**

Rare reportable diseases not summarized in this section include chancroid and cytomegalovirus, congenital.

*Excludes infectious, late latent and congenital syphilis.

AIDS/HIV

Table 1.2: AIDS/HIV summary data Toronto						
	2004		5-yr period 1999-2003		10-yr period 1994-2003	
	Totals		Means			
	AIDS*	HIV	AIDS*	HIV	AIDS*	HIV
Number of reported cases	93	567	97	512	182	521
Incidence rate (per 100,000 population)						
Overall	3.6	21.8	3.8	19.9	7.2	20.7
Male	5.8	34.0	6.5	32.4	13.4	35.3
Female	1.5	10.2	1.2	7.6	1.4	6.6
Age at onset (years)	Summary statistics					
Mean	42	37	41	36	39	35
Median	41	36	40	35	38	34
Range	<1 - 67	<1 - 81	<1 - 73	<1 - 81	<1 - 79	<1 - 81

*For AIDS cases there is a delay in reporting by as much as 2 years.

Highlights: HIV

- In 2004, there were 567 reported cases (21.8 cases per 100,000) of human immunodeficiency virus (HIV). This represented a decrease of five cases (1%) from the 2003 total of 572 cases (Figure 1.1). The incidence rate for HIV remained unchanged from 2003.

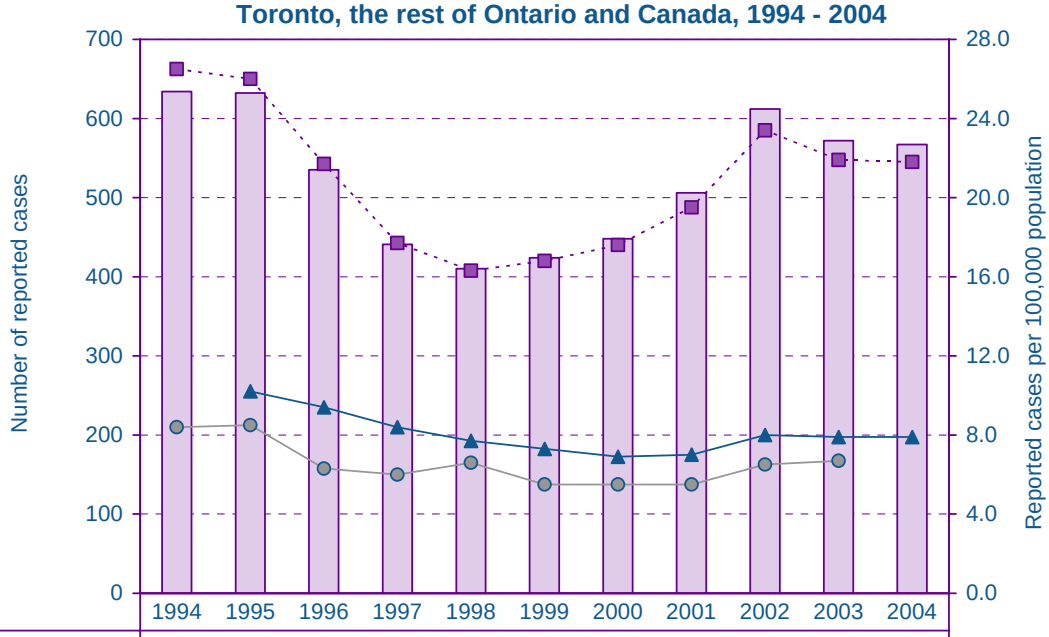
- HIV continues to be more frequently reported in males who accounted for 76% (n=431) of all HIV cases in 2004. In keeping with recent trends, HIV rates for females in 2004 were higher compared to previous 5 and 10-year mean incidence rates (Table 1.2). The gap between male and female HIV rates has continued to decrease (Figure 1.3). Males experienced HIV at a rate eight times higher than females in 1995, this factor has decreased to only three times higher than females in 2004.

- Among the 424 male cases with a known risk factor in 2004, the most commonly reported risk factors for acquiring HIV were having sex with other men (79%) (Table 1.3), which increased 7% from 2003. Among the 129 female cases with a known risk factor, the most commonly reported risk factors were living or travelling in an HIV-endemic country (60%) and heterosexual contact with a partner with an identified risk (20%).

- There was one reported case of HIV acquired via perinatal transmission in a 9 month old female born in Ethiopia.

- The proportion of HIV infections associated with endemic countries decreased from 29% in 2003 to 21% in 2004. The top 3 countries of origin for foreign-born HIV cases in 2004 were Ethiopia, Zimbabwe and Jamaica.

Figure 1.1: Incidence of HIV infection by year. Toronto, the rest of Ontario and Canada, 1994 - 2004

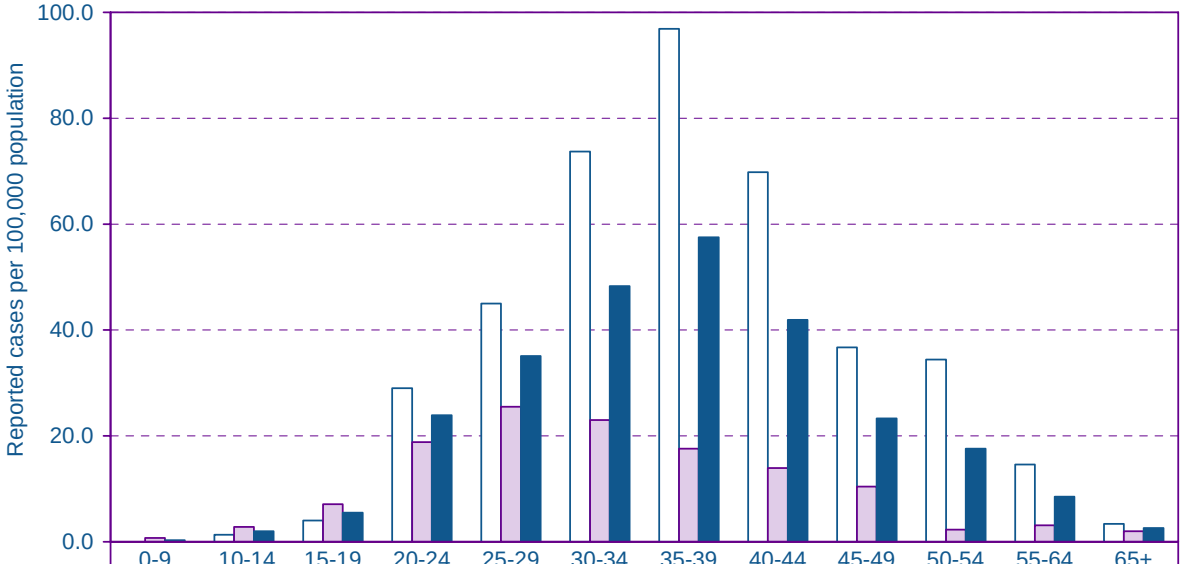


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	634	632	535	441	410	424	448	506	612	572	567
Toronto rates	26.5	26.0	21.7	17.7	16.3	16.8	17.6	19.5	23.4	21.9	21.8
Ontario less Toronto rates	8.4	8.5	6.3	6.0	6.6	5.5	5.5	5.5	6.5	6.7	NA
Canada rates	NA	10.2	9.4	8.4	7.7	7.3	6.9	7.0	8.0	7.9	7.9

Year

NA: Canada data for 1994 not available. Ontario data for 2004 not available.

Figure 1.2: Incidence rates of HIV infection by age group* and sex. Toronto, 2004



	0-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
Male rates	0.0	1.3	4.0	29.0	45.0	73.7	96.9	69.8	36.7	34.4	14.6	3.4
Female rates	0.7	2.8	7.1	18.8	25.5	23.0	17.6	13.9	10.4	2.3	3.1	2.0
Overall rates	0.3	2.0	5.5	23.9	35.1	48.3	57.5	41.9	23.3	17.6	8.5	2.6
Male cases	0	1	3	26	49	86	106	76	34	27	17	5
Female cases	1	2	5	17	29	27	19	15	10	2	4	4

Age group (years)

*The age of 2 cases was not reported.

Figure 1.3: Incidence rates of HIV infection by sex and year. Toronto, 1994 - 2004

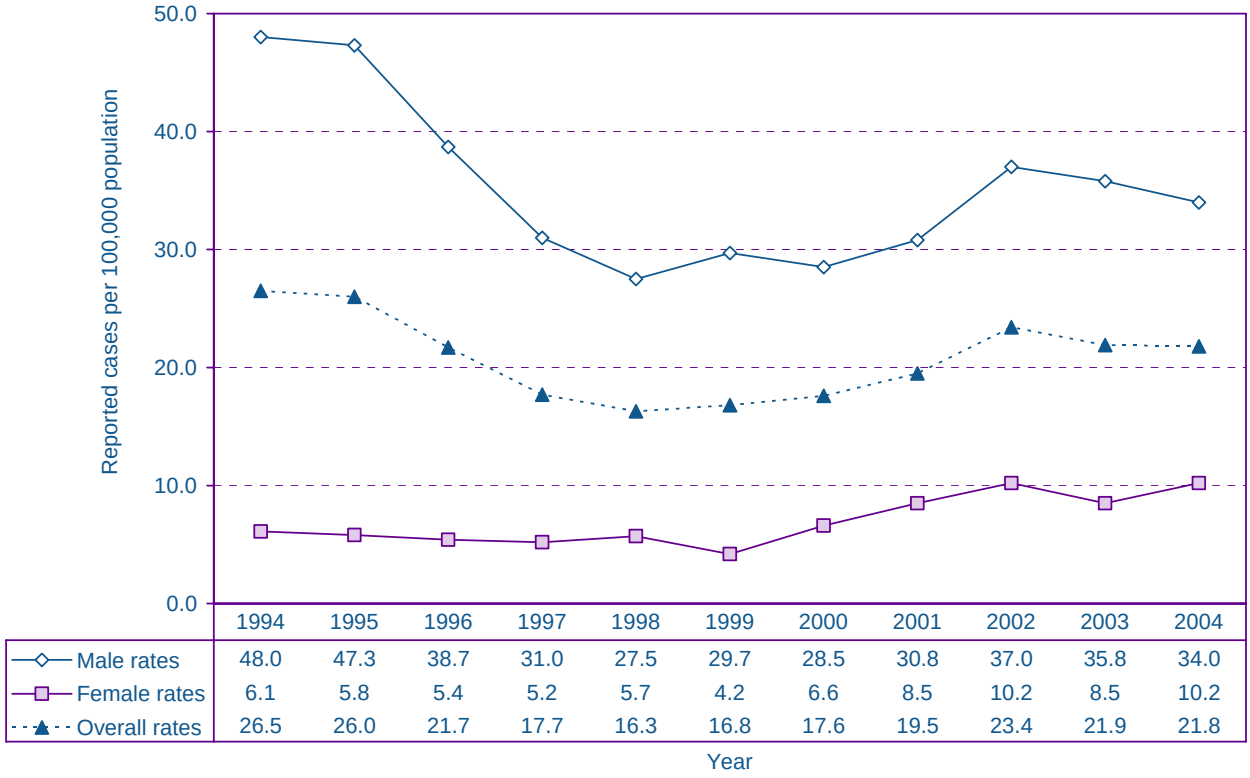


Table 1.3: Number and proportion of HIV-positive diagnoses by exposure category* and sex. Toronto, 2004

Exposure category†	Number of cases (%)					
	Male		Female		Overall	
MSM	333	(79)	-	-	333	(60)
MSM/IDU	4	(<1)	-	-	4	(<1)
IDU	7	(2)	7	(5)	14	(3)
Perinatal transmission	0	(0)	1	(<1)	1	(<1)
Clotting factor/transfusion pre 1985	0	(0)	2	(2)	2	(<1)
HIV-endemic	38	(9)	78	(60)	116	(21)
HET-partner	12	(3)	26	(20)	38	(7)
NIR-HET	23	(5)	13	(10)	36	(7)
Other	1	(<1)	2	(2)	3	(<1)
No identifiable risk	6	(1)	0	(0)	6	(1)
Total with a known exposure	**424**	**(100)**	**129**	**(100)**	**553**	**(100)**
Number unknown	7		7		14	
Total cases	**431**		**136**		**567**	

*Cases may report one or more risks but are counted in the category considered the highest risk according to an exposure category hierarchy. The categories are listed in descending order from those that are considered to carry the highest risk of HIV infection to those considered to carry the lowest risk.

†See the glossary for definitions of each exposure category.

Highlights: AIDS

- In 2004, there were 93 cases (3.6 cases per 100,000) of AIDS reported (Figure 1.4). This represented a decrease of five cases (5%) from the 2003 total of 98. Since 2000, the incidence rate of AIDS in Toronto has remained under 4.0 cases per 100,000.

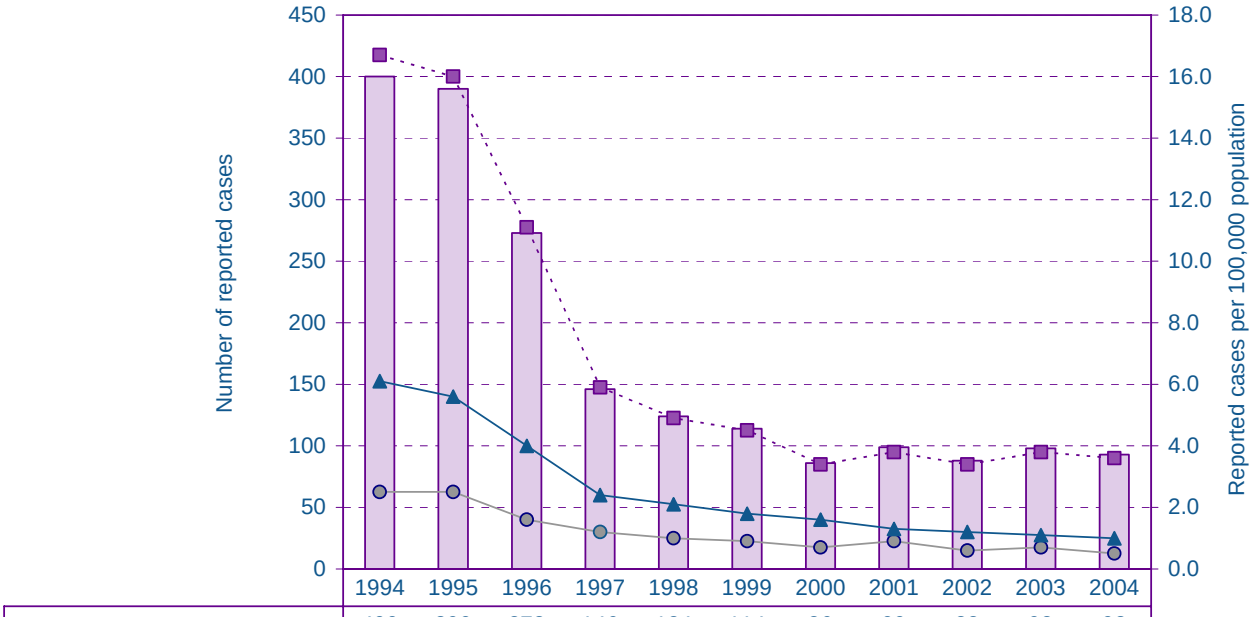
- Toronto's rate of AIDS was more than 7 times the rate for the rest of Ontario in 2004 (Figure 1.4).

- The age groups with the highest incidence rates of AIDS were again 40 to 44 years (9.2 cases per 100,000) and 35 to 39 years (8.3 cases per 100,000), but increases were noted among older age groups (Figure 1.5). Those 55 to 64 years of age experienced a rate almost three times higher than the previous year. This shift to older age groups may be due to delayed onset of AIDS as a result of improved access to HAART (highly active antiretroviral therapies).

- Males accounted for 78% (n=73) of all AIDS cases in 2004 (Table 1.4). The proportion of female AIDS cases has increased since 1993 but has remained within the 20% range since 2001.

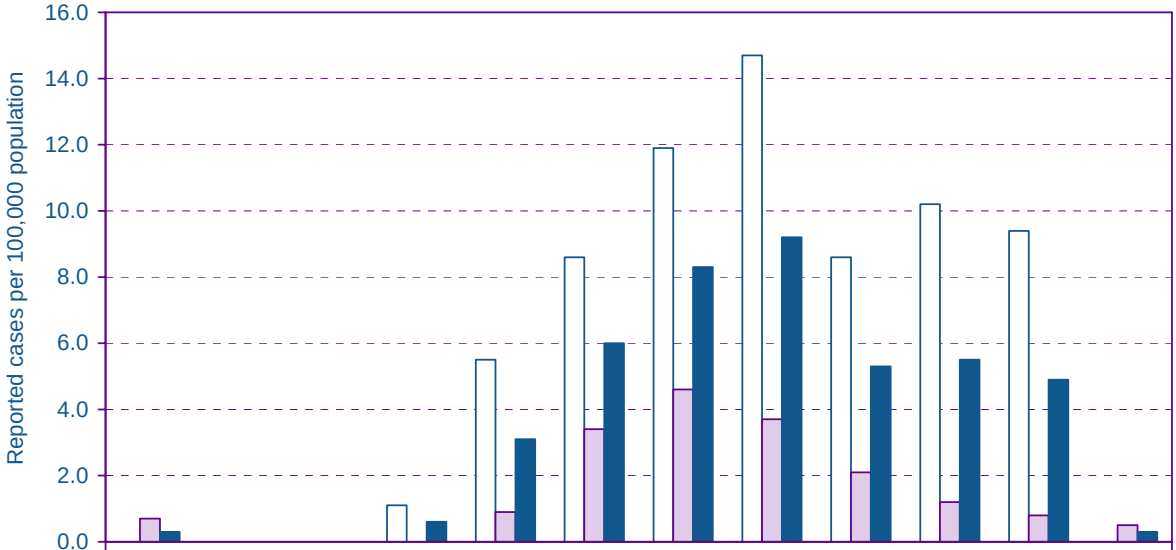
- The median length of time from an initial positive HIV test to the development of AIDS dropped from 6.0 years for those diagnosed in 2003 to 3.3 years for those diagnosed in 2004 (Figure 1.7).

Figure 1.4: Incidence of AIDS by year.
Toronto, the rest of Ontario and Canada*, 1994 - 2004



*Canada data for 2004 does not include Quebec.

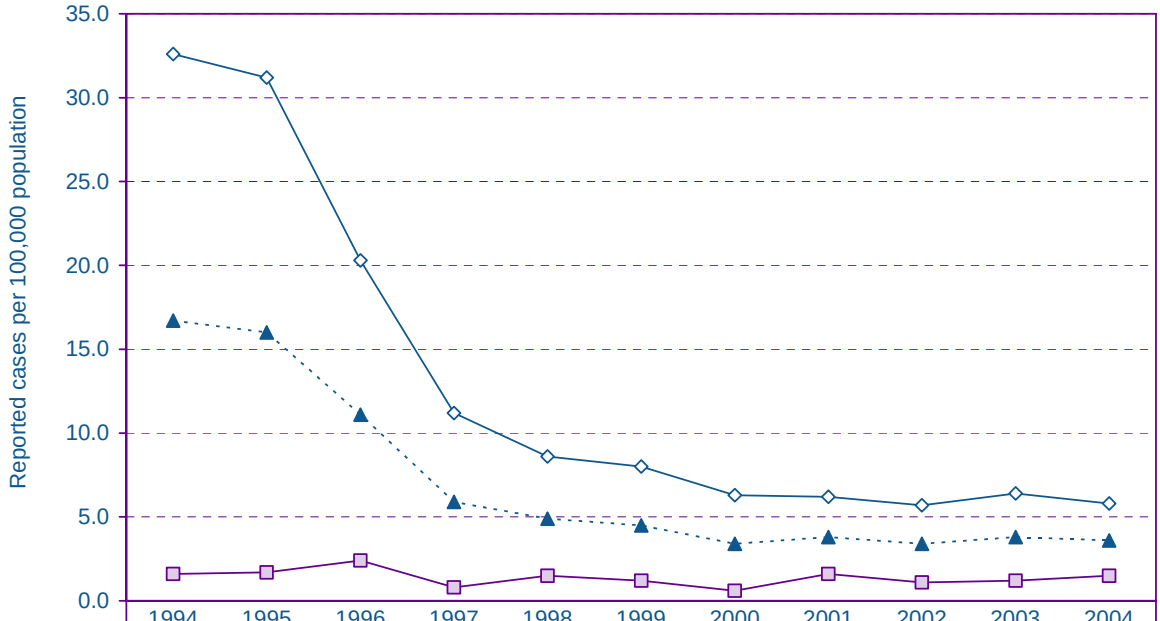
Figure 1.5: Incidence rates of AIDS by age group and sex. Toronto, 2004



	0-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
Male rates	0.0	0.0	0.0	1.1	5.5	8.6	11.9	14.7	8.6	10.2	9.4	0.0
Female rates	0.7	0.0	0.0	0.0	0.9	3.4	4.6	3.7	2.1	1.2	0.8	0.5
Overall rates	0.3	0.0	0.0	0.6	3.1	6.0	8.3	9.2	5.3	5.5	4.9	0.3
Male cases	0	0	0	1	6	10	13	16	8	8	11	0
Female cases	1	0	0	0	1	4	5	4	2	1	1	1

Age group (years)

Figure 1.6: Incidence rates of AIDS by sex and year. Toronto, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Male rates	32.6	31.2	20.3	11.2	8.6	8.0	6.3	6.2	5.7	6.4	5.8
Female rates	1.6	1.7	2.4	0.8	1.5	1.2	0.6	1.6	1.1	1.2	1.5
Overall rates	16.7	16.0	11.1	5.9	4.9	4.5	3.4	3.8	3.4	3.8	3.6

Year

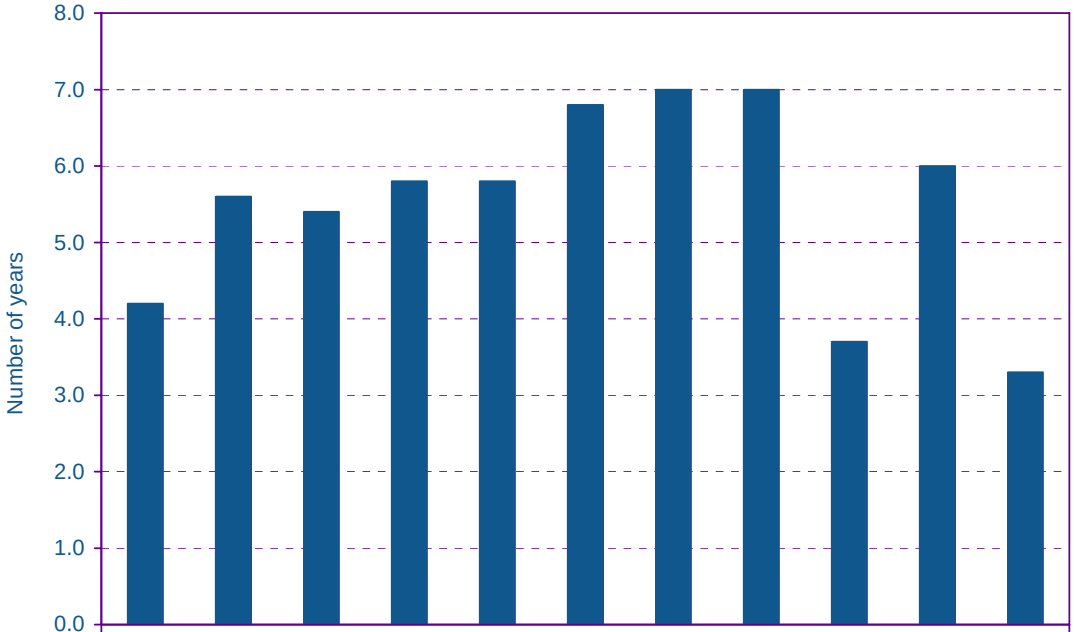
Table 1.4: Number and proportion of reported cases of AIDS, by sex. Toronto, 1994 - 2004

Year	Number of cases (%)				
	Male		Female		Overall
1994	380	(95)	20	(5)	400
1995	369	(95)	21	(5)	390
1996	243	(89)	30	(11)	273
1997	136	(93)	10	(7)	146
1998	105	(85)	19	(15)	124
1999	98	(86)	16	(14)	114
2000	78	(91)	8	(9)	86
2001	78	(79)	21	(21)	99
2002	73	(83)	15	(17)	88
2003	82	(84)	16	(16)	98
2004	73	(78)	20	(22)	93

Table 1.5: Number of deaths in reported AIDS cases by year of diagnosis and year of death. Toronto, 1994 - 2004

Year	Number of AIDS cases by year of diagnosis	Number of death reports by year of AIDS diagnosis	Number of death reports by year of death
1994	400	325	375
1995	390	282	433
1996	273	161	295
1997	146	76	135
1998	124	48	89
1999	114	52	83
2000	86	37	68
2001	99	25	57
2002	88	25	37
2003	98	19	43
2004	93	9	12

Figure 1.7: Median* number of years between diagnosis of HIV infection and AIDS diagnosis. Toronto, 1994 - 2004



*There were 695 AIDS cases reported between 1994 and 2004 with a date of diagnosis of AIDS within one month of a diagnosis date of HIV infection. These cases were excluded from the analysis above.

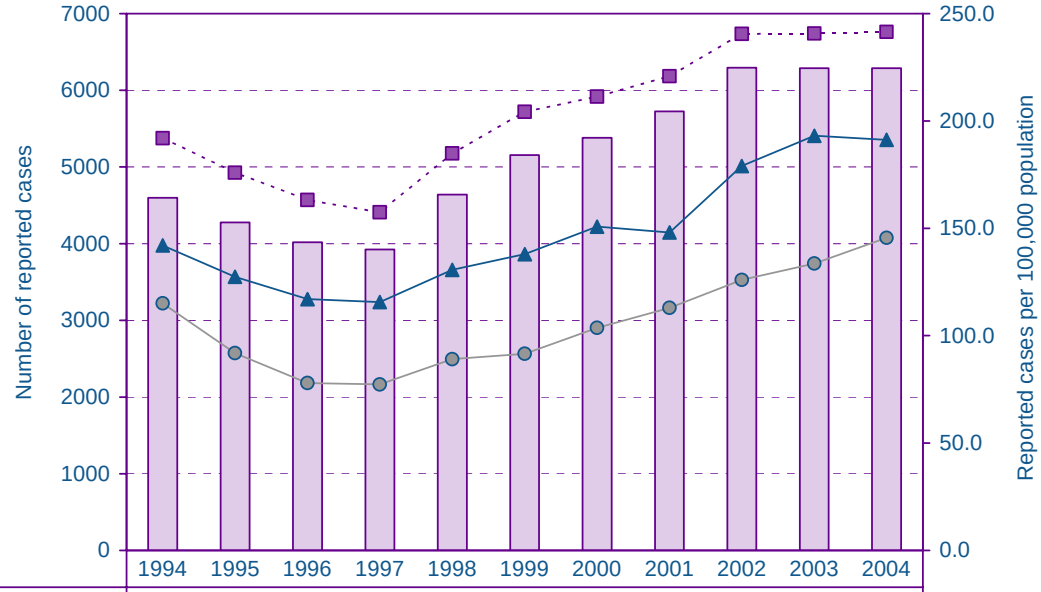
Chlamydia

Table 1.6: Chlamydia summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	6287	5769	5031
Incidence rate (per 100,000 population)			
Overall	241.5	223.7	199.7
Male	197.4	169.4	135.1
Female	283.3	275.3	261.0
Age at onset (years)	Summary Statistics		
Mean	26	26	25
Median	24	23	23
Range	2 79	<1 80	<1 94

Highlights

- Chlamydia continues to be the most commonly reported sexually transmitted infection (STI) and reportable disease in Toronto, accounting for 48% of all STI reports (Table 1.1) and 27% of all reported diseases (Table 1.0).
- In 2004, there were 6287 reported cases (241.5 cases per 100,000) of chlamydia. This represented a decrease of two cases from the 2003 total of 6289 cases (Figure 1.8). Since peaking in 2002, the chlamydia rate in Toronto has remained steady.
- Female rates of chlamydia continued to exceed male rates, however, since 2002, rates have been declining among females while male rates have been increasing, diminishing the gap between sexes (Figure 1.10).
- The age groups with the highest incidence rates were 20 to 24 year olds (1166.2 cases per 100,000) and 15 to 19 year olds (855.4 cases per 100,000), which remained unchanged from 2003 (Figure 1.9).
- Among the 5754 cases with a known risk factor in 2004, the most commonly reported risk factor for acquiring chlamydia was not using a condom or chemical barrier (87%) (Table 1.7).
- In Toronto, three cases of lymphogranuloma venereum (LGV) began experiencing symptoms in 2004 (although they were first reported to TPH in 2005). LGV is a systemic sexually transmitted infection caused by strains of the bacterium Chlamydia trachomatis (immunotypes L-1, L-2, L-3). Although rare in industrialized countries, an outbreak among men who have sex with men (MSM) in the Netherlands began in 2003 and cases have since been reported in several European and North American cities.

Figure 1.8: Incidence of chlamydia by year.
Toronto, the rest of Ontario and Canada*, 1994 - 2004

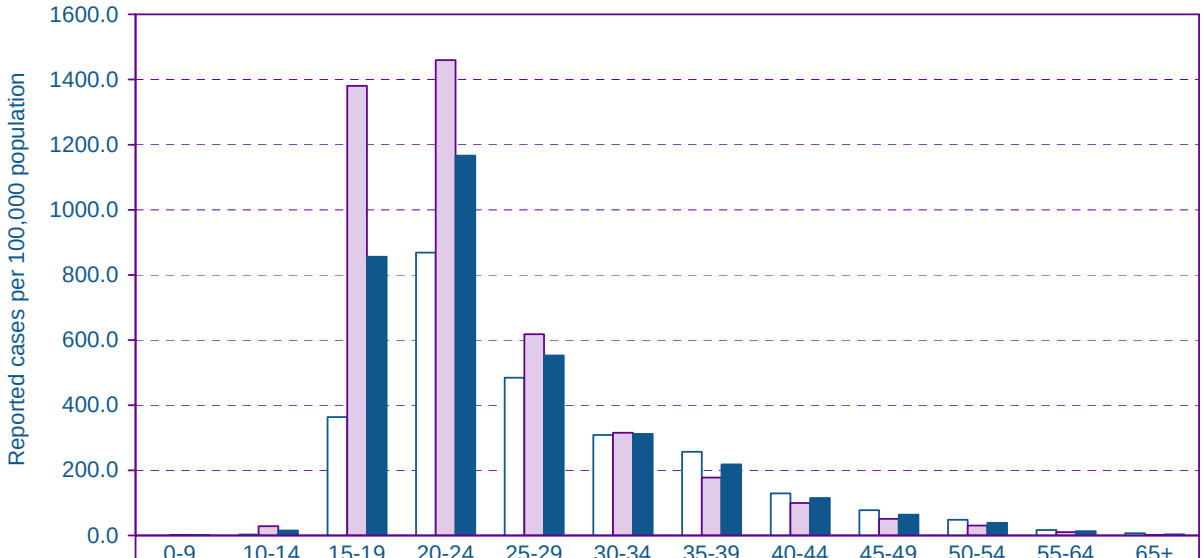


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	4600	4277	4019	3924	4640	5157	5380	5724	6295	6289	6287
Toronto rates	192.0	175.9	163.2	157.5	184.9	204.2	211.3	220.8	240.5	240.7	241.5
Ontario less Toronto rates	115.0	91.9	78.0	77.3	89.1	91.6	103.7	113.0	126.0	133.6	145.6
Canada rates	142.0	127.4	117.0	115.7	130.7	138.0	150.8	148.1	179.0	193.1	191.2

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 1.9: Incidence of chlamydia by age group and sex*.
Toronto, 2004



	0-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
Male rates	0.0	2.6	363.3	868.4	484.7	308.4	256.9	129.5	77.8	48.4	16.3	6.8
Female rates	1.4	28.0	1380.7	1459.6	618.1	315.7	177.7	99.9	50.7	30.1	10.0	1.5
Overall rates	0.7	14.9	855.4	1166.2	552.8	312.1	217.6	114.8	64.0	38.8	12.9	3.7
Male cases	0	2	275	778	528	360	281	141	72	38	19	10
Female cases	2	20	979	1317	702	370	192	108	49	26	13	3

*The sex of two cases was not reported.

Age group (years)

Figure 1.10: Incidence rates of chlamydia by sex and year. Toronto, 1994 - 2004

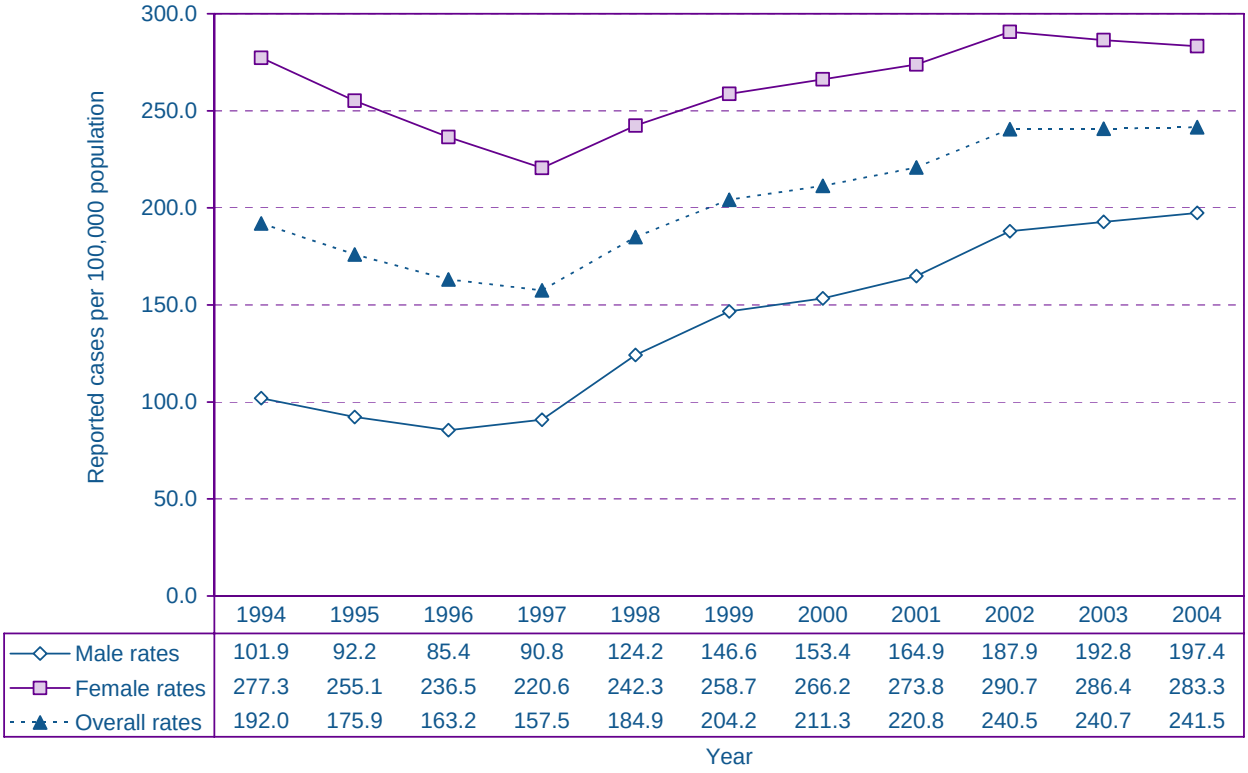


Table 1.7: Risk factors for reported cases of chlamydia by sex*. Toronto, 2004

Reported risk factor	Number of cases† (%)					
	Male		Female		Overall	
No condom or chemical barrier used	1935	(85)	3092	(89)	5029	(87)
New partner in past 2 months	333	(15)	236	(7)	569	(10)
Multiple sexual partners	385	(17)	177	(5)	563	(10)
Sexual contact of a confirmed case	247	(11)	140	(4)	387	(7)
Condom breakage	145	(6)	133	(4)	278	(5)
Homosexual/bisexual	257	(11)	0	(0)	257	(4)
Travel	112	(5)	70	(2)	182	(3)
Partner visiting from outside	8	(<1)	45	(1)	53	(<1)
Homeless	7	(<1)	25	(<1)	32	(<1)
Judgement impaired by alcohol/drugs	11	(<1)	13	(<1)	24	(<1)
Sex trade worker	9	(<1)	7	(<1)	16	(<1)
Other	136	(6)	233	(7)	368	(6)
Total with a known risk factor	**2272**		**3480**		**5754**	
Number missing or unknown	232		301		533	
Total cases	**2504**		**3781**		**6287**	

*The sex of two cases was not reported.

†Cases may report more than one risk factor.

Gonorrhea

Table 1.8: Gonorrhea summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	1734	1708	1667
Incidence rate (per 100,000 population)			
Overall	66.6	66.2	66.2
Male	94.5	89.7	86.6
Female	39.9	43.9	46.8
Age at onset (years)	Summary statistics		
Mean	29	28	27
Median	26	25	25
Range	9 73	<1 85	<1 90

Highlights

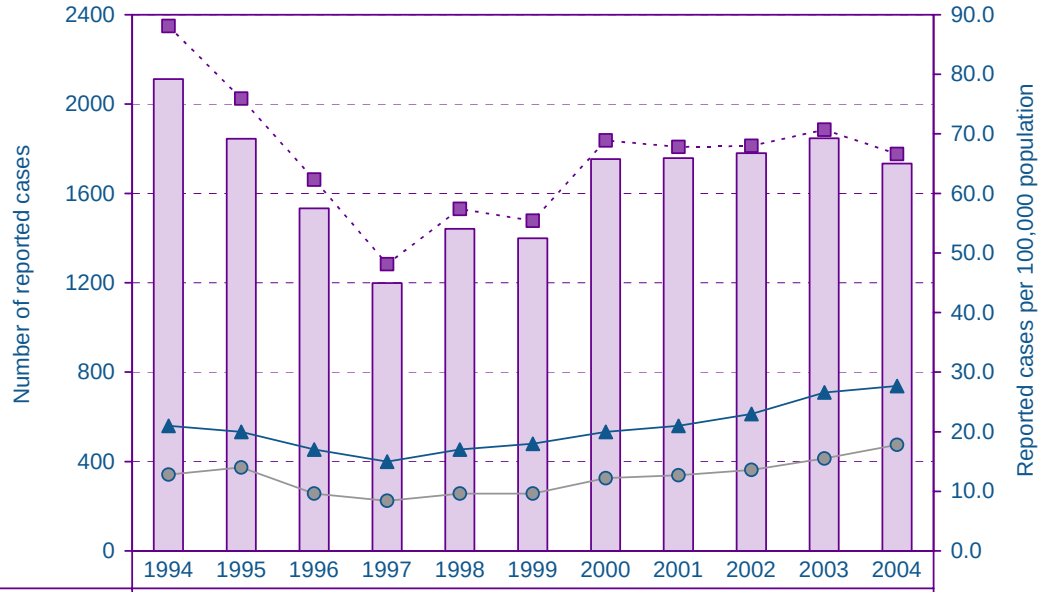
- In 2004, there were 1734 reported cases (66.6 cases per 100,000) of gonorrhea. This represented a decrease of 113 cases (6%) from the 2003 total of 1847 cases. Reports of gonorrhea have remained above 1700 cases since 2000 (Figure 1.11).

- Gonorrhea continued to be reported more frequently in males who accounted for 69% (n=1199) of all cases in 2004. However, both male and female rates of gonorrhea declined in 2004 (Figure 1.13). Although women are more likely to be screened routinely for gonorrhea, symptoms occur more commonly in infected males, which may lead them to seek medical care and diagnosis.

- In 2004, gonorrhea rates for all age groups under 45 years declined or remained comparable to 2003.

- Among the 1555 cases with a known risk factor in 2004, the most commonly reported risk factor for acquiring gonorrhea was not using a condom or chemical barrier (83%) (Table 1.9).

Figure 1.11: Incidence of gonorrhea by year.
Toronto, the rest of Ontario and Canada*, 1994 - 2004

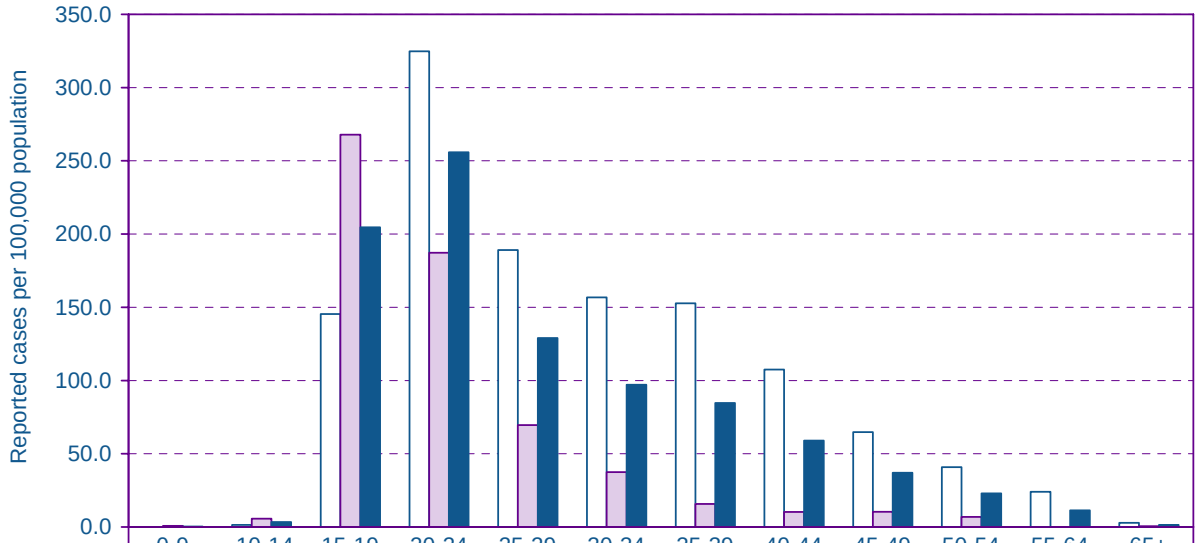


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	2112	1845	1534	1199	1441	1399	1754	1758	1780	1847	1734
Toronto rates	88.1	75.9	62.3	48.1	57.4	55.4	68.9	67.8	68.0	70.7	66.6
Ontario less Toronto rates	12.8	14.0	9.6	8.4	9.6	9.6	12.2	12.7	13.6	15.5	17.8
Canada rates	21.0	20.0	17.0	15.0	17.0	18.0	20.0	21.0	23.0	26.6	27.7

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 1.12: Incidence of gonorrhea by age group and sex*.
Toronto, 2004



	0-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
Male rates	0.0	1.3	145.3	324.8	189.1	156.8	152.7	107.5	64.8	40.8	24.0	2.7
Female rates	0.7	5.6	268.0	187.3	69.6	37.5	15.7	10.2	10.4	6.9	0.0	0.5
Overall rates	0.3	3.4	204.6	255.8	129.0	97.0	84.6	59.0	37.0	23.0	11.3	1.4
Male cases	0	1	110	291	206	183	167	117	60	32	28	4
Female cases	1	4	190	169	79	44	17	11	10	6	0	1

*The sex and/or age of two cases was not reported.

Age group (years)

Figure 1.13: Incidence rates of gonorrhea by sex and year. Toronto, 1994 - 2004

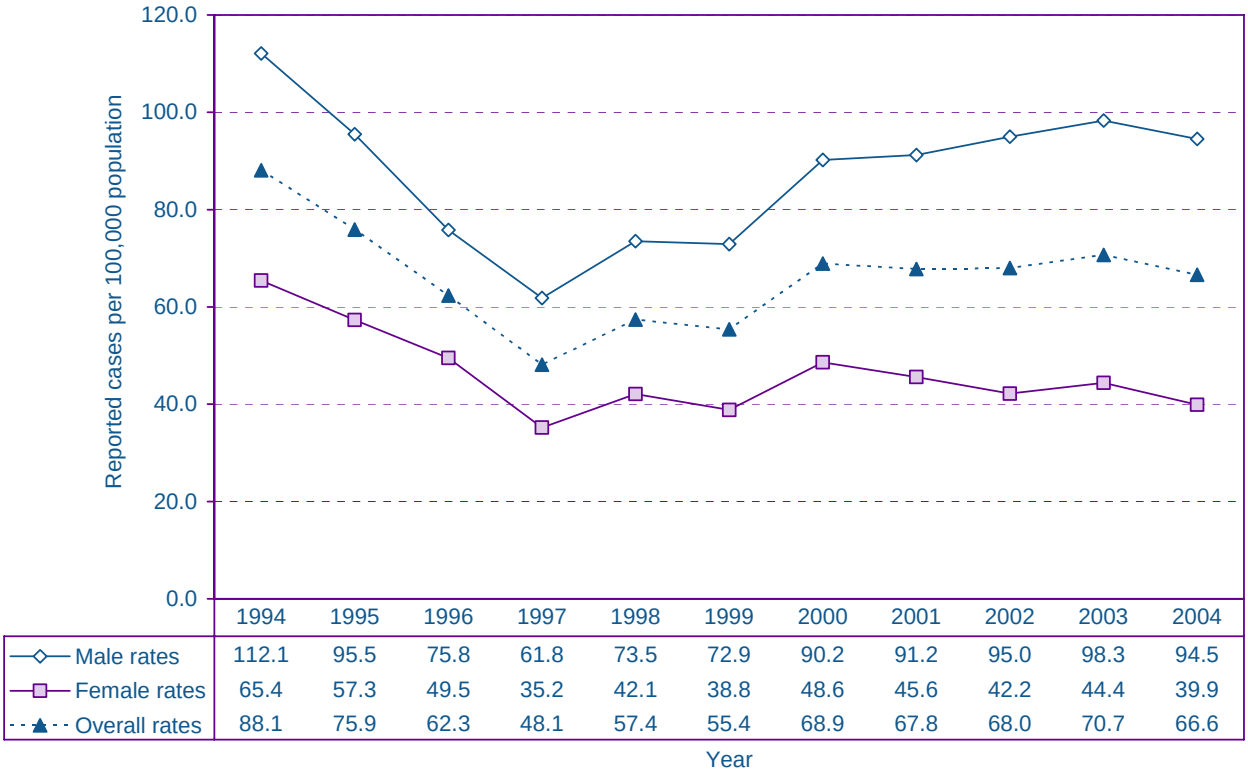


Table 1.9: Risk factors for reported cases of gonorrhea by sex*. Toronto, 2004

Reported risk factor	Number of cases† (%)					
	Male		Female		Overall	
No condom or chemical barrier used	867	(81)	421	(87)	1290	(83)
Homosexual/bisexual	348	(33)	0	(0)	349	(22)
Multiple sexual partners	300	(28)	42	(9)	342	(22)
New partner in past 2 months	268	(25)	36	(7)	304	(20)
Condom breakage	95	(9)	26	(5)	121	(8)
Sexual contact of a confirmed case	58	(5)	38	(8)	96	(6)
Travel	36	(3)	6	(1)	42	(3)
Judgement impaired by alcohol/drugs	24	(2)	7	(1)	31	(2)
Sex trade worker	14	(1)	7	(1)	21	(1)
Homeless	6	(<1)	10	(2)	16	(1)
Partner visiting from outside	4	(<1)	6	(1)	10	(<1)
Sex for drugs	1	(<1)	3	(<1)	4	(<1)
Other	76	(7)	27	(6)	103	(7)
Total with a known risk factor	**1070**		**483**		**1555**	
Number missing or unknown	129		50		179	
Total cases	**1199**		**533**		**1734**	

*The sex of two cases was not reported.

†Cases may report more than one risk factor.

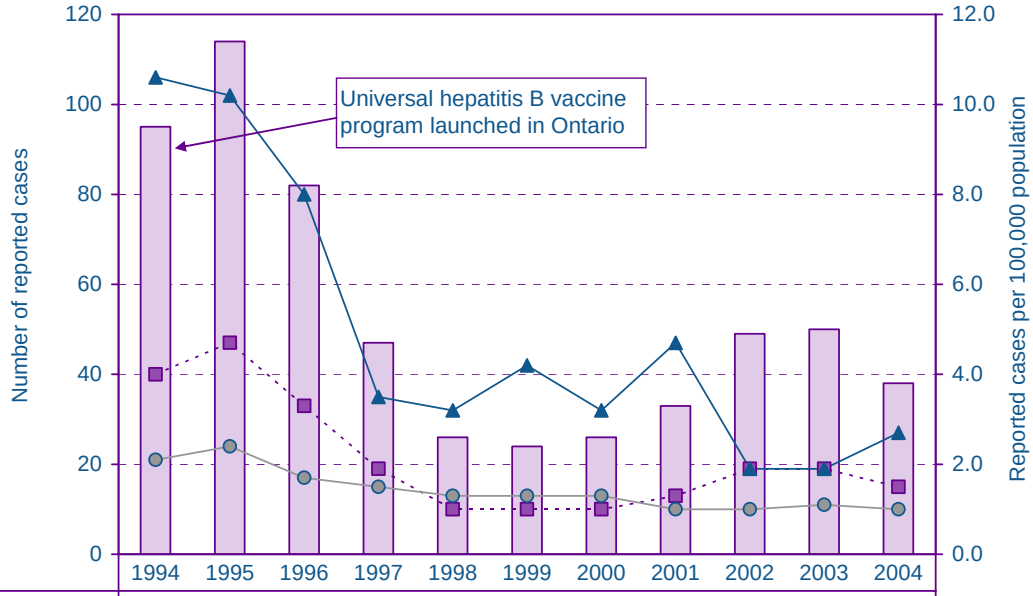
Hepatitis B

Table 1.10: Hepatitis B summary data Toronto						
	2004		5-yr period 1999-2003		10-yr period 1994-2003	
	Total		Means			
	Cases	Carriers	Cases	Carriers	Cases	Carriers
Number of reports	38	1936	36	2142	55	2402
Incidence rate (per 100,000 population)						
Overall	1.5	74.4	1.4	83.1	2.2	95.4
Male	1.8	81.4	2.0	91.2	3.0	105.0
Female	1.1	67.3	0.9	74.1	1.3	83.8
Age at onset (years)	Summary statistics					
Mean	38	38	38	37	36	38
Median	38	35	37	35	33	35
Range	<1-75	2 - 100	<1 - 85	<1 - 99	<1 - 88	<1 - 99

Highlights

- In 2004, there were 38 reported cases (1.5 cases per 100,000) of acute hepatitis B. This represented a decrease of 12 (24%) cases from the 2003 total of 50 cases (Figure 1.14).
- There were 1936 hepatitis B carriers and 683 unclassified hepatitis B reports in 2004 (Figure 1.16). Unclassified hepatitis B reports are clients whose laboratory results indicate hepatitis B infection but are lacking sufficient evidence to be classified as cases or carriers. These reports are most likely carriers.
- Acute hepatitis B was reported more frequently in males who accounted for 61% (n=23) of all cases in 2004.
- In 2004, travel to or living in an endemic area (58%) was the most commonly reported risk factor in both male and female hepatitis B cases (Table 1.11). Sexual activity with a same sex partner fell to third place (18%) from being reported as the most common risk factor among males in 2003.

Figure 1.14: Incidence of acute hepatitis B by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

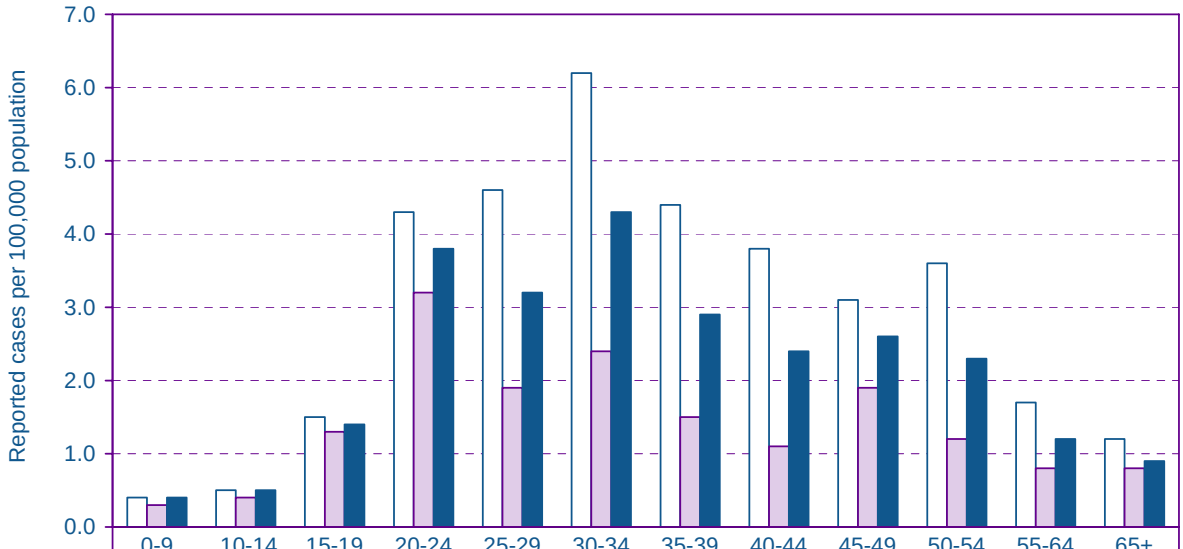


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	95	114	82	47	26	24	26	33	49	50	38
Toronto rates	4.0	4.7	3.3	1.9	1.0	1.0	1.0	1.3	1.9	1.9	1.5
Ontario less Toronto rates	2.1	2.4	1.7	1.5	1.3	1.3	1.3	1.0	1.0	1.1	1.0
Canada rates	10.6	10.2	8.0	3.5	3.2	4.2	3.2	4.7	1.9	1.9	2.7

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 1.15: Incidence of acute hepatitis B by age group* and sex. Toronto, 1994 - 2004 combined

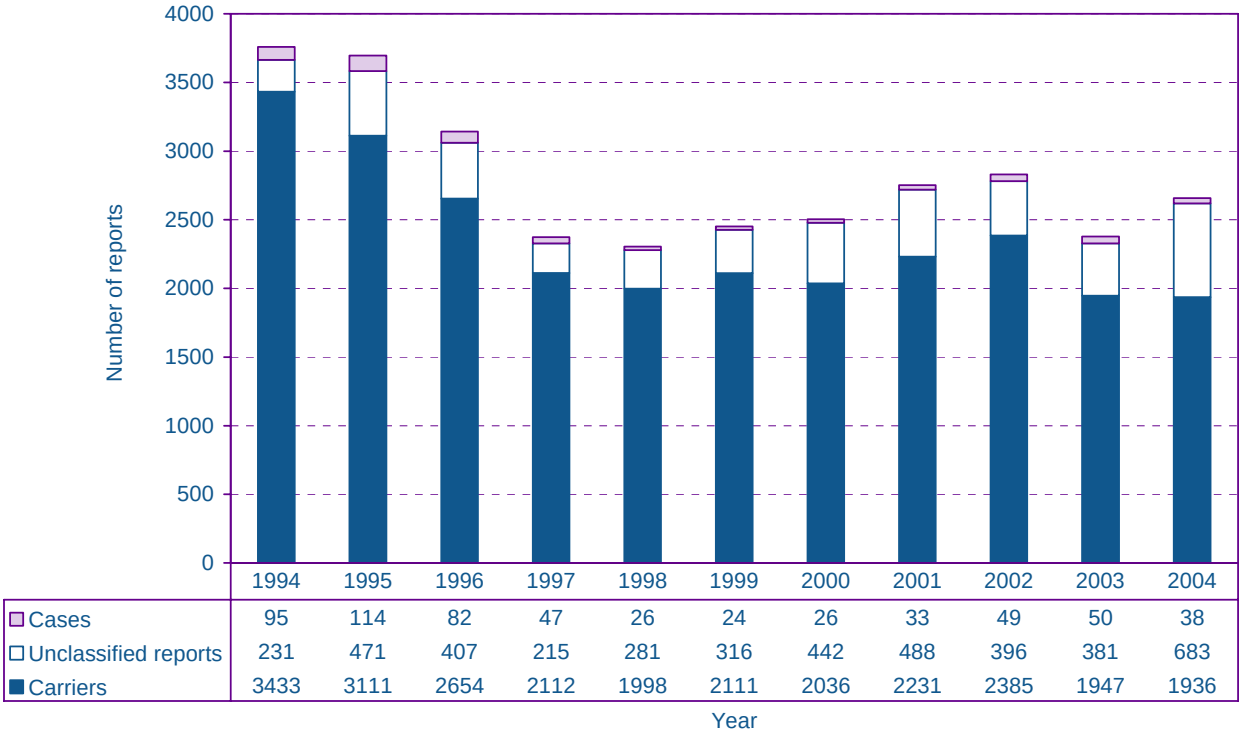


	0-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
Male rates	0.4	0.5	1.5	4.3	4.6	6.2	4.4	3.8	3.1	3.6	1.7	1.2
Female rates	0.3	0.4	1.3	3.2	1.9	2.4	1.5	1.1	1.9	1.2	0.8	0.8
Overall rates	0.4	0.5	1.4	3.8	3.2	4.3	2.9	2.4	2.6	2.3	1.2	0.9
Male cases	7	4	12	41	56	82	54	41	29	28	20	18
Female cases	5	3	10	31	24	31	18	12	19	10	10	16

*The age of one case was not reported.

Age group (years)

Figure 1.16: Number of hepatitis B cases, carriers and unclassified reports* by year. Toronto, 1994 - 2004



*Unclassified hepatitis B reports are clients whose laboratory results indicate positive hepatitis B virus markers but are lacking sufficient evidence to be classified as cases or carriers. These reports are most likely carriers.

Table 1.11: Risk factors for reported acute cases of hepatitis B by sex. Toronto, 2004

Reported risk factor	Number of cases* (%)					
	Male		Female		Overall	
Travel	9	(53)	6	(67)	15	(58)
Sexual contact of a confirmed case	5	(29)	1	(11)	6	(23)
Multiple sexual partners	3	(18)	1	(11)	4	(15)
Homosexual/bisexual	3	(18)	0	(0)	3	(12)
No condom or chemical barrier used	1	(6)	1	(11)	2	(8)
Household contact of a case or carrier	0	(0)	2	(22)	2	(8)
Infant born to a case or carrier	0	(0)	1	(11)	1	(4)
Recipient of blood or blood products	1	(6)	0	(0)	1	(4)
Injection drug user	0	(0)	1	(11)	1	(4)
Other	2	(12)	2	(22)	4	(15)
Total with a known risk factor	**17**		**9**		**26**	
Number missing or unknown	6		6		12	
Total cases	**23**		**15**		**38**	

*Cases may report more than one risk factor.

Hepatitis C

Table 1.12: Hepatitis C summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	1340	1530	1923
Incidence rate (per 100,000 population)			
Overall	51.5	59.3	76.4
Male	64.4	76.1	98.9
Female	38.9	42.5	54.0
Age at onset (years)	Summary statistics		
Mean	45	45	43
Median	45	43	41
Range	<1 93	<1 98	<1 110
Case fatality (%)	0.1	<0.1	0.2

Highlights

- In 2004, there were 1340 reported cases (51.5 cases per 100,000) of hepatitis C. This represented an increase of 42 cases (3%) over the 2003 total of 1298 cases. After decreasing steadily from 1995 to 2003, the incidence rate for hepatitis C in 2004 stayed low and was comparable to the rate observed in 2003 (Figure 1.17).

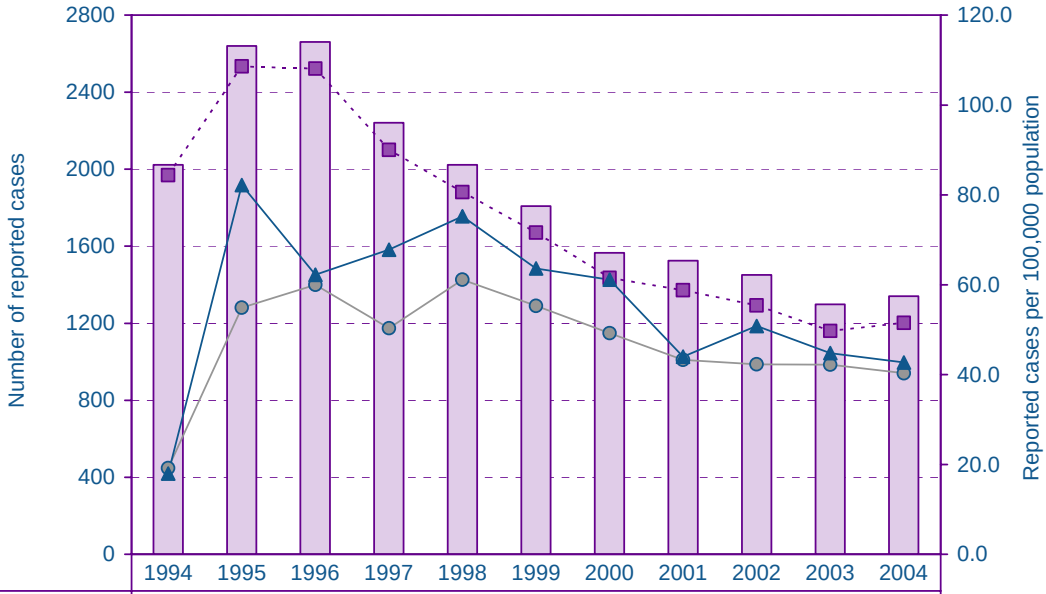
- Toronto's rate of hepatitis C exceeded the rate reported in the rest of Ontario in 2004 (Figure 1.17). The gap between Toronto and Ontario increased as Toronto rates increased in 2004 while Ontario rates continue to decrease.

- The age group with the highest incidence rate was the 45 to 49 year age group (120.0 cases per 100,000) in 2004 (Figure 1.18).

- Male rates of hepatitis C continued to exceed female rates in all age groups except 20 to 24 years old (Figure 1.18). While hepatitis C rates for females have remained stable over the past 5 years, rates for males increased in 2004 after decreasing every year from 1996 (Figure 1.19).

- Among the 782 cases with a known risk factor in 2004, the most commonly reported risk factors for acquiring hepatitis C were injection drug use (45%) and the receipt of blood or blood products (22%) (Table 1.13).

Figure 1.17: Incidence of hepatitis C by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

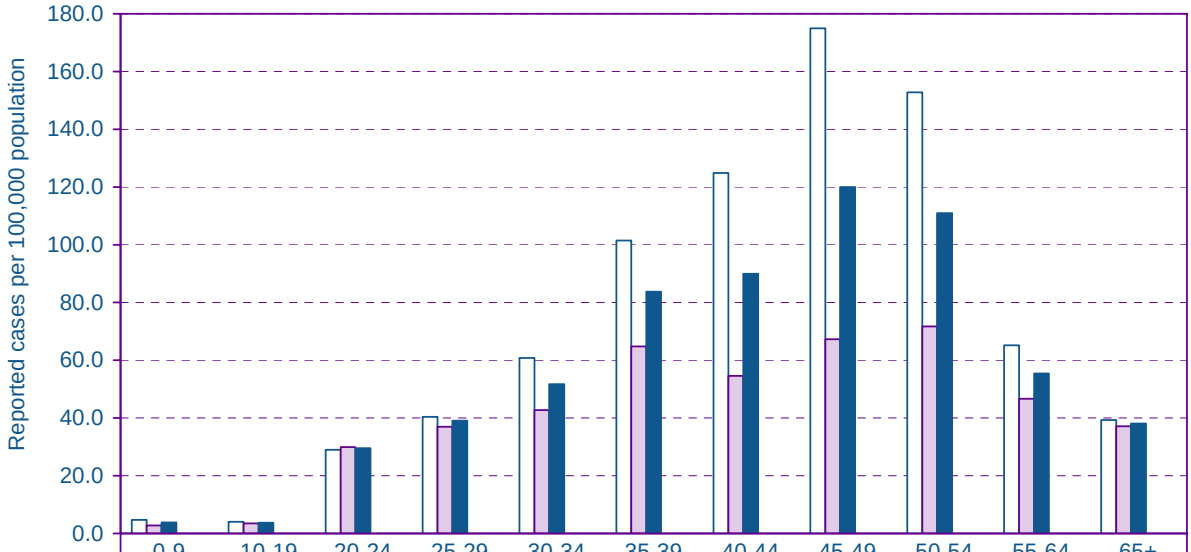


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	2022	2640	2661	2241	2022	1809	1566	1525	1450	1298	1340
Toronto rates	84.4	108.6	108.1	90.0	80.6	71.6	61.5	58.8	55.4	49.7	51.5
Ontario less Toronto rates	19.2	54.9	60.0	50.3	61.1	55.3	49.2	43.3	42.3	42.2	40.3
Canada rates	18.0	82.2	62.2	67.8	75.2	63.6	61.1	44.0	50.8	44.8	42.7

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 1.18: Incidence of hepatitis C by age group and sex*. Toronto, 2004



	0-9	10-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
Male rates	4.7	4.0	29.0	40.4	60.8	101.5	124.9	175.0	152.8	65.2	39.3
Female rates	2.8	3.5	29.9	37.0	42.7	64.8	54.6	67.3	71.7	46.7	37.1
Overall rates	3.8	3.7	29.5	39.1	51.7	83.7	89.9	120.0	110.9	55.4	38.1
Male cases	7	6	26	44	71	111	136	162	120	76	58
Female cases	4	5	27	42	50	70	59	65	62	61	74

Year

*The sex of four cass was not reported.

Figure 1.19: Incidence rates of hepatitis C by sex and year. Toronto, 1994 - 2004

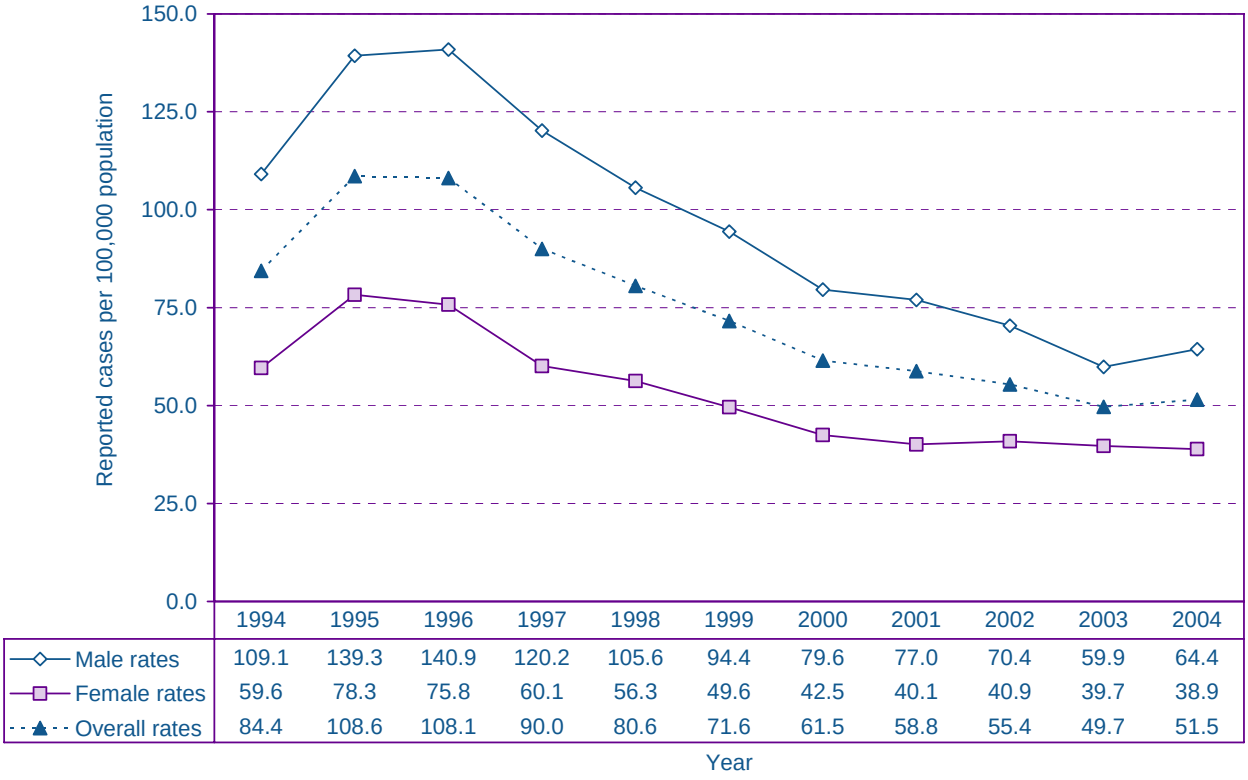


Table 1.13: Risk factors for reported cases of hepatitis C by sex*. Toronto, 2004

Reported risk factor‡	Number of cases† (%)					
	Male		Female		Overall	
Injection drug user	268	(54)	84	(30)	352	(45)
Recipient of blood or blood products	70	(14)	100	(35)	170	(22)
Tattoo/acupuncture/ear piercing	106	(21)	50	(18)	156	(20)
Multiple sexual partners	83	(17)	34	(12)	117	(15)
Sexual contact of a confirmed case	41	(8)	37	(13)	78	(10)
Health care worker	11	(2)	24	(8)	35	(4)
Household contact of a case or carrier	11	(2)	15	(5)	26	(3)
Travel	7	(1)	6	(2)	13	(2)
Infant born to case or carrier	5	(1)	3	(1)	8	(1)
Homeless	3	(<1)	1	(<1)	4	(<1)
Dialysis	2	(<1)	2	(<1)	4	(<1)
Other occupational exposure	4	(<1)	0	(0)	4	(<1)
No condom or chemical barrier used	1	(<1)	0	(0)	1	(<1)
Resident of facility for the developmentally disabled	1	(<1)	0	(0)	1	(<1)
Other	62	(13)	46	(16)	110	(14)
Total with a known risk factor	**496**		**284**		**782**	
Number missing or unknown	321		235		558	
Total cases	**817**		**519**		**1340**	

*The sex of four cases was not reported. †Cases may report more than one risk factor.

‡Cases that reported recipient of blood or blood products as a risk factor were diagnosed but not infected with hepatitis C in 2004.

Syphilis, infectious

(Primary, secondary and early latent syphilis)

Table 1.14: Infectious syphilis summary data

Toronto

	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	371	123	86
Incidence rate (per 100,000 population)			
Overall	14.3	4.8	3.4
Male	28.7	9.0	5.8
Female	0.5	0.8	1.2
Age at onset (years)	Summary statistics		
Mean	39	37	36
Median	39	37	36
Range	20 71	17 72	15 72

Highlights

- In 2004, there were 371 reported cases (14.3 cases per 100,000) of infectious syphilis. This represented an increase of 44 cases (13%) over the 2003 total of 327 cases and the highest incidence rate for the 11-year surveillance period (Figure 1.20). This increase reflects the continuation of a syphilis outbreak that began in 2002 among men who have sex with men (MSM) living in Toronto.

- Males continued to experience the highest burden of infectious syphilis, exceeding the incidence rates of females in all age groups (Figure 1.21) and reporting an overall rate 57 times that for females (Figure 1.22). In 2004, males accounted for 98% (n=364) of all cases. Age specific rates for males increased or remained comparable to 2003 in all age groups except those 15 to 19 and 25 to 29 years of age.

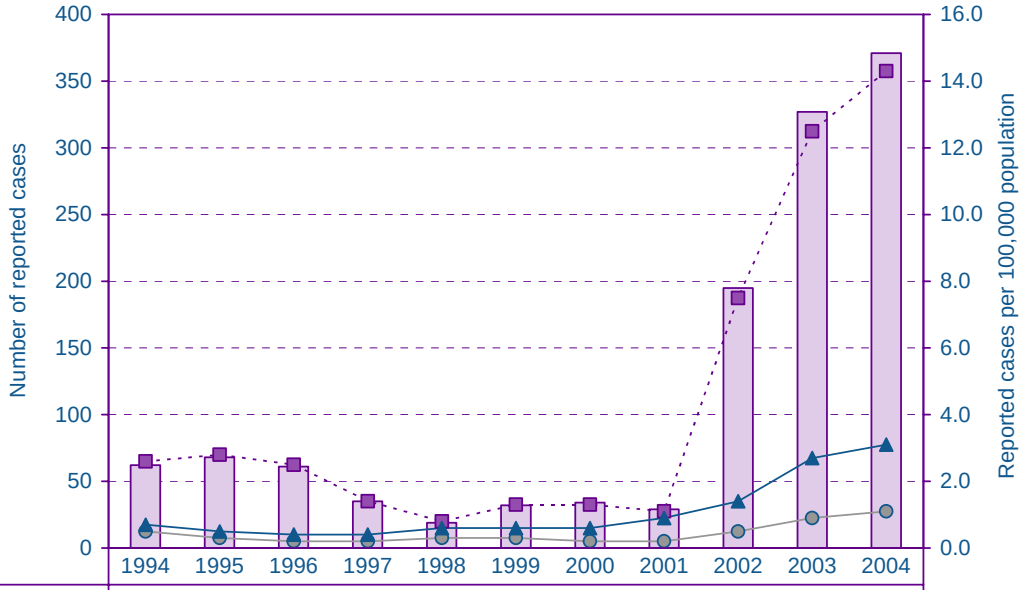
- The incidence rate for females decreased by 62% from 1.3 cases per 100,000 in 2003 to 0.5 cases per 100,000 in 2004 and was comparable to rates observed prior to 2003 (Figure 1.22).

- Since the onset of the outbreak in 2002, the majority of infectious syphilis cases have been diagnosed during the secondary stage of syphilis (Figure 1.23).

- In 2004, 36% (n=135) of infectious syphilis cases were co-infected with HIV, which is comparable to levels observed since the outbreak began in 2002 (Figure 1.24). Of the 135 infectious syphilis cases co-infected with HIV, 77% (n=104) were diagnosed with primary or secondary syphilis.

- Among the 356 cases with a known risk factor in 2004, the most commonly reported risk factors for acquiring infectious syphilis were not using a condom or chemical barrier (89%) and engaging in sexual activity with a same sex partner (78%) (Table 1.15).

Figure 1.20: Incidence of infectious syphilis by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

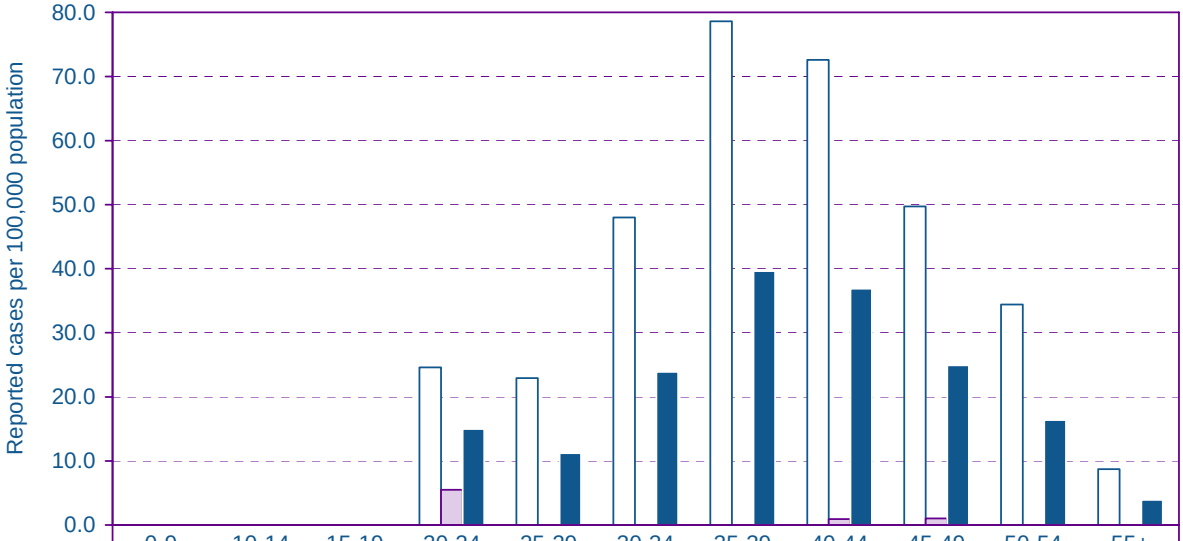


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	62	68	61	35	19	32	34	29	195	327	371
Toronto rates	2.6	2.8	2.5	1.4	0.8	1.3	1.3	1.1	7.5	12.5	14.3
Ontario less Toronto rates	0.5	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.5	0.9	1.1
Canada rates	0.7	0.5	0.4	0.4	0.6	0.6	0.6	0.9	1.4	2.7	3.1

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

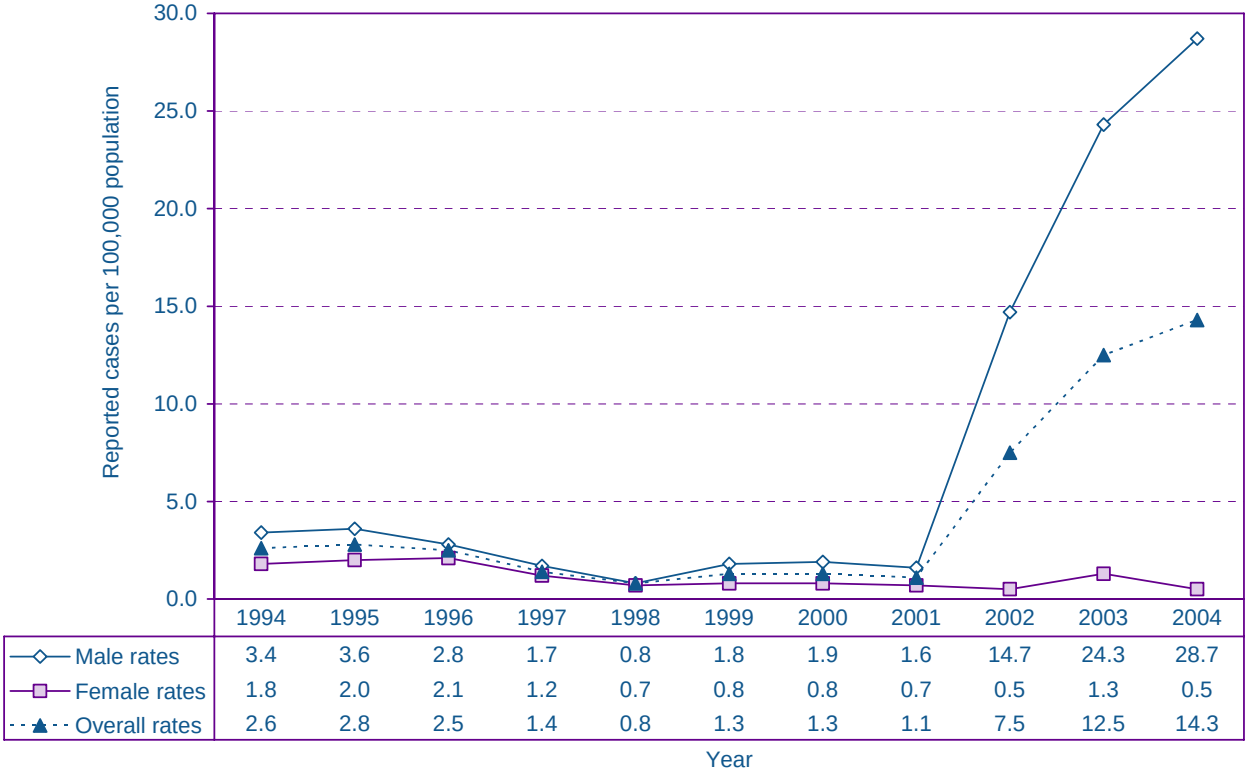
Figure 1.21: Incidence of infectious syphilis by age group and sex. Toronto, 2004



	0-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55+
Male rates	0.0	0.0	0.0	24.6	22.9	48.0	78.6	72.6	49.7	34.4	8.7
Female rates	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.9	1.0	0.0	0.0
Overall rates	0.0	0.0	0.0	15.0	11.2	23.9	39.6	36.9	24.9	16.4	3.9
Male cases	0	0	0	22	25	56	86	79	46	27	23
Female cases	0	0	0	5	0	0	0	1	1	0	0

Age group (years)

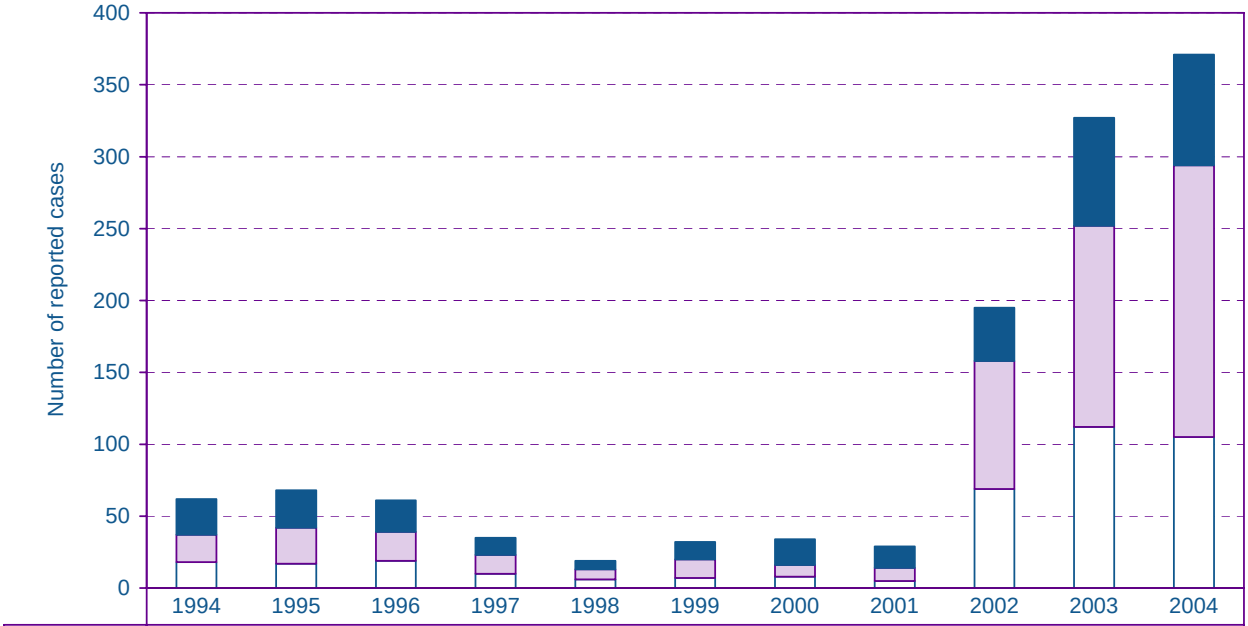
Figure 1.22: Incidence rates of infectious syphilis by sex and year. Toronto, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Male rates	3.4	3.6	2.8	1.7	0.8	1.8	1.9	1.6	14.7	24.3	28.7
Female rates	1.8	2.0	2.1	1.2	0.7	0.8	0.8	0.7	0.5	1.3	0.5
Overall rates	2.6	2.8	2.5	1.4	0.8	1.3	1.3	1.1	7.5	12.5	14.3

Year

Figure 1.23: Incidence of infectious syphilis by staging and year. Toronto, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Early latent	25	26	22	12	6	12	18	15	37	75	77
Secondary	19	25	20	13	7	13	8	9	89	140	189
Primary	18	17	19	10	6	7	8	5	69	112	105

Year

Figure 1.24: Incidence of HIV and infectious syphilis co-infections by year. Toronto, 1994 - 2004

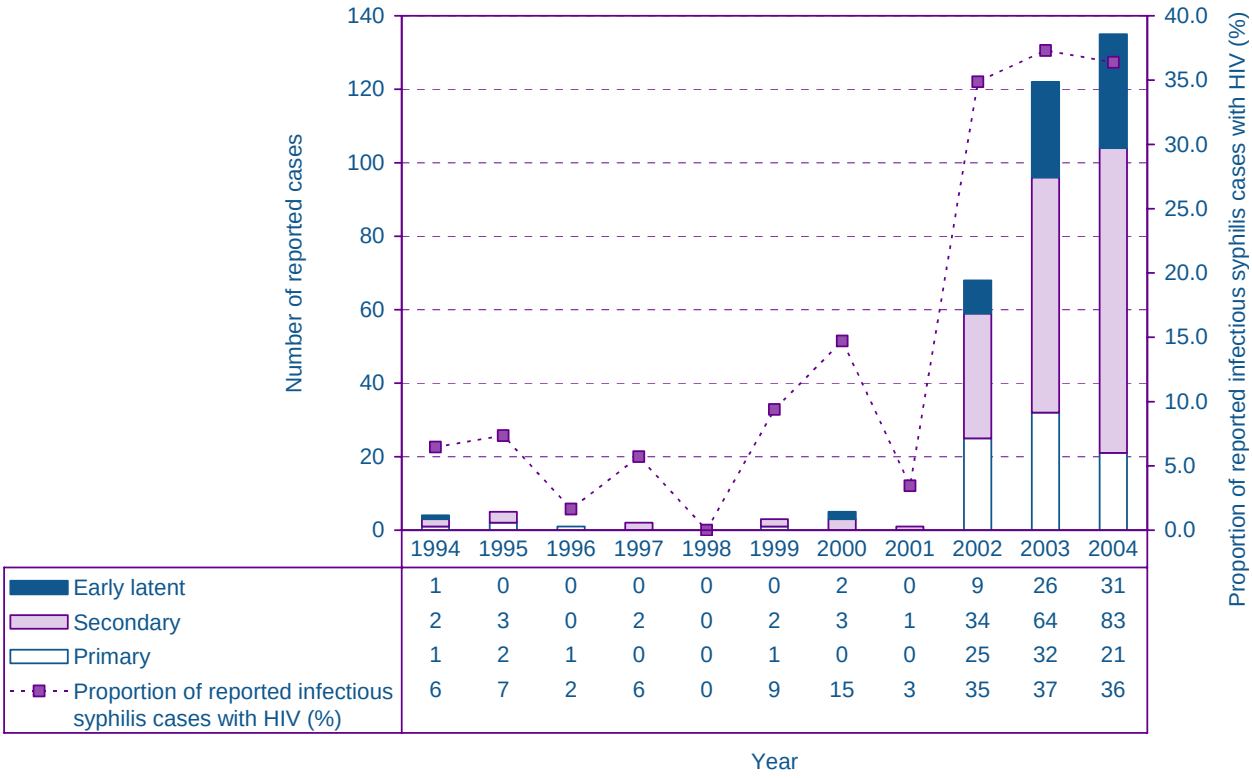


Table 1.15: Risk factors for reported cases of infectious syphilis by sex. Toronto, 2004

Reported risk factor	Number of cases* (%)					
	Male		Female		Overall	
No condom or chemical barrier used	312	(89)	5	(83)	317	(89)
Homosexual/bisexual	278	(79)	0	(0)	278	(78)
Multiple sexual partners	162	(46)	1	(17)	163	(46)
Sexual contact of a confirmed case	25	(7)	2	(33)	27	(8)
Sex trade worker	3	(<1)	0	(0)	3	(<1)
Other	54	(15)	3	(50)	57	(16)
Total with a known risk factor	**350**		**6**		**356**	
Number missing or unknown	14		1		15	
Total cases	**364**		**7**		**371**	

*Cases may report more than one risk factor.

Syphilis, late latent

Table 1.16: Late latent syphilis summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	142	137	140
Incidence rate (per 100,000 population)			
Overall	5.5	5.3	5.6
Male	7.5	6.0	6.1
Female	3.5	4.7	5.0
Age at onset (years)	Summary statistics		
Mean	47	47	47
Median	46	43	43
Range	20 98	15 93	7 97

Highlights

- In 2004, there were 142 reported cases (5.5 cases per 100,000) of late latent syphilis. This represented an increase of 10 cases (8%) over the 2003 total of 132 cases (Figure 1.25).

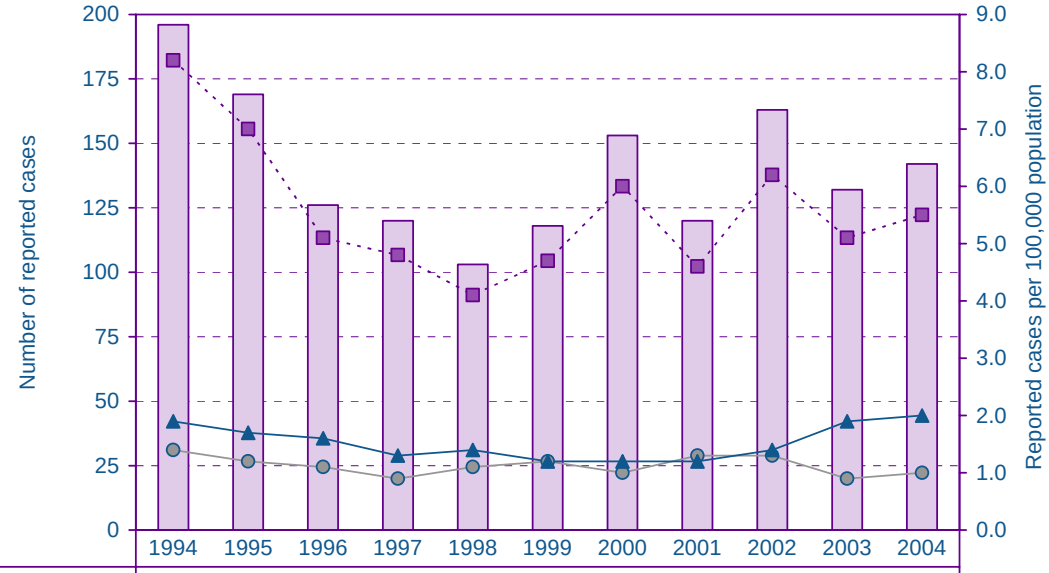
- In 2004, the age group with the highest late latent syphilis rate was those aged 55 to 64 years (9.3 cases per 100,000) (Figure 1.26).

- Late latent syphilis continued to be reported more frequently in males, who had rates higher than females in all age groups (Figure 1.26). Sex-specific rates over time indicate that male rates of disease continue to exceed female rates and the gap between the sexes is increasing (Figure 1.27). Among males, the largest increases were observed in age groups 25 to 29 and 50 to 54 years. Rates in these age groups were two and three times higher than their respective rates in 2003.

- Of the 142 reported late latent syphilis cases in 2004, 22 (15%) were known to be co-infected with HIV, twice the proportion reported in 2003 (Figure 1.28). This was the highest proportion of late latent syphilis and HIV co-infections reported within the 11-year surveillance period.

- Among the 110 late latent syphilis cases with a known risk factor in 2004, the most commonly reported risk factors for acquiring late latent syphilis were not using a condom or chemical barrier (64%) and engaging in sexual activity with a same sex partner (32%) (Table 1.17). The proportion of cases that reported engaging in sexual activity with a same sex partner as a risk factor increased from 14% in 2003 to 32% in 2004.

Figure 1.25: Incidence of late latent syphilis by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

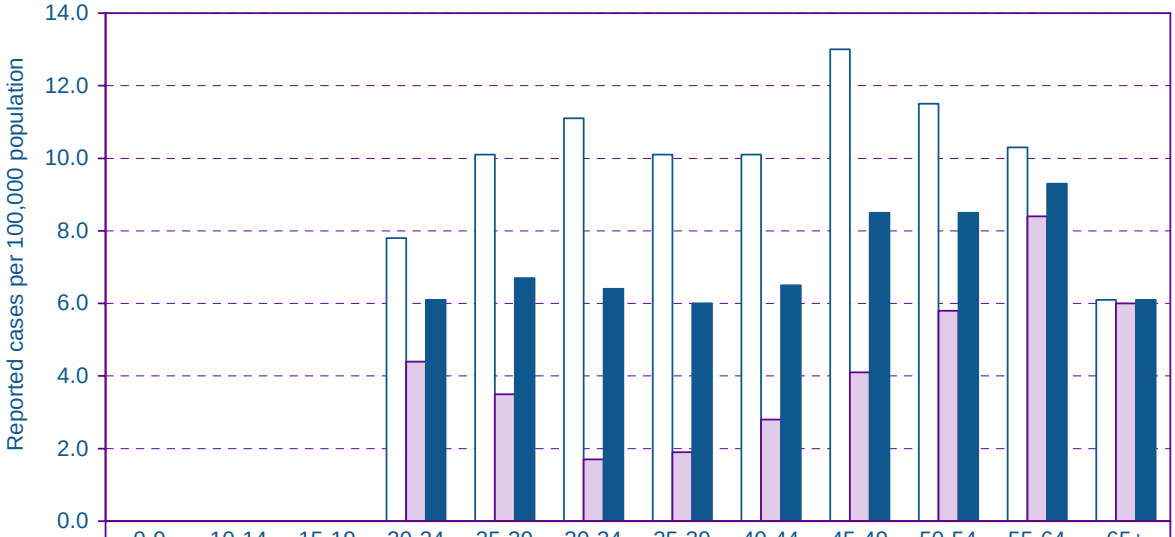


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	196	169	126	120	103	118	153	120	163	132	142
Toronto rates	8.2	7.0	5.1	4.8	4.1	4.7	6.0	4.6	6.2	5.1	5.5
Ontario less Toronto rates	1.4	1.2	1.1	0.9	1.1	1.2	1.0	1.3	1.3	0.9	1.0
Canada rates	1.9	1.7	1.6	1.3	1.4	1.2	1.2	1.2	1.4	1.9	2.0

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.
Canada data includes all syphilis stages except infectious and congenital, but is equivalent to late latent syphilis for comparison purposes.

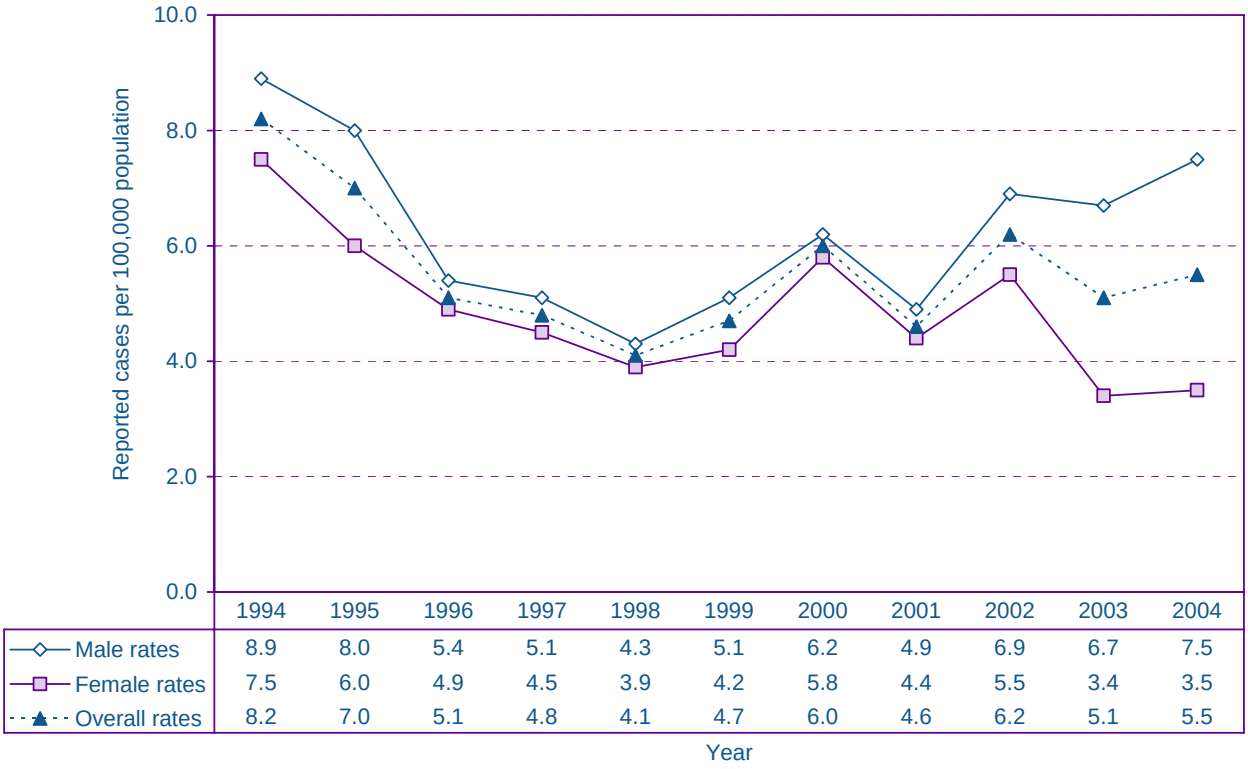
Figure 1.26: Incidence of late latent syphilis by age group and sex. Toronto, 2004



	0-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
Male rates	0.0	0.0	0.0	7.8	10.1	11.1	10.1	10.1	13.0	11.5	10.3	6.1
Female rates	0.0	0.0	0.0	4.4	3.5	1.7	1.9	2.8	4.1	5.8	8.4	6.0
Overall rates	0.0	0.0	0.0	6.1	6.7	6.4	6.0	6.5	8.5	8.5	9.3	6.1
Male cases	0	0	0	7	11	13	11	11	12	9	12	9
Female cases	0	0	0	4	4	2	2	3	4	5	11	12

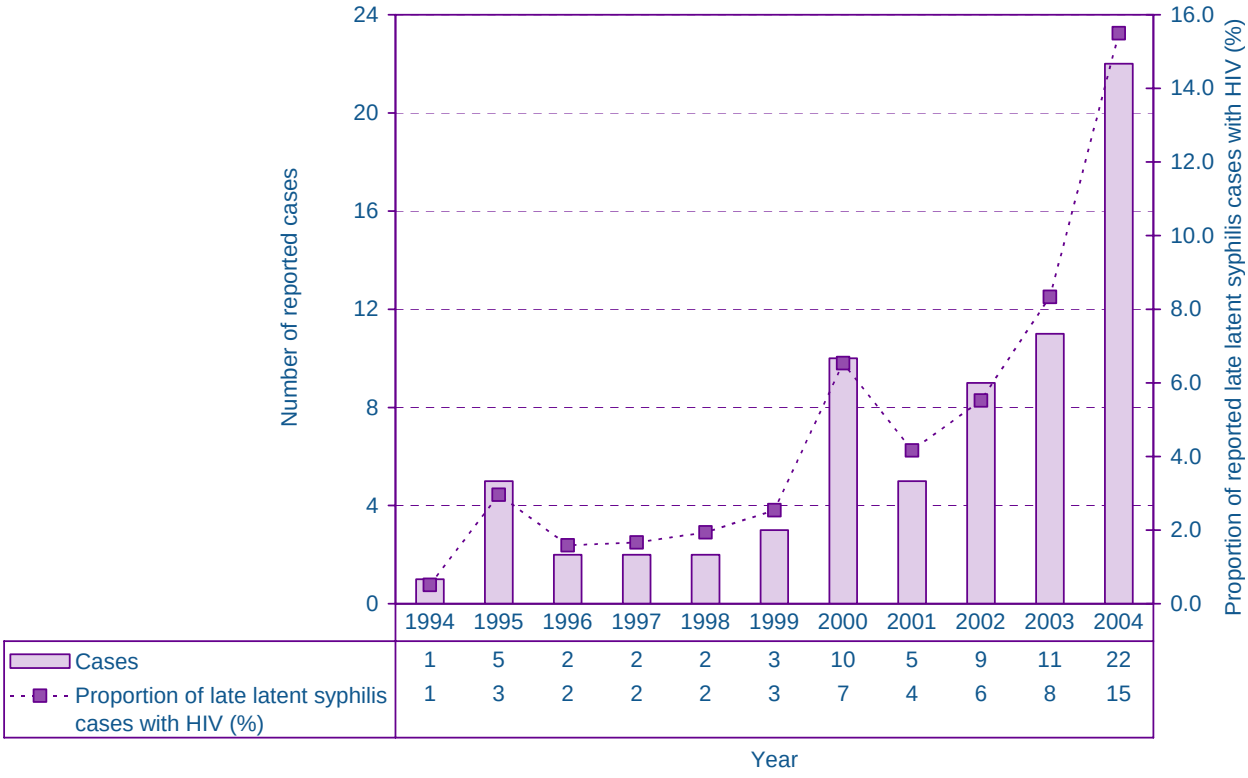
Age group (years)

Figure 1.27: Incidence rates of late latent syphilis by sex and year. Toronto, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Male rates	8.9	8.0	5.4	5.1	4.3	5.1	6.2	4.9	6.9	6.7	7.5
Female rates	7.5	6.0	4.9	4.5	3.9	4.2	5.8	4.4	5.5	3.4	3.5
Overall rates	8.2	7.0	5.1	4.8	4.1	4.7	6.0	4.6	6.2	5.1	5.5

Figure 1.28: Incidence of HIV and late latent syphilis co-infections by year. Toronto, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cases	1	5	2	2	2	3	10	5	9	11	22
Proportion of late latent syphilis cases with HIV (%)	1	3	2	2	2	3	7	4	6	8	15

Table 1.17: Risk factors for reported cases of late latent syphilis by sex. Toronto, 2004

Reported risk factor	Number of cases* (%)					
	Male		Female		Overall	
No condom or chemical barrier used	51	(66)	19	(58)	70	(64)
Homosexual/bisexual	35	(45)	0	(0)	35	(32)
Multiple sexual partners	20	(26)	0	(0)	20	(18)
Sexual contact of a confirmed case	4	(5)	0	(0)	4	(4)
Illicit drug user	1	(1)	0	(0)	1	(<1)
Other	23	(30)	16	(48)	39	(35)
Total with a known risk factor	**77**		**33**		**110**	
Number missing or unknown	18		14		32	
Total cases	**95**		**47**		**142**	

*Cases may report more than one risk factor.

Enteric, Food and Waterborne Diseases

Communicable Diseases in Toronto

2004

Toronto Public Health

Enteric, Food and Waterborne Diseases

This section focuses on diseases caused by infectious agents that are shed in the feces and can contaminate food or water sources. Transmission occurs primarily through ingestion of infected food or water, and more rarely through direct or fecal-oral contact with an infected person (e.g. oral-anal contact). This group of diseases is widespread in Toronto. Relative proportions of each disease within this grouping, and their ranking are listed below. In 2004, there was a 9% drop from 2003 reports of diseases falling in this category. *Campylobacter* enteritis accounted for 36% of reports falling into this category. ❑

Table 2.1: Number and proportion of reported cases of enteric, food and waterborne diseases. Toronto, 2004

Ranking	Reportable disease	Number of cases	Proportion of cases (%)
1	*Campylobacter* enteritis	975	36
2	Giardiasis	521	19
3	Salmonellosis	481	18
4	Amebiasis	324	12
5	Shigellosis	100	4
6	Yersiniosis	92	3
7	Verotoxin-producing *E. coli* infection	50	2
8	Cryptosporidiosis	49	2
9	Hepatitis A	48	2
10	Cyclosporiasis	30	1
11	Typhoid fever	28	1
12	Paratyphoid fever	16	<1
13	Listeriosis	14	<1
14	Botulism	2	<1
	Total	**2730**	**100**

Rare reportable diseases not summarized in this section include cholera and trichinosis.

Amebiasis

Table 2.2: Amebiasis summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	324	409	405
Incidence rate (per 100,000 population)			
Overall	12.4	15.9	16.1
Male	18.3	24.2	24.3
Female	6.9	8.0	8.3
Age at onset (years)	Summary statistics		
Mean	37	37	35
Median	37	36	35
Range	2 91	1 93	<1 98

Highlights

- In 2004, there were 324 reported cases (12.4 cases per 100,000) of amebiasis. This represented a decrease of 100 cases (24%) from the 2003 total of 424 cases and the lowest yearly total reported for the entire surveillance period (Figure 2.1).

- Toronto's rate of amebiasis continued to exceed the rate reported in the rest of Ontario. In 2004, Toronto's rate was almost 4 times the rate in the rest of Ontario (Figure 2.1).

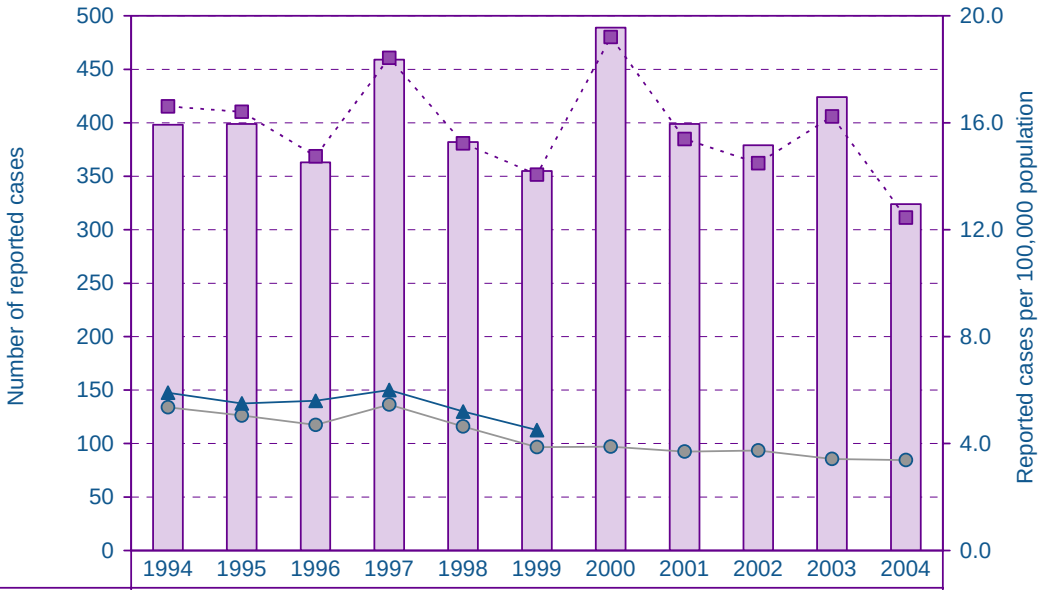
- The age groups with the highest incidence rates in 2004 were 40 to 44 years (24.4 cases per 100,000) and 35 to 39 years (23.5 cases per 100,000) (Figure 2.2). Males in the 35 to 39 year age group experienced the highest decrease of all subgroups from 2003.

- Males accounted for 72% (n=232) of all cases in 2004 and had a rate (18.3 cases per 100,000) almost 3 times the rate for females (6.9 cases per 100,000) (Figure 2.3). The rate for males exceeded female rates for all age groups (Figure 2.2). The largest differences were detected in the 40 to 44 and 45 to 49 year age groups, in which males experienced more than 3 times the rate of amebiasis.

- Except for February, June, September, and November, the number of reported cases for each month in 2004 was lower than the historical mean (Figure 2.4).

- The most commonly reported sources of infection in 2004 were person-to-person contact (6%) and water (5%) (Figure 2.5). The most commonly reported risk setting was travel outside of Canada to an endemic area (32%) (Figure 2.6).

Figure 2.1: Incidence of amebiasis by year.
Toronto, the rest of Ontario and Canada, 1994 - 2004

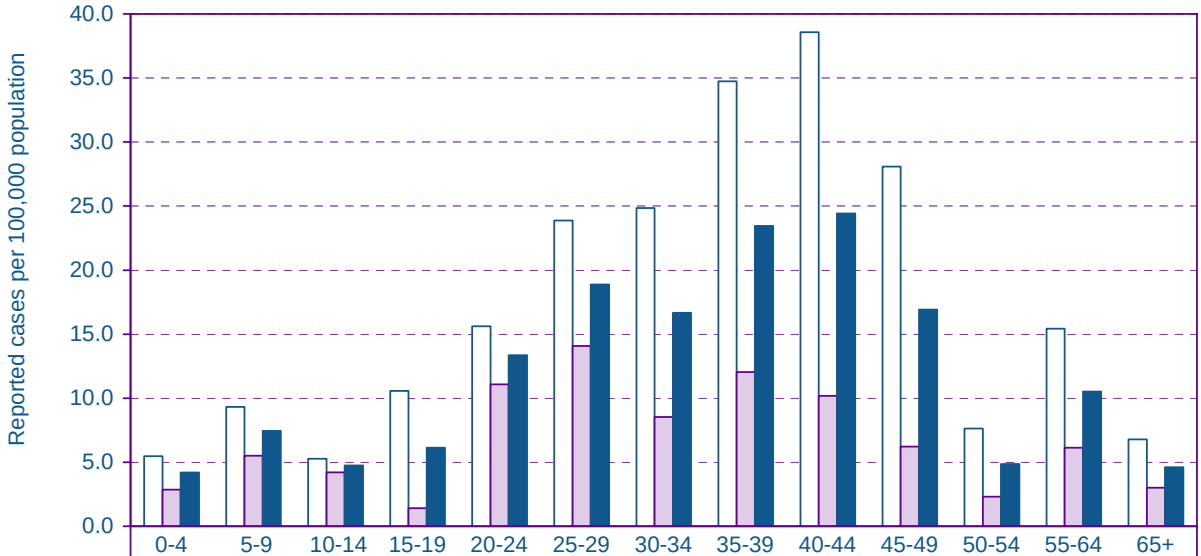


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	398	399	363	459	382	355	489	399	379	424	324
Toronto rates	16.6	16.4	14.7	18.4	15.2	14.1	19.2	15.4	14.5	16.2	12.4
Ontario less Toronto rates	5.4	5.1	4.7	5.5	4.6	3.9	3.9	3.7	3.7	3.4	3.4
Canada rates	5.9	5.5	5.6	6.0	5.2	4.5	NR	NR	NR	NR	NR

Year

NR: Not reportable. Amebiasis was no longer nationally notifiable in Canada as of 2000.

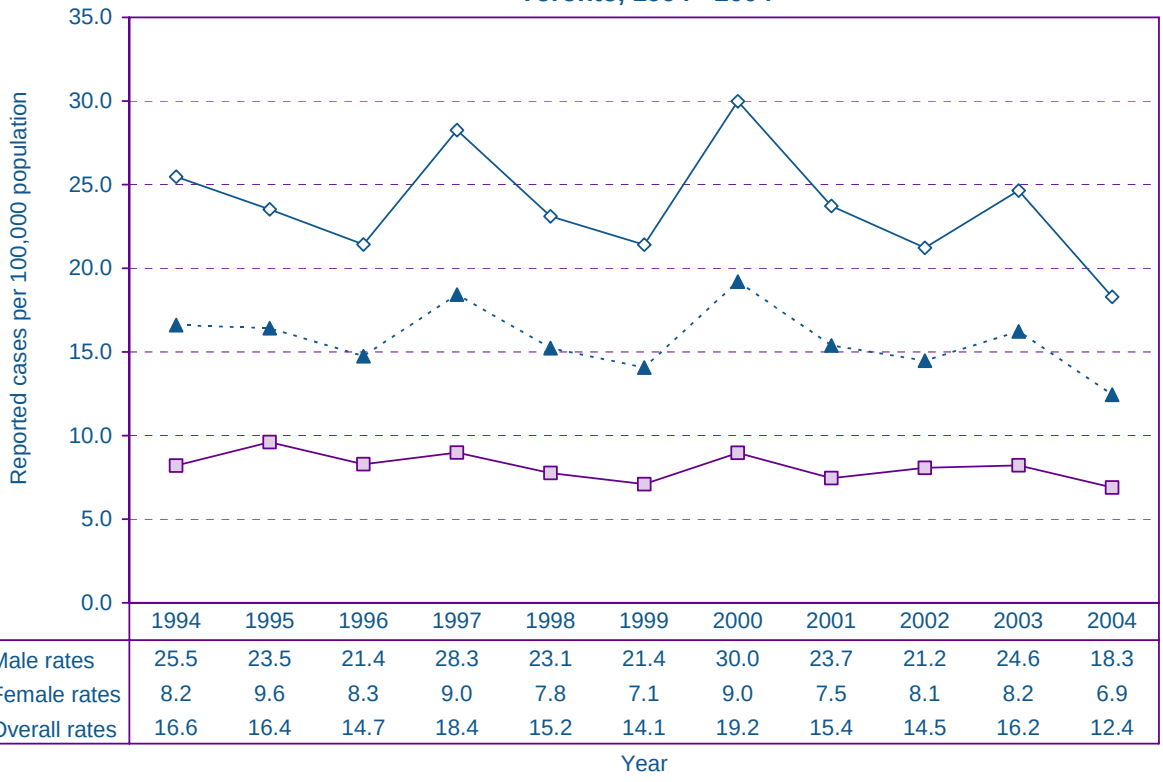
Figure 2.2: Incidence of amebiasis by age group and sex.
Toronto, 2004



	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
Male rates	5.5	9.3	5.3	10.6	15.6	23.9	24.8	34.7	38.6	28.1	7.6	15.4	6.8
Female rates	2.9	5.5	4.2	1.4	11.1	14.1	8.5	12.0	10.2	6.2	2.3	6.1	3.0
Overall rates	4.2	7.4	4.8	6.1	13.3	18.9	16.7	23.5	24.4	16.9	4.9	10.5	4.6
Male cases	4	7	4	8	14	26	29	38	42	26	6	18	10
Female cases	2	4	3	1	10	16	10	13	11	6	2	8	6

Age group (years)

Figure 2.3: Incidence rates of amebiasis by sex and year.
Toronto, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Male rates	25.5	23.5	21.4	28.3	23.1	21.4	30.0	23.7	21.2	24.6	18.3
Female rates	8.2	9.6	8.3	9.0	7.8	7.1	9.0	7.5	8.1	8.2	6.9
Overall rates	16.6	16.4	14.7	18.4	15.2	14.1	19.2	15.4	14.5	16.2	12.4

Figure 2.4: Number of reported cases of amebiasis by month.
Toronto, 2004 compared to 1994 - 2003 mean

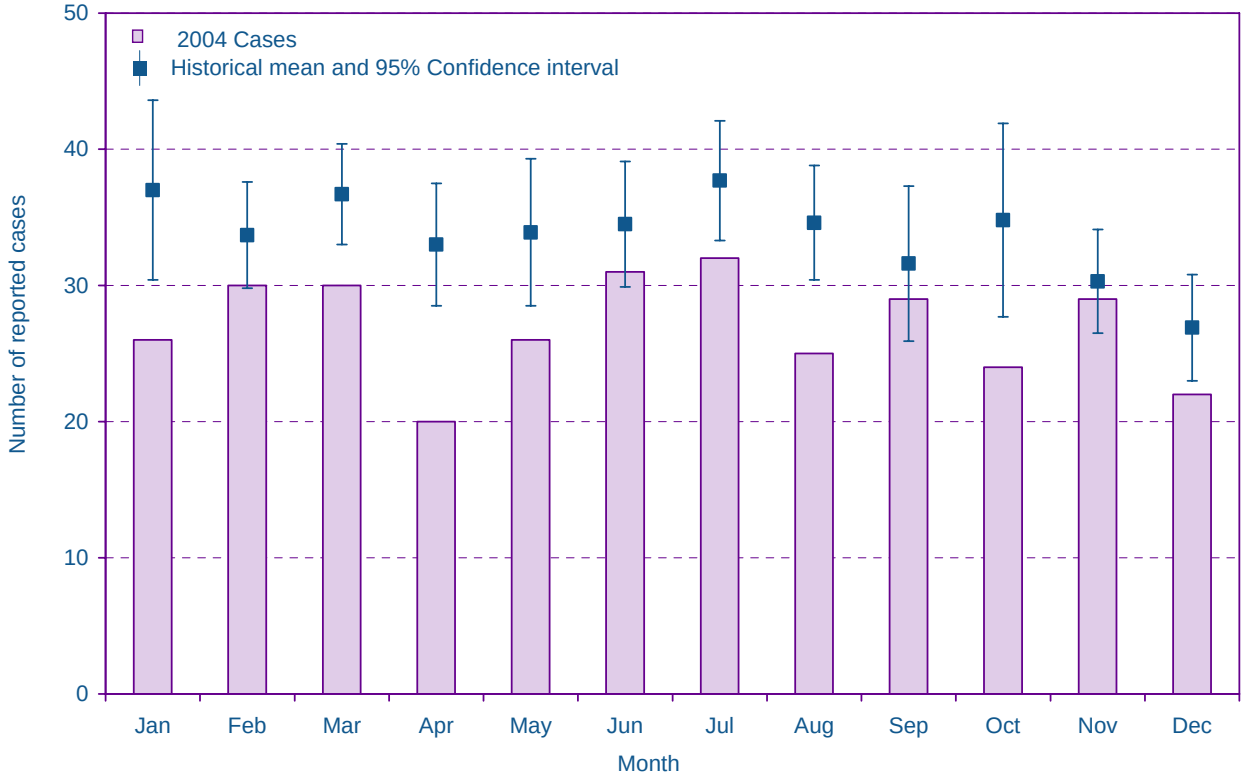


Figure 2.5: Proportion of reported cases of amebiasis by suspected source of infection. Toronto, 2004 (N=324)

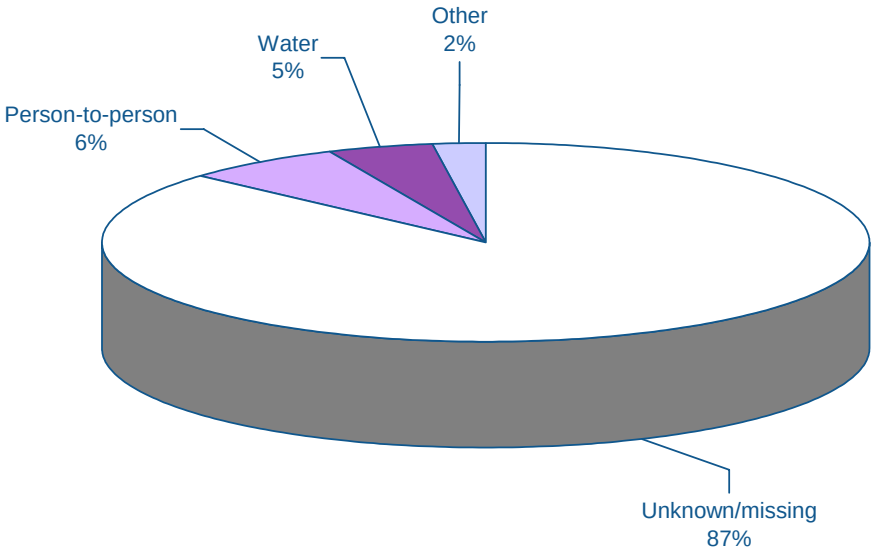
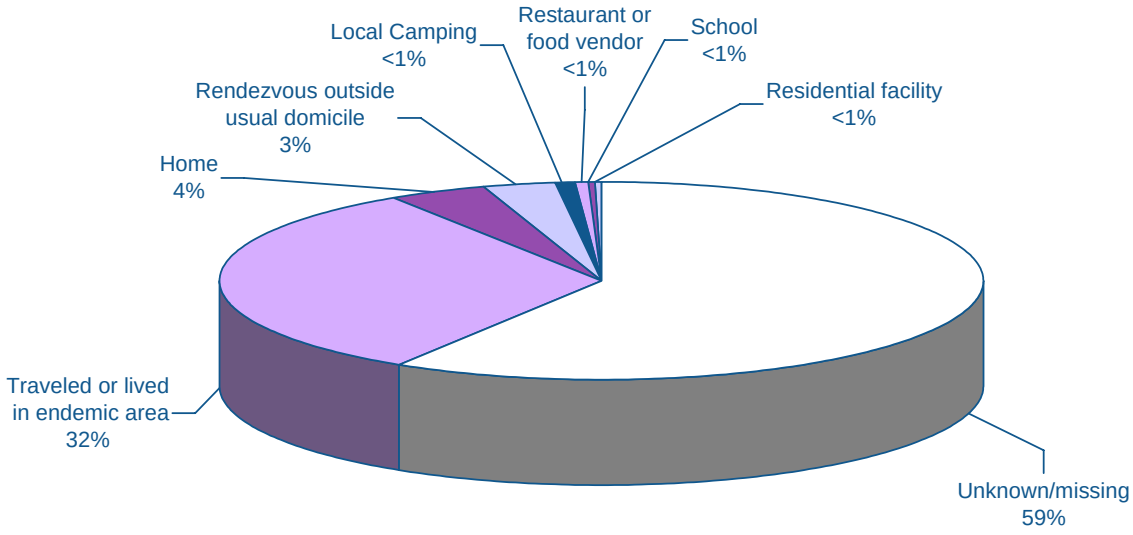


Figure 2.6: Proportion of reported cases of amebiasis by suspected risk setting. Toronto, 2004 (N=324)



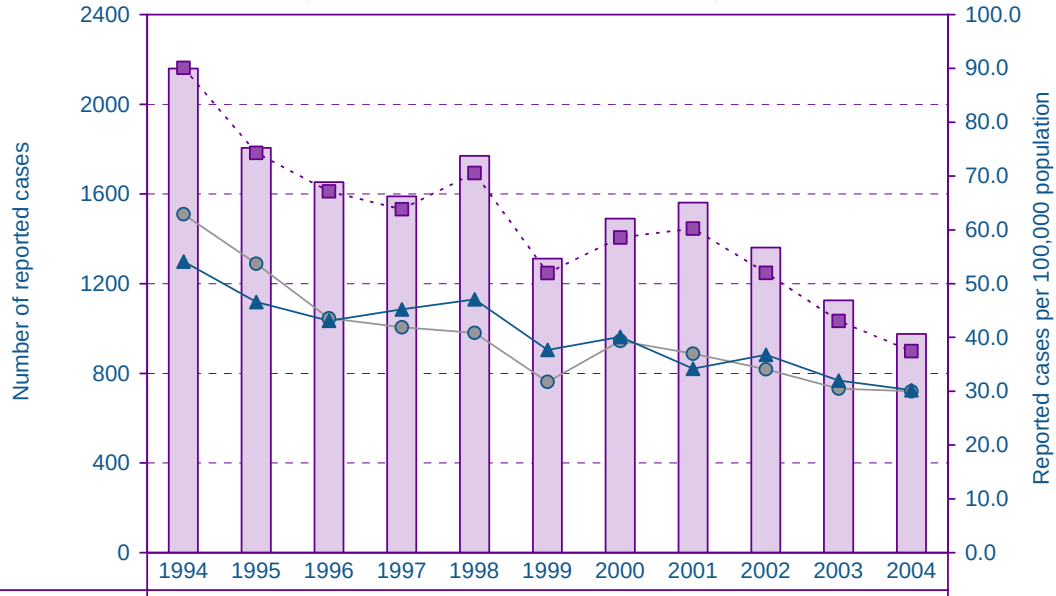
Campylobacter enteritis

Table 2.3: *Campylobacter* enteritis summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	975	1370	1583
Incidence rate (per 100,000 population)			
Overall	37.5	53.1	62.8
Male	41.5	58.5	68.6
Female	33.5	47.9	57.1
Age at onset (years)	Summary statistics		
Mean	33	31	30
Median	31	30	28
Range	<1 88	<1 100	<1 100
Hospitalization rate (%)	5	2	2

Highlights

- *Campylobacter* continues to be the most commonly reported enteric pathogen in Toronto, accounting for 36% of all enteric agents reported in 2004 (Table 2.1).
- In 2004, there were 975 reported cases (37.5 cases per 100,000) of *Campylobacter* enteritis. This represented a decrease of 150 cases (13%) from the 2003 total of 1125 and is in keeping with decreases noted for other enteric diseases for 2004 (Figure 2.7).
- Age specific rates for all age groups were lower in 2004 than in 2003.
- Males accounted for 54% (n=527) of all cases in 2004 and experienced rates of disease that exceeded female rates in all age groups, except those 25 to 29, 50 to 54, and 65 and older years of age (Figure 2.8). The largest differences were detected in the 35 to 39 year age group, in which males experienced more than twice the rate of *Campylobacter* enteritis.
- The number of reported cases for each month in 2004 was lower than the historical mean (Figure 2.9).
- The most commonly reported source of infection in 2004 was food (23%) (Figure 2.10). The most commonly reported risk settings were travel outside of Canada to an endemic area (19%) and the home environment (15%) (Figure 2.11).

Figure 2.7: Incidence of *Campylobacter* enteritis by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

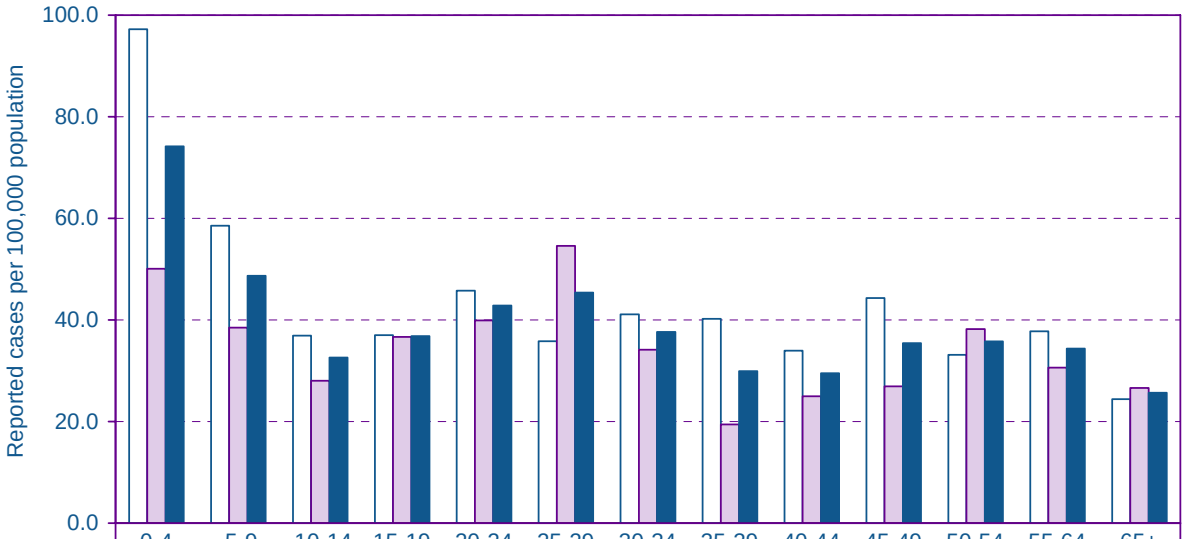


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	2159	1806	1653	1589	1770	1312	1491	1561	1361	1125	975
Toronto rates	90.1	74.3	67.1	63.8	70.5	52.0	58.5	60.2	52.0	43.1	37.5
Ontario less Toronto rates	62.9	53.7	43.5	41.9	40.9	31.8	39.4	37.0	34.1	30.5	30.0
Canada rates	54.1	46.6	43.1	45.2	47.1	37.7	40.1	34.2	36.8	32.0	30.2

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 2.8: Incidence of *Campylobacter* enteritis by age group and sex*. Toronto, 2004



	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
Male rates	97.2	58.6	36.9	37.0	45.8	35.8	41.1	40.2	34.0	44.3	33.1	37.7	24.4
Female rates	50.1	38.5	28.0	36.7	39.9	54.6	34.1	19.4	25.0	26.9	38.2	30.6	26.6
Overall rates	74.2	48.7	32.6	36.8	42.8	45.4	37.6	29.9	29.5	35.4	35.8	34.4	25.7
Male cases	71	44	28	28	41	39	48	44	37	41	26	44	36
Female cases	35	28	20	26	36	62	40	21	27	26	33	40	53

*The sex of one case was not reported.

Age group (years)

Figure 2.9: Number of reported cases of *Campylobacter* enteritis by month. Toronto, 2004 compared to 1994 - 2003 mean

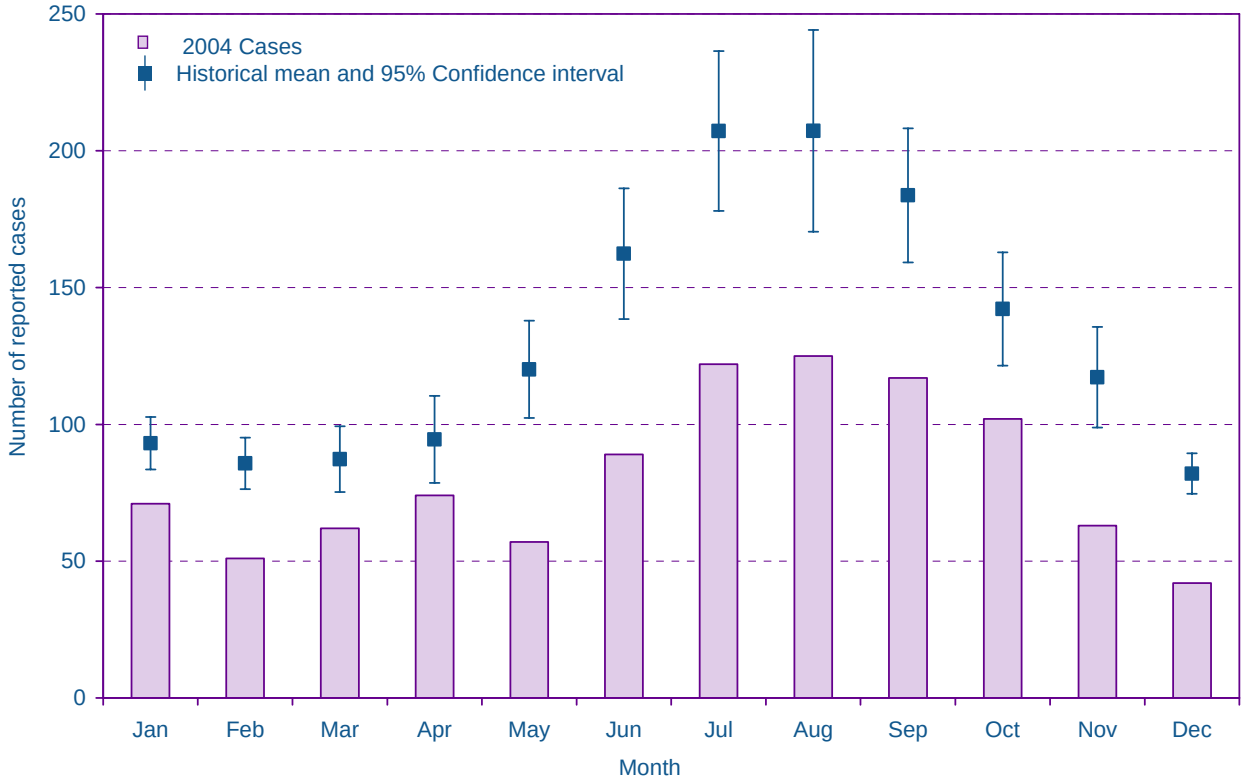
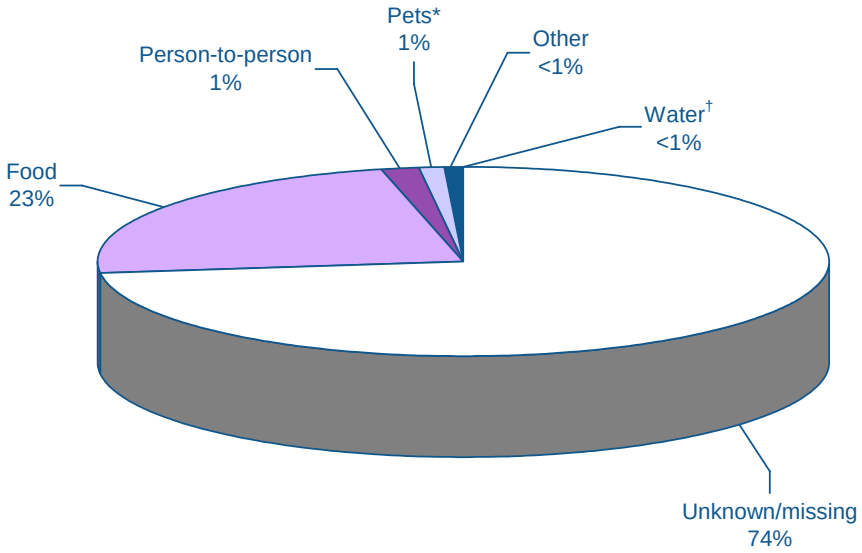


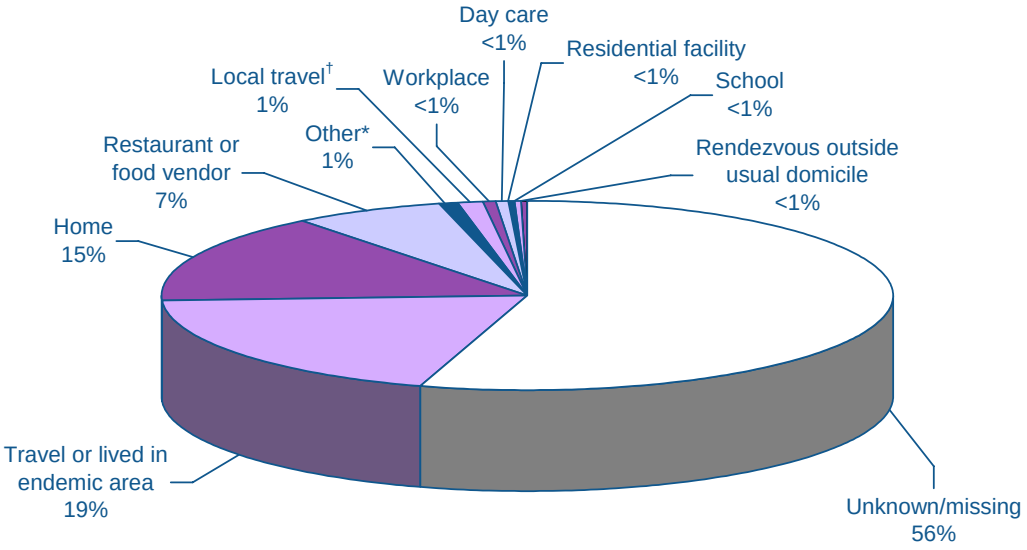
Figure 2.10: Proportion of reported cases of *Campylobacter* enteritis by suspected source of infection. Toronto, 2004 (N=975)



*Includes animal contact.

†Includes water - lake, stream/pond, and water - other.

Figure 2.11: Proportion of reported cases of *Campylobacter* enteritis by suspected risk setting. Toronto, 2004 (N=975)



*Includes farm, and shelter or rooming house.
†Includes travel to a local vacation property, camping or park/recreational area.

Cryptosporidiosis

Table 2.4: Cryptosporidiosis summary data* Toronto		
	2004	5-yr period 1999-2003
	Total	Mean
Number of reported cases	49	39
Incidence rate (per 100,000 population)		
Overall	1.9	1.5
Male	3.1	2.1
Female	0.7	1.0
Age at onset (years)	Summary statistics	
Mean	23	21
Median	26	12
Range	1 58	<1 75

*Cryptosporidiosis became reportable in Ontario in 1996.

Highlights

- In 2004, there were 49 reported cases (1.9 cases per 100,000) of cryptosporidiosis. This represented an increase of 14 cases (40%) over the 2003 total of 35 cases and the highest annual total reported since 1996 when cryptosporidiosis became reportable in Ontario (Figure 2.12).

- In contrast to 2003 when cryptosporidiosis rates for males and females were comparable, the 2004 cryptosporidiosis rate for males was 4 times the rate for females (Table 2.4). This is consistent with reports prior to 2003 when males accounted for a larger proportion of cryptosporidiosis cases. This difference has been attributed to the increased risk of sexual transmission in men who have sex with other men (MSM).

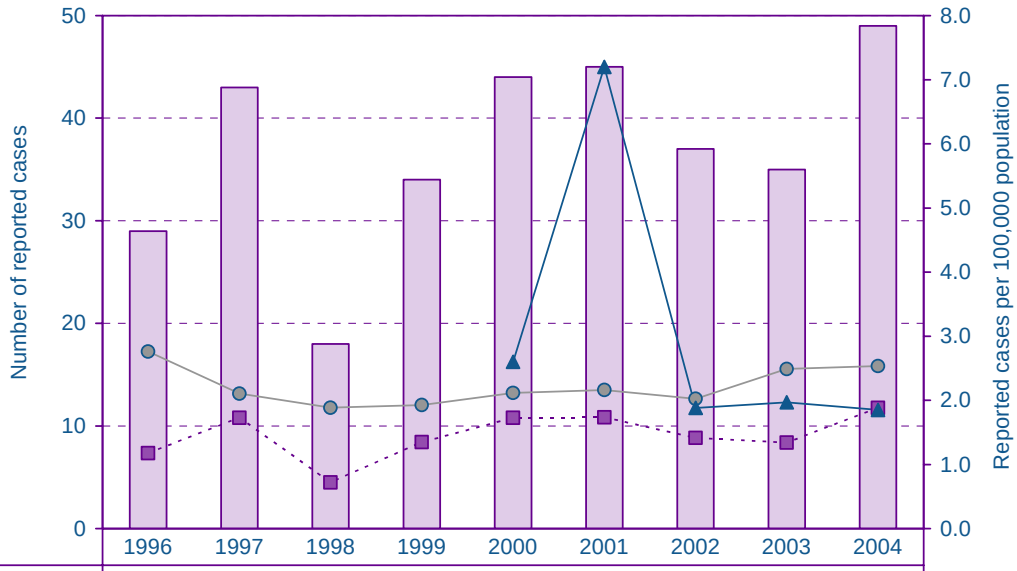
- Males accounted for 80% (n=39) of all cases in 2004 and had a rate (3.1 cases per 100,000) more than 3 times the rate for females (0.7 cases per 100,000) (Table 2.4). The rate for males exceeded female rates for all age groups except the 5 to 9 and 0 to 4 year age groups. The largest differences were detected in the 20 to 29, 30 to 39 and 40 to 49 year age groups, in which males experienced more than 3 times the rate of cryptosporidiosis (Figure 2.13).

- The median age of cases increased to 26 years in 2004 from 12 years that was reported during the previous 5-year period (Table 2.4).

- Reports of cryptosporidiosis in 2004 exhibited no marked seasonality. In April, June, August, October, November and December the number of reported cases exceeded the historical mean for those months (Figure 2.14).

- The most commonly reported source of infection in 2004 was person-to-person contact (18%) (Figure 2.15). This was a change from 2003 when exposure to water from a lake, stream, river or pond (11%) was the most commonly reported source of infection. As in 2003 the most commonly reported risk setting was travel outside of Canada to an endemic area (49%) (Figure 2.16).

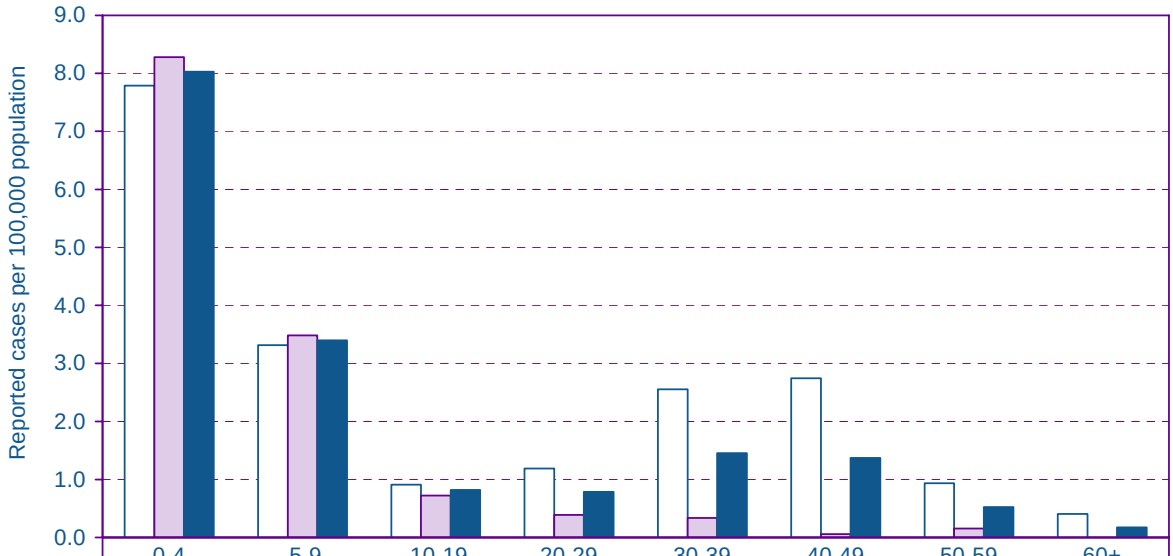
Figure 2.12: Incidence of cryptosporidiosis by year. Toronto, the rest of Ontario* and Canada†, 1996 - 2004



	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	29	43	18	34	44	45	37	35	49
Toronto rates	1.2	1.7	0.7	1.3	1.7	1.7	1.4	1.3	1.9
Ontario less Toronto rates	2.8	2.1	1.9	1.9	2.1	2.2	2.0	2.5	2.5
Canada rates	NR	NR	NR	NR	2.6	7.2	1.9	2.0	1.9

*Cryptosporidiosis became reportable in Ontario in 1996. †Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan. NR: Not reportable. Starting January 1, 2000 Cryptosporidiosis became nationally notifiable.

Figure 2.13: Incidence of cryptosporidiosis by age group and sex. Toronto, 1996 - 2004 combined



	0-4	5-9	10-19	20-29	30-39	40-49	50-59	60+
Male rates	7.8	3.3	0.9	1.2	2.6	2.7	0.9	0.4
Female rates	8.3	3.5	0.7	0.4	0.3	0.1	0.2	0.0
Overall rates	8.0	3.4	0.8	0.8	1.5	1.4	0.5	0.2
Male cases	55	23	12	21	54	46	11	7
Female cases	56	23	9	7	7	1	2	0

Figure 2.14: Number of reported cases of cryptosporidiosis by month. Toronto, 2004 compared to 1996 - 2003 mean

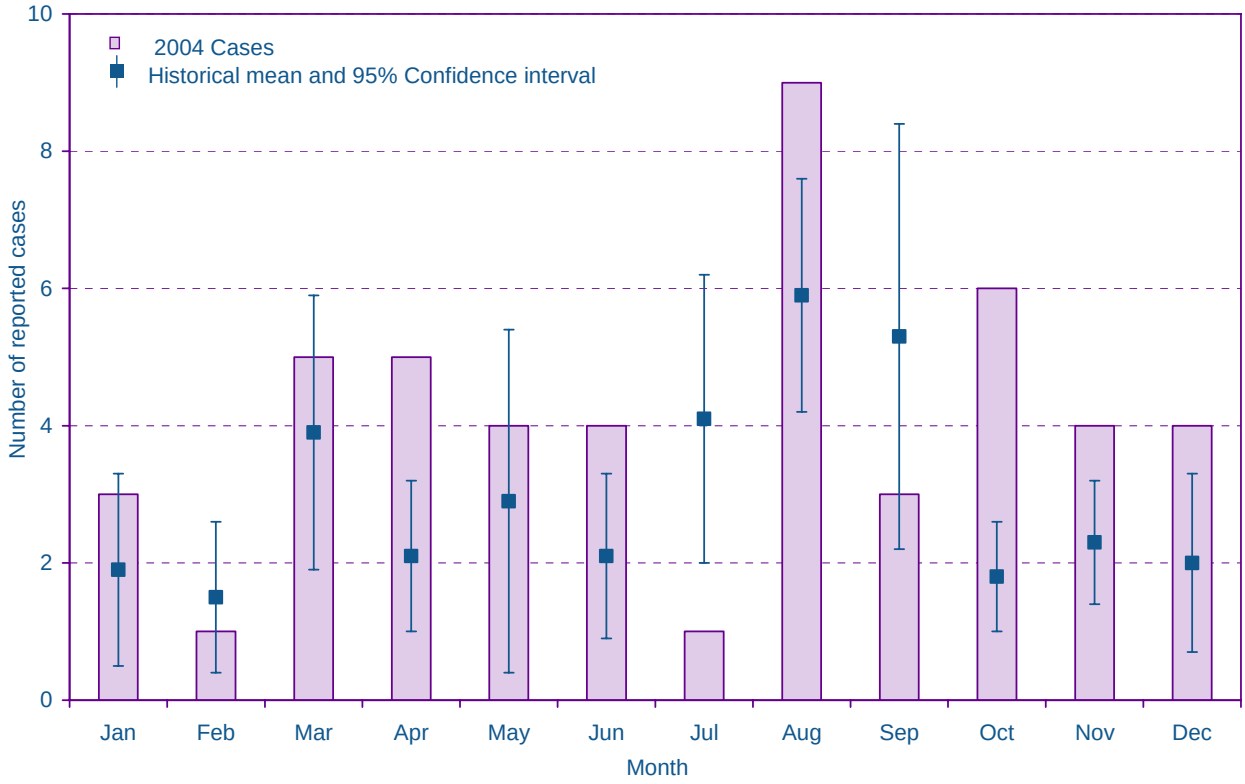


Figure 2.15: Proportion of reported cases of cryptosporidiosis by suspected source of infection. Toronto, 2004 (N=49)

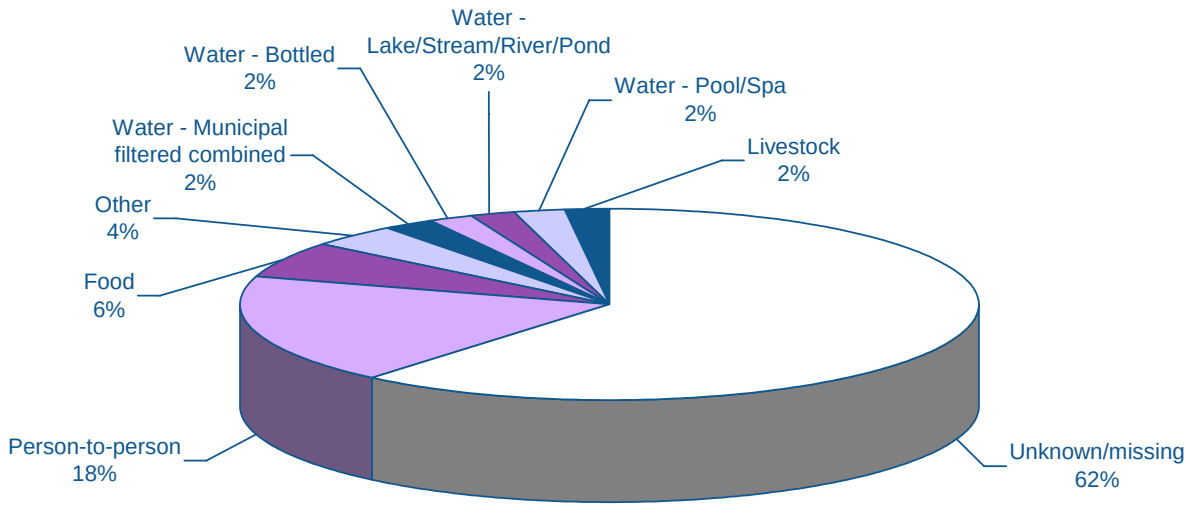
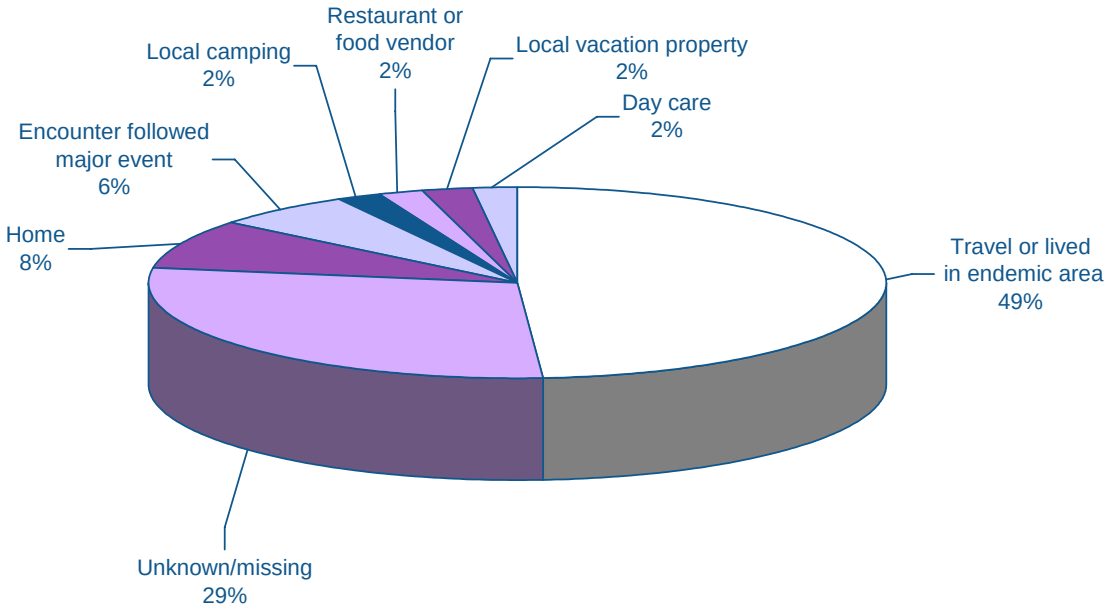


Figure 2.16: Proportion of reported cases of cryptosporidiosis by suspected risk setting. Toronto, 2004 (N=49)



Cyclosporiasis

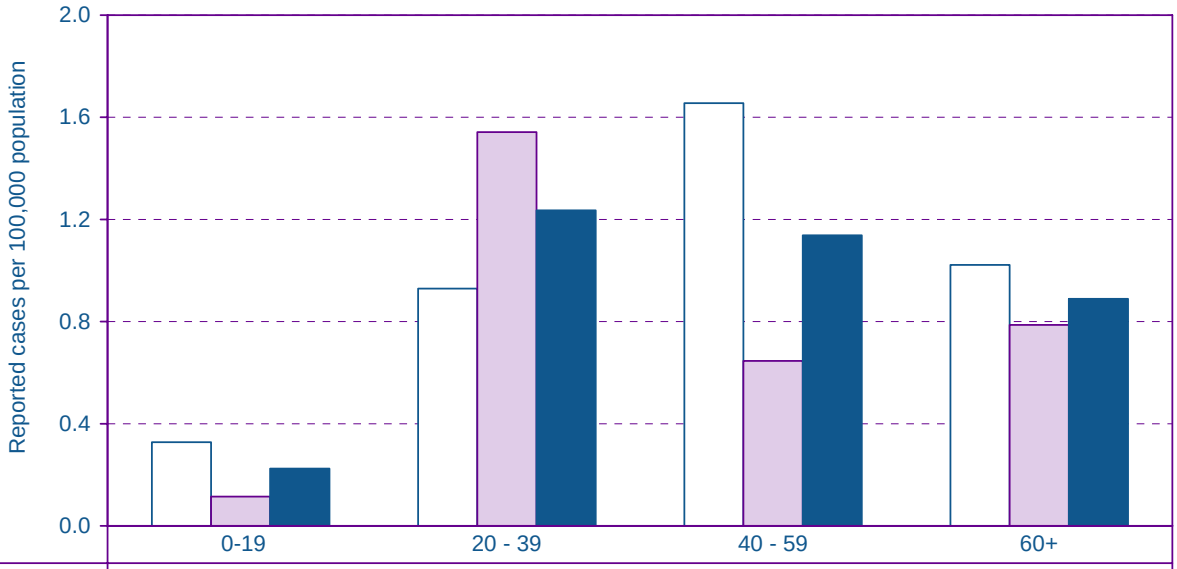
Table 2.5: Cyclosporiasis summary data* Toronto			
	2004	2003	2002
Number of reported cases	30	14	28
Incidence rate (per 100,000 population)			
Overall	1.2	0.5	1.1
Male	1.1	0.8	1.1
Female	1.2	0.3	1.0
Age at onset (years)	Summary statistics		
Mean	48	34	40
Median	48	33	37
Range	24 84	2 67	24 80

*Cyclosporiasis became reportable in Ontario in 2002.

Highlights

- In 2004, there were 30 reported cases of cyclosporiasis (1.2 cases per 100,000). This represented an increase of 16 cases (114%) over the 2003 total of 14 cases and the highest total since it became reportable in 2002 (Table 2.5).
- In 2004, the cyclosporiasis rate for males was comparable to the rate for females (Table 2.5).
- Reports of cyclosporiasis in 2004 exhibited a seasonal peak in the early summer months. The highest number of cases was reported in June (Figure 2.18).
- The most commonly identified source of infection in 2004 was food (20%) (Figure 2.19). The most commonly reported risk setting was travel outside of Canada to an endemic area (71%) (Figure 2.20).

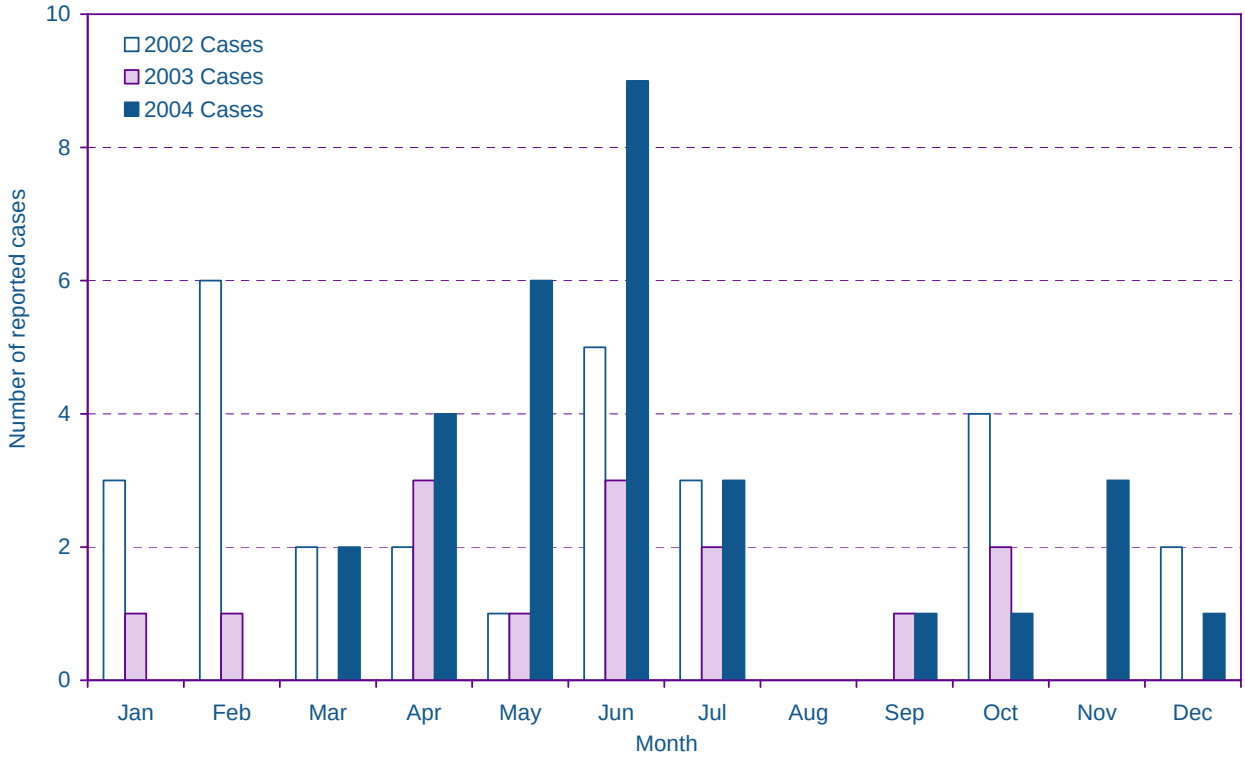
Figure 2.17: Incidence of cyclosporiasis by age group and sex. Toronto, 2002 - 2004 combined



	0-19	20 - 39	40 - 59	60+
Male rates	0.3	0.9	1.7	1.0
Female rates	0.1	1.5	0.6	0.8
Overall rates	0.2	1.2	1.1	0.9
Male cases	3	12	17	6
Female cases	1	20	7	6

Age group (years)

Figure 2.18: Number of reported cases of cyclosporiasis by month. Toronto, 2002 - 2004*



*Only three years of data are available since cyclosporiasis became reportable in 2002.

Figure 2.19: Proportion of cases of cyclosporiasis by suspected source of infection. Toronto, 2004 (N=30)

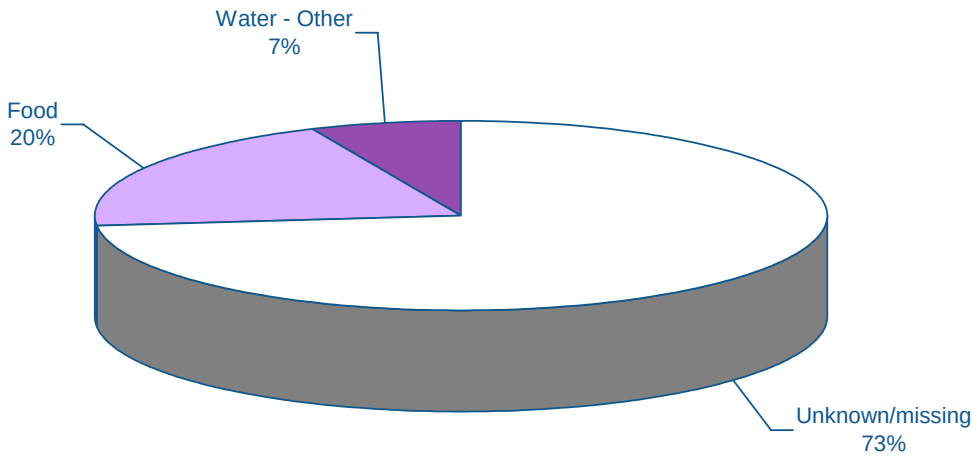
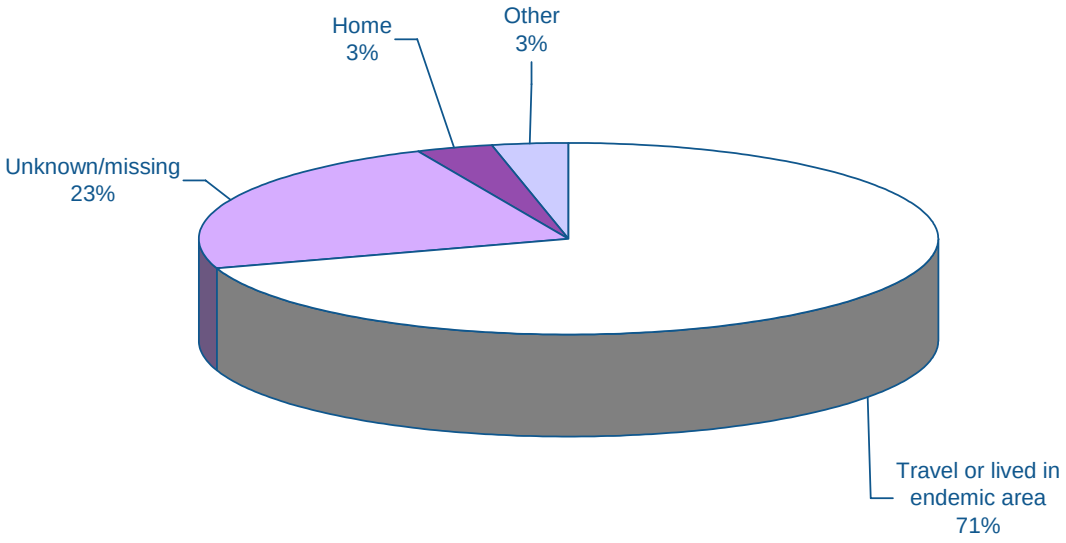


Figure 2.20: Proportion of cases of cyclosporiasis by suspected risk setting. Toronto, 2004 (N=30)



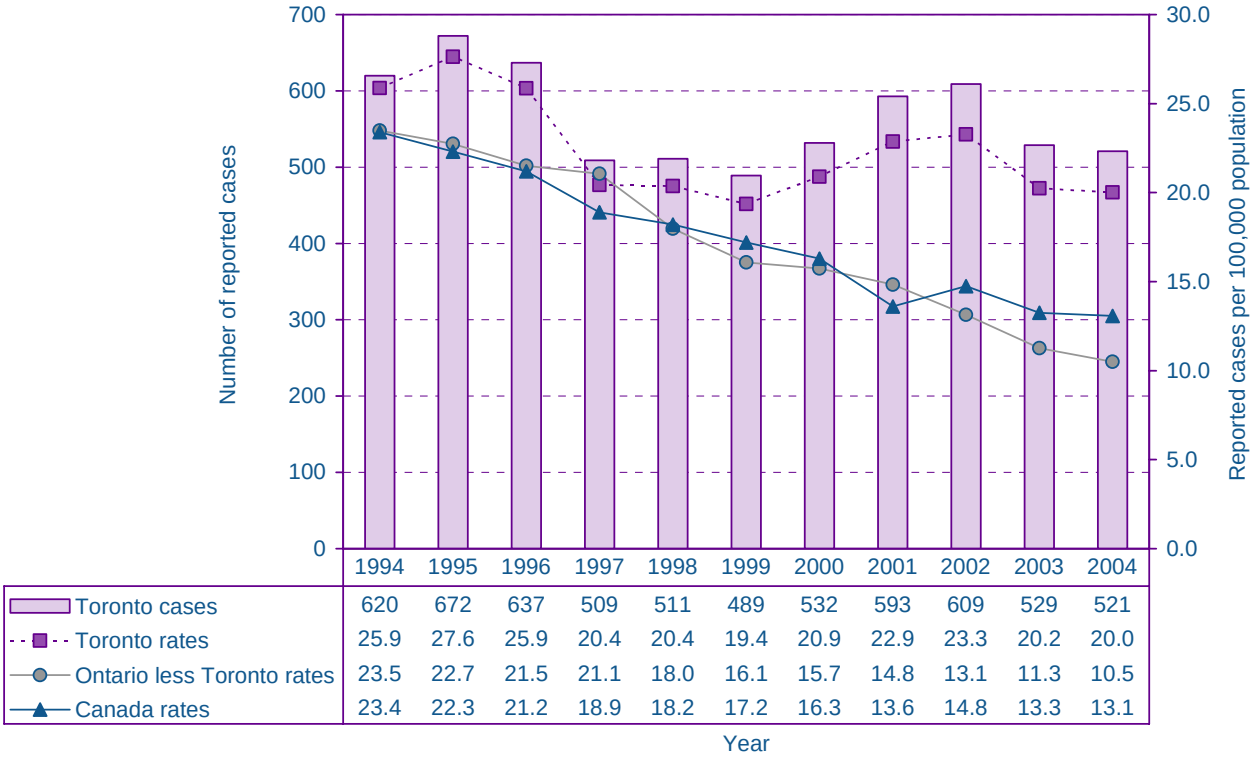
Giardiasis

Table 2.6: Giardiasis summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	521	550	570
Incidence rate (per 100,000 population)			
Overall	20.0	21.3	22.6
Male	25.9	28.1	29.3
Female	14.4	15.0	16.4
Age at onset (years)	Summary statistics		
Mean	29	28	27
Median	28	30	28
Range	<1 90	<1 99	<1 99

Highlights

- In 2004, there were 521 reported cases (20.0 cases per 100,000) of giardiasis. This represented a decrease of eight cases (2%) from the 2003 total of 529 cases (Figure 2.21).
- Toronto's rate of giardiasis continued to exceed the rate reported in the rest of Ontario in 2004 (Figure 2.21).
- Males accounted for 63% (n=329) of all cases in 2004. The rate for males exceeded female rates for all age groups except the 5 to 9 and 15 to 19 year old groups (Figure 2.22). The largest difference was observed in the 45 to 49 year age group, for which the male rate was 5 times higher than the rate for females. As with other enteric agents, these gender differences are likely related to the increased risk of sexual transmission in men who have sex with men (MSM).
- With the exception of April, the number of reports for each month in 2004 was either comparable to or lower than the historical mean (Figure 2.23).
- The most commonly reported sources of infection in 2004 were water (8%) and person-to-person contact (7%) (Figure 2.24). The most commonly reported risk setting was travel outside of Canada to an endemic area (38%) (Figure 2.25).

Figure 2.21: Incidence of giardiasis by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

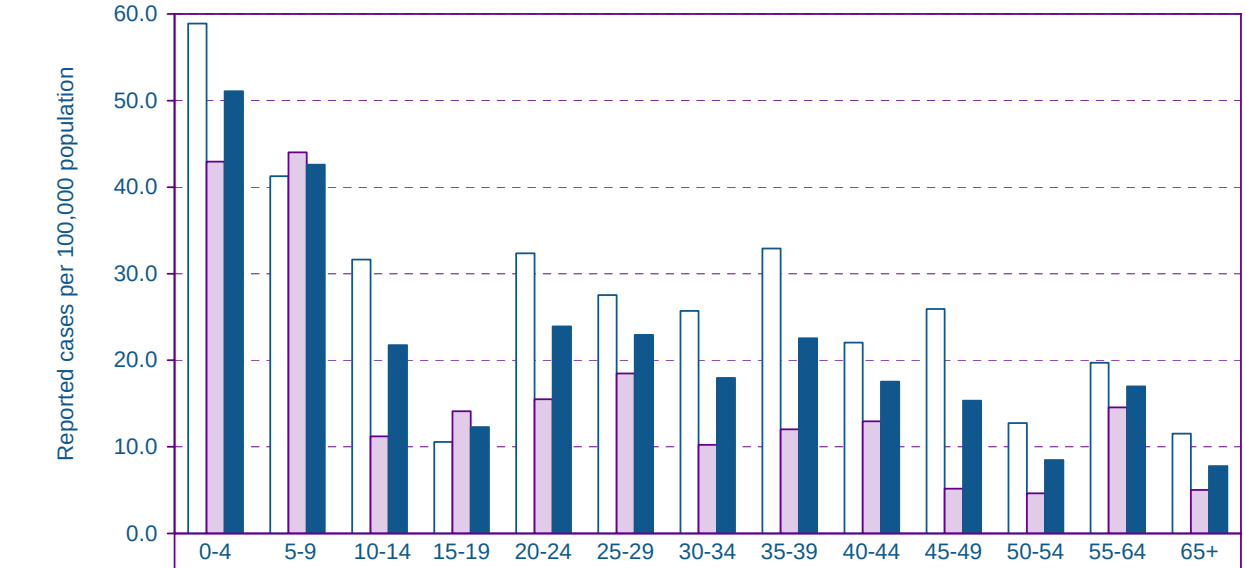


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	620	672	637	509	511	489	532	593	609	529	521
Toronto rates	25.9	27.6	25.9	20.4	20.4	19.4	20.9	22.9	23.3	20.2	20.0
Ontario less Toronto rates	23.5	22.7	21.5	21.1	18.0	16.1	15.7	14.8	13.1	11.3	10.5
Canada rates	23.4	22.3	21.2	18.9	18.2	17.2	16.3	13.6	14.8	13.3	13.1

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 2.22: Incidence of giardiasis by age group and sex. Toronto, 2004



	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
Male rates	58.9	41.3	31.6	10.6	32.4	27.5	25.7	32.9	22.0	25.9	12.7	19.7	11.5
Female rates	42.9	44.0	11.2	14.1	15.5	18.5	10.2	12.0	13.0	5.2	4.6	14.5	5.0
Overall rates	51.1	42.6	21.7	12.3	23.9	22.9	18.0	22.5	17.5	15.3	8.5	17.0	7.8
Male cases	43	31	24	8	29	30	30	36	24	24	10	23	17
Female cases	30	32	8	10	14	21	12	13	14	5	4	19	10

Age group (years)

**Figure 2.23: Number of reported cases of giardiasis by month.
Toronto, 2004 compared to 1994 - 2003 mean**

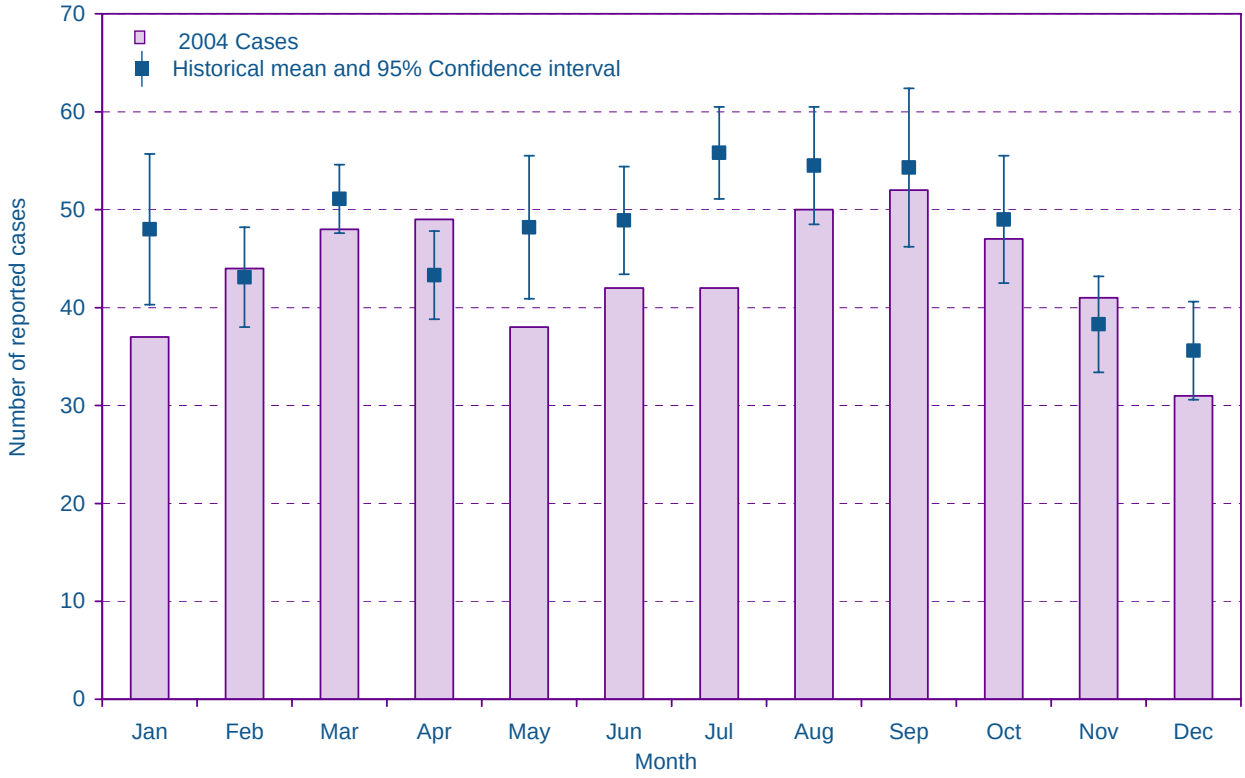


**Figure 2.24: Proportion of reported cases of giardiasis by suspected source of infection.
Toronto, 2004 (N=521)**

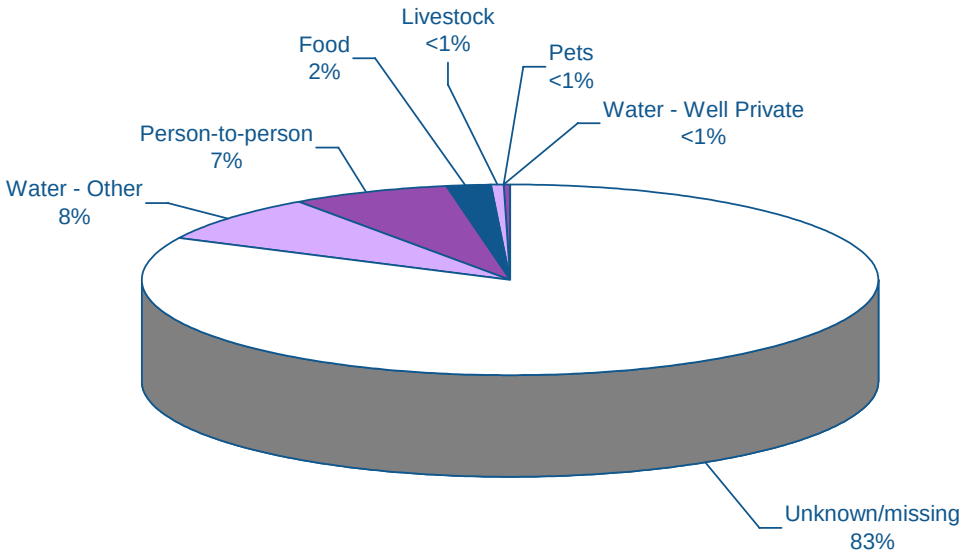
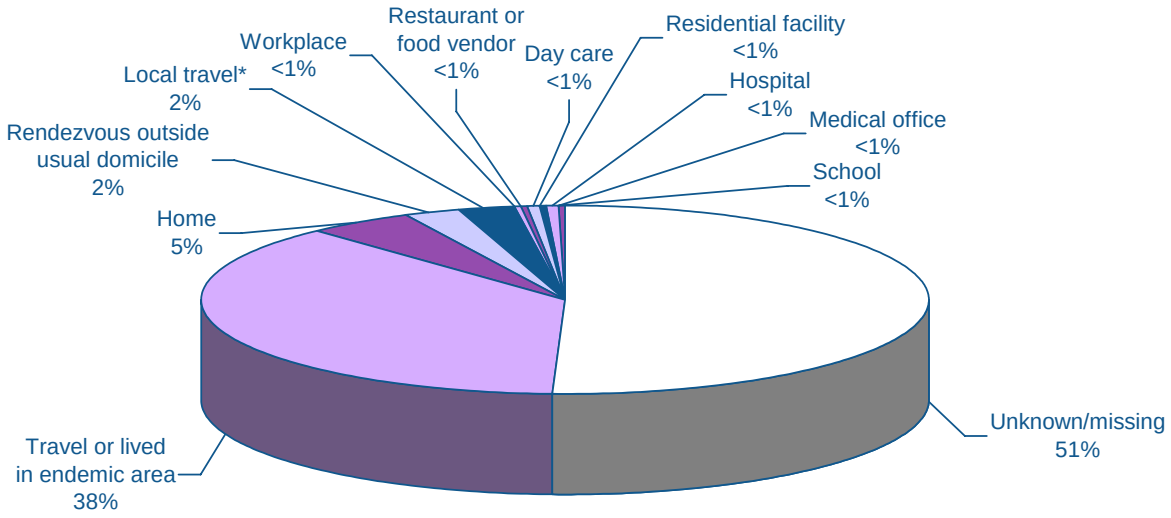


Figure 2.25: Proportion of reported cases of giardiasis by suspected risk setting. Toronto, 2004 (N=521)



*Includes travel to a local vacation property, camping or park/recreational area.

Hepatitis A

Table 2.7: Hepatitis A summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	48	64	120
Incidence rate (per 100,000 population)			
Overall	1.8	2.5	4.8
Male	2.5	2.9	6.3
Female	1.2	2.1	3.3
Age at onset (years)	Summary statistics		
Mean	26	25	30
Median	20	25	31
Range	2 92	<1 80	<1 84
Outbreak associated cases (%)	4	10	5
Hospitalization rate (%)	25	9	5

Highlights

- In 2004, there were 48 reported cases (1.8 cases per 100,000) of hepatitis A. This represented an increase of 13 cases (37%) over the 2003 total of 35 cases (Figure 2.26). Among these cases, 4% (n=2) were outbreak related and 25% (n=12) were treated in a hospital (Table 2.7). The hospitalization rate in 2004 was higher than the rate for the previous 5-year and 10-year periods.

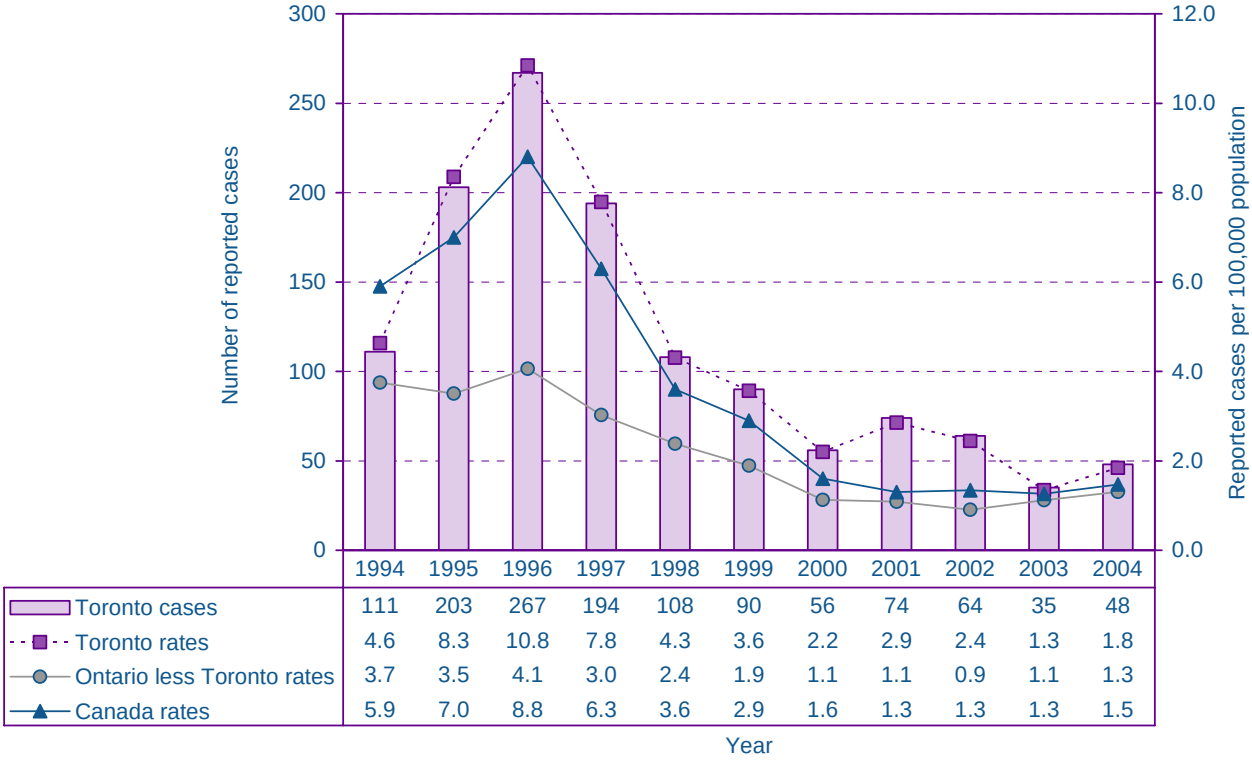
- Toronto's rate of hepatitis A in 2004 was comparable to the rate reported in the rest of Ontario (Figure 2.26).

- Males accounted for 67% (n=32) of all cases in 2004. The incidence rate for males exceeded female rates in all age groups. The greatest differences were in the 0 to 4 and 20 to 39 year age groups, for which males had 3 or more times the reported rate for females (Figure 2.27). As with other enteric agents, the increased adult male rates may be related to the increased risk of sexual transmission for men who have sex with men (MSM).

- Except for February, April and May the number of reports for each month in 2004 was lower than the historical mean (Figure 2.28). The highest number of cases was reported in February and April.

- The most commonly reported source of infection was person-to-person transmission (10%) (Figure 2.29). The most commonly reported risk setting was travel outside of Canada to an endemic area (73%) (Figure 2.30).

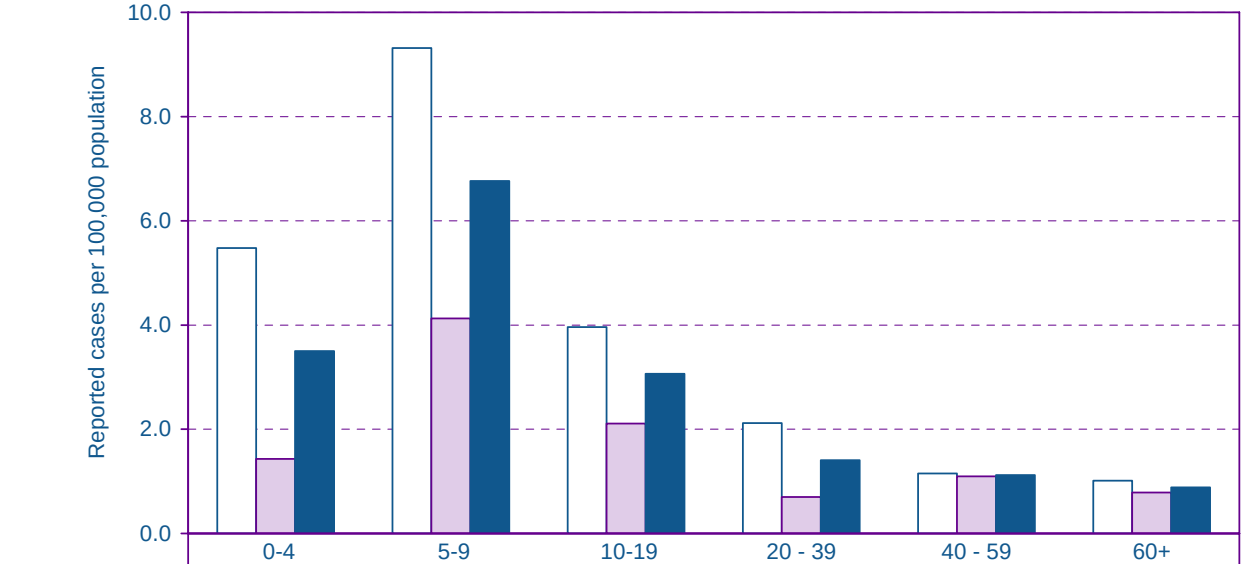
Figure 2.26: Incidence of hepatitis A by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	111	203	267	194	108	90	56	74	64	35	48
Toronto rates	4.6	8.3	10.8	7.8	4.3	3.6	2.2	2.9	2.4	1.3	1.8
Ontario less Toronto rates	3.7	3.5	4.1	3.0	2.4	1.9	1.1	1.1	0.9	1.1	1.3
Canada rates	5.9	7.0	8.8	6.3	3.6	2.9	1.6	1.3	1.3	1.3	1.5

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 2.27: Incidence of hepatitis A by age group and sex. Toronto, 2004



	0-4	5-9	10-19	20 - 39	40 - 59	60+
Male - rates	5.5	9.3	4.0	2.1	1.2	1.0
Female - rates	1.4	4.1	2.1	0.7	1.1	0.8
Overall - rates	3.5	6.8	3.1	1.4	1.1	0.9
Male - cases	4	7	6	9	4	2
Female - cases	1	3	3	3	4	2

**Figure 2.28: Number of reported cases of hepatitis A by month.
Toronto, 2004 compared to 1994 - 2003 mean**

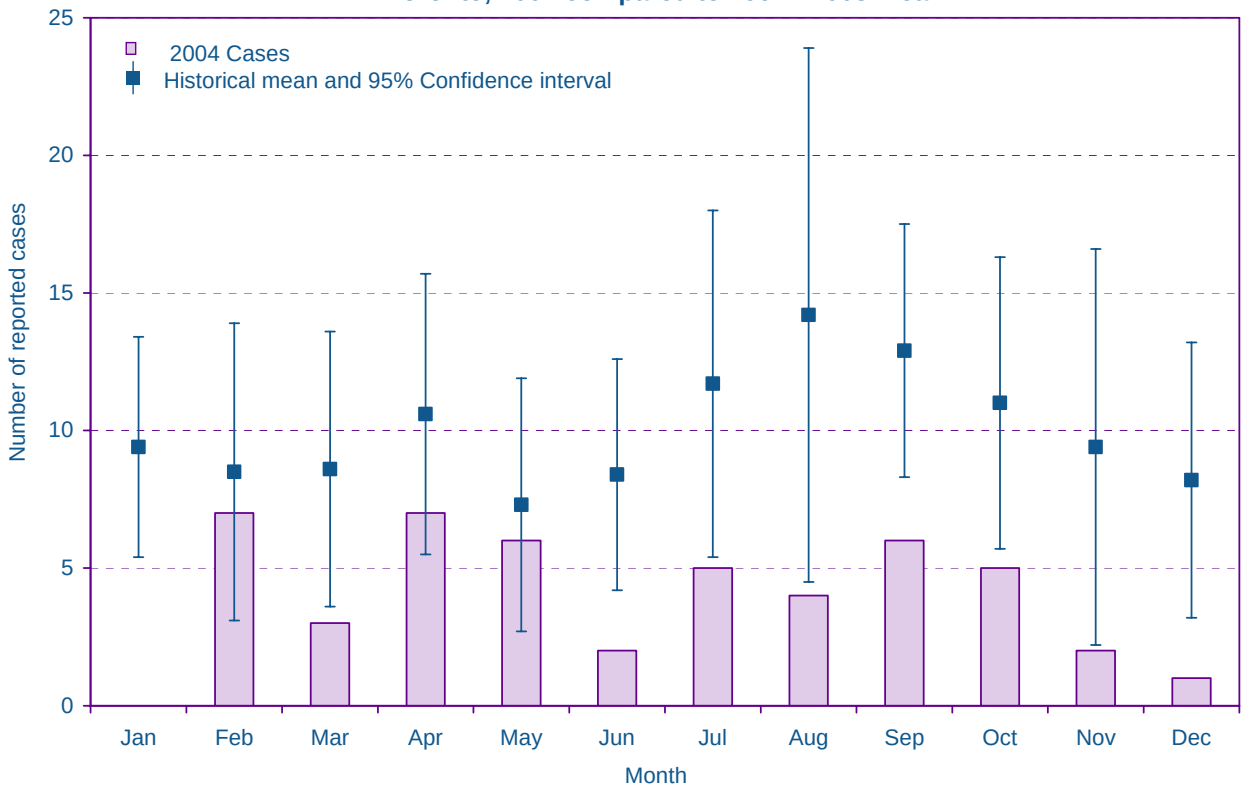


**Figure 2.29: Proportion of reported cases of hepatitis A by suspected source of infection.
Toronto, 2004 (N=48)**

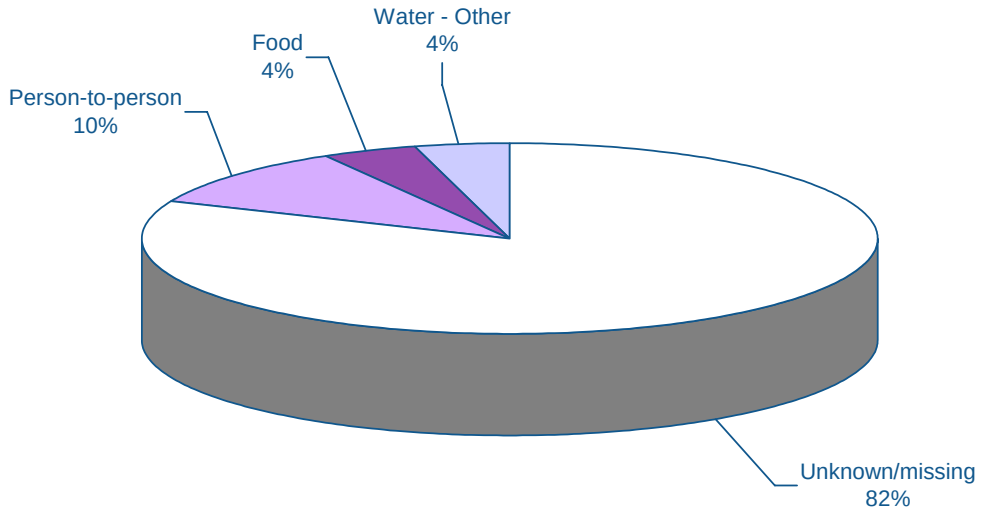
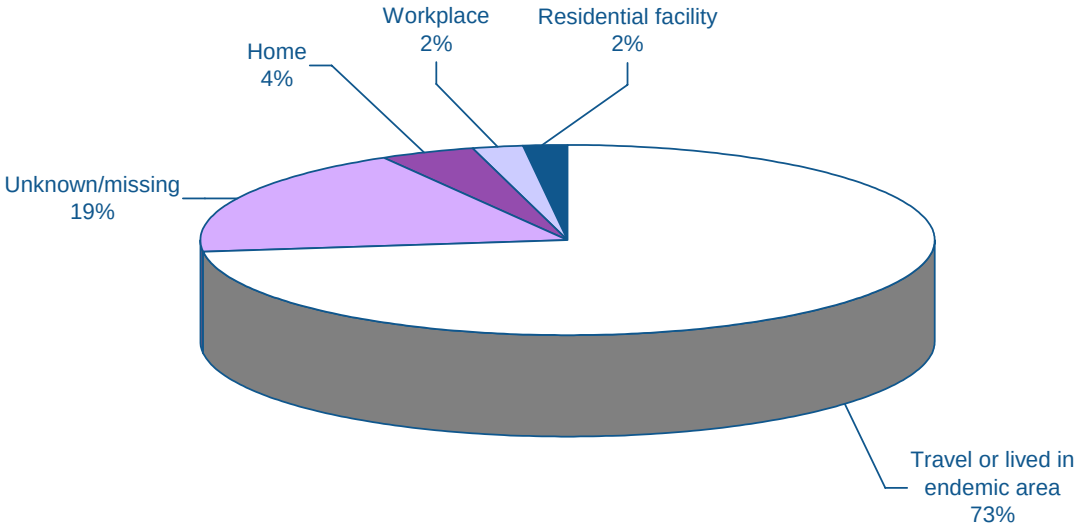


Figure 2.30: Proportion of reported cases of hepatitis A by suspected risk setting. Toronto, 2004 (N=48)



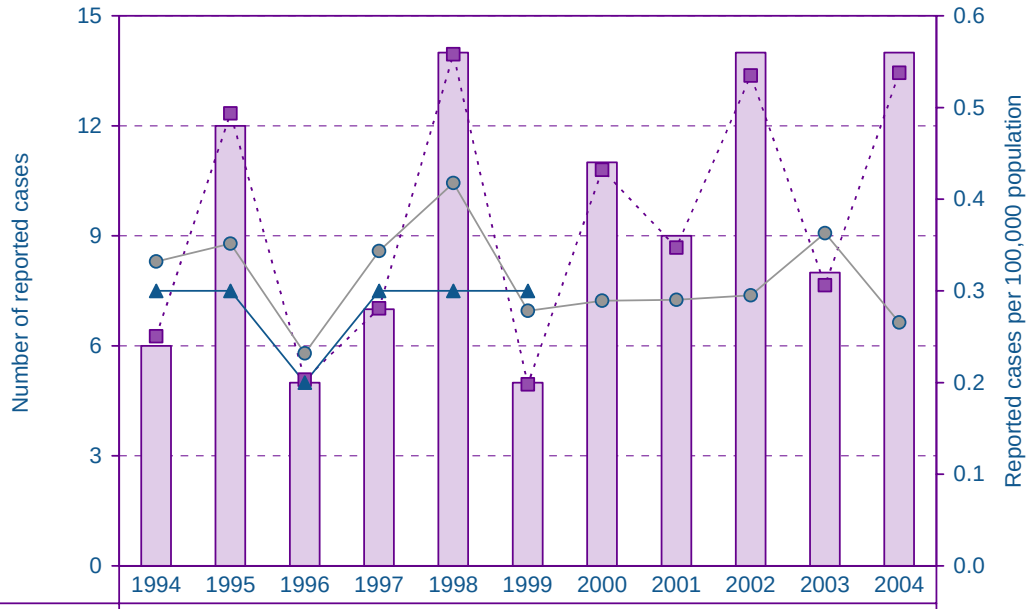
Listeriosis

Table 2.8: Listeriosis summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	14	9	9
Incidence rate (per 100,000 population)			
Overall	0.5	0.4	0.4
Male	0.3	0.3	0.4
Female	0.7	0.5	0.4
Age at onset (years)	Summary statistics		
Mean	63	57	59
Median	70	65	66
Range	<1 94	<1 95	<1 95
Hospitalization rate (%)	86	62	68
Case fatality (%)	21	19	20

Highlights

- In 2004, there were 14 reported cases (0.5 cases per 100,000) of listeriosis. This represented an increase of six cases (75%) over the 2003 total of eight cases (Figure 2.31).
- Of the 14 cases reported in 2004, 12 (86%) were treated in a hospital, and three (21%) related deaths were reported (Table 2.8).
- Over the ten-year period, older age groups were particularly vulnerable to listeriosis (Figure 2.32). In 2004, 71% (n=10) of reported cases were over 65 years of age. The median age of cases in 2004 was 70 years of age, older than the previous 5-year and 10-year medians (65 and 66 years, respectively) (Table 2.8). This may explain the higher hospitalization rate observed in 2004 compared to the previous 5-year and 10-year periods.
- The source of infection was known for 57% (n=8) of reported listeriosis cases in 2004. Food was identified as the source in each of these cases.

Figure 2.31: Incidence of listeriosis by year. Toronto, the rest of Ontario and Canada, 1994 - 2004

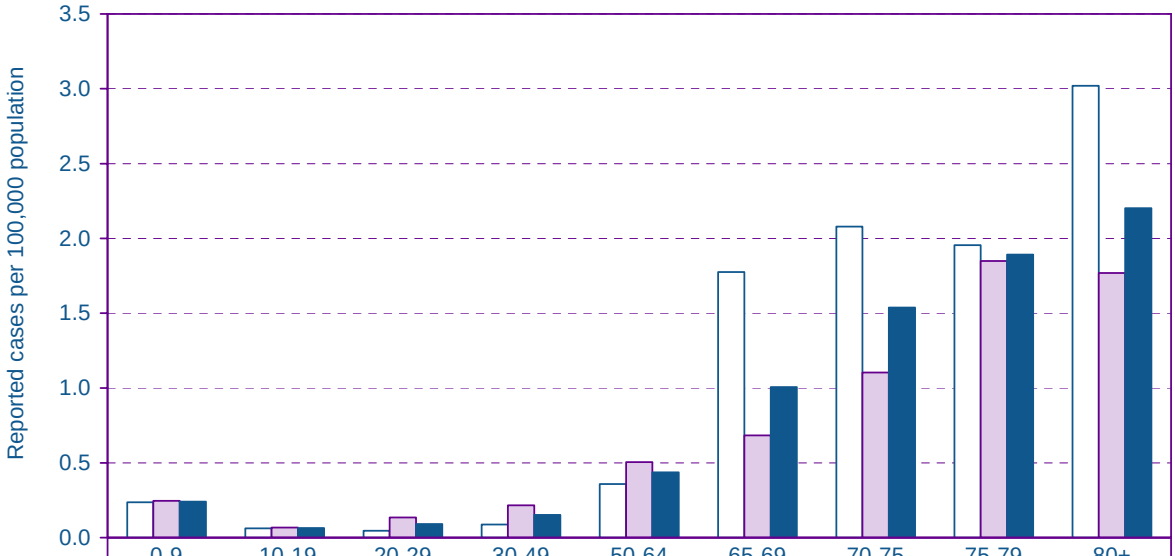


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	6	12	5	7	14	5	11	9	14	8	14
Toronto rates	0.3	0.5	0.2	0.3	0.6	0.2	0.4	0.3	0.5	0.3	0.5
Ontario less Toronto rates	0.3	0.4	0.2	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.3
Canada rates	0.3	0.3	0.2	0.3	0.3	0.3	NR	NR	NR	NR	NR

Year

NR: Not reportable. Listeriosis was no longer nationally notifiable in Canada as of 2000.

Figure 2.32: Incidence of listeriosis by age group and sex. Toronto, 1994 - 2004 combined



	0-9	10-19	20-29	30-49	50-64	65-69	70-75	75-79	80+
Male rates	0.2	<0.1	<0.1	<0.1	0.4	1.8	2.1	2.0	3.0
Female rates	0.2	<0.1	0.1	0.2	0.5	0.7	1.1	1.8	1.8
Overall rates	0.2	<0.1	<0.1	0.2	0.4	1.0	1.5	1.9	2.2
Male cases	4	1	1	4	7	7	9	6	9
Female cases	4	1	3	10	11	4	6	8	10

Age group (years)

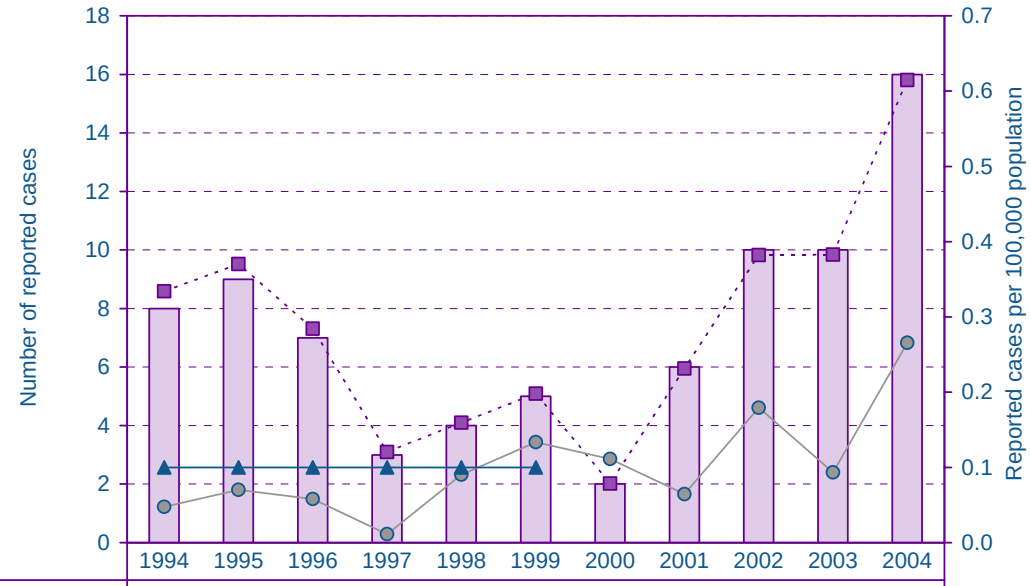
Paratyphoid fever

Table 2.9: Paratyphoid fever summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	16	7	6
Incidence rate (per 100,000 population)			
Overall	0.6	0.3	0.3
Male	0.6	0.3	0.3
Female	0.6	0.2	0.2
Age at onset (years)	Summary statistics		
Mean	29	29	26
Median	30	28	26
Range	3 52	1 87	<1 87

Highlights

- In 2004, there were 16 reported cases (0.6 cases per 100,000) of paratyphoid fever. This represented an increase of six cases (60%) over the 2003 total of 10 cases and the highest number of reports for the entire 11-year surveillance period (Figure 2.33).
- Toronto's rate of paratyphoid fever continued to exceed the rate for the rest of Ontario in 2004, likely reflecting differences in travel patterns between Toronto residents and those living in other parts of Ontario (Figure 2.33).
- Travel outside of Canada to an endemic area was the identified risk setting for 88% (n=14) of cases. Of the 14 cases with a known risk setting, 57% (n=9) travelled to India, 21% (n=3) traveled to Bangladesh, two cases travelled to Kampuchea, and one case each travelled to Pakistan and Sri Lanka. The risk setting was unknown for the two remaining cases (22%).

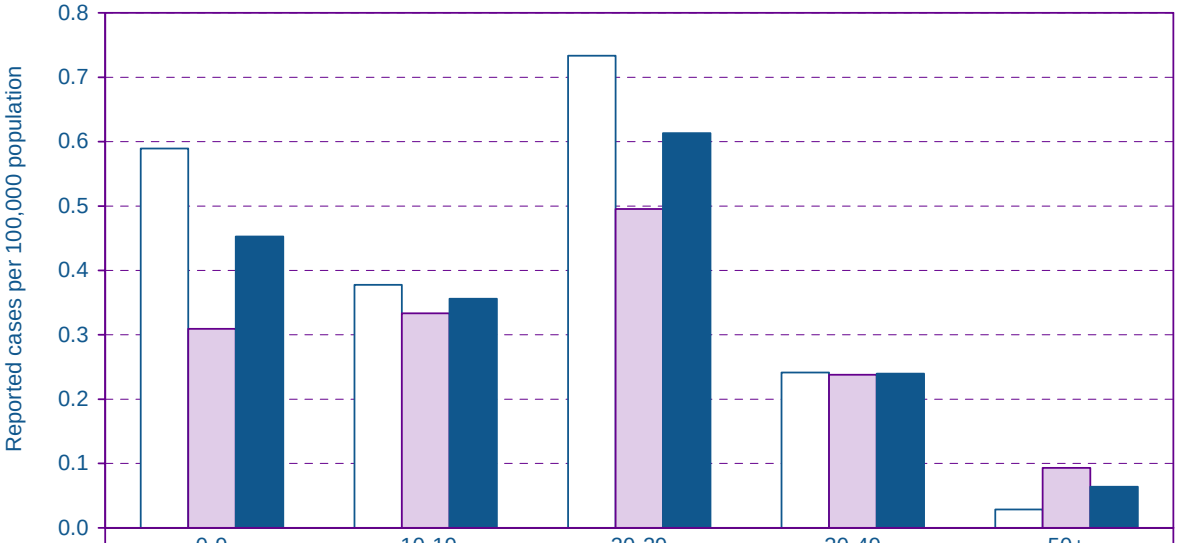
Figure 2.33: Incidence of paratyphoid fever by year. Toronto, the rest of Ontario and Canada, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	8	9	7	3	4	5	2	6	10	10	16
Toronto rates	0.3	0.4	0.3	0.1	0.2	0.2	<0.1	0.2	0.4	0.4	0.6
Ontario less Toronto rates	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	0.2	<0.1	0.3
Canada rates	0.1	0.1	0.1	0.1	0.1	0.1	NR	NR	NR	NR	NR

NR: Not reportable. Paratyphoid fever was no longer nationally notifiable in Canada as of 2000.

Figure 2.34: Incidence of paratyphoid fever by age group and sex. Toronto, 1994 - 2004 combined



	0-9	10-19	20-29	30-49	50+
Male rates	0.6	0.4	0.7	0.2	<0.1
Female rates	0.3	0.3	0.5	0.2	<0.1
Overall rates	0.5	0.4	0.6	0.2	<0.1
Male cases	10	6	16	11	1
Female cases	5	5	11	11	4

Salmonellosis

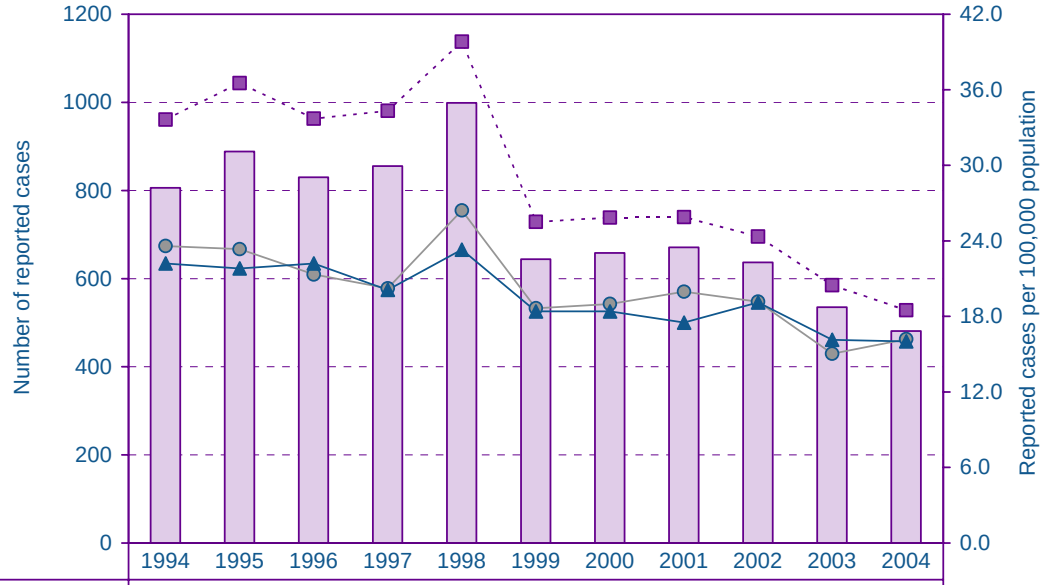
(non-typhoidal *Salmonella*)

Table 2.10: Salmonellosis summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	481	629	752
Incidence rate (per 100,000 population)			
Overall	18.5	24.4	29.9
Male	19.8	25.0	29.9
Female	17.2	23.7	29.6
Age at onset (years)	Summary statistics		
Mean	26	25	25
Median	21	22	21
Range	<1 87	<1 100	<1 100
Outbreak associated cases (%)	1	3	5
Hospitalization rate (%)	8	6	5

Highlights

- In 2004, there were 481 reported cases (18.5 cases per 100,000) of salmonellosis. This represented a decrease of 54 (10%) cases from the 2003 total of 535 cases and the lowest number of reports during the 11-year surveillance period (Figure 2.35).
- Outbreak related cases were lower than previous years and accounted for 1% (n=5) of salmonellosis cases in 2004 (Table 2.10). Eight percent of all cases (n=38) were treated in a hospital and one death was a result of salmonellosis. The death occurred in an 81 year old female.
- Toronto's 2004 rate of salmonellosis exceeded the rate in the rest of Ontario, but the gap was smaller than in 2003 (Figure 2.35).
- The age group with the highest incidence rate in 2004 was again children under 5 years of age (85.4 cases per 100,000) (Figure 2.36). The rate in this subgroup increased from 78.5 cases per 100,000 in 2003 to 85.4 cases per 100,000 in 2004.
- With the exception of February, the number of reports for each month in 2004 was lower than the historical mean (Figure 2.37).
- A specific *Salmonella* species was identified in 94% (n=454) of reported cases in 2004. Among these 454 cases, the most commonly isolated agents were *S. typhimurium* (22%), *S. enteritidis* (19%) and *S. heidelberg* (13%) (Table 2.11).
- The most commonly reported source of infection in 2004 was food (25%) (Figure 2.38). The most commonly reported risk settings were travel outside of Canada to an endemic area (24%) and the home environment (21%) (Figure 2.39).

Figure 2.35: Incidence of salmonellosis by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

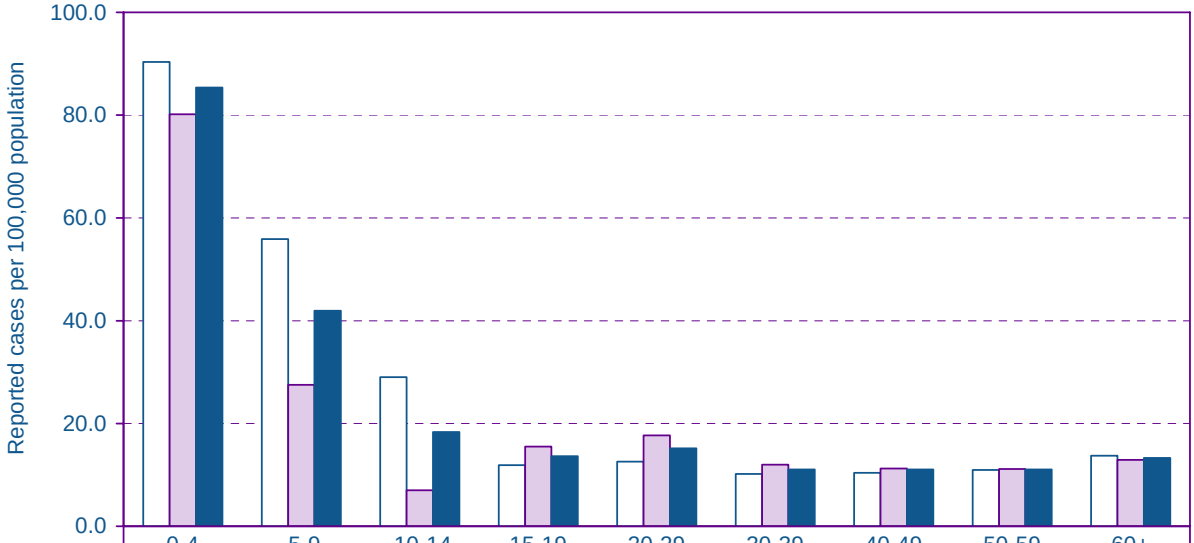


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	806	888	830	855	999	644	658	671	637	535	481
Toronto rates	33.6	36.5	33.7	34.3	39.8	25.5	25.8	25.9	24.3	20.5	18.5
Ontario less Toronto rates	23.6	23.3	21.3	20.2	26.4	18.6	19.0	20.0	19.2	15.0	16.2
Canada rates	22.2	21.8	22.2	20.1	23.3	18.4	18.4	17.5	19.1	16.1	16.0

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 2.36: Incidence of salmonellosis by age group and sex*. Toronto, 2004



	0-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60+
Male rates	90.4	55.9	29.0	11.9	12.6	10.2	10.4	11.0	13.7
Female rates	80.2	27.5	7.0	15.5	17.7	12.0	11.2	11.2	12.9
Overall rates	85.4	41.9	18.3	13.6	15.2	11.1	11.1	11.1	13.3
Male cases	66	42	22	9	25	23	21	16	27
Female cases	56	20	5	11	36	27	23	18	33

*The sex of one case was not reported.

Age group (years)

Figure 2.37: Number of reported cases of salmonellosis by month. Toronto, 2004 compared to 1994 - 2003 mean

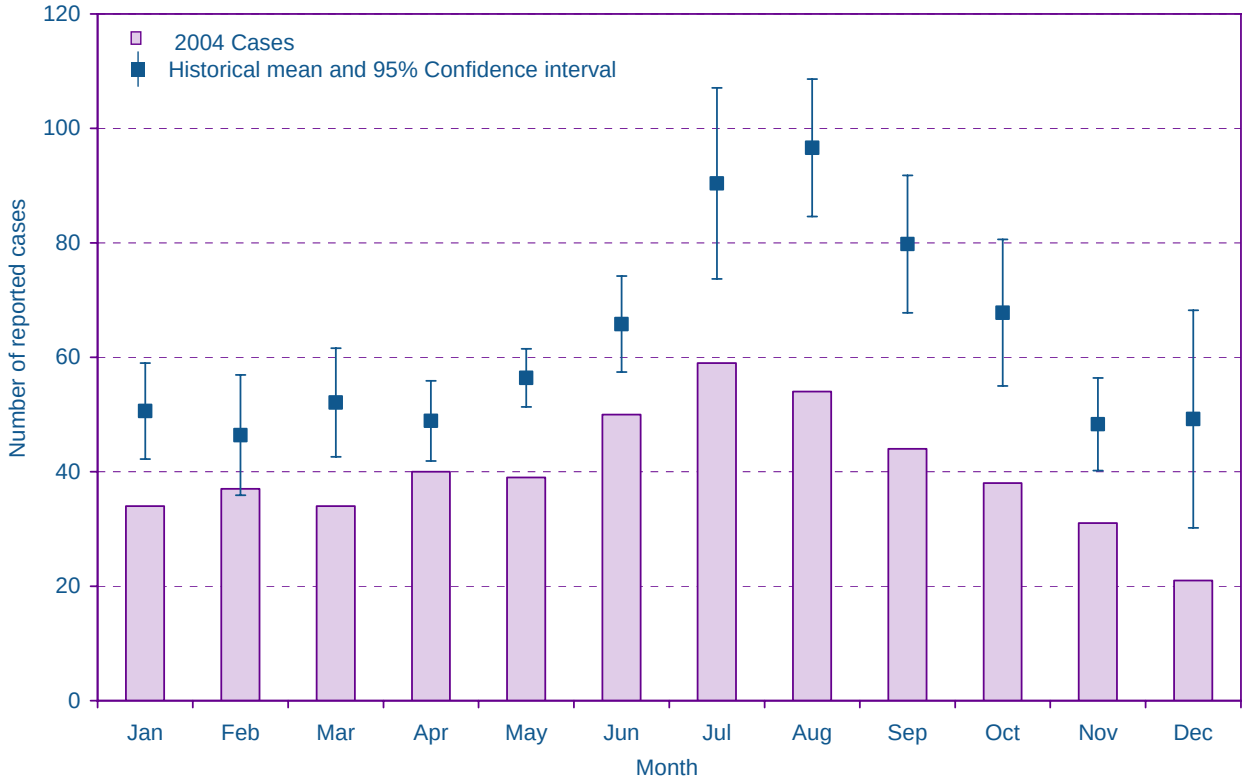


Table 2.11: Ten most prevalent *Salmonella* species. Toronto, 2004 cases compared to previous 5-year mean

***Salmonella* species**	**Number of cases (%)**	
	2004 (N = 454)*	**5-yr mean 1999-2003 (N = 585)***
S. typhimurium	98 (22)	116 (20)
S. enteritidis	87 (19)	102 (17)
S. heidelberg	57 (13)	82 (14)
S. infantis	18 (4)	14 (2)
S. braenderup	14 (3)	10 (2)
S. thompson	14 (3)	25 (4)
S. agona	12 (3)	17 (3)
S. berta	12 (3)	7 (1)
S. hadar	11 (2)	31 (5)
S. newport	7 (2)	14 (2)

*Denominator (N) = number of infections with a type isolated.

Figure 2.38: Proportion of reported cases of salmonellosis by suspected source of infection. Toronto, 2004 (N=481)

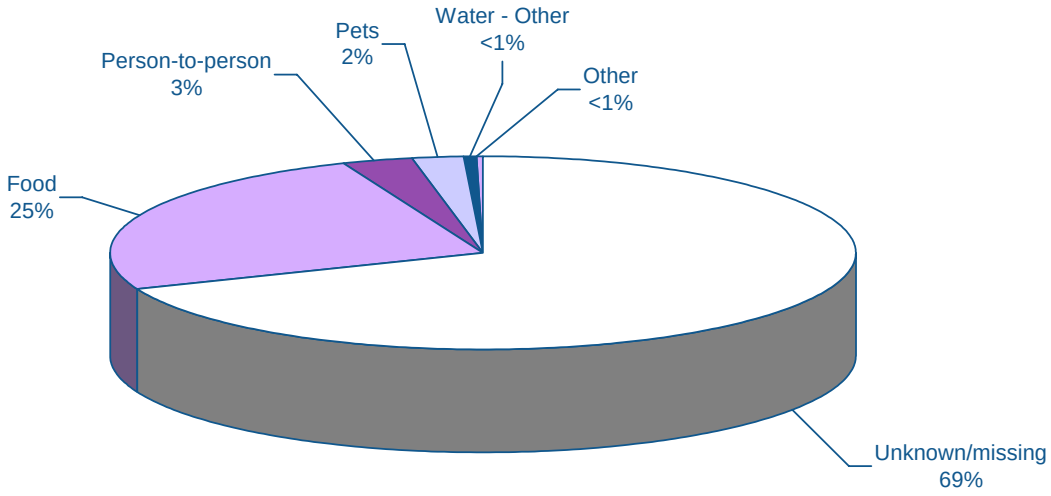
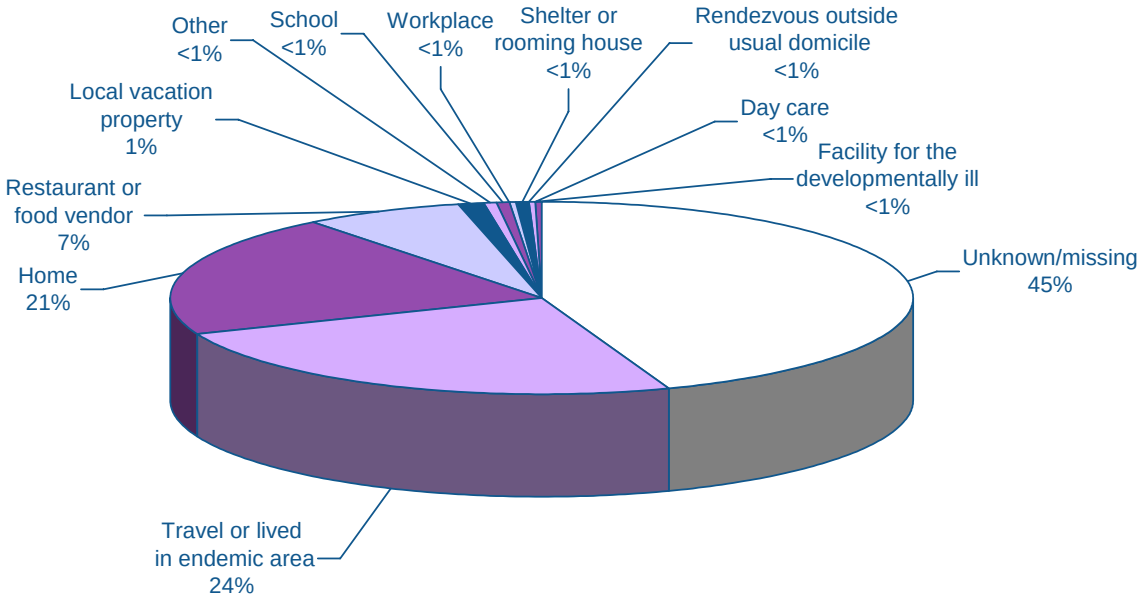


Figure 2.39: Proportion of reported cases of salmonellosis by suspected risk setting. Toronto, 2004 (N=481)



Shigellosis

Table 2.12: Shigellosis summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	100	152	157
Incidence rate (per 100,000 population)			
Overall	3.8	5.9	6.2
Male	4.6	6.5	6.6
Female	3.1	5.3	5.8
Age at onset (years)	Summary statistics		
Mean	32	31	29
Median	34	32	30
Range	<1 75	<1 83	<1 84
Outbreak associated cases (%)	3	33	18
Hospitalization rate (%)	22	6	5

Highlights

- In 2004, there were 100 reported cases (3.8 cases per 100,000) of shigellosis. This represented an increase of two (2%) cases over the 2003 total of 98 (Figure 2.40).

- Outbreak related cases accounted for 3% (n=3) of shigellosis cases in 2004 (Table 2.12). This proportion is comparable to the proportion of outbreak related cases that were reported prior to 2002 (the year there was a large province-wide shigellosis outbreak). Twenty-two percent of all cases (n=22) were treated in hospital in 2004. This is higher than both the 5-year and 10-year means and may be related to the increase in the proportion of the more virulent *Shigella dysenteriae* and *Shigella flexneri* reported in 2004.

- The age group with the highest incidence rate in 2004 was 5 to 9 year olds (7.4 cases per 100,000), followed closely by 40 to 49 year olds (5.7 cases per 100,000) (Figure 2.41).

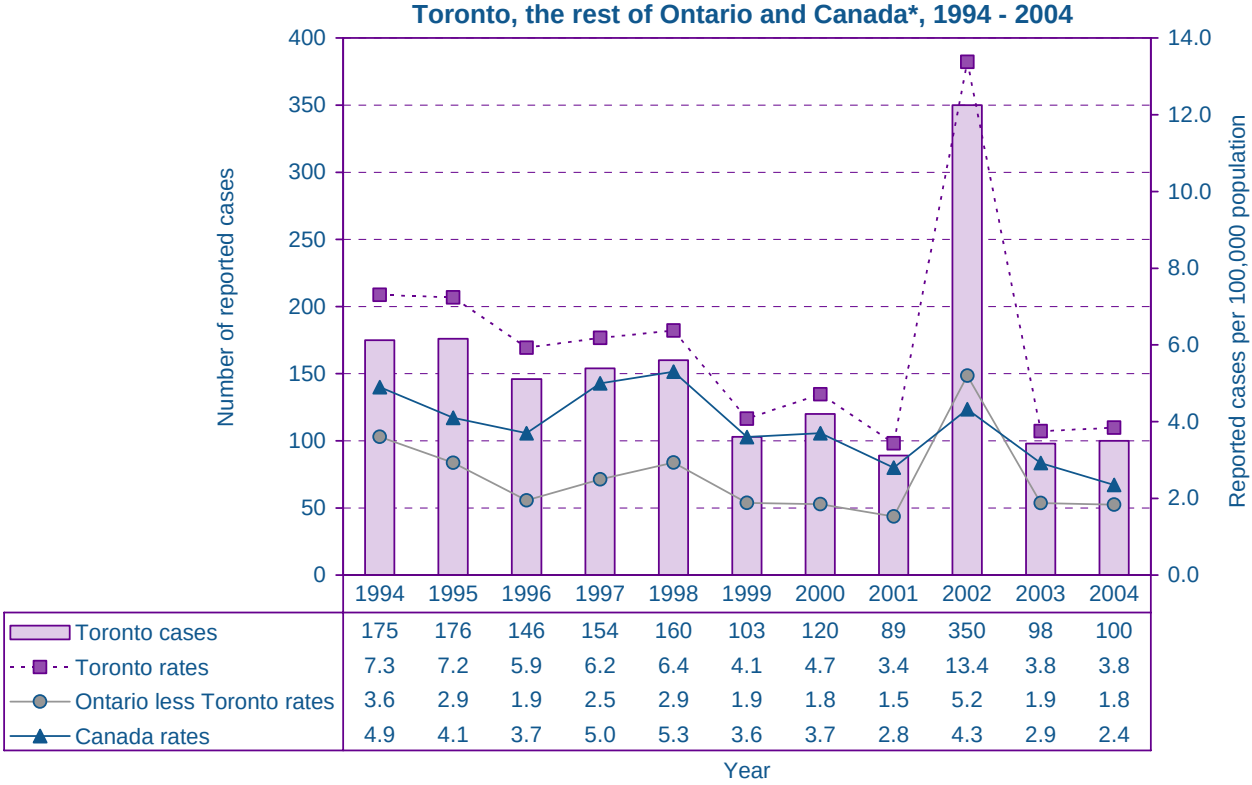
- Males accounted for 58% (n=58) of all shigellosis cases in 2004 and had a rate (4.6 cases per 100,000) 1.5 times the rate for females (3.1 cases per 100,000) (Table 2.12). With the exception of 2002, the year of the provincial *Shigella* outbreak, an increased burden of disease among males has been observed since 1999 (Figure 2.42). This increase may reflect a higher rate of transmission through sexual contact, particularly between men who have sex with men (MSM).

- The number of reports for each month in 2004 was comparable to or lower than the historical mean (Figure 2.43).

- *Shigella sonnei* was the most commonly isolated Shigella species reported in 2004 (56%) but decreased from the 71% of reported *Shigella* cases it comprised in 2003 (Figure 2.44). The difference is accounted for by increases in the proportions of the other 3 species of *Shigella* (*Shigella flexneri*, *Shigella boydii* and *Shigella dysenteriae*) that were reported in 2004.

- The most commonly reported source of infection in 2004 was person-to-person transmission (18%) (Figure 2.45). The most commonly reported risk setting in 2004 was travel outside of Canada to an endemic area (53%) (Figure 2.46).

Figure 2.40: Incidence of shigellosis by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004



*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 2.41: Incidence of shigellosis by age group and sex. Toronto, 2004

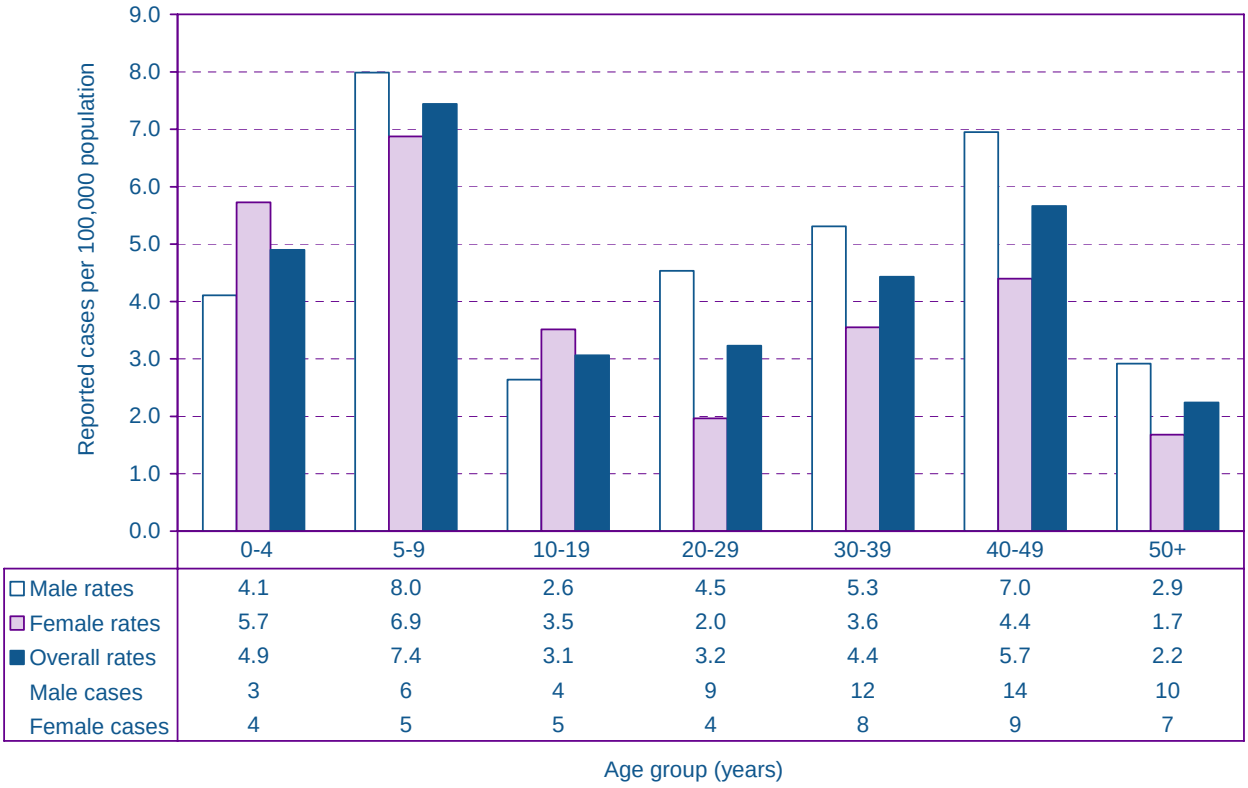
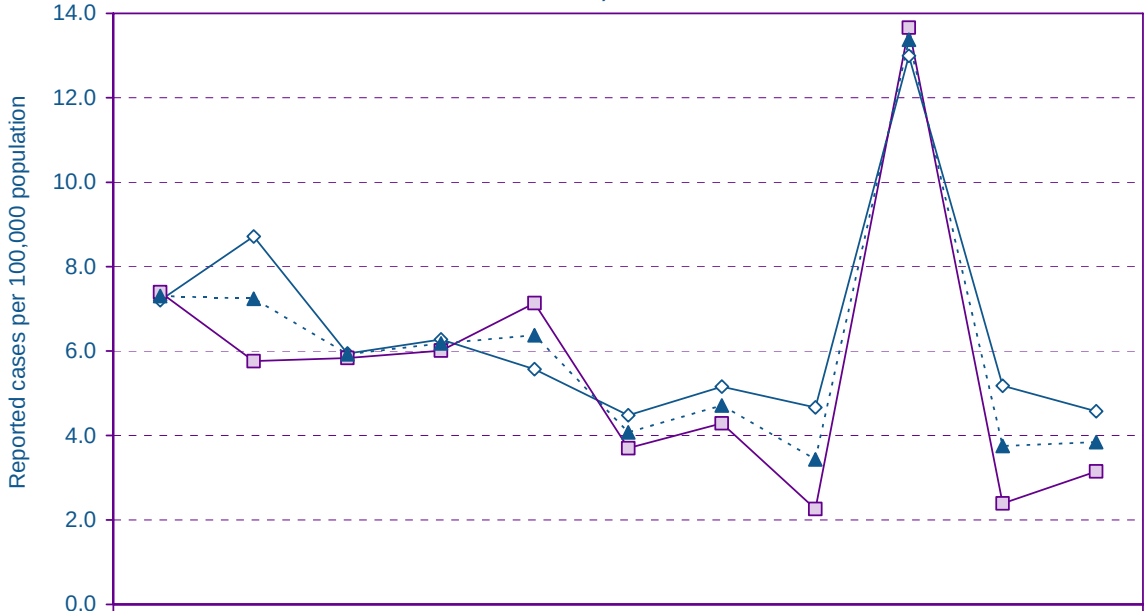


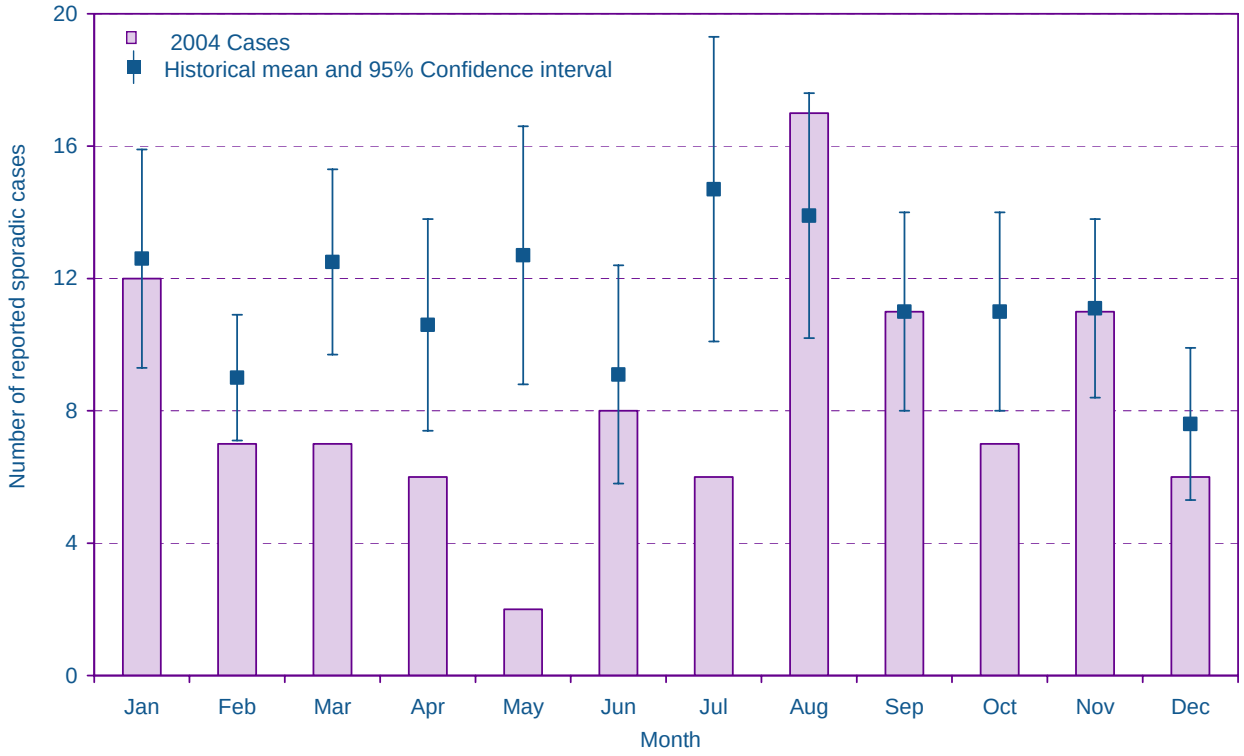
Figure 2.42: Incidence rates of shigellosis by sex and year. Toronto, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Male rates	7.2	8.7	5.9	6.3	5.6	4.5	5.2	4.7	13.0	5.2	4.6
Female rates	7.4	5.8	5.8	6.0	7.1	3.7	4.3	2.3	13.7	2.4	3.1
Overall rates	7.3	7.2	5.9	6.2	6.4	4.1	4.7	3.4	13.4	3.8	3.8

Year

Figure 2.43: Number of reported cases of shigellosis by month. Toronto 2004 compared to 1994 - 2003 mean*



*Excludes the 218 cases associated with a large province-wide shigellosis outbreak in 2002.

Figure 2.44: Proportion of reported cases of shigellosis by agent. Toronto, 2004 (N=100)

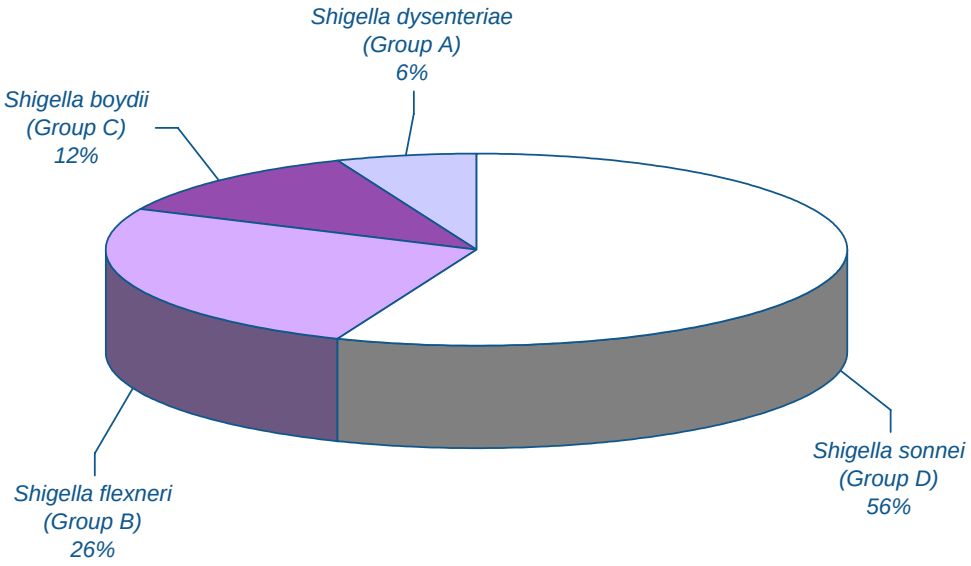


Figure 2.45: Proportion of reported cases of shigellosis by suspected source of infection. Toronto, 2004 (N=100)

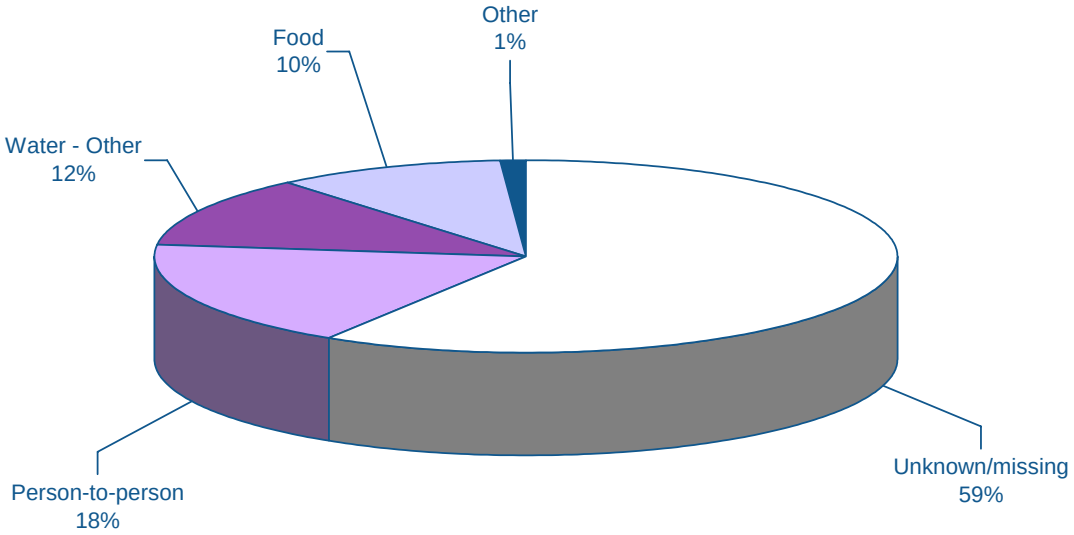
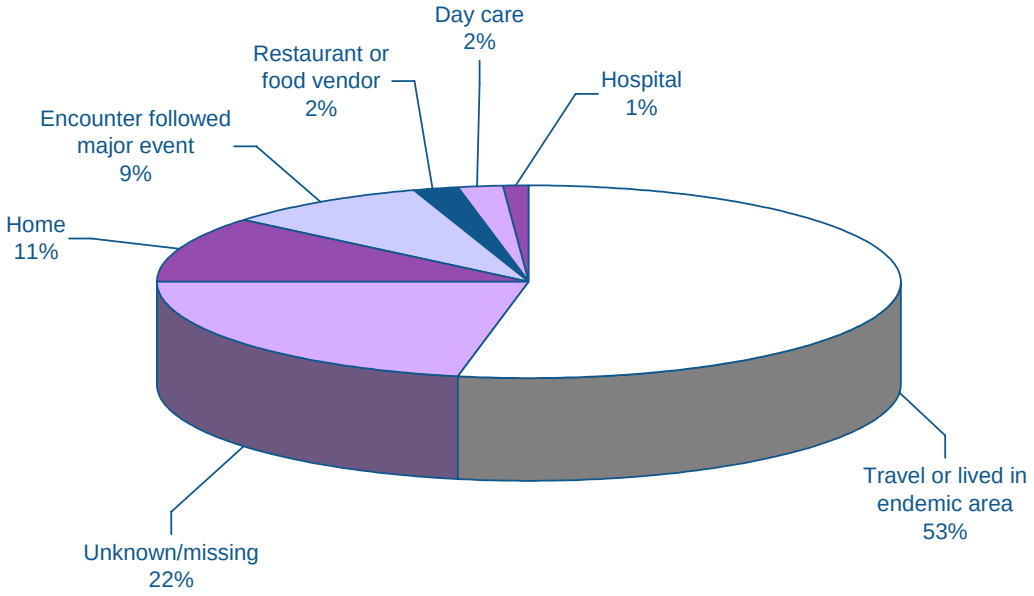


Figure 2.46: Proportion of reported cases of shigellosis by suspected risk setting. Toronto, 2004 (N=100)



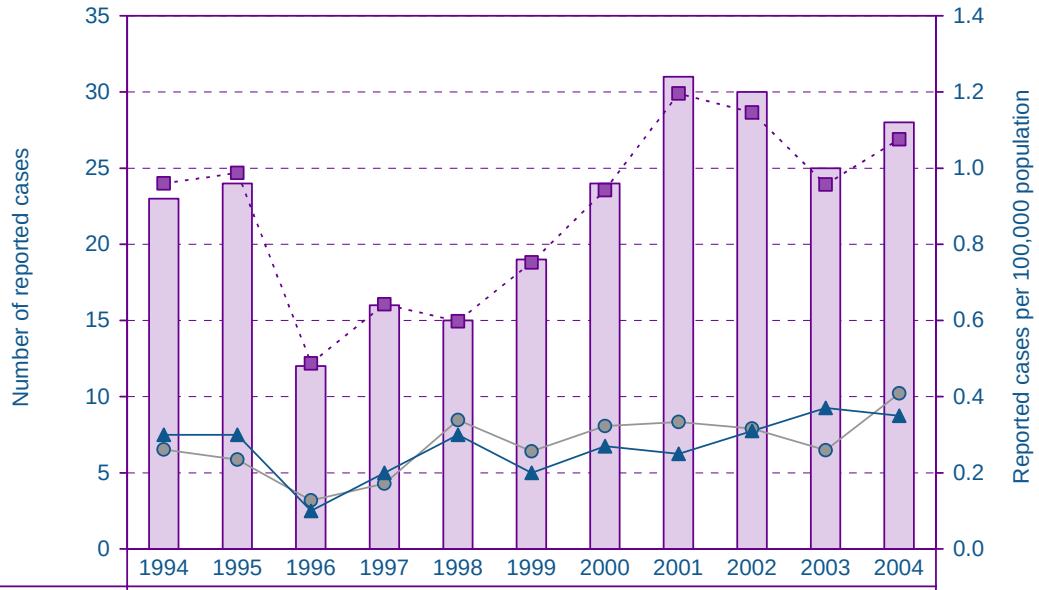
Typhoid fever

Table 2.13: Typhoid fever summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	28	26	22
Incidence rate (per 100,000 population)			
Overall	1.1	1.0	0.9
Male	0.9	1.0	0.9
Female	1.2	1.0	0.8
Age at onset (years)	Summary statistics		
Mean	24	20	22
Median	17	20	22
Range	1 54	<1 58	<1 83

Highlights

- In 2004, there were 28 reported cases (1.1 cases per 100,000) of typhoid fever. This represented an increase of three cases (12%) over the 2003 total of 25 cases (Figure 2.47).
- In 2004, the number of reports in February, May, June and August exceeded the historical means for those months (Figure 2.49). The highest number of cases was reported in June.
- The source of infection was unknown in 81% (n=23) of typhoid fever cases in 2004. Of the cases with a recorded source of infection, the most commonly reported sources of infection were food (11%) and person-to-person transmission (4%) (Figure 2.50). Travel outside of Canada to an endemic area was the most common risk setting for acquiring typhoid fever (96%) (Figure 2.51). Of the 27 cases with known travel destinations, 56% (n=15) travelled to India, 15% (n=4) travelled to Pakistan, 15% (n=4) traveled to Bangladesh and one case each travelled to Africa, Kuwait, Vietnam, Philippines, El Salvador and Saudi Arabia.

Figure 2.47: Incidence of typhoid fever by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

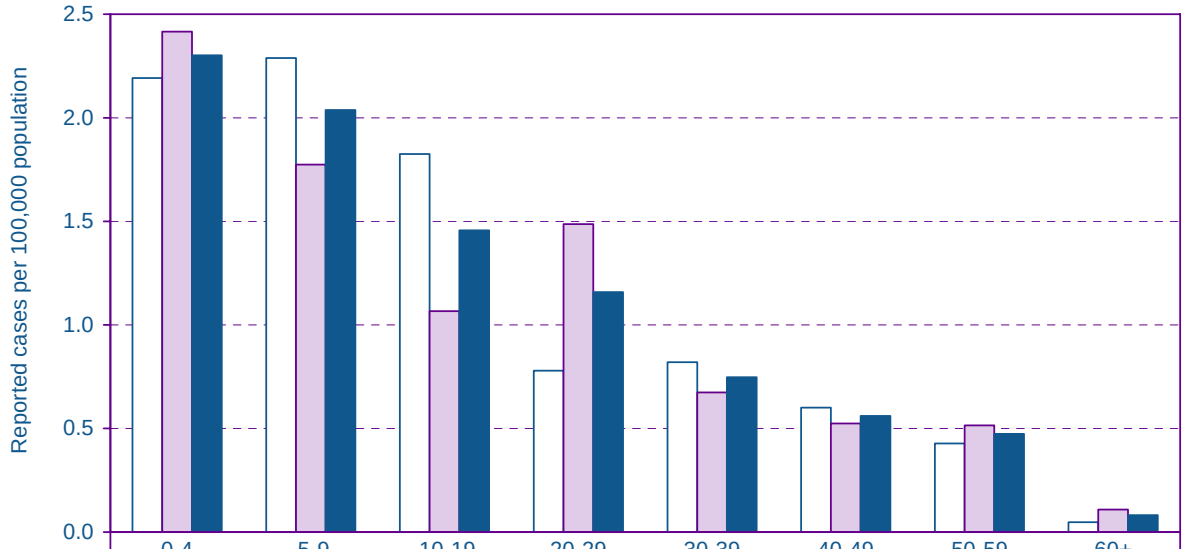


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	23	24	12	16	15	19	24	31	30	25	28
Toronto rates	1.0	1.0	0.5	0.6	0.6	0.8	0.9	1.2	1.1	1.0	1.1
Ontario less Toronto rates	0.3	0.2	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4
Canada rates	0.3	0.3	0.1	0.2	0.3	0.2	0.3	0.3	0.3	0.4	0.4

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 2.48: Incidence of typhoid fever by age group and sex*. Toronto, 1994 - 2004 combined



	0-4	5-9	10-19	20-29	30-39	40-49	50-59	60+
Male rates	2.2	2.3	1.8	0.8	0.8	0.6	0.4	<0.1
Female rates	2.4	1.8	1.1	1.5	0.7	0.5	0.5	0.1
Overall rates	2.3	2.0	1.5	1.2	0.7	0.6	0.5	<0.1
Male cases	19	19	29	17	21	12	6	1
Female cases	20	14	16	33	17	11	8	3

*The sex of one case was not reported.

Age group (years)

Figure 2.49: Number of reported cases of typhoid fever by month. Toronto, 2004 compared to 1994 - 2003 mean

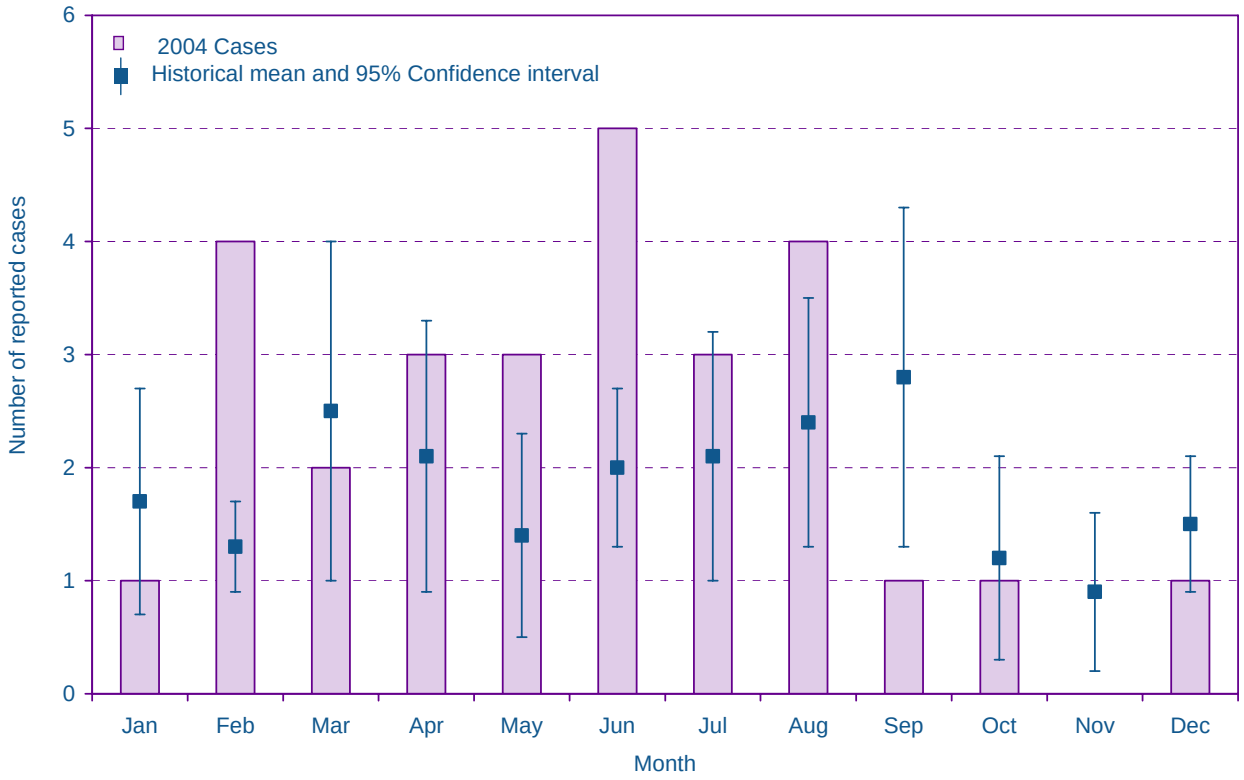


Figure 2.50: Proportion of reported cases of typhoid fever by suspected source of infection. Toronto, 2004 (N=28)

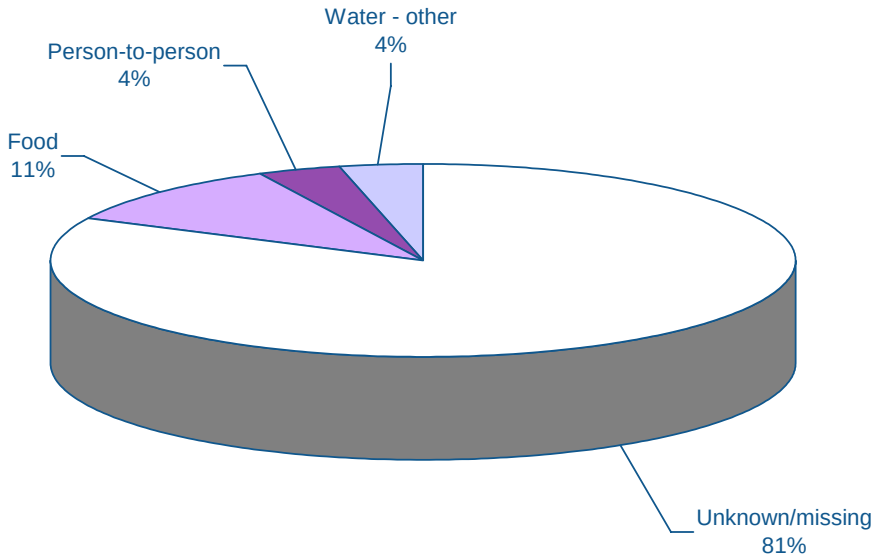
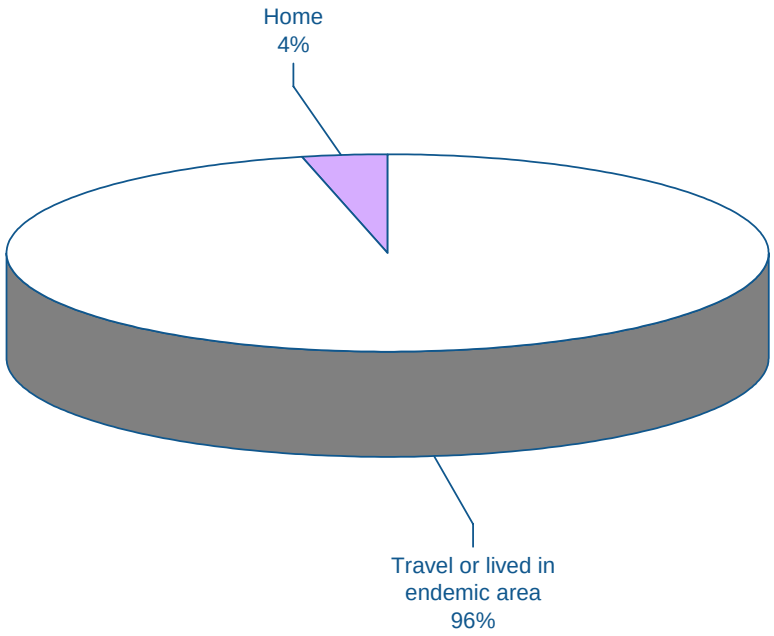


Figure 2.51: Proportion of reported cases of typhoid fever by suspected risk setting. Toronto, 2004 (N=28)



Verotoxin-producing *E. coli* (VTEC) infection

Table 2.14: Verotoxin-producing *E. coli* infection summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	50	59	73
Incidence rate (per 100,000 population)			
Overall	1.9	2.3	2.9
Male	1.7	2.2	2.9
Female	2.2	2.4	2.8
Age at onset (years)	Summary statistics		
Mean	24	27	25
Median	13	16	15
Range	<1 83	<1 92	<1 92
Outbreak associated cases (%)	8	14	6
Hospitalization rate (%)	34	23	20

Highlights

- In 2004, there were 50 reported cases (1.9 cases per 100,000) of verotoxin-producing *E. coli* (VTEC). This represented a decrease of five cases (9%) from the 2003 total of 55 cases (Figure 2.52). Of these cases, 34% (n=17) were treated in a hospital and no related deaths were reported (Table 2.14). The hospitalization rate in 2004 was higher than the rate in previous 5-year and 10-year periods. Hemolytic–uremic syndrome (HUS) was reported in two cases (4%).

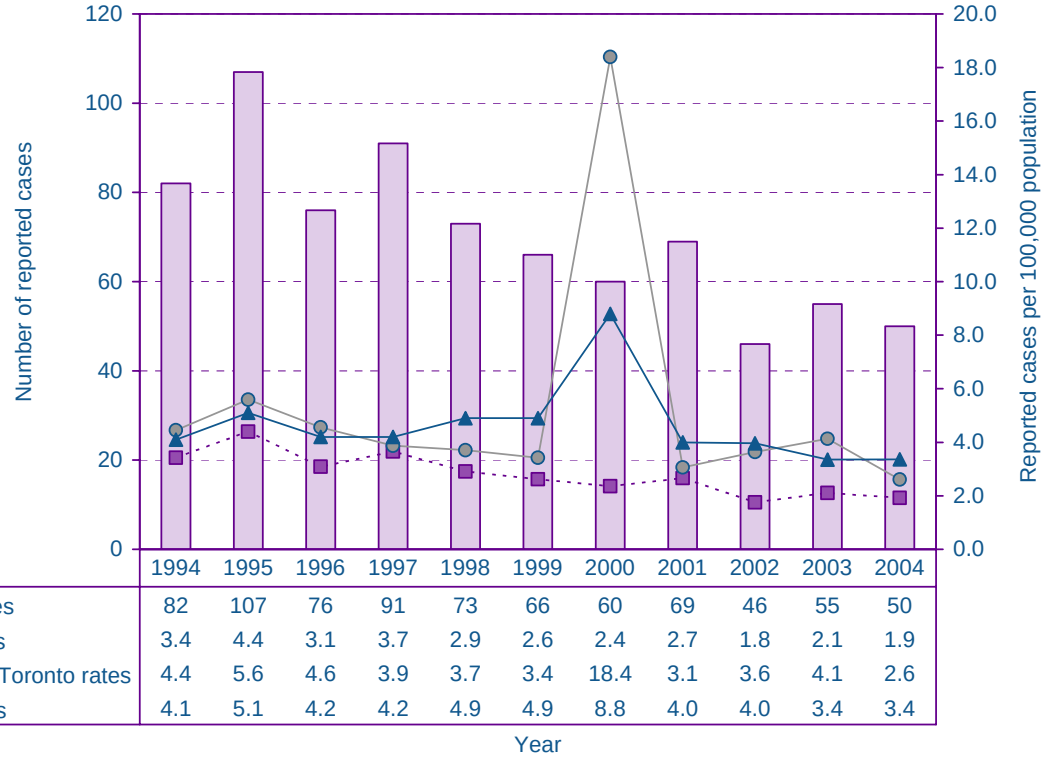
- In 2004, four cases (8%) were outbreak associated which is lower than the proportion of outbreak associated cases observed in the previous 5-year period but comparable to the proportion observed over the previous 10-year period (Table 2.14).

- VTEC disproportionately affects the young. In 2004, 46% (n=23) of reported cases were less than 10 years of age.

- The number of reports for each month in 2004 was comparable to or lower than the historical mean (Figure 2.54). The highest numbers of cases were reported in July.

- The most commonly reported source of infection in 2004 was food (32%) (Figure 2.55). The most commonly reported risk setting in 2004 was the home environment (44%) (Figure 2.56).

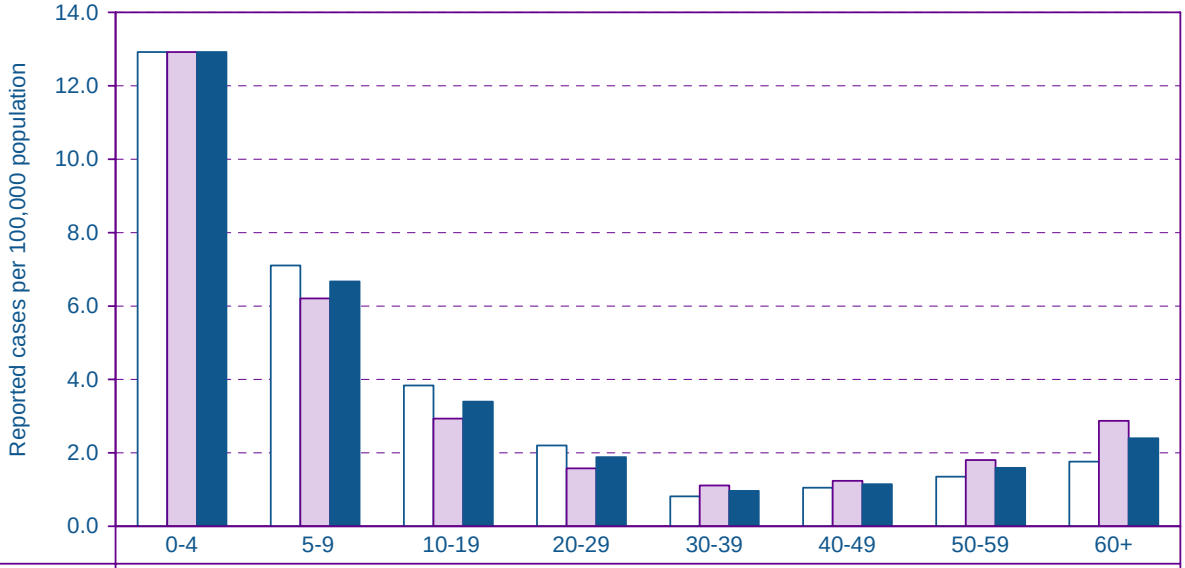
Figure 2.52: Incidence of verotoxin-producing *E. coli* infection by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	82	107	76	91	73	66	60	69	46	55	50
Toronto rates	3.4	4.4	3.1	3.7	2.9	2.6	2.4	2.7	1.8	2.1	1.9
Ontario less Toronto rates	4.4	5.6	4.6	3.9	3.7	3.4	18.4	3.1	3.6	4.1	2.6
Canada rates	4.1	5.1	4.2	4.2	4.9	4.9	8.8	4.0	4.0	3.4	3.4

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 2.53: Incidence of verotoxin-producing *E. coli* infection by age group* and sex. Toronto, 1994 - 2004 combined



	0-4	5-9	10-19	20-29	30-39	40-49	50-59	60+
Male rates	12.9	7.1	3.8	2.2	0.8	1.1	1.4	1.8
Female rates	12.9	6.2	2.9	1.6	1.1	1.2	1.8	2.9
Overall rates	12.9	6.7	3.4	1.9	1.0	1.1	1.6	2.4
Male cases	112	59	61	48	21	21	19	37
Female cases	107	49	44	35	28	26	28	79

*The age of one case was not reported.

Figure 2.54: Number of reported cases of verotoxin-producing *E. coli* infection by month. Toronto, 2004 compared to 1994 - 2003 mean

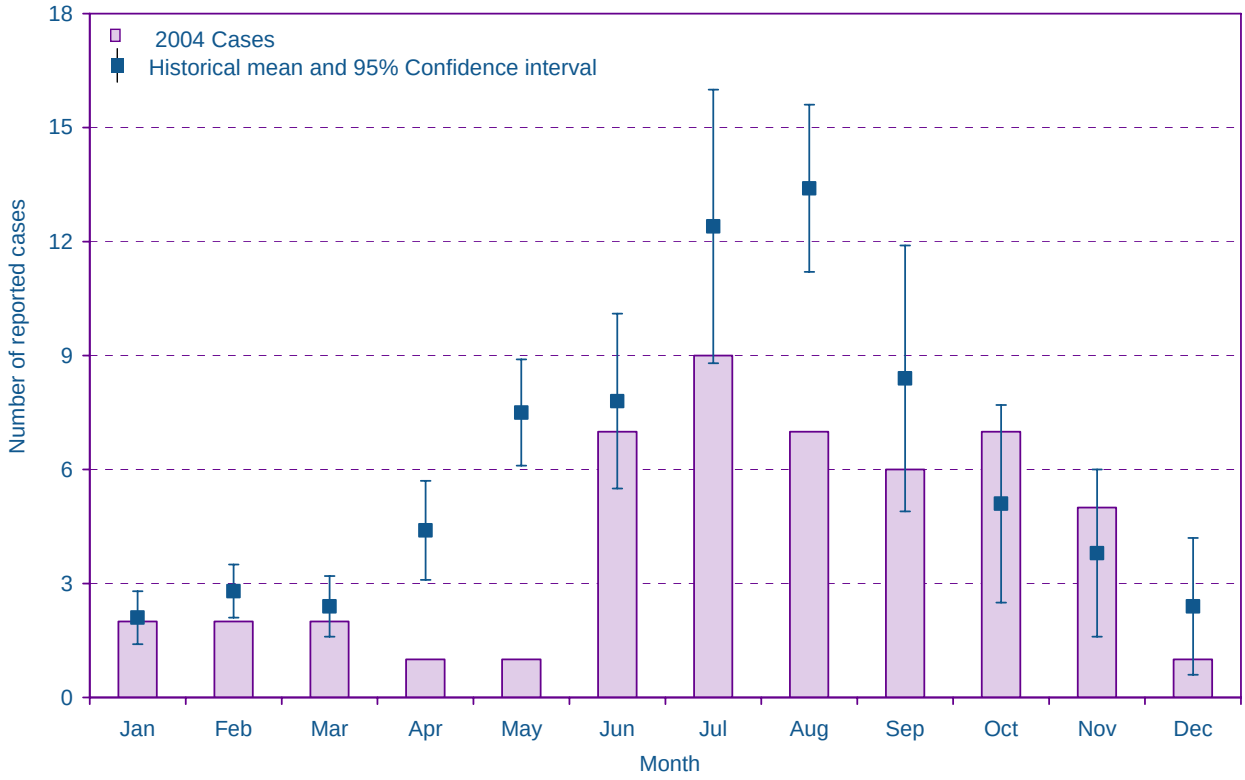


Figure 2.55: Proportion of reported cases of verotoxin-producing *E. coli* infection by suspected source of infection. Toronto, 2004 (N=50)

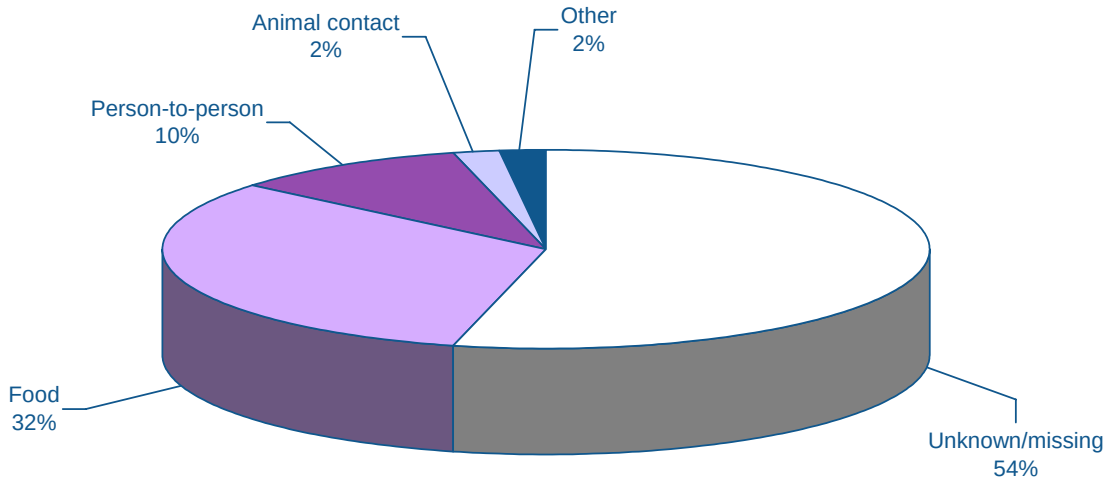
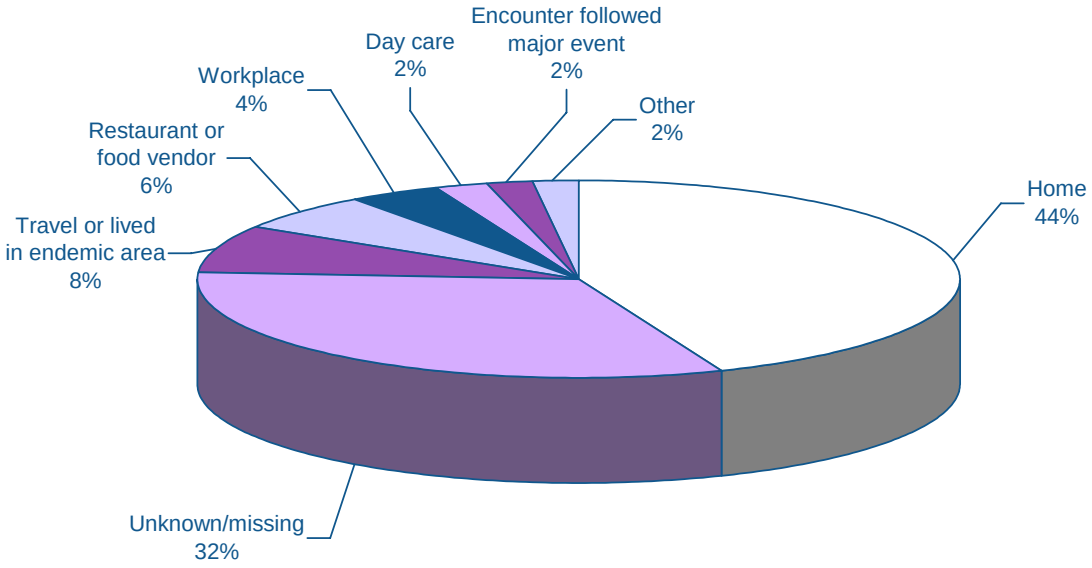


Figure 2.56: Proportion of reported cases of verotoxin-producing *E. coli* infection by suspected risk setting. Toronto, 2004 (N=50)



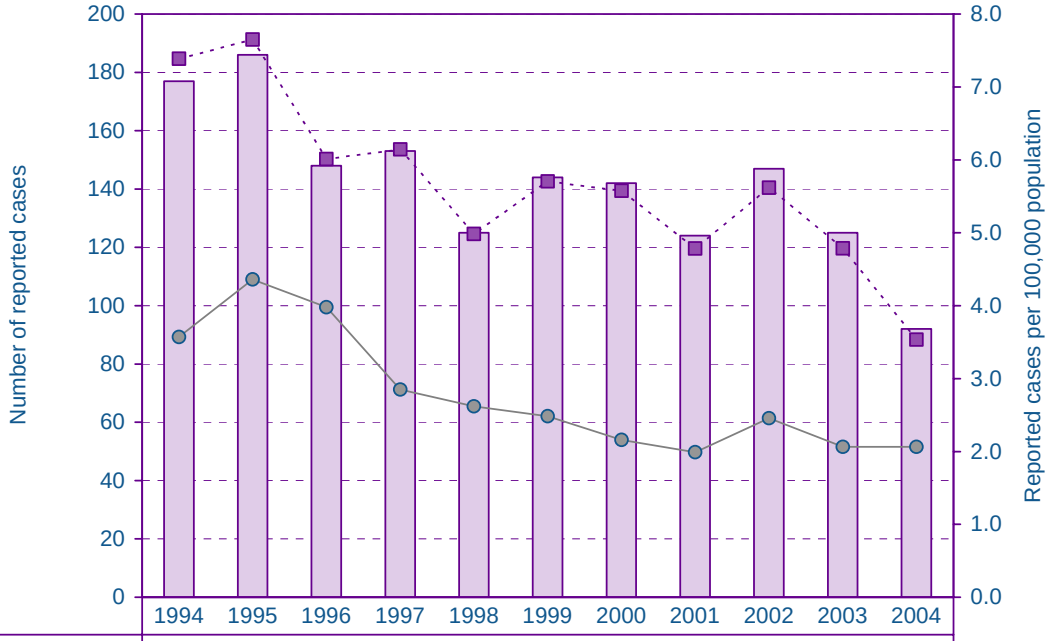
Yersiniosis

Table 2.15: Yersiniosis summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	92	136	147
Incidence rate (per 100,000 population)			
Overall	3.5	5.3	5.8
Male	4.1	5.9	6.7
Female	3.0	4.7	5.0
Age at onset (years)	Summary statistics		
Mean	16	20	19
Median	8	11	10
Range	<1 66	<1 101	<1 101

Highlights

- In 2004, there were 92 reported cases (3.5 cases per 100,000) of yersiniosis. This represented a decrease of 33 cases (26%) from the 2003 total of 125 cases (Figure 2.57).
- Compared to 2003, all age groups experienced a decrease in rates in 2004 except those 5 to 9 years of age.
- Males accounted for 57% (n=52) of all yersiniosis cases in 2004 and experienced higher or comparable rates of disease compared with females in all age groups except for those 40 to 49 years and those over 60 years of age (Figure 2.58).
- The number of reported cases for each month in 2004 was either comparable to or lower than the historical mean (Figure 2.59). The highest number of cases were reported in March.
- The most commonly reported source of infection in 2004 was food (15%) (Figure 2.60). The most commonly reported risk setting was the home environment (18%) (Figure 2.61).

Figure 2.57: Incidence of yersiniosis by year. Toronto and the rest of Ontario, 1994 - 2004

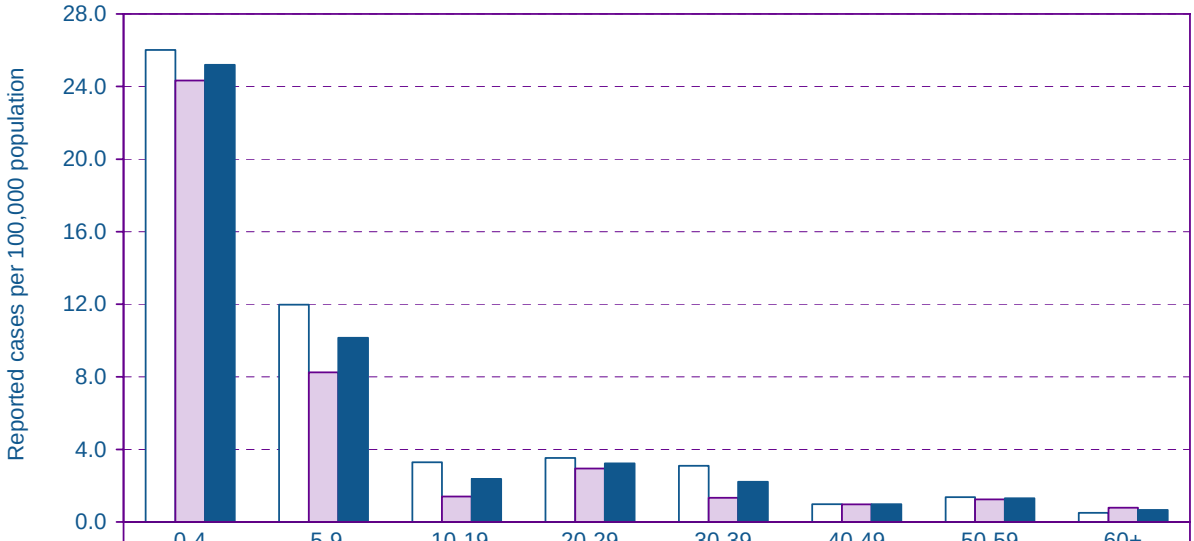


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	177	186	148	153	125	144	142	124	147	125	92
Toronto rates	7.4	7.7	6.0	6.1	5.0	5.7	5.6	4.8	5.6	4.8	3.5
Ontario less Toronto rates	3.6	4.4	4.0	2.8	2.6	2.5	2.2	2.0	2.5	2.1	2.1

Yersiniosis is not nationally notifiable.

Year

Figure 2.58: Incidence of yersiniosis by age group and sex. Toronto, 2004



	0-4	5-9	10-19	20-29	30-39	40-49	50-59	60+
Male rates	26.0	12.0	3.3	3.5	3.1	1.0	1.4	0.5
Female rates	24.3	8.3	1.4	2.9	1.3	1.0	1.2	0.8
Overall rates	25.2	10.1	2.4	3.2	2.2	1.0	1.3	0.7
Male cases	19	9	5	7	7	2	2	1
Female cases	17	6	2	6	3	2	2	2

Age group (years)

**Figure 2.59: Number of reported cases of yersiniosis by month.
Toronto, 2004 compared to 1994 - 2003 mean**

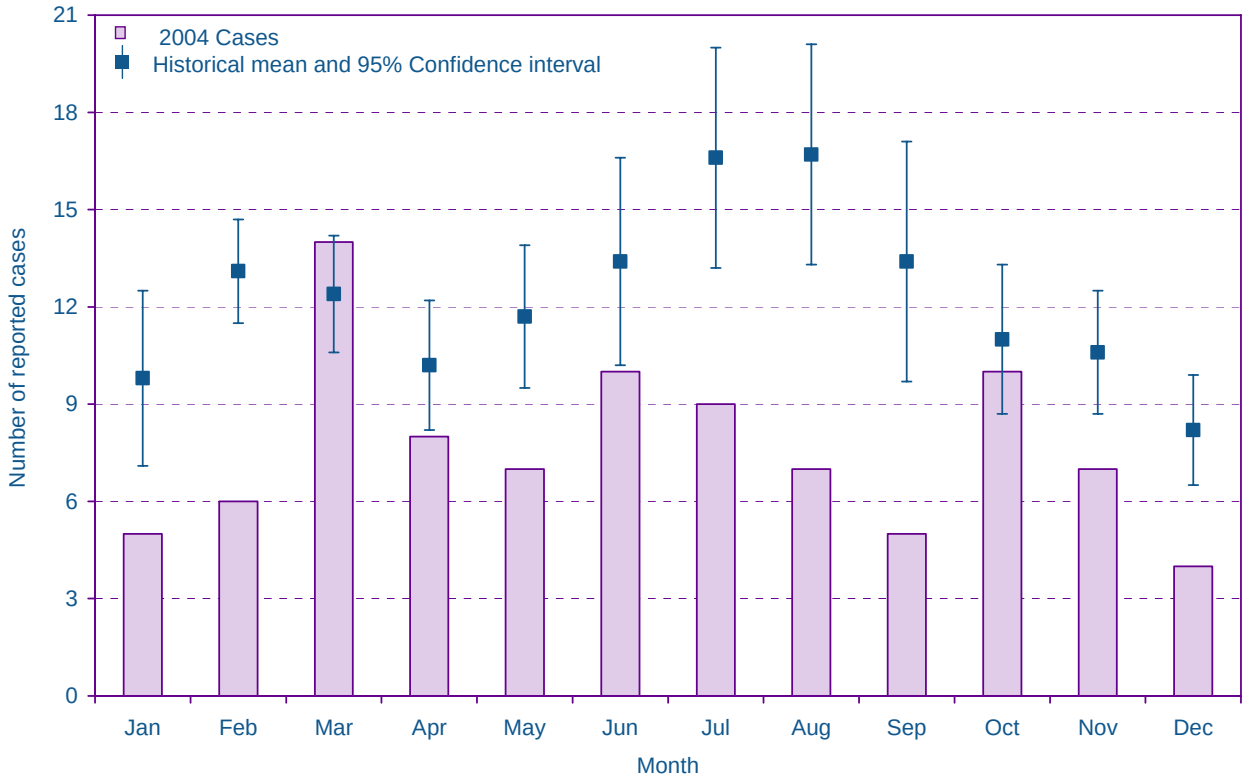


**Figure 2.60: Proportion of reported cases of yersiniosis by suspected source of infection.
Toronto, 2004 (N=92)**

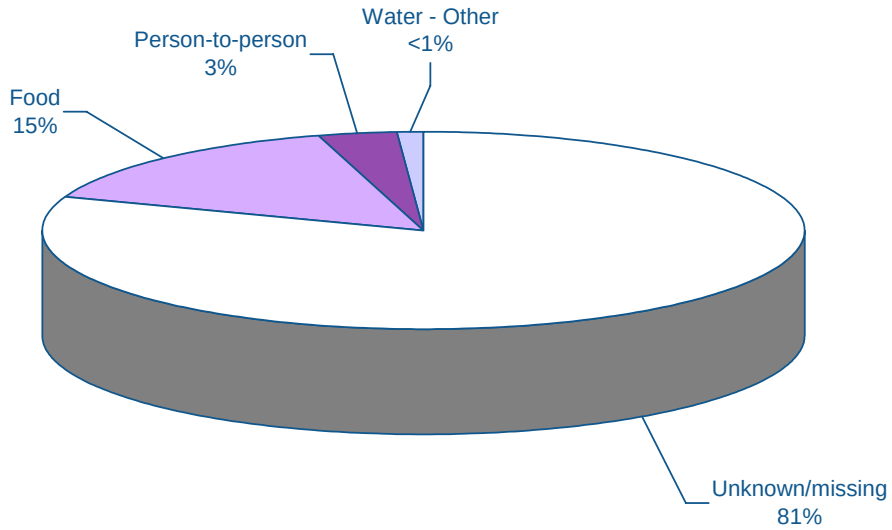
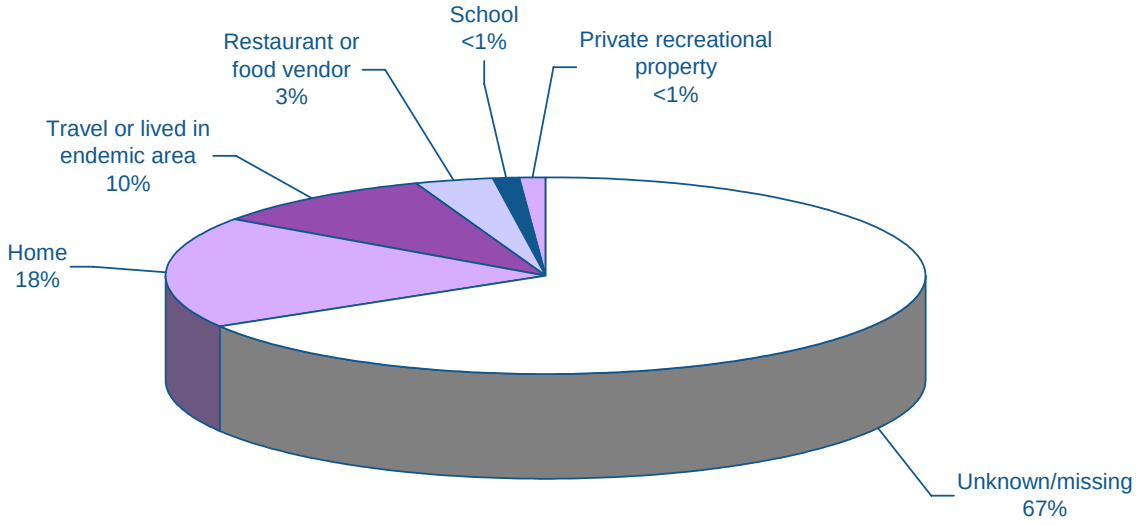


Figure 2.61: Proportion of reported cases of yersiniosis by suspected risk setting. Toronto, 2004 (N=92)



Diseases Preventable by Routine Vaccination

Communicable Diseases in Toronto

2004

Toronto Public Health

Diseases Preventable by Routine Vaccination

This section focuses on diseases caused by agents that can be spread through a variety of ways, but for which there is an effective vaccine that is readily available and routinely used. Due in large part to the successful use and efficacy of the respective vaccines, the majority of these diseases are rare in Toronto. Relative proportions of each disease within this grouping, and their ranking are listed below. In 2004, influenza accounted for 90% of reports falling into this category. ❑

Table 3.1: Number and proportion of reported cases of vaccine preventable diseases. Toronto, 2004

Ranking	Reportable disease	Number of cases	Proportion of cases (%)
1	Influenza*	941	90
2	Pertussis	92	9
3	*Haemophilus influenzae* b disease, invasive	3	<1
4	Mumps	2	<1
5	Rubella, congenital syndrome	1	<1
5	Measles	1	<1
5	Rubella	1	<1
	Total	**1041**	**100**

*Seasonal year from July to June (e.g. 2004/05 includes cases from July 1, 2004 to June 30, 2005)

Rare reportable diseases not summarized in this section include diphtheria, poliomyelitis, smallpox and tetanus.

Influenza

Note: Client information for only laboratory-confirmed cases of influenza are captured in RDIS and included in this section. These data are mostly sporadic cases, which tend to be younger and healthier than outbreak associated cases reported to public health.

Table 3.2: Influenza summary data

Toronto

	2004/05	5-yr period 1999/00-2003/04	10-yr period 1994/95-2003/04
	Total	Means	
Number of reported cases	941	340	340
Incidence rate (per 100,000 population)			
Overall	36.1	13.2	13.5
Male	33.2	13.1	12.7
Female	39.0	13.2	14.2
Age at onset (years)	Summary statistics		
Mean	50	35	38
Median	62	14	23
Range	<1 104	<1 102	<1 106
Case fatality (%)	1	1	<1
Influenza outbreaks	103	32	NA

NA: Not available. Influenza outbreaks occurring in institutions first became reportable in Ontario in 1998.

Highlights

- In the 2004/05 season, there were 941 reported laboratory-confirmed cases (36.1 cases per 100,000) of influenza. This represented an increase of 325 cases (53%) over the previous season total of 616 cases (Figure 3.1) and the highest incidence of influenza during the surveillance period. This increase was largely due to the appearance of a new A/California strain of influenza, which was not included in the vaccine for the 2004/05 season.

- As in the previous season, influenza type A was the predominant strain reported in Toronto during the 2004/05 season. It accounted for 68% (n=638) of all the laboratory-confirmed cases and was identified as the etiologic agent in 77% (n=241) of outbreak associated cases.

- In the 2004/05 season, there were 103 influenza outbreaks reported (Table 3.2). This represented an increase of 43 outbreaks (72%) over the 60 outbreaks during the previous season.

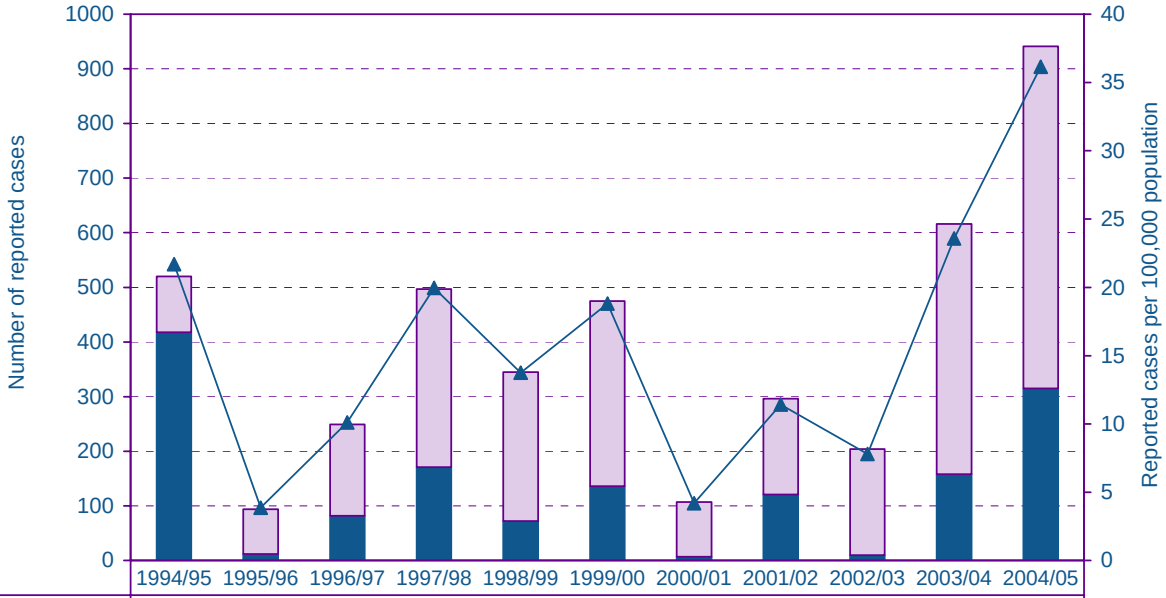
- Toronto's rate of influenza was lower than the rate reported for the rest of Ontario during the 2004/05 season (Figure 3.2).

- Compared to the 2003/04 season, influenza rates increased in all age groups except those less than 5 years of age and those 20 to 29 years of age. Although the highest rate was among those 85 years and older, the largest increase was noted in the 40 to 49 year age group (7.9 times the rate reported for 2003/04 season). The incidence rate for children less than 1 year of age decreased from 325.0 cases per 100,000 in the 2003/04 season to 266.8 cases per 100,000 during the current season.

- The first laboratory-confirmed case for the 2004/05 season had an earlier onset date (October 2, 2004) than what was reported in the previous season (October 24, 2003).

- During the 2004/05 season, the distribution of cases shifted to later in the year than 2003/04 season. The number of reports for each month from January to April exceeded historical means for those months (Figure 3.4). Influenza reports for February were 5 times the 10-year historical mean.

Figure 3.1: Incidence of influenza by seasonal year*. Toronto, 1994/95 - 2004/05

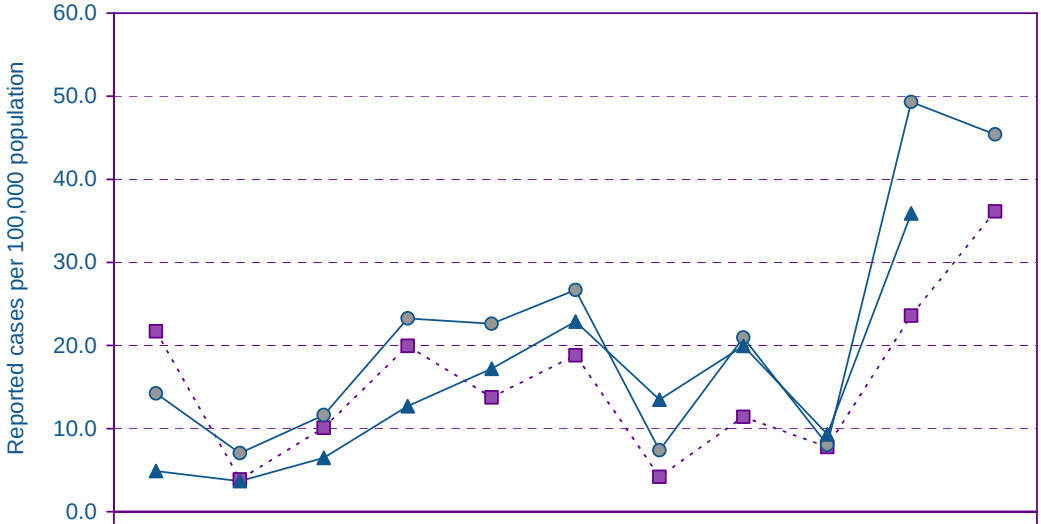


	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Sporadic cases	102	82	167	326	273	339	100	175	194	458	626
Outbreak cases	418	12	82	171	72	136	7	121	10	158	315
Overall cases	520	94	249	497	345	475	107	296	204	616	941
Overall rates	21.7	3.9	10.1	20.0	13.7	18.8	4.2	11.4	7.8	23.6	36.1

Seasonal year

*Seasonal year from July to June (i.e. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

Figure 3.2: Incidence of influenza by seasonal year*. Toronto, the rest of Ontario and Canada†, 1994/95 - 2004/05



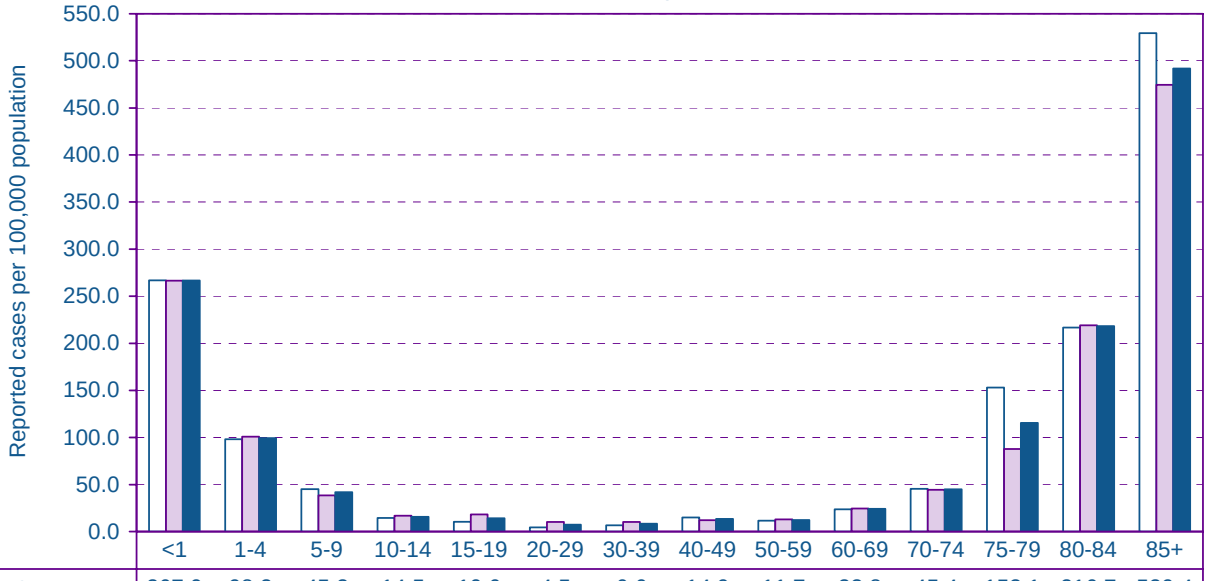
	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Toronto rates	21.7	3.9	10.1	20.0	13.7	18.8	4.2	11.4	7.8	23.6	36.1
Ontario less Toronto rates	14.2	7.1	11.6	23.3	22.6	26.7	7.4	20.9	8.0	49.3	45.4
Canada rates	4.9	3.7	6.5	12.7	17.2	22.9	13.5	19.9	9.3	35.9	NA

Year

*For Toronto, the seasonal year includes July to June (e.g. 2004/05 includes cases from July 1, 2004 to June 30, 2005). For Ontario and Canada the seasonal year is from October to June (e.g. 2004/05 includes cases from October 1, 2004 to June 30, 2005).

†Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan. NA: 2004-05 Canada rates not available.

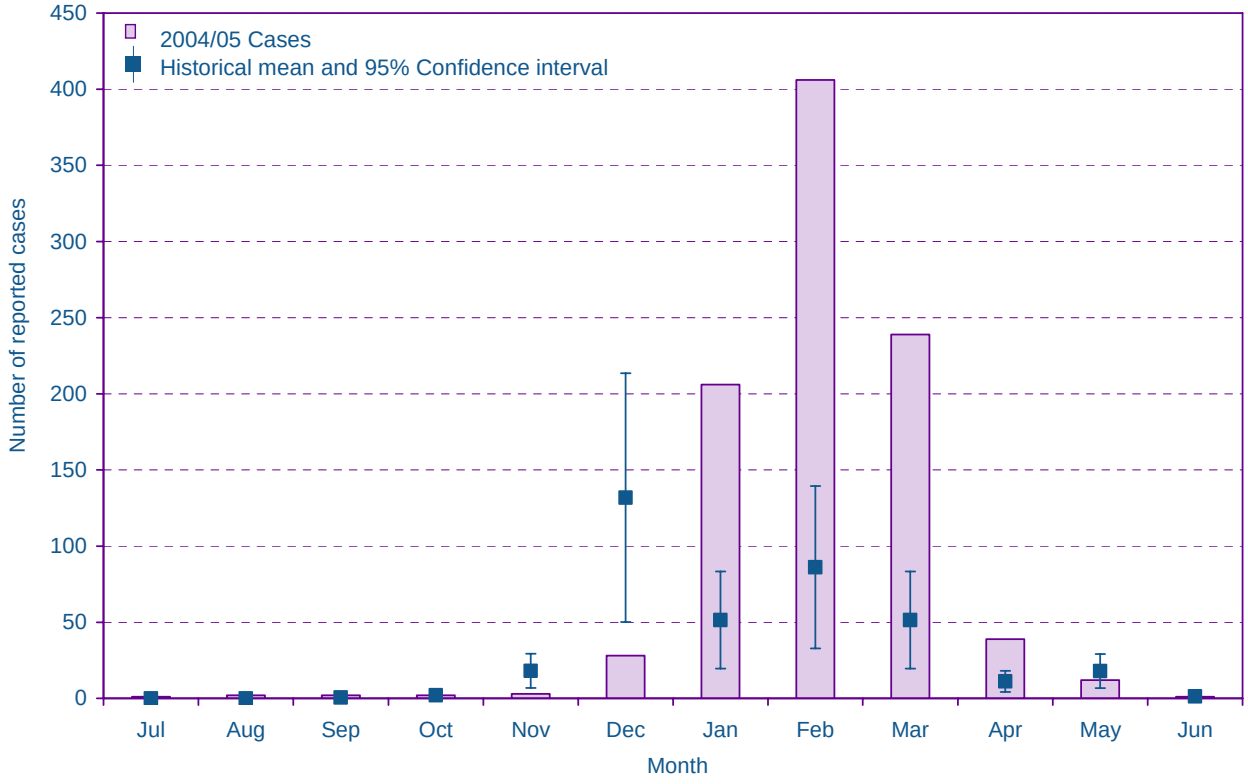
Figure 3.3: Incidence of influenza by age group and sex. Toronto, 2004/05



	<1	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70-74	75-79	80-84	85+
Male rates	267.0	98.2	45.2	14.5	10.6	4.5	6.6	14.9	11.7	23.8	45.4	153.1	216.7	529.4
Female rates	266.5	100.7	38.5	16.8	18.3	10.3	10.2	12.2	13.0	24.5	44.5	87.6	219.1	474.3
Overall rates	266.8	99.4	41.9	15.6	14.3	7.5	8.4	13.5	12.4	24.2	44.9	115.5	218.1	491.8
Male cases	40	57	34	11	8	9	15	30	17	22	18	48	46	66
Female cases	38	56	28	12	13	21	23	25	21	26	21	37	72	127

Age group (years)

Figure 3.4: Number of reported cases of influenza by month. Toronto, 2004/05 compared to 1994/95 - 2003/04 mean



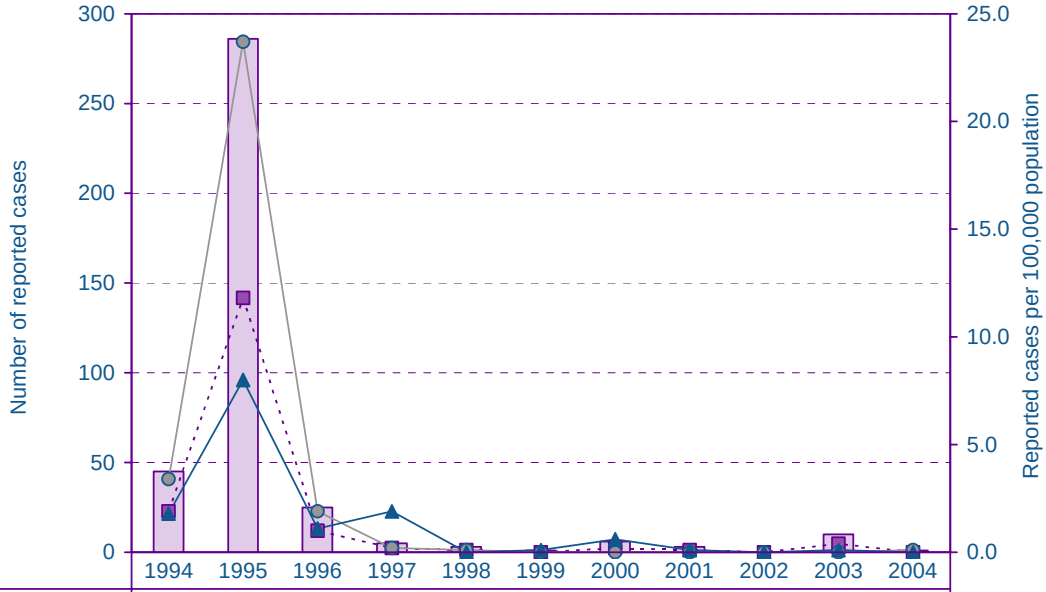
Measles

Table 3.3: Measles summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	1	4	38
Incidence rate (per 100,000 population)			
Overall	<0.1	0.2	1.5
Male	0.0	0.2	1.8
Female	<0.1	0.1	1.3
Age at onset (years)	Summary statistics		
Mean	<1	15	12
Median	<1	9	11
Range	<1 <1	<1 42	<1 42

Highlights

- In 2004, there was one reported case (<0.1 cases per 100,000) of measles. This represented a decrease of nine cases (90%) from the 2003 total of 10 cases (Figure 3.5), and more in keeping with numbers reported in the recent past.
- This measles case was an unvaccinated infant 10 months of age who was born in Canada. This case was travel-related and was associated with a medical office in Pakistan.
- Toronto's rate of measles was comparable to the rate reported for the rest of Ontario and Canada in 2004 (Figure 3.5).

Figure 3.5: Incidence of measles by year.
Toronto, the rest of Ontario and Canada*, 1994 - 2004

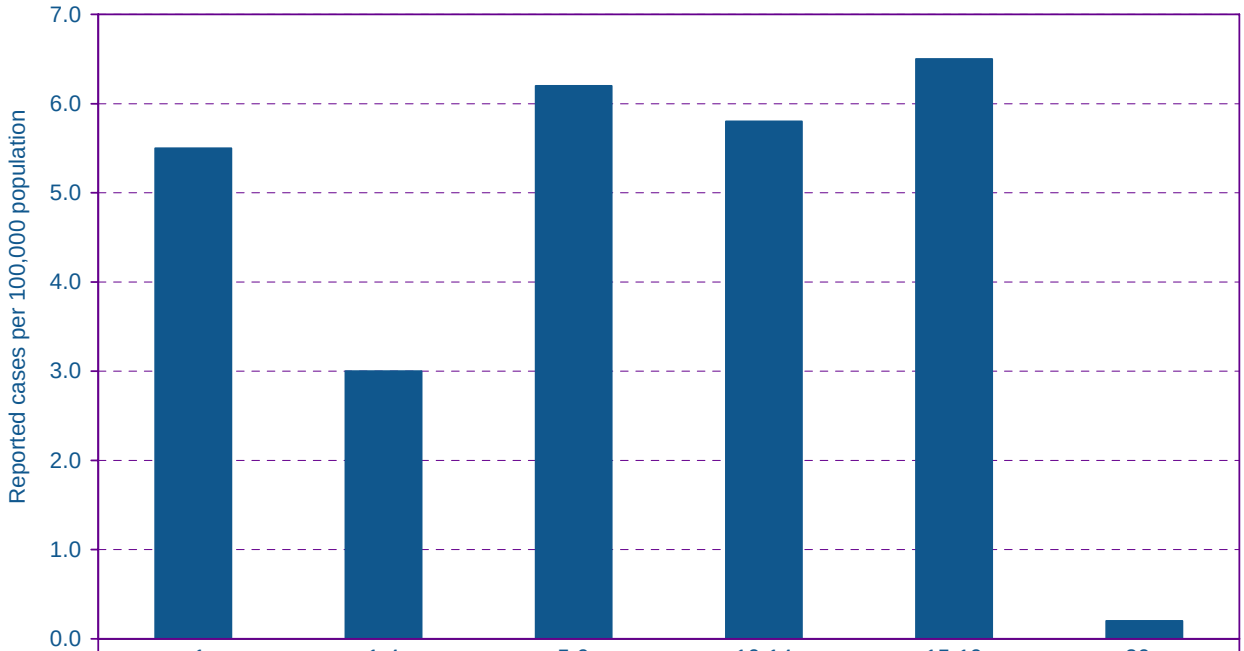


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	45	286	25	5	3	1	6	3	0	10	1
Toronto rates	1.9	11.8	1.0	0.2	0.1	<0.1	0.2	0.1	0.0	0.4	<0.1
Ontario less Toronto rates	3.4	23.7	1.9	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Canada rates	1.8	8.0	1.1	1.9	<0.1	0.1	0.6	0.1	<0.1	0.1	<0.1

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 3.6: Incidence of measles by age group.
Toronto, 1994 - 2004 combined



	<1	1-4	5-9	10-14	15-19	20+
Rates	5.5	3.0	6.2	5.8	6.5	0.2
Cases	19	40	100	89	102	35

Age group (years)

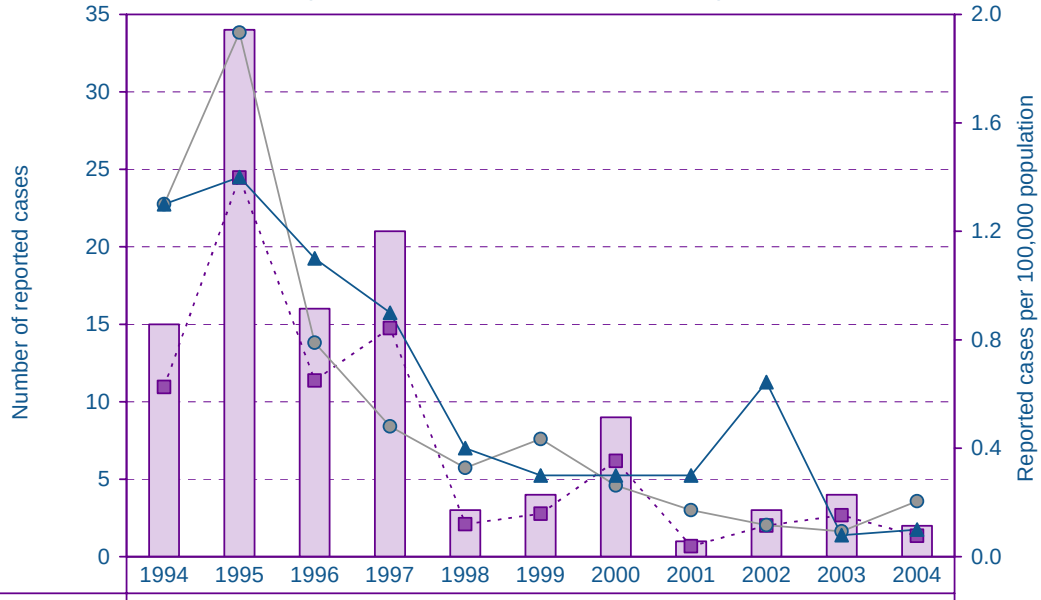
Mumps

Table 3.4: Mumps summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	2	4	11
Incidence rate (per 100,000 population)			
Overall	<0.1	0.2	0.4
Male	0.0	0.1	0.5
Female	0.1	0.2	0.4
Age at onset (years)	Summary statistics		
Mean	29	22	17
Median	29	17	10
Range	25 32	2 63	<1 67

Highlights

- In 2004, there were two reported cases (<0.1 cases per 100,000) of mumps. This represented a decrease of two cases (50%) from the 2003 total of four cases (Figure 3.7).
- Toronto's rate of mumps was lower than the rate reported for the rest of Ontario and Canada in 2004 (Figure 3.7).
- One of the two mumps cases had previously received the MMR vaccination. The second case had never received a mumps vaccine and was reported to have traveled to China prior to developing symptoms.

Figure 3.7: Incidence of mumps by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

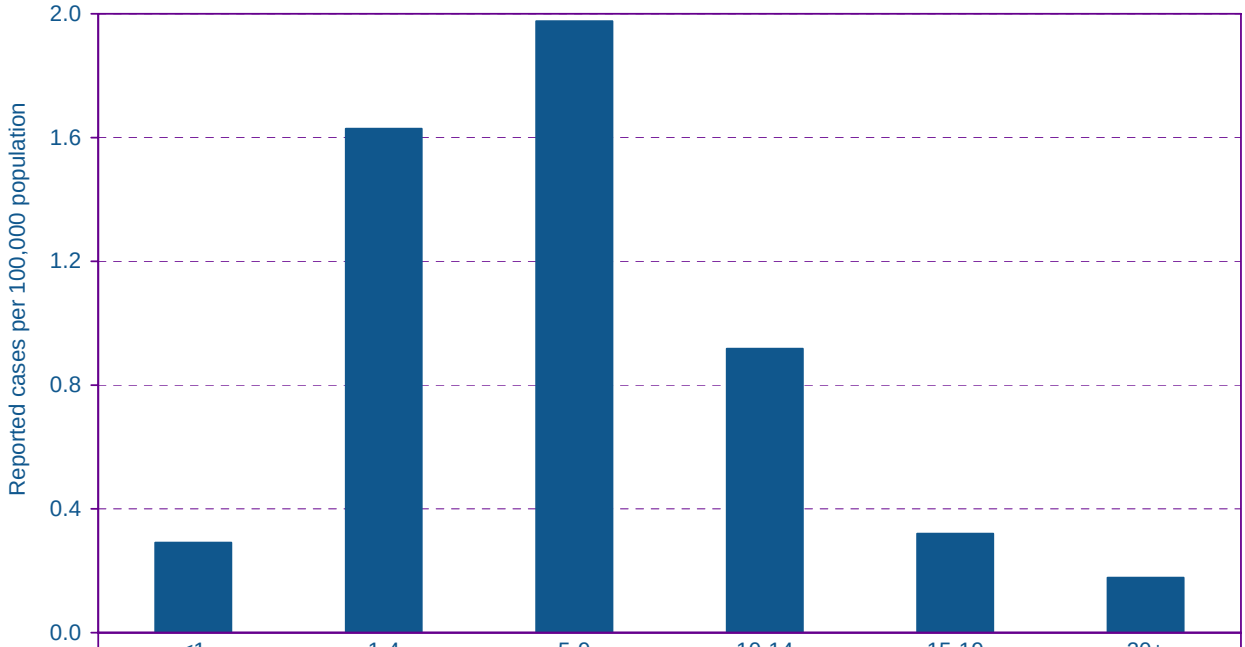


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	15	34	16	21	3	4	9	1	3	4	2
Toronto rates	0.6	1.4	0.6	0.8	0.1	0.2	0.4	<0.1	0.1	0.2	<0.1
Ontario less Toronto rates	1.3	1.9	0.8	0.5	0.3	0.4	0.3	0.2	0.1	<0.1	0.2
Canada rates	1.3	1.4	1.1	0.9	0.4	0.3	0.3	0.3	0.6	<0.1	0.1

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 3.8: Incidence of mumps by age group. Toronto, 1994 - 2004 combined



	<1	1-4	5-9	10-14	15-19	20+
Rates	0.3	1.6	2.0	0.9	0.3	0.2
Cases	1	22	32	14	5	38

Age group (years)

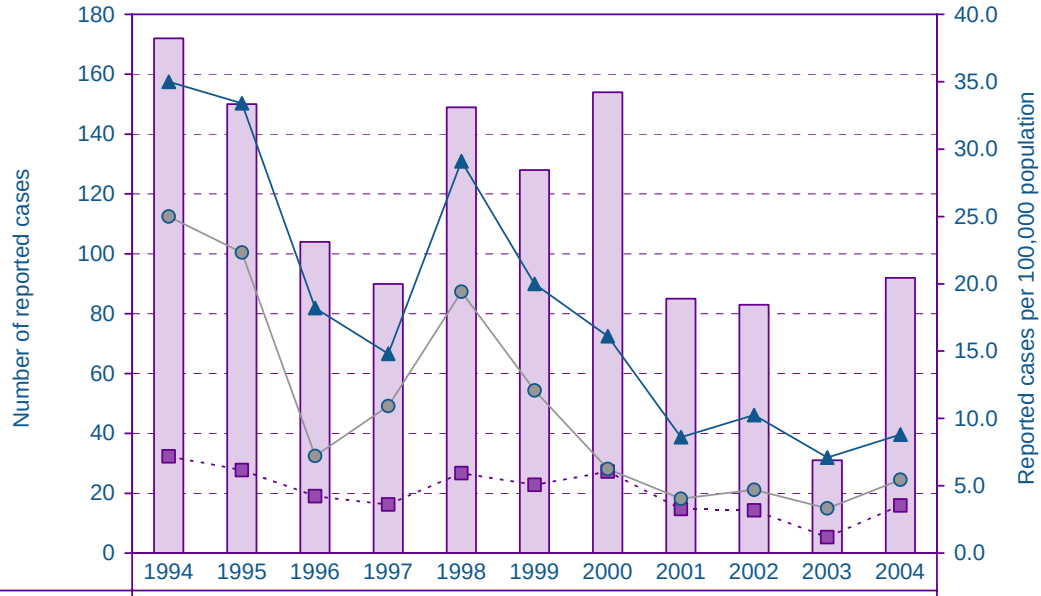
Pertussis

Table 3.5: Pertussis summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	92	96	115
Incidence rate (per 100,000 population)			
Overall	3.5	3.7	4.6
Male	3.6	3.9	4.5
Female	3.4	3.6	4.5
Age at onset (years)			
Mean	18	12	10
Median	11	9	7
Range	<1 78	<1 76	<1 76

Highlights

- In 2004, there were 92 reported cases (3.5 cases per 100,000) of pertussis. This represented an increase of 61 cases (197%) over the 2003 total of 31 cases (Figure 3.9).
- Toronto's rate of pertussis was lower than the rate reported for the rest of Ontario and Canada in 2004 (Figure 3.9).
- All age groups had a higher rate of pertussis in 2004 compared to 2003.
- The age group with the highest incidence rate in 2004 was children under one year of age (71.8 cases per 100,000) (Figure 3.10).
- The most commonly reported risk settings in 2004 were the home environment (52%) and school (31%).
- Seventy-two of the 92 pertussis cases had a known vaccination history, of which 76% (n=55) had received a pertussis vaccine.
- With the exception of May and June, the number of reports for each month in 2004 was either comparable to or lower than the historical mean (Figure 3.11). The highest number of cases was reported in August.

Figure 3.9: Incidence of pertussis by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

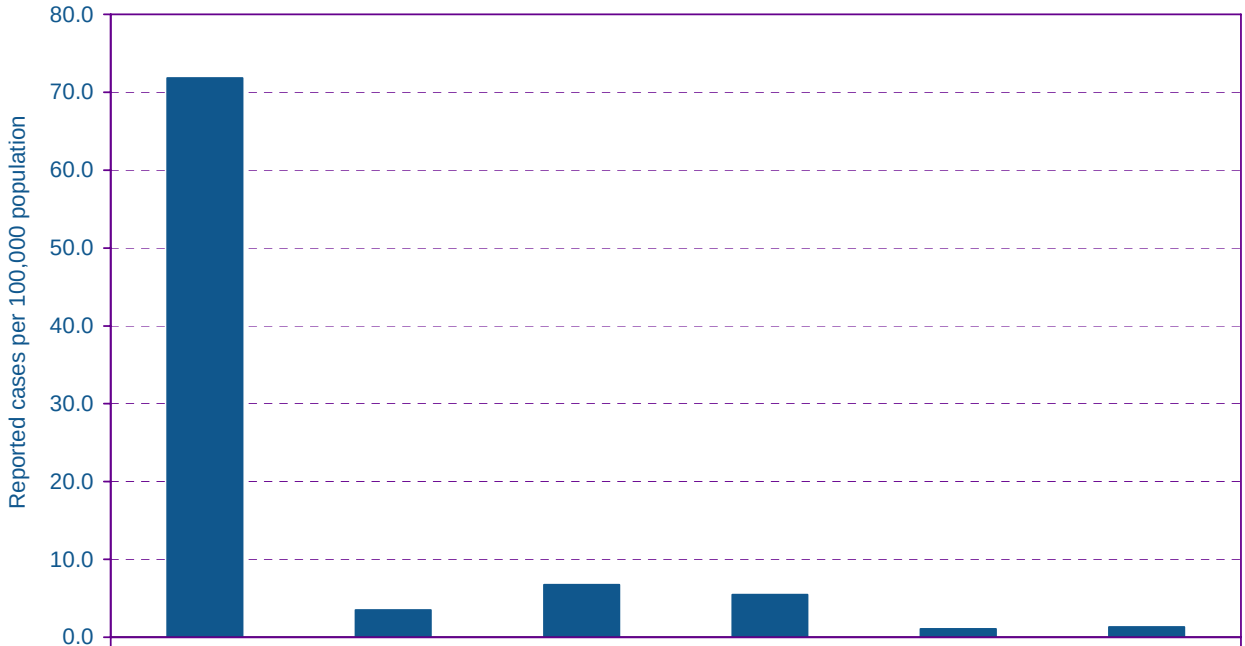


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	172	150	104	90	149	128	154	85	83	31	92
Toronto rates	7.2	6.2	4.2	3.6	5.9	5.1	6.0	3.3	3.2	1.2	3.5
Ontario less Toronto rates	25.0	22.3	7.2	10.9	19.4	12.1	6.2	4.0	4.7	3.3	5.4
Canada rates	35.0	33.4	18.2	14.8	29.1	20.0	16.1	8.6	10.3	7.1	8.8

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

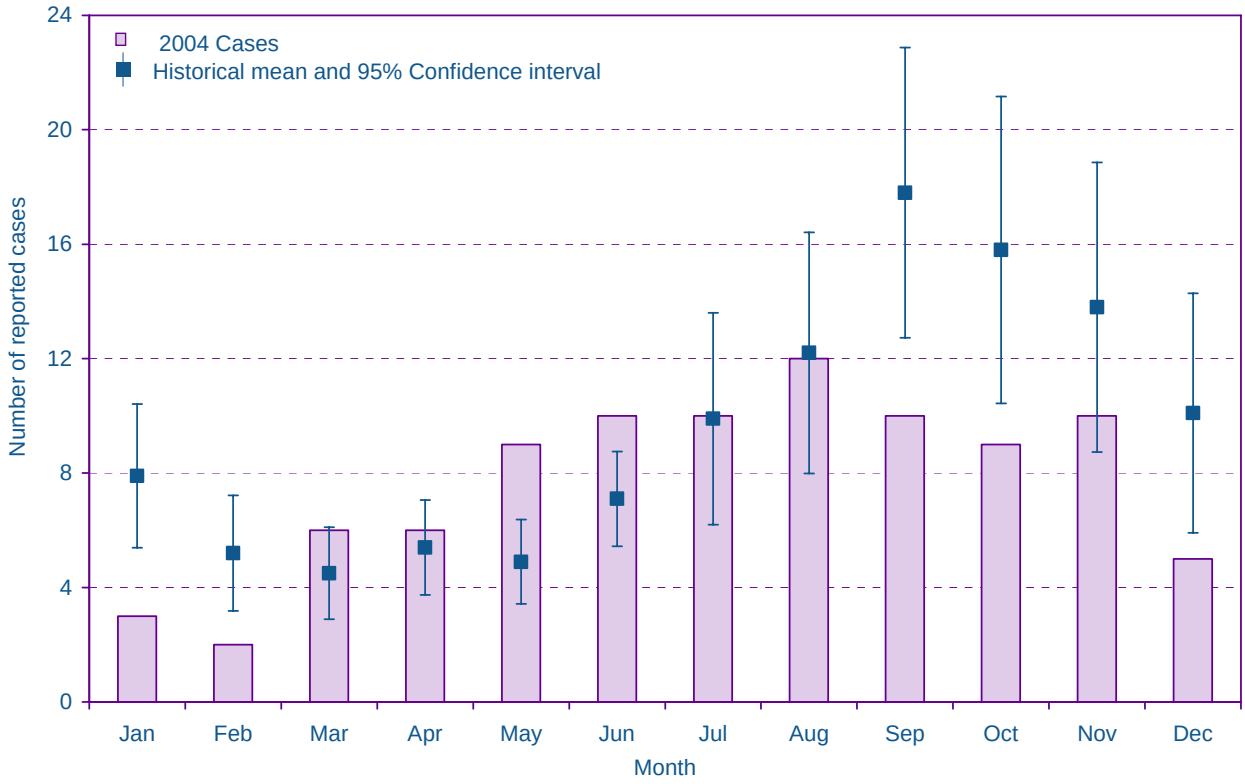
Figure 3.10: Incidence of pertussis by age group. Toronto, 2004



	<1	1-4	5-9	10-29	30-49	50+
Rates	71.8	3.5	6.8	5.5	1.0	1.3
Cases	21	4	10	38	9	10

Age group (years)

Figure 3.11: Number of reported cases of pertussis by month.
Toronto, 2004 compared to 1994 - 2003 mean



Rubella

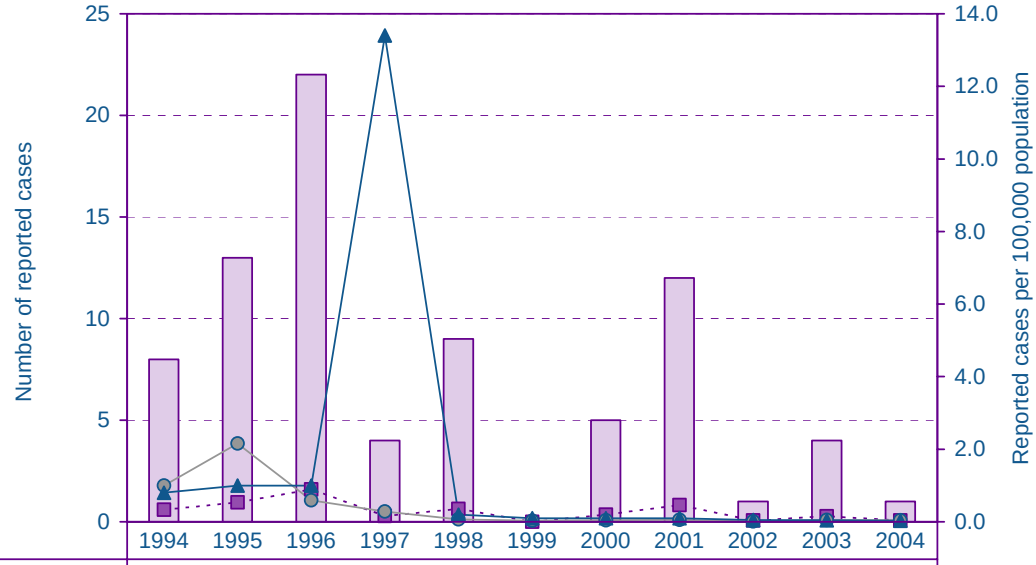
Table 3.6: Rubella summary data* Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	1	4	8
Incidence rate (per 100,000 population)			
Overall	<0.1	0.2	0.3
Male	<0.1	0.2	0.3
Female	0.0	0.2	0.3
Age at onset (years)	Summary statistics		
Mean	55	35	26
Median	55	41	30
Range	55 55	2 65	<1 65

*Only cases of rubella are summarized in this table. Congenital rubella reports are summarized in the rare diseases section.

Highlights

- In 2004, there was one reported case (<0.1 cases per 100,000) of rubella. This represented a decrease of three cases (75%) from the 2003 total of four cases (Figure 3.12).
- Toronto's rate of rubella was comparable to the rate reported for the rest of Ontario and Canada in 2004 (Figure 3.12).
- This rubella case was born in Canada and had no prior vaccination. This case had no travel history and was not related to an outbreak.
- There was one case of congenital rubella reported in 2004 (Table 3.1). This case was a Canadian-born infant whose mother was born in Sri Lanka. The mother had previously received the MMR vaccination and was reported to have traveled to Sri Lanka during the early stages of pregnancy.

Figure 3.12: Incidence of rubella* by year. Toronto, the rest of Ontario and Canada†, 1994 - 2004

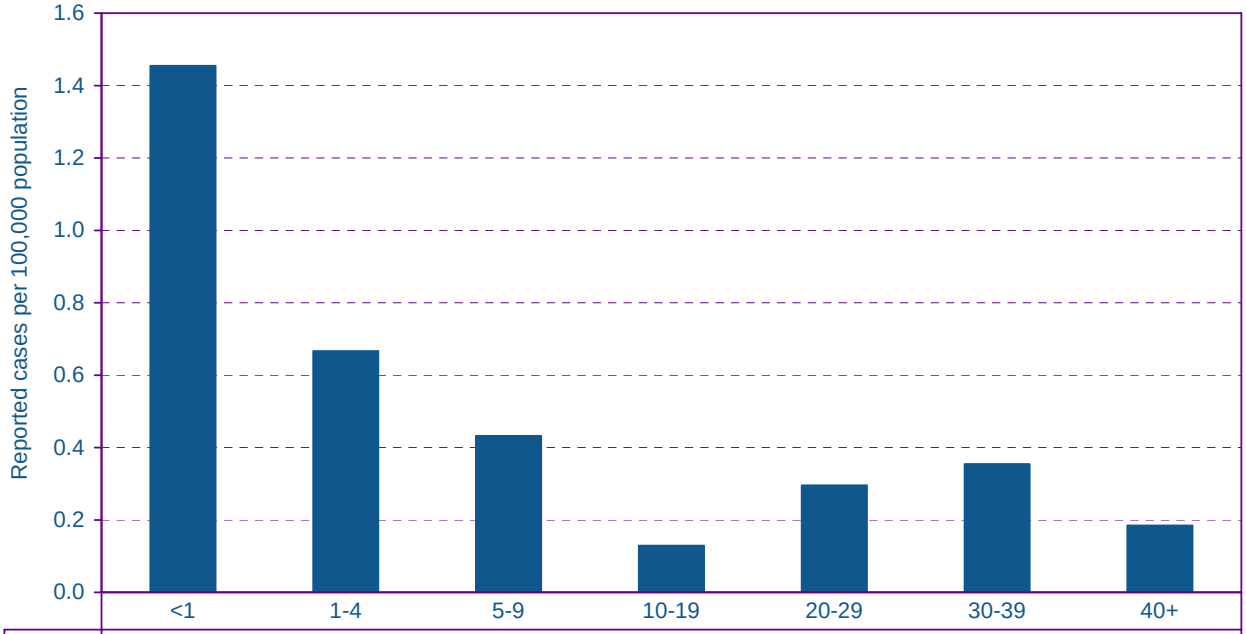


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	8	13	22	4	9	0	5	12	1	4	1
Toronto rates	0.3	0.5	0.9	0.2	0.4	0.0	0.2	0.5	<0.1	0.2	<0.1
Ontario less Toronto rates	1.0	2.2	0.6	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Canada rates	0.8	1.0	1.0	13.4	0.2	0.1	0.1	0.1	<0.1	<0.1	<0.1

Year

*Only cases of rubella are summarized in this figure. Congenital rubella reports are summarized in the rare diseases section.
†Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

Figure 3.13: Incidence of rubella* by age group†. Toronto, 1994 - 2004 combined



	<1	1-4	5-9	10-19	20-29	30-39	40+
Rates	1.5	0.7	0.4	0.1	0.3	0.4	0.2
Cases	5	9	7	4	13	18	22

Age group (years)

*Only cases of rubella are summarized in this figure. Congenital rubella reports are summarized in the rare diseases section.
†The age was not reported for one case.

Diseases Transmitted by Direct Contact and Respiratory Routes

Communicable Diseases in Toronto

2004

Toronto Public Health

Diseases Transmitted by Direct Contact and Respiratory Routes

This section focuses on diseases caused by infectious agents transmitted through direct contact with and/or airborne spread of contagious secretions of an infected person, usually secretions from the respiratory tract. This group of diseases includes one of the most contagious and common reportable diseases, chickenpox. Relative proportions of each disease within this grouping, and their ranking are listed below. In 2004, chickenpox accounted for 88% of reports falling into this category. ❑

Table 4.1: Number and proportion of reported cases of direct contact and respiratory diseases. Toronto, 2004

Ranking	Reportable disease	Number of cases	Proportion of cases (%)
1	Chickenpox	5317	88
2	Tuberculosis	358	6
3	*Streptococcus pneumoniae* , invasive	264	4
4	Streptococcal disease, Group A invasive	52	<1
5	Streptococcal disease, Group B neonatal	16	<1
6	Meningococcal disease, invasive	6	<1
7	Legionellosis	3	<1
	Total	**6016**	**100**

Rare reportable diseases not summarized in this section include leprosy and severe acute respiratory syndrome (SARS).

Chickenpox (Varicella Zoster virus)

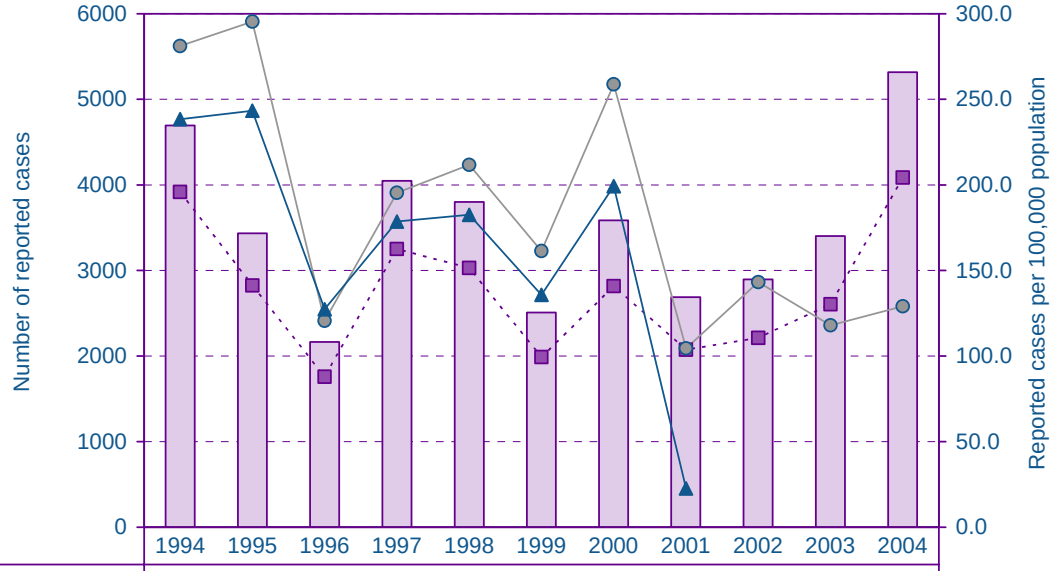
Table 4.2: Chickenpox summary data* Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	5317	3016	3323
Incidence rate (per 100,000 population)	204.3	117.0	131.9
Age at onset (years)	Summary statistics		
Grouped mean	7	7	7
Grouped median	7	7	7
Range	<1 29	<1 29	<1 29

*Reports of chickenpox are received in aggregate numbers based on defined age categories.

Highlights

- In 2004, there were 5317 reported cases (204.3 cases per 100,000) of chickenpox. This represented an increase of 1914 cases (56%) over the 2003 total of 3403 cases (Figure 4.1) and the highest number of reports in the 11-year surveillance period.
- Toronto's rate of chickenpox was 1.6 times the rate reported for the rest of Ontario in 2004 (Figure 4.1).
- The highest incidence rates of chickenpox were seen in those ages 1 to 4 years (1126.3 cases per 100,000) and 5 to 9 years (2135.4 cases per 100,000) (Figure 4.2).
- All age groups but one (<1 year old) had a higher rate of chickenpox in 2004 compared to 2003.
- In 2004, the number of reports exceeded historical means for all months except August and September (Figure 4.3). The highest numbers of cases were reported in April and May 2004.
- In September 2004, chickenpox vaccine was added to the Ontario publicly funded immunization schedule for one year olds and susceptible 5 year olds. Individuals at high risk of severe outcomes from chickenpox also qualify for publicly funded vaccine.

Figure 4.1: Incidence of chickenpox by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

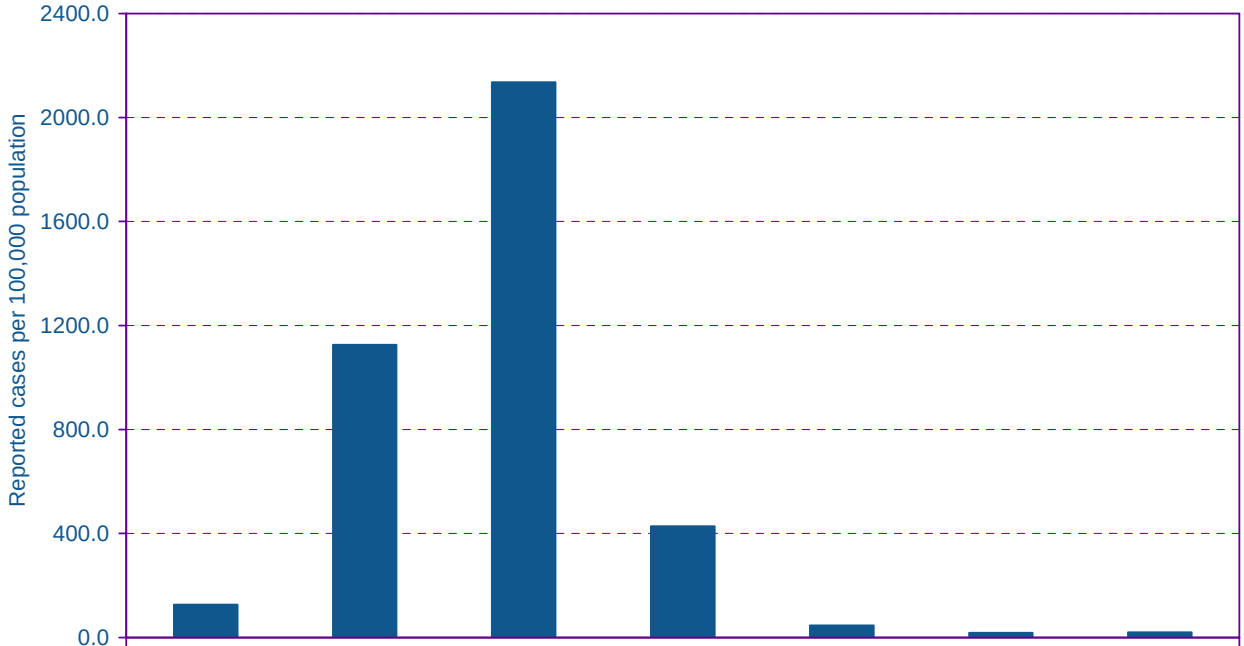


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	4695	3433	2165	4049	3801	2509	3586	2689	2895	3403	5317
Toronto rates	195.9	141.2	87.9	162.6	151.5	99.4	140.8	103.7	110.6	130.3	204.3
Ontario less Toronto rates	281.2	295.4	120.6	195.3	211.7	161.3	258.8	104.5	143.2	117.9	129.1
Canada rates	238.4	243.4	127.4	178.7	182.6	135.7	199.3	22.6	NA	NA	NA

Year

*Canada data for 2001 does not include Ontario or Saskatchewan. From 1993 to 2001 Chickenpox was not reportable in Quebec, Manitoba and British Columbia.
NA: Canada data for 2002, 2003 and 2004 not available.

Figure 4.2: Incidence of chickenpox by age group*. Toronto, 2004

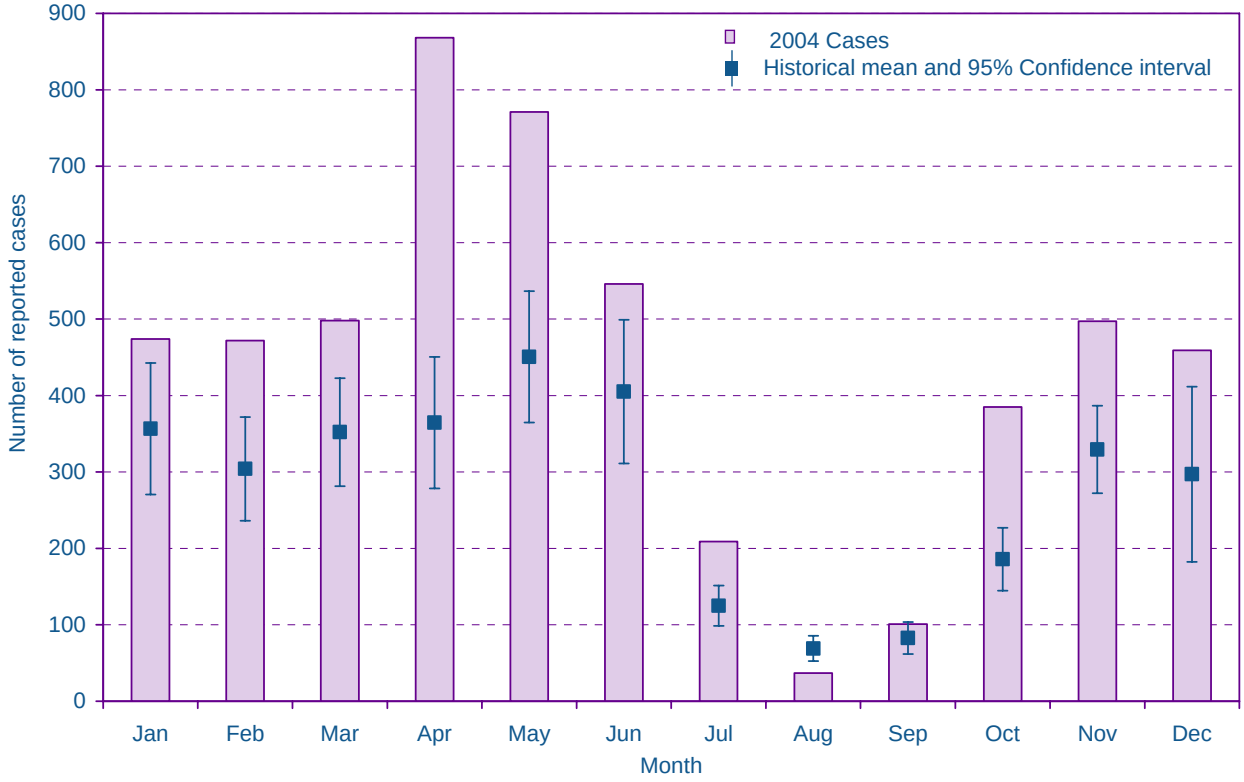


	<1	1-4	5-9	10-14	15-19	20-24	25-29
Rates	126.5	1126.3	2135.4	428.0	46.4	17.8	20.2
Cases	37	1280	3157	630	68	32	45

*The age group was not reported for 68 cases.

Age group (years)

**Figure 4.3: Number of reported cases of chickenpox by month.
Toronto, 2004 compared to 1994 - 2003 mean**



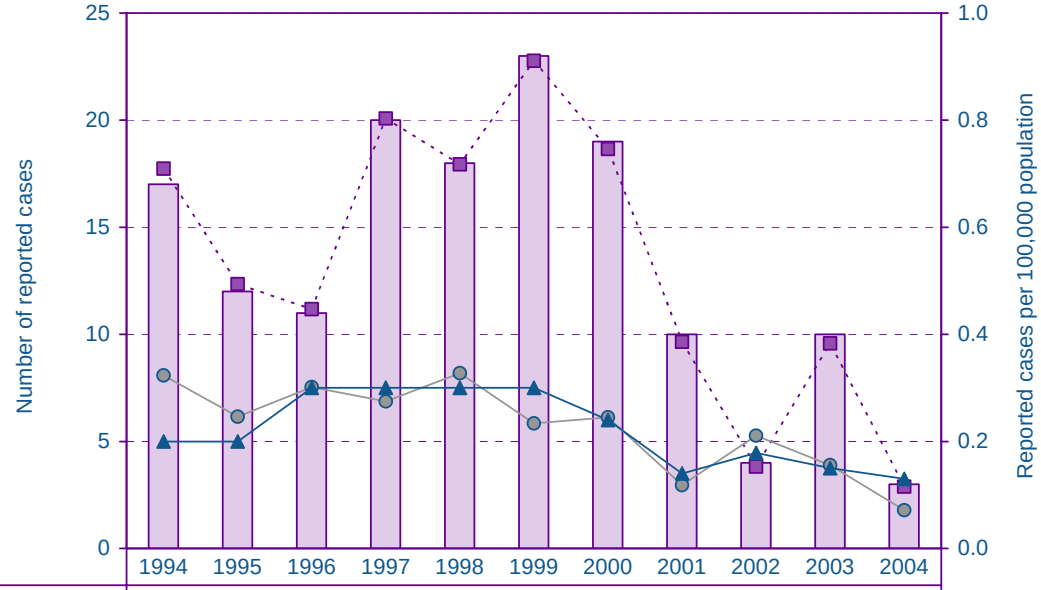
Legionellosis

Table 4.3: Legionellosis summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	3	13	14
Incidence rate (per 100,000 population)			
Overall	0.1	0.5	0.6
Male	0.1	0.7	0.8
Female	0.1	0.3	0.4
Age at onset (years)	Summary statistics		
Mean	70	67	66
Median	77	70	69
Range	47 87	32 87	2 94
Case fatality (%)	0	26	24

Highlights

- In 2004, there were three reported cases (0.1 cases per 100,000) of legionellosis. This represented a decrease of seven cases (70%) from the 2003 total of 10 cases (Figure 4.4) and the lowest rate reported for the surveillance period. There were no reported deaths related to legionella in 2004 (Table 4.3).
- Toronto's rate of legionellosis was comparable to the rates reported for the rest of Ontario and Canada in 2004 (Figure 4.4).
- Water was reported as the source of infection in all three legionellosis cases.

Figure 4.4: Incidence of legionellosis by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

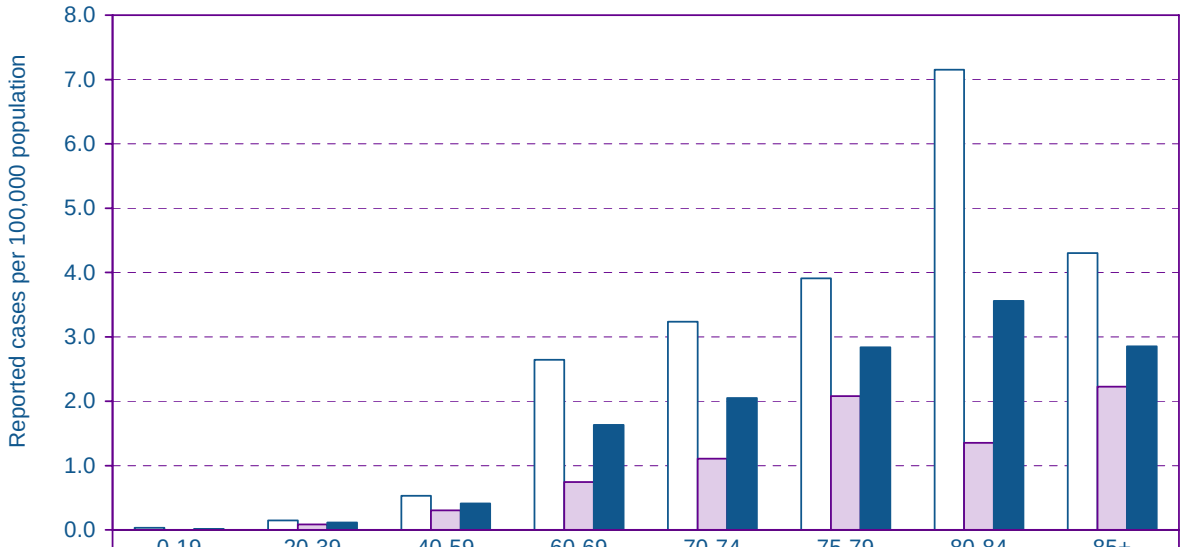


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	17	12	11	20	18	23	19	10	4	10	3
Toronto rates	0.7	0.5	0.4	0.8	0.7	0.9	0.7	0.4	0.2	0.4	0.1
Ontario less Toronto rates	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.1	0.2	0.2	<0.1
Canada rates	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.1	0.2	0.2	0.1

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

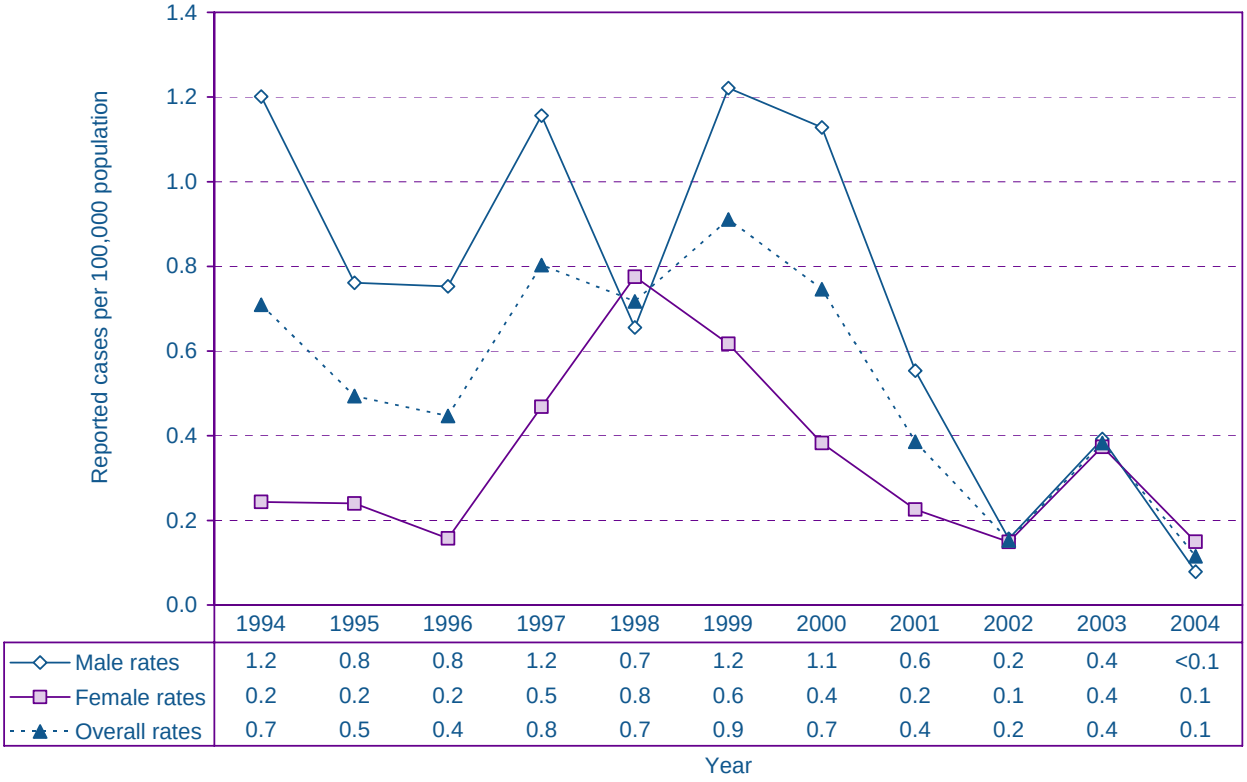
Figure 4.5: Incidence of legionellosis by age group and sex. Toronto, 1994 - 2004 combined



	0-19	20-39	40-59	60-69	70-74	75-79	80-84	85+
Male rates	<0.1	0.1	0.5	2.6	3.2	3.9	7.2	4.3
Female rates	0.0	<0.1	0.3	0.7	1.1	2.1	1.4	2.2
Overall rates	<0.1	0.1	0.4	1.6	2.0	2.8	3.6	2.9
Male cases	1	7	18	28	14	12	13	5
Female cases	0	4	11	9	6	9	4	6

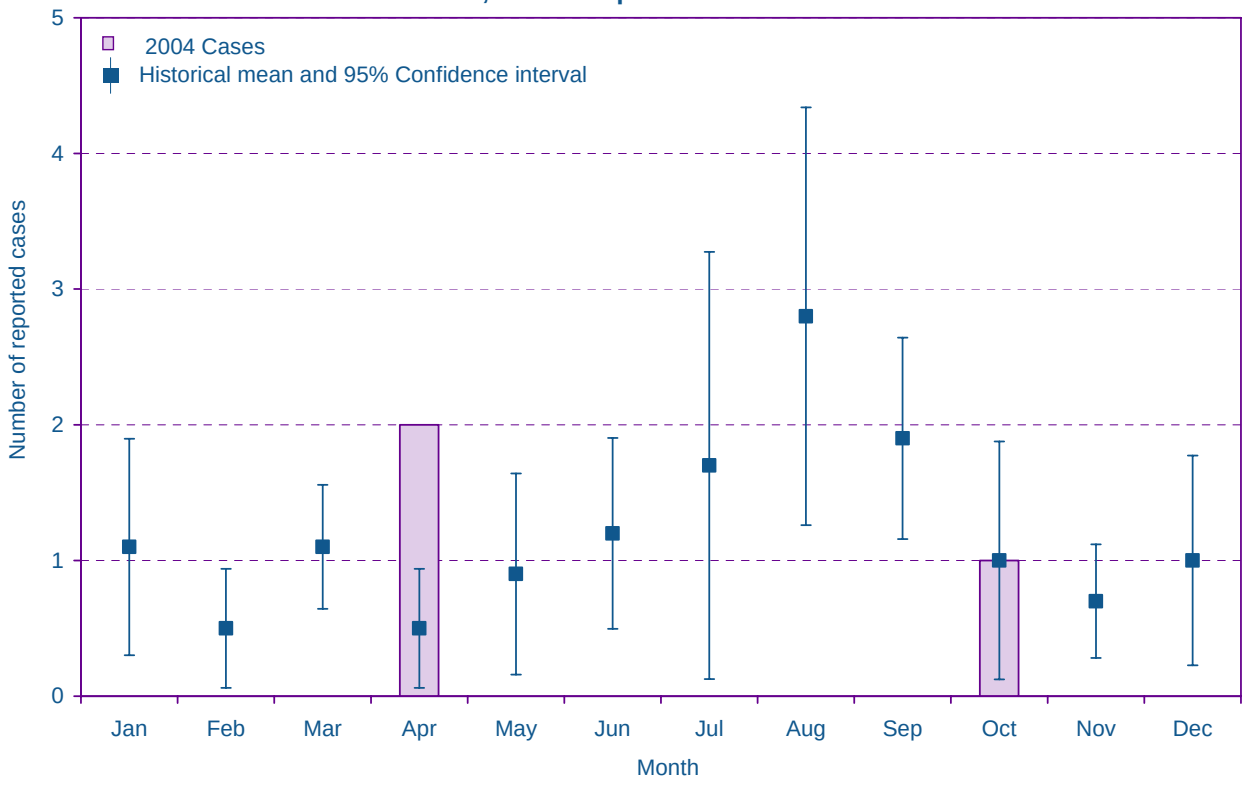
Age group (years)

Figure 4.6: Incidence rates of legionellosis by sex and year.
Toronto, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Male rates	1.2	0.8	0.8	1.2	0.7	1.2	1.1	0.6	0.2	0.4	<0.1
Female rates	0.2	0.2	0.2	0.5	0.8	0.6	0.4	0.2	0.1	0.4	0.1
Overall rates	0.7	0.5	0.4	0.8	0.7	0.9	0.7	0.4	0.2	0.4	0.1

Figure 4.7: Number of reported cases of legionellosis by month.
Toronto, 2004 compared to 1994 - 2003 mean



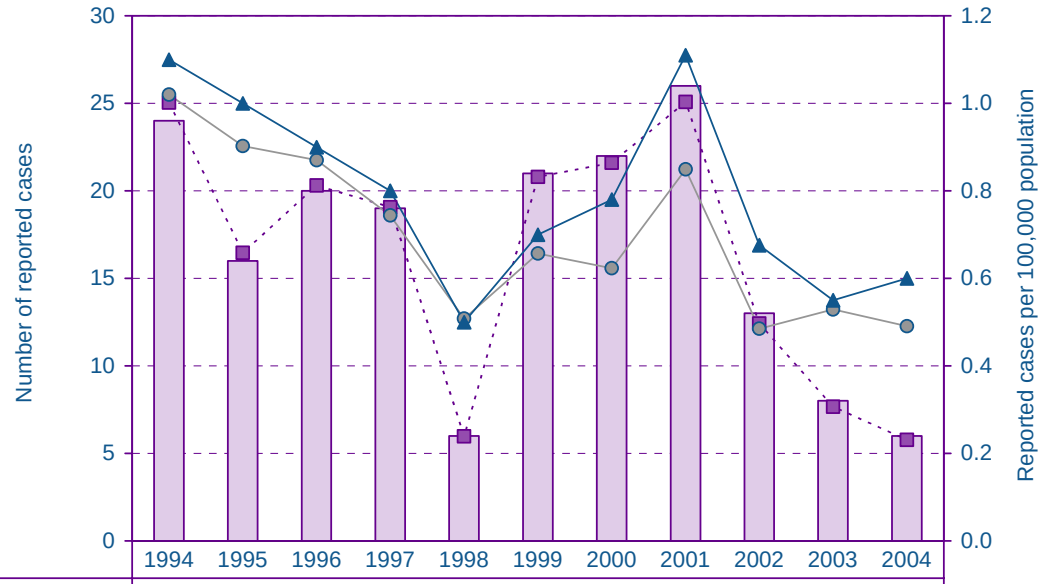
Meningococcal disease, invasive

Table 4.4: Invasive meningoccocal disease summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	6	18	18
Incidence rate (per 100,000 population)			
Overall	0.2	0.7	0.7
Male	<0.1	0.6	0.7
Female	0.4	0.8	0.7
Age at onset (years)	Summary statistics		
Mean	48	31	28
Median	51	24	22
Range	21 67	<1 79	<1 88
Case fatality (%)	17	19	13

Highlights

- In 2004, there were six reported cases (0.2 cases per 100,000) of invasive meningococcal disease (IMD). This represented a decrease of two cases (25%) from the 2003 total of eight cases (Figure 4.8). There was one IMD related death reported in 2004, for a case fatality rate of 17% (Table 4.4).
- In 2004 and 2003, Toronto's rate of IMD was lower than the rates reported for the rest of Ontario and Canada (Figure 4.8).
- Among the six reported cases, four different meningococcal serogroups were identified. This was the first year since 1997 that a case of serogroup A was identified and the first year during the surveillance period 1994-2004 that a case of serogroup B was not reported (Figure 4.10).
- In 2004, there were no cases of IMD reported in those less than 21 years of age; the mean and median ages of cases in 2004 were higher than both the previous 5- and 10-year equivalents (Table 4.4).
- In September 2004, vaccination for group C meningococcal disease was added to the Ontario publicly funded immunization schedule for one year olds.

Figure 4.8: Incidence of invasive meningococcal disease by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

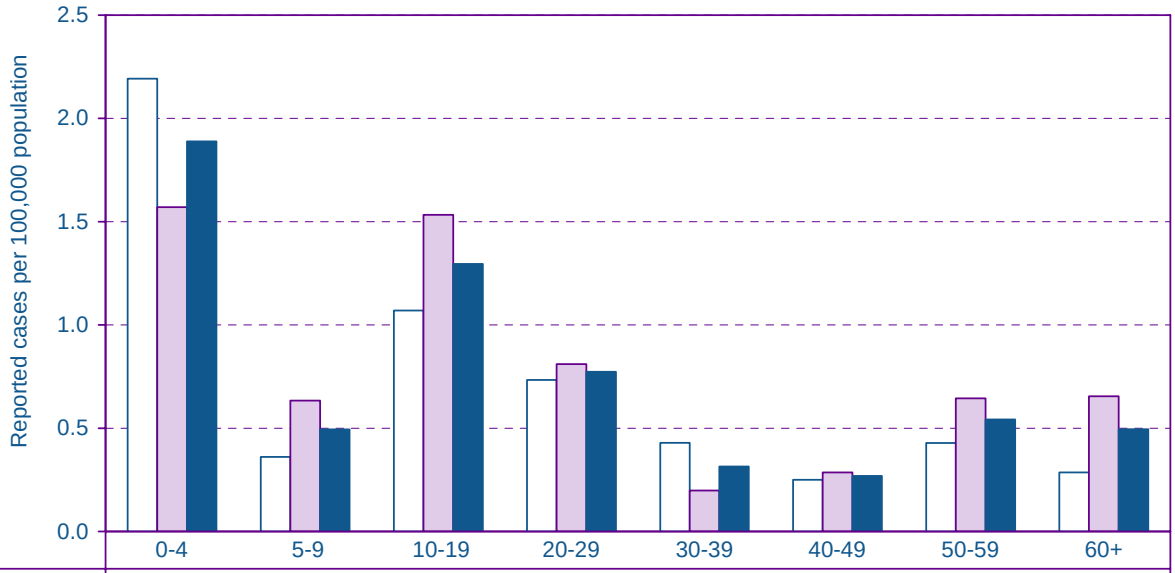


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	24	16	20	19	6	21	22	26	13	8	6
Toronto rates	1.0	0.7	0.8	0.8	0.2	0.8	0.9	1.0	0.5	0.3	0.2
Ontario less Toronto rates	1.0	0.9	0.9	0.7	0.5	0.7	0.6	0.8	0.5	0.5	0.5
Canada rates	1.1	1.0	0.9	0.8	0.5	0.7	0.8	1.1	0.7	0.6	0.6

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

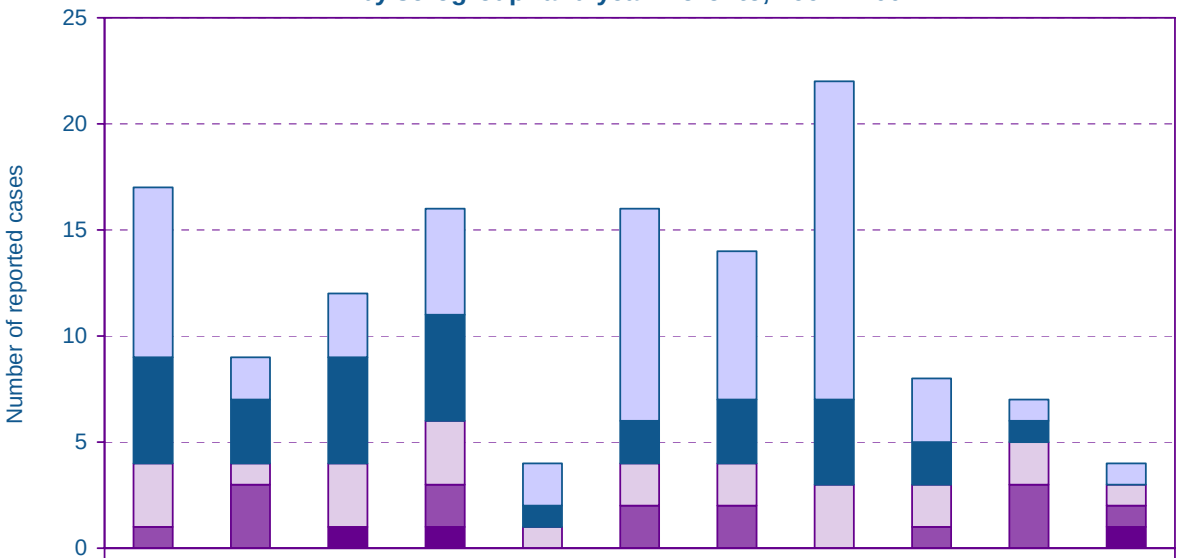
Figure 4.9: Incidence of invasive meningococcal disease by age group and sex. Toronto, 1994 - 2004 combined



	0-4	5-9	10-19	20-29	30-39	40-49	50-59	60+
Male rates	2.2	0.4	1.1	0.7	0.4	0.3	0.4	0.3
Female rates	1.6	0.6	1.5	0.8	0.2	0.3	0.6	0.7
Overall rates	1.9	0.5	1.3	0.8	0.3	0.3	0.5	0.5
Male cases	19	3	17	16	11	5	6	6
Female cases	13	5	23	18	5	6	10	18

Age group (years)

Figure 4.10: Number of reported cases of invasive meningococcal disease by serogroup* and year. Toronto, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Group C	8	2	3	5	2	10	7	15	3	1	1
Group B	5	3	5	5	1	2	3	4	2	1	0
Group Y	3	1	3	3	1	2	2	3	2	2	1
Group W-135	1	3	0	2	0	2	2	0	1	3	1
Group A	0	0	1	1	0	0	0	0	0	0	1

Year

*52 cases were not typed.

Streptococcal infections, Group A invasive

Table 4.5: Invasive group A streptococcal infections summary data*
Toronto

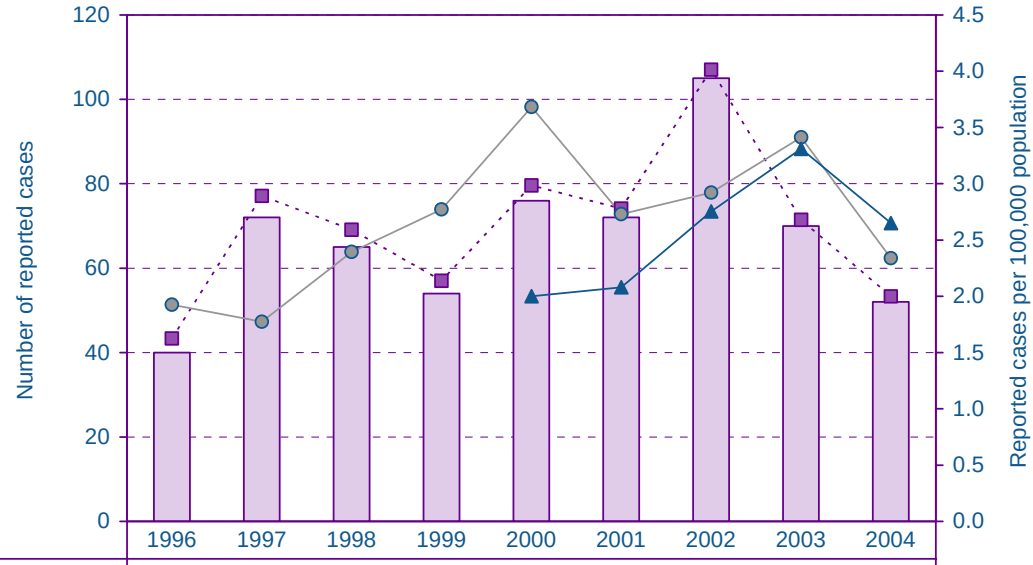
	2004	5-yr period 1999-2003
	Total	Mean
Number of reported cases	52	75
Incidence rate (per 100,000 population)		
Overall	2.0	2.9
Male	1.9	3.1
Female	2.1	2.7
Age at onset (years)	Summary statistics	
Mean	50	51
Median	50	51
Range	3 95	<1 100
Case fatality (%)	17	18
Hospitalization rate (%)	94	79

*Since April 1995 all forms of invasive GAS were reportable to Toronto Public Health.

Highlights

- In 2004, there were 52 reported cases (2.0 cases per 100,000) of invasive group A streptococcal (GAS) disease. This represented a decrease of 18 cases (26%) from the 2003 total of 70 cases (Figure 4.14).
- The hospitalization rate for GAS cases increased from 81% in 2003 to 94% in 2004. Of the 49 cases treated in hospital, 98% were inpatients and 2% were outpatients. Necrotizing fascitis was reported in 10% (n=5) of reported cases, which is comparable to the proportion of necrotizing fascitis reported in 2003.
- In 2004, males over 70 and 10 to 19 years of age had higher age-specific rates than females. The largest disparities between male and female rates were noted among the 70 to 74 and 80 to 84 year age groups, where the respective male rates were between 3 to 5 times higher than the female rates (Figure 4.12).
- The most commonly reported risk factor for acquiring GAS was the presence of an underlying medical condition (55%) (Table 4.6). The proportion of cases reporting the presence of an underlying medical condition as a risk factor increased from 32% in 2003 to 55% in 2004. This increase may explain the higher hospitalization rate reported in 2004.
- Risk setting information was available for 65% (n=34) of cases reported in 2004. Among these cases, the most commonly reported risk settings were the home environment (47%), hospitals (18%) and residential facilities (15%).

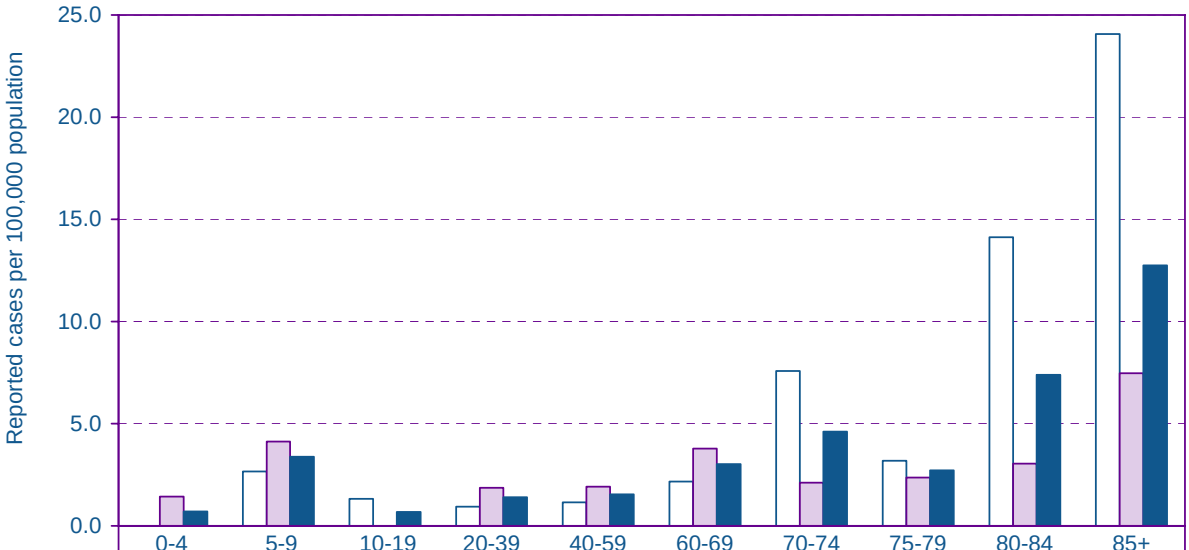
Figure 4.11: Incidence of invasive group A streptococcal infections by year. Toronto*, the rest of Ontario and Canada†, 1996 - 2004



	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	40	72	65	54	76	72	105	70	52
Toronto rates	1.6	2.9	2.6	2.1	3.0	2.8	4.0	2.7	2.0
Ontario less Toronto rates	1.9	1.8	2.4	2.8	3.7	2.7	2.9	3.4	2.3
Canada rates	NR	NR	NR	NR	2.0	2.1	2.8	3.3	2.7

*Since April 1995 all forms of invasive GAS were reportable to Toronto Public Health.
†Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.
NR: Not reportable. Starting January 1, 2000, invasive Group A Streptococcal disease was added to the list of national notifiable diseases.

Figure 4.12: Incidence of invasive group A streptococcal infections by age group and sex. Toronto, 2004



	0-4	5-9	10-19	20-39	40-59	60-69	70-74	75-79	80-84	85+
Male rates	0.0	2.7	1.3	0.9	1.2	2.2	7.6	3.2	14.1	24.1
Female rates	1.4	4.1	0.0	1.9	1.9	3.8	2.1	2.4	3.0	7.5
Overall rates	0.7	3.4	0.7	1.4	1.5	3.0	4.6	2.7	7.4	12.7
Male cases	0	2	2	4	4	2	3	1	3	3
Female cases	1	3	0	8	7	4	1	1	1	2

Table 4.6: Risk factors for reported cases of invasive group A streptococcal infections. Toronto, 2004

Reported risk factor	Number of cases*	Proportion of cases (%)
Underlying medical conditions	26	55
Trauma within past month	4	9
Close contact of known case	3	6
Invasive surgical or dental procedure	3	6
Chronic dermatological condition	2	4
Dialysis	2	4
Peripartum	1	2
Other	14	30
Total with a known risk factor	**47**	
Number missing or unknown	5	
Total cases	**52**	

*Cases may report more than one risk factor.

Streptococcal infections, Group B neonatal

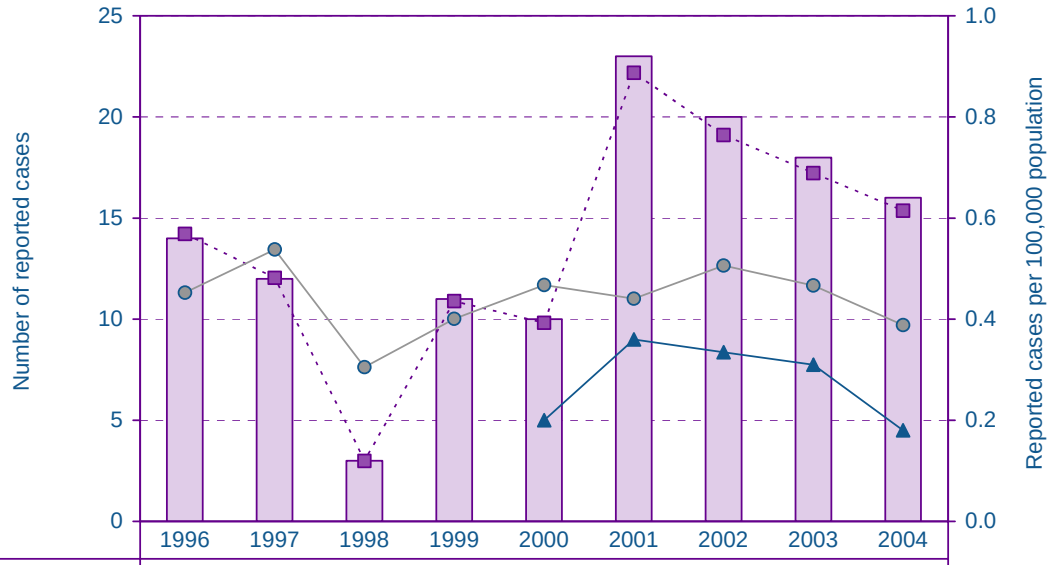
Table 4.7: Neonatal group B streptococcal infections summary data* Toronto		
	2004	5-yr period 1999-2003
	Total	Mean
Number of reported cases	16	16
Incidence rate (per 100,000 population)		
Overall	0.6	0.6
Male	0.7	0.6
Female	0.5	0.7
Age at onset (days)	Summary statistics	
Mean	5	6
Median	0	0
Range	0 22	0 28
Case fatality (%)	6	7

*Neonatal group B streptococcal infections first became reportable in Ontario in 1996. Only disease occurring within the first 28 days of life is reportable.

Highlights

- In 2004, there were 16 reported cases (0.6 cases per 100,000) of neonatal group B streptococcal (GBS) infections. This represented a decrease of two cases (11%) from the 2003 total of 18 cases (Figure 4.13).
- Toronto's rate of GBS has continued to decline since 2001, however, it remains 1.5 and 3 times higher than the rate in the rest of Ontario and Canada, respectively (Figure 4.13).
- The most commonly reported type of GBS in 2004 was early onset (0 to 7 days) disease, which accounted for 65% (n=11) of cases. The remaining five reported cases were late onset disease (8 to 28 days).
- Case fatality rates were 9% (n=1) among early onset cases (N=11); there were no deaths in late onset cases (N=5).

Figure 4.13: Incidence of neonatal group B streptococcal infections by year. Toronto, the rest of Ontario* and Canada†, 1996 - 2004



	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	14	12	3	11	10	23	20	18	16
Toronto rates	0.6	0.5	0.1	0.4	0.4	0.9	0.8	0.7	0.6
Ontario less Toronto rates	0.5	0.5	0.3	0.4	0.5	0.4	0.5	0.5	0.4
Canada rates	NR	NR	NR	NR	0.2	0.4	0.3	0.3	0.2

Year

*Neonatal group B streptococcal infections became reportable in Ontario in 1996.

†Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

NR: Not reportable. Starting January 1, 2000, neonatal Group B Streptococcal disease was added to the list of national notifiable diseases.

Streptococcus pneumoniae, invasive

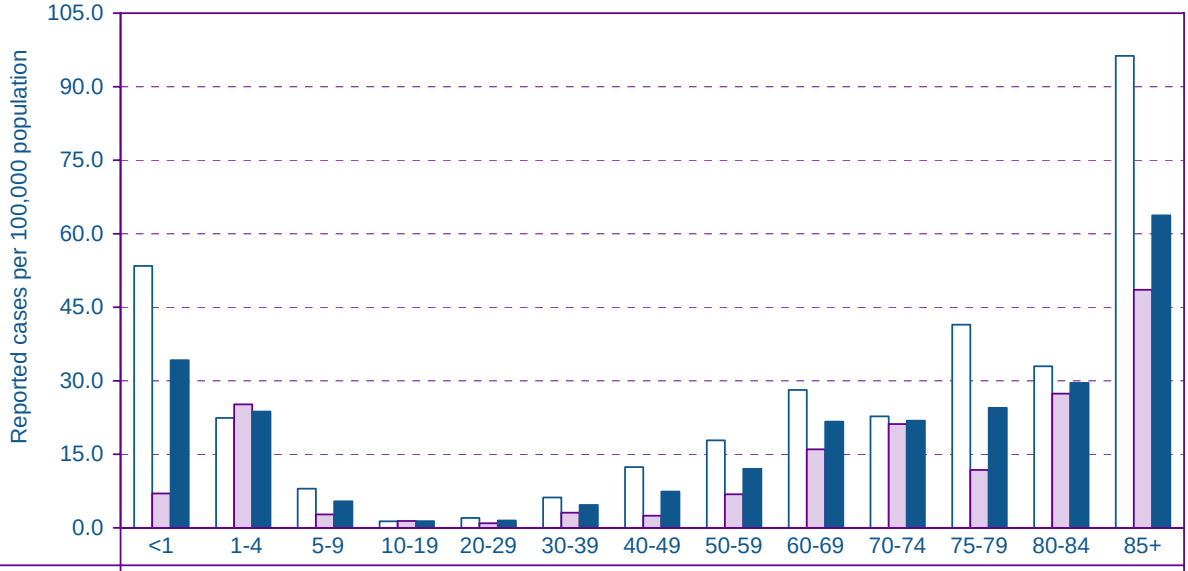
Table 4.8: Invasive *Streptococcus pneumoniae* summary data* Toronto			
	2004	2003	2002
Number of reported cases	264	235	276
Incidence rate (per 100,000 population)			
Overall	10.1	9.0	10.5
Male	13.0	9.8	11.7
Female	7.3	8.2	9.3
Age at onset (years)	Summary statistics		
Mean	51	51	51
Median	56	57	57
Range	<1 97	<1 99	<1 108
Case fatality (%)	9	6	11
Hospitalization rate (%)	85	86	91

*Invasive *Streptococcus pneumoniae* became reportable in fall 2001.

Highlights

- In 2004, there were 264 reported cases (10.1 cases per 100,000) of invasive *Streptococcus pneumoniae* (ISP) (Table 4.8). This represented an increase of 29 cases (12%) over the 2003 total of 235 cases.
- Eighty-five percent (n=225) of ISP cases were treated in a hospital (Table 4.8); 94% were inpatients and 6% were outpatients.
- Males accounted for 63% (n=165) of ISP cases in 2004 and exceeded the female rates for all age groups except those 1 to 4 and 10 to 19 years of age (Figure 4.14).
- Compared to 2003, the incidence rate among males 85 years and older increased from 41.2 cases per 100,000 to 96.3 cases per 100,000, the highest increase among all subgroups. In contrast, the rate among females in this age group was almost halved from 87.5 cases per 100,000 in 2003 to 48.6 cases per 100,000 in 2004.

Figure 4.14: Incidence of invasive *Streptococcus pneumoniae* by age group and sex*. Toronto, 2004

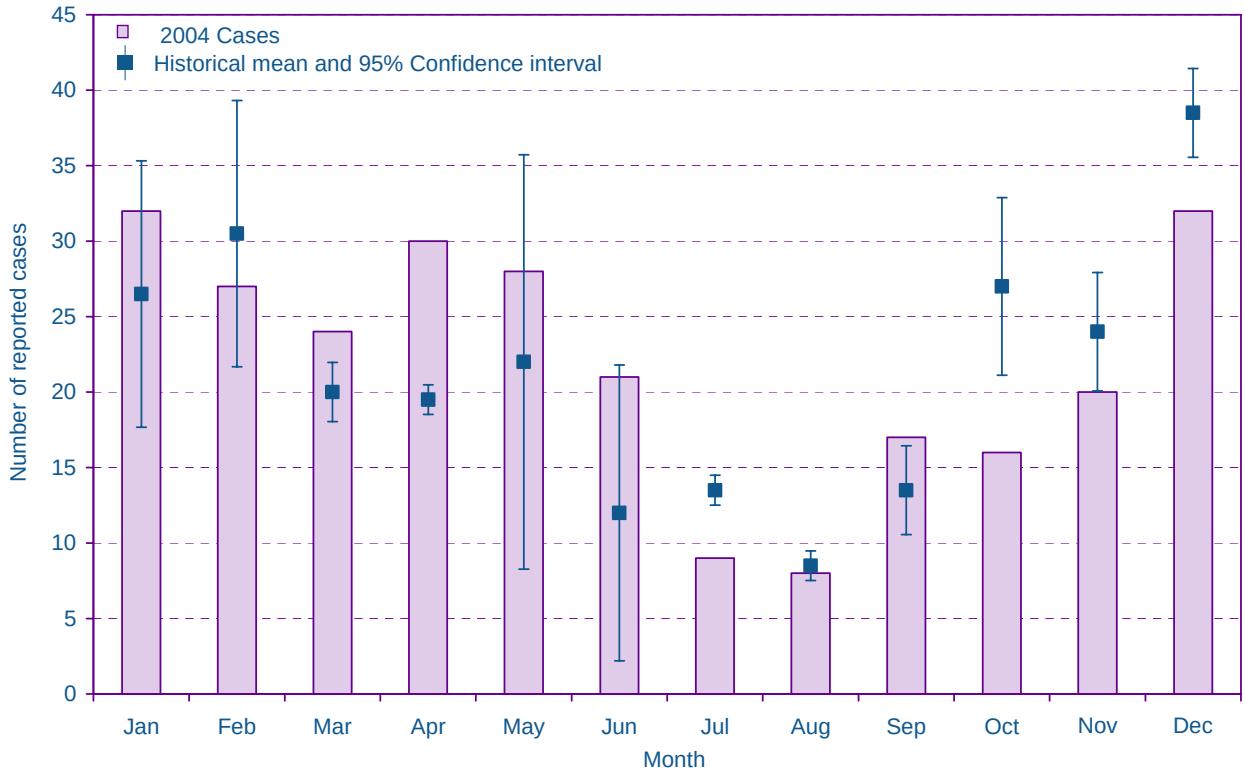


	<1	1-4	5-9	10-19	20-29	30-39	40-49	50-59	60-69	70-74	75-79	80-84	85+
Male rates	53.4	22.4	8.0	1.3	2.0	6.2	12.4	17.9	28.1	22.7	41.5	33.0	96.3
Female rates	7.0	25.2	2.8	1.4	1.0	3.1	2.4	6.8	16.0	21.2	11.8	27.4	48.6
Overall rates	34.2	23.8	5.4	1.4	1.5	4.7	7.4	12.1	21.7	21.9	24.5	29.6	63.7
Male cases	8	13	6	2	4	14	25	26	26	9	13	7	12
Female cases	1	14	2	2	2	7	5	11	17	10	5	9	13

*The sex of one case was not reported.

Age group (years)

Figure 4.15: Number of reported cases of invasive *Streptococcus pneumoniae* by month. Toronto, 2004 compared to 2002 - 2003 mean



Tuberculosis

Table 4.9: Tuberculosis summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	358	376	418
Incidence rate (per 100,000 population)			
Overall	13.8	14.6	16.6
Male	15.1	16.1	17.9
Female	12.4	13.1	15.3
Age at onset (years)	Summary statistics		
Mean	44	45	44
Median	38	39	39
Range	1 96	<1 106	<1 106
Case fatality (%)	7	9	9

Highlights

- In 2004, there were 358 cases (13.8 cases per 100,000) of tuberculosis (TB) reported. This represented a decrease of six cases (2%) from the 2003 total of 364 cases. Incidence rates for TB have been decreasing steadily in Toronto, reaching the lowest level for the 11-year surveillance period in 2004 (Figure 4.16).

- Toronto's rate of TB continued to exceed the rate reported in the rest of Ontario by a factor of almost five (Figure 4.16). Toronto cases accounted for 56% of all TB cases in Ontario (N=637).

- The age groups with the highest incidence rates of disease were 25 to 29 year olds (20.7 cases per 100,000) followed by both those between 20 to 24 years old (19.5 cases per 100,000) and those 65 years and older (19.3 cases per 100,000) (Figure 4.17). The highest increase in rates in 2004 occurred in the 50 to 54 year age group, which almost doubled (198%) from the rate in 2003.

- In 2004, males accounted for 54% (n=192) of all TB cases. In comparison to 2003, the gap between male and female rates increased primarily amongst the 50 to 54 and 65 and older age groups. In these age groups, male rates of TB were more than double the female rates (Figure 4.17). Overall rates for males remained higher than rates for females, as in 2003 (Figure 4.18).

- As in 2003, travel outside of Canada to an endemic area was the most commonly reported risk setting for cases of tuberculosis in 2004 (Table 4.10). This risk setting was reported by 90% of all cases (n=311) with a known risk setting. Risk setting captures the site where transmission most likely occurred.

- In 2004, only 4% (n=15) of TB cases reported a shelter/rooming house as a risk setting for acquiring TB. The increase over the 5 shelter/rooming house associated cases reported in 2003 was related to an active case finding effort in Toronto's shelters carried out in late 2004 (see Outbreak Section, page 178). Six (40%) of the 15 homeless cases in 2004 were detected through this effort.

- The proportion of TB cases who were foreign-born was 92% in 2004 (Figure 4.19). Given that approximately 44% of Toronto's population is foreign-born (2001 census) this confirms that TB continues to disproportionately affect the foreign-born population. The top ten countries of origin for TB cases were similar to last year, with Hong Kong not appearing in 2004, and Portugal taking its place (Figure 4.20).

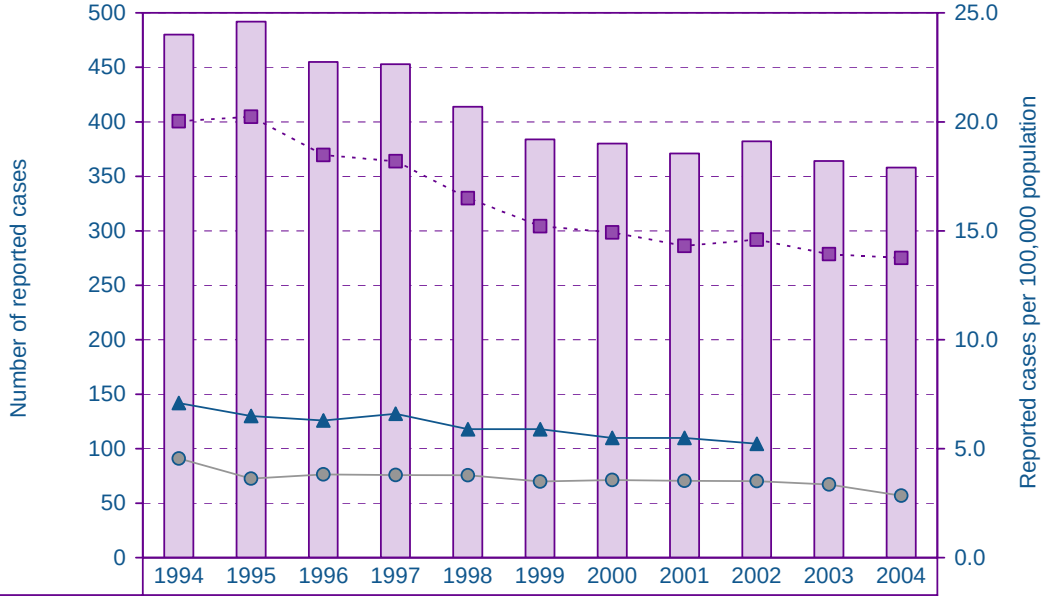
- Of the 358 reported TB cases in 2004, 15 (4%) were known to be co-infected with HIV, similar to the 3% reported in 2003.

- In 2004, the lungs continue to be the most commonly reported anatomic site of tuberculosis (65%) (Table 4.11).

- Fifty-nine percent (n=214) of TB cases in 2003 (the most recent cohort expected to have completed their treatment at the time of this report) were enrolled in the directly observed therapy (DOT) program (Table 4.12). Eighty-seven percent (n=186) of those cases successfully completed treatment. Seventy-one percent (n=173) of pulmonary cases in 2003 were enrolled in DOT.

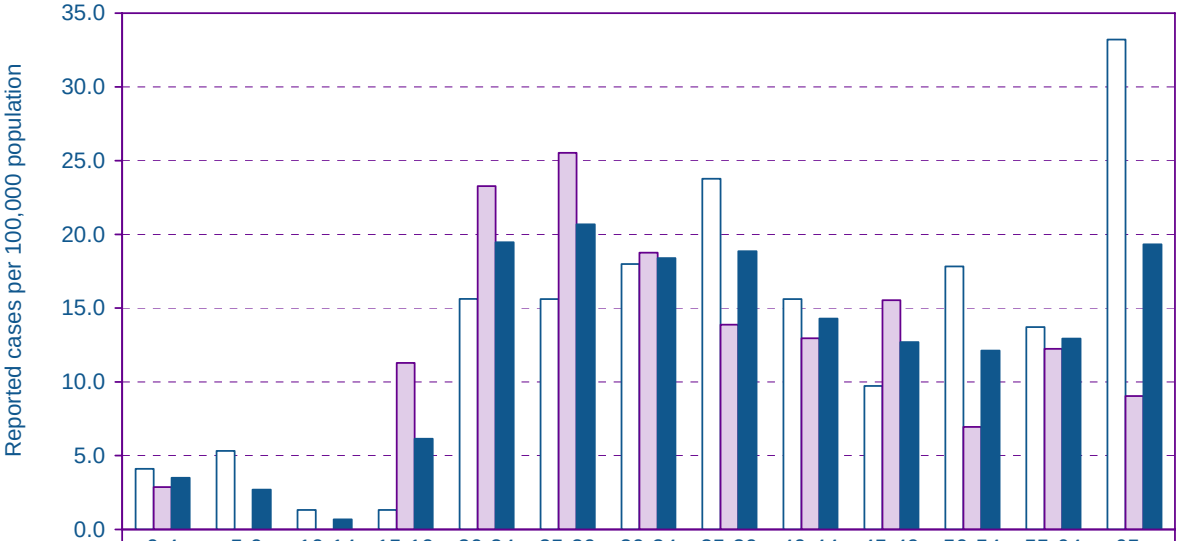
- In 2004, the proportion of isolates resistant to one or more drugs was 19%, an increase over the 14% resistant in 2003 (Figure 4.24). The largest proportion of drug resistant isolates continued to be those exhibiting any INH resistance pattern (excluding rifampin), which accounted for 11% of all isolates that were tested. The proportion of multidrug-resistant TB strains (i.e. strains resistant to at least rifampin and isoniazid) has continued to fluctuate and accounted for 1% of all isolates that were tested in 2004. The proportion of isolates exhibiting other patterns of resistance has increased to a high of 7%.

Figure 4.16: Incidence of tuberculosis by year.
Toronto, the rest of Ontario and Canada, 1994 - 2004



NA: Canada data for 2003 and 2004 are not available.

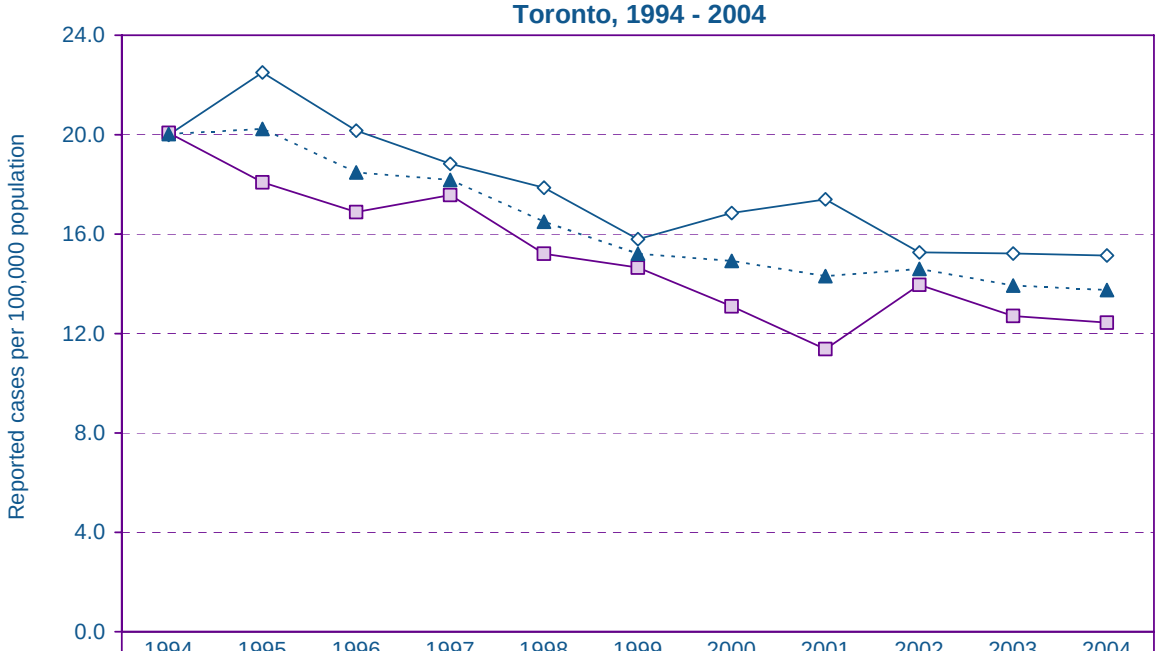
Figure 4.17: Incidence of tuberculosis by age group and sex. Toronto, 2004



	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-64	65+
Male - rates	4.1	5.3	1.3	1.3	15.6	15.6	18.0	23.8	15.6	9.7	17.8	13.7	33.2
Female - rates	2.9	0.0	0.0	11.3	23.3	25.5	18.8	13.9	13.0	15.5	6.9	12.3	9.0
Overall - rates	3.5	2.7	0.7	6.1	19.5	20.7	18.4	18.9	14.3	12.7	12.1	12.9	19.3
Male - cases	3	4	1	1	14	17	21	26	17	9	14	16	49
Female - cases	2	0	0	8	21	29	22	15	14	15	6	16	18

Age group (years)

Figure 4.18: Incidence rates of tuberculosis by sex and year. Toronto, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Male rates	20.0	22.5	20.2	18.8	17.9	15.8	16.8	17.4	15.3	15.2	15.1
Female rates	20.1	18.1	16.9	17.6	15.2	14.7	13.1	11.4	14.0	12.7	12.4
Overall rates	20.0	20.2	18.5	18.2	16.5	15.2	14.9	14.3	14.6	13.9	13.8

Year

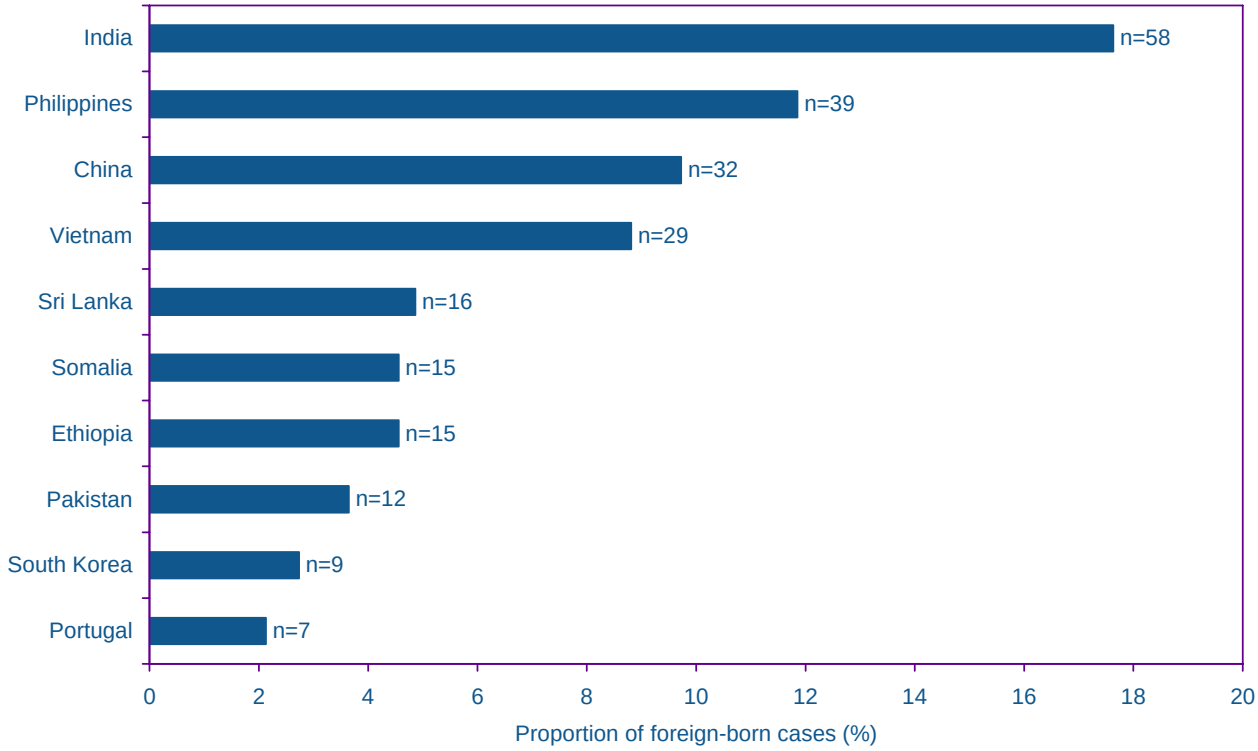
Table 4.10: Risk settings of reported cases of tuberculosis. Toronto, 2004

Reported risk setting	Number of cases	Proportion of cases (%)
Travel or lived in endemic area	311	90
Home	15	4
Shelter or rooming house	15	4
Workplace	2	<1
Residential facility	1	<1
Hospital	1	<1
Other	1	<1
Total with a known risk setting	**346**	**100**
Number missing or unknown	12	
Total cases	**358**	

Figure 4.19: Reported cases of tuberculosis by origin* and year. Toronto, 1994 - 2004

*Numbers may not add up to total cases for any given year because the origin was unknown or missing for some cases.

Figure 4.20: Proportion of foreign-born tuberculosis cases by top 10 countries* of birth. Toronto, 2004



*Other countries of birth were reported by foreign-born tuberculosis cases in 2004.

Table 4.11: Number and proportion of reported cases of tuberculosis by anatomic site and country of origin. Toronto, 2004

Site of tuberculosis*	Canadian-born cases (%)		Foreign-born cases (%)		Overall cases† (%)	
Pulmonary	20	(71)	192	(58)	213	(59)
Lymph node	4	(14)	85	(26)	89	(25)
Pleurisy	1	(4)	16	(5)	17	(5)
Primary pulmonary	3	(11)	12	(4)	15	(4)
Abdominal	0	(0)	15	(5)	15	(4)
Genitourinary	0	(0)	8	(2)	8	(2)
Central nervous system	0	(0)	7	(2)	7	(2)
Miliary	1	(4)	5	(2)	6	(2)
Bone and joint	0	(0)	6	(2)	6	(2)
Skin	0	(0)	3	(<1)	3	(<1)
Other respiratory	1	(4)	0	(0)	1	(<1)
Other	1	(4)	16	(5)	17	(5)
Total sites of infection	**31**		**365**		**397**	
Total cases	**28**		**329**		**358**	

*Cases may have tuberculosis at more than one anatomic site.

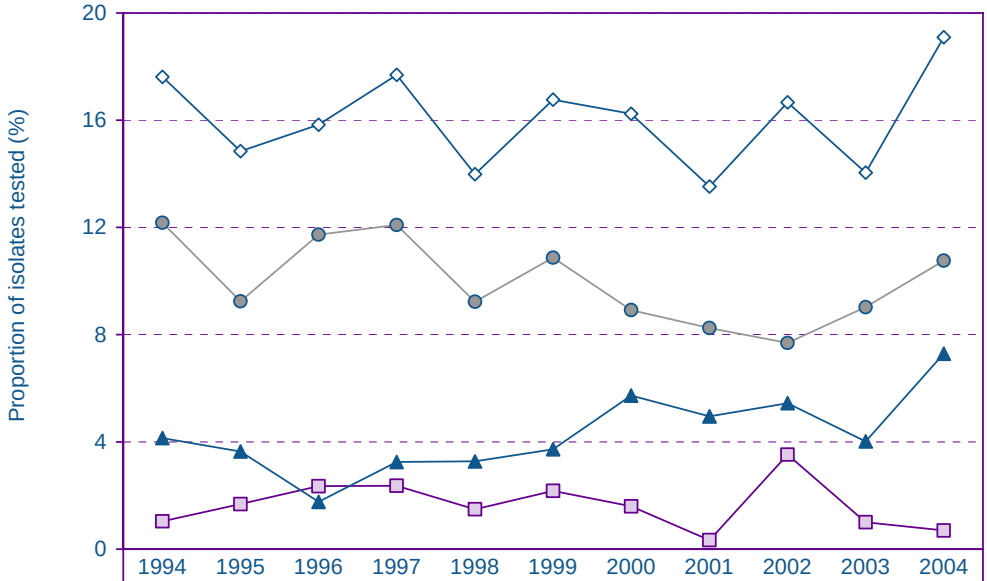
†Country of origin was unknown or missing for one case. The site of tuberculosis for this case was pulmonary (1).

Table 4.12: Reported cases of tuberculosis by treatment status and treatment method. Toronto, 2003*

Treatment status	DOT (%)		Non-DOT (%)	
Successfully treated	186	(87)	107	(71)
Undergoing treatment	18	(8)	8	(5)
Not completed, side effects	1	(<1)	0	(<1)
Not completed, non-compliant	1	(<1)	2	(1)
Not completed, medical contraindications	1	(<1)	2	(1)
Lost to follow up	0	(0)	5	(3)
Other	6	(3)	24	(16)
Unknown	1	(<1)	2	(1)
Total cases	**214**	**(100)**	**150**	**(100)**

*Treatment status is reported for 2003 since this is the most recent cohort expected to have completed their treatment at the time of the report.

Figure 4.21: Proportion of drug resistant tuberculosis cases by year. Toronto, 1994 - 2004



*MDR-TB cases are resistant to at least isoniazid (INH) and rifampin (RMP).

Vectorborne and Zoonotic Diseases

Communicable Diseases in Toronto

2004

Toronto Public Health

Vectorborne and Zoonotic Diseases

This section focuses on diseases caused by infectious agents transmitted through contact with an infected animal. Most transmission occurs through the bite of an arthropod (mosquito or tick), which introduces infectious agents into the bloodstream. Given that the vectors and animal reservoirs for many of these diseases are not naturally found in Toronto, this group of diseases is rare. Relative proportions of each disease within this grouping, and their ranking are listed below. In 2004, malaria accounted for 88% of reports falling into this category. ❑

Table 5.1: Number and proportion of reported cases of vectorborne and zoonotic diseases. Toronto, 2004

Ranking	Reportable disease	Number of cases	Proportion of cases (%)
1	Malaria	93	88
2	West Nile virus	6	6
3	Lyme disease	4	4
4	Brucellosis	2	2
5	Q fever	1	<1
	Total	**106**	**100**

Rare reportable diseases not summarized in this section include hantavirus, hemorrhagic fevers, lassa fever, plague, psittacosis/ornithosis, rabies, tularemia, yellow fever.

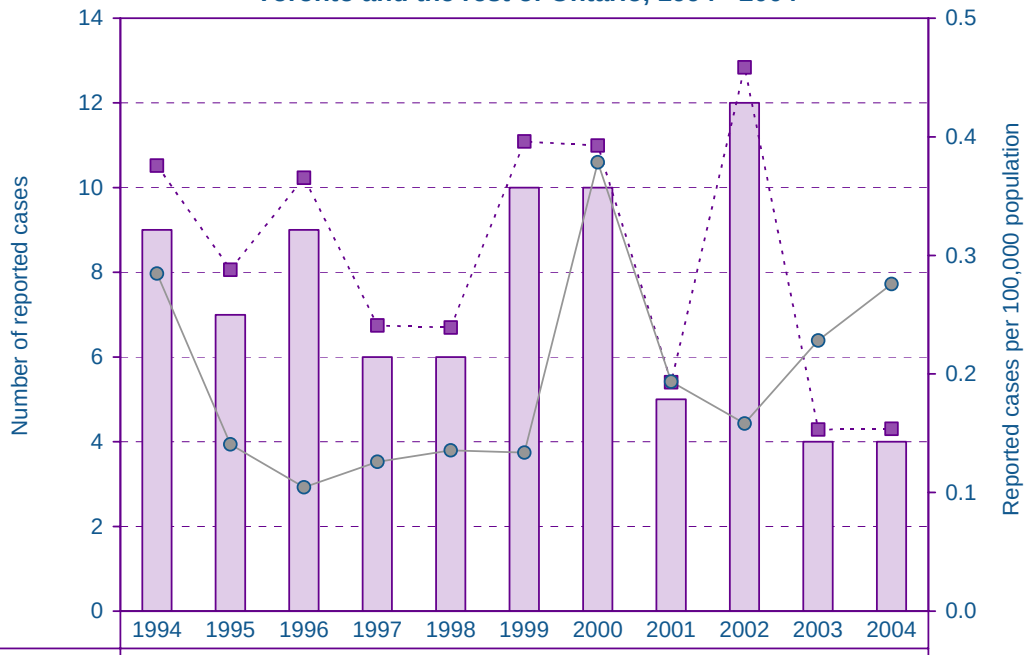
Lyme disease

Table 5.2: Lyme disease summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	4	8	8
Incidence rate (per 100,000 population)			
Overall	0.2	0.3	0.3
Male	0.2	0.3	0.2
Female	0.1	0.3	0.4
Age at onset (years)	Summary statistics		
Mean	43	36	40
Median	49	31	39
Range	24 52	2 72	2 76

Highlights

- In 2004, there were four reported cases (0.2 cases per 100,000) of lyme disease. This represented no change from the number of cases and rate reported for 2003 (Figure 5.1).
- Toronto's rate of lyme disease was lower than the rate reported for the rest of Ontario in 2004 (Figure 5.1).
- The median age of lyme disease cases in 2004 was 49 years. This median age was higher than the previous 5- and 10- year medians of 31 and 39 years, respectively (Table 5.2), but with few reported cases, the median age of cases may change substantially from year to year.
- In the three cases where risk setting was identified, two cases (67%) reported travel outside of Canada to an endemic area and one (33%) reported local camping as the risk setting for acquiring lyme disease.

Figure 5.1: Incidence of lyme disease by year.
Toronto and the rest of Ontario, 1994 - 2004

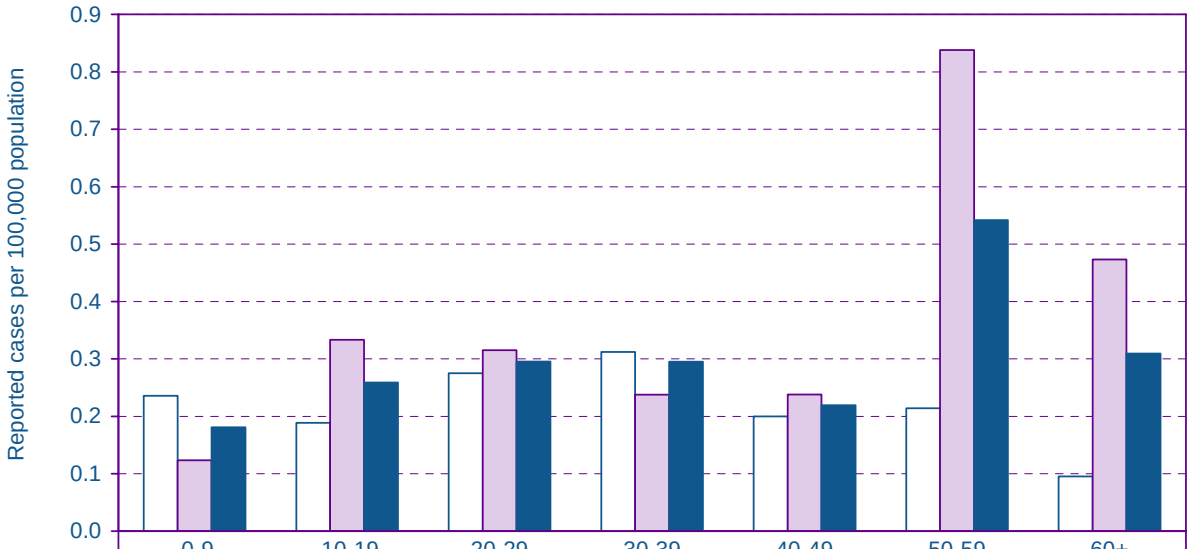


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	9	7	9	6	6	10	10	5	12	4	4
Toronto rates	0.4	0.3	0.4	0.2	0.2	0.4	0.4	0.2	0.5	0.2	0.2
Ontario less Toronto rates	0.3	0.1	0.1	0.1	0.1	0.1	0.4	0.2	0.2	0.2	0.3

Year

Lyme disease is not nationally notifiable.

Figure 5.2: Incidence of lyme disease by age group and sex*.
Toronto, 1994- 2004 combined



	0-9	10-19	20-29	30-39	40-49	50-59	60+
Male rates	0.2	0.2	0.3	0.3	0.2	0.2	0.1
Female rates	0.1	0.3	0.3	0.2	0.2	0.8	0.5
Overall rates	0.2	0.3	0.3	0.3	0.2	0.5	0.3
Male cases	4	3	6	8	4	3	2
Female cases	2	5	7	6	5	13	13

*The sex was not reported for one case.

Age group (years)

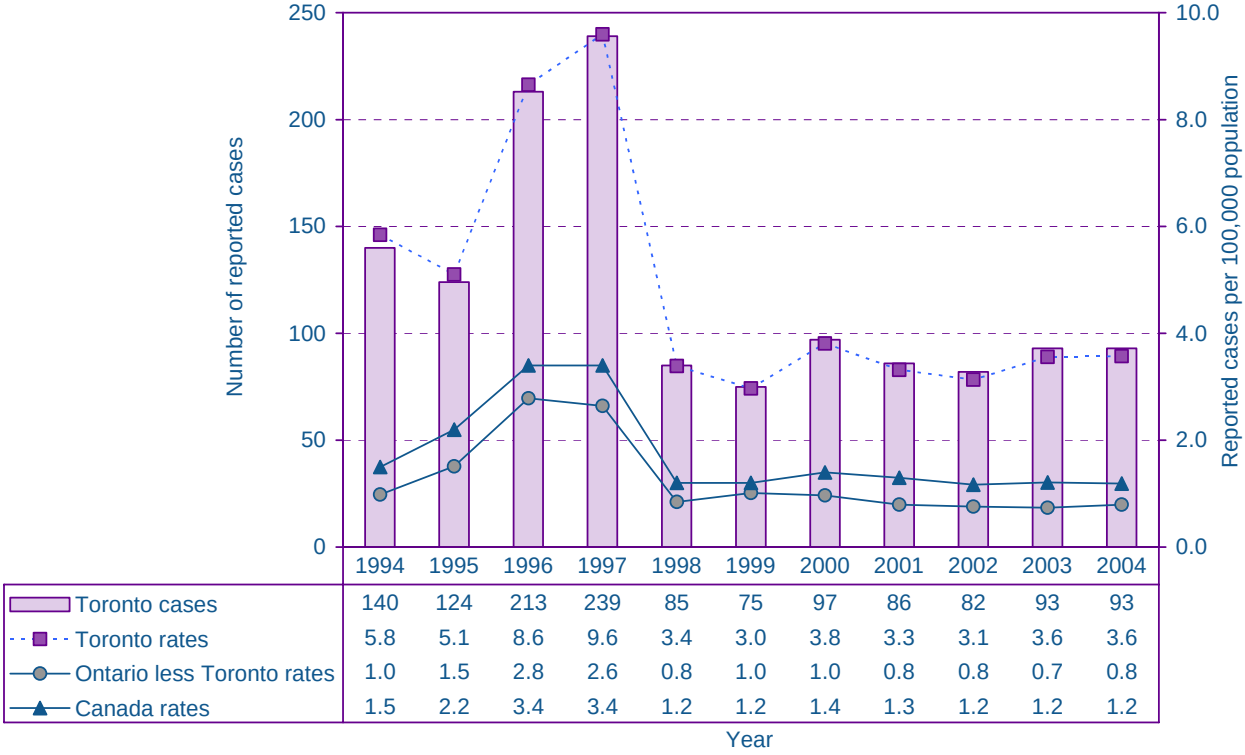
Malaria

Table 5.3: Malaria summary data Toronto			
	2004	5-yr period 1999-2003	10-yr period 1994-2003
	Total	Means	
Number of reported cases	93	87	123
Incidence rate (per 100,000 population)			
Overall	3.6	3.4	4.9
Male	4.9	5.0	6.4
Female	2.3	1.8	3.4
Age at onset (years)	Summary statistics		
Mean	35	33	33
Median	35	35	33
Range	<1 83	<1 79	<1 95

Highlights

- In 2004, there were 93 reported cases (3.6 cases per 100,000) of malaria. This represented no change from the number of cases and rate reported for 2003 (Figure 5.3).
- Toronto's rate of malaria was 4.5 times the rate reported for the rest of Ontario in 2004 and 3 times the rate reported for Canada (Figure 5.3). This may be related to Toronto's large immigrant population and associated travel to malaria endemic areas of the world. In 2004, cases from Toronto accounted for 54% of all malaria cases reported in Ontario (N=171).
- The age groups with the highest incidence rates of malaria included all three groups from 20 to 49 year olds (Figure 5.4).
- Males accounted for 67% (n=62) of all malaria cases in 2004 and experienced age-specific rates which exceeded their female counterparts in all age groups but one (0 to 9 year olds) (Figure 5.4).
- With the exception of March and December, the number of reports for each month in 2004 was comparable to or lower than the historical mean (Figure 5.5).
- Of the 89 cases where a travel destination was reported, 24% (n=21) traveled to Ghana, 21% (n=19) traveled to Nigeria, 16% (n=14) traveled to India, 10% (n=9) traveled to Pakistan, and 2% (n=2) traveled to Dominican Republic. The remaining 24 reported travel to sixteen other countries.

Figure 5.3: Incidence of malaria by year. Toronto, the rest of Ontario and Canada*, 1994 - 2004

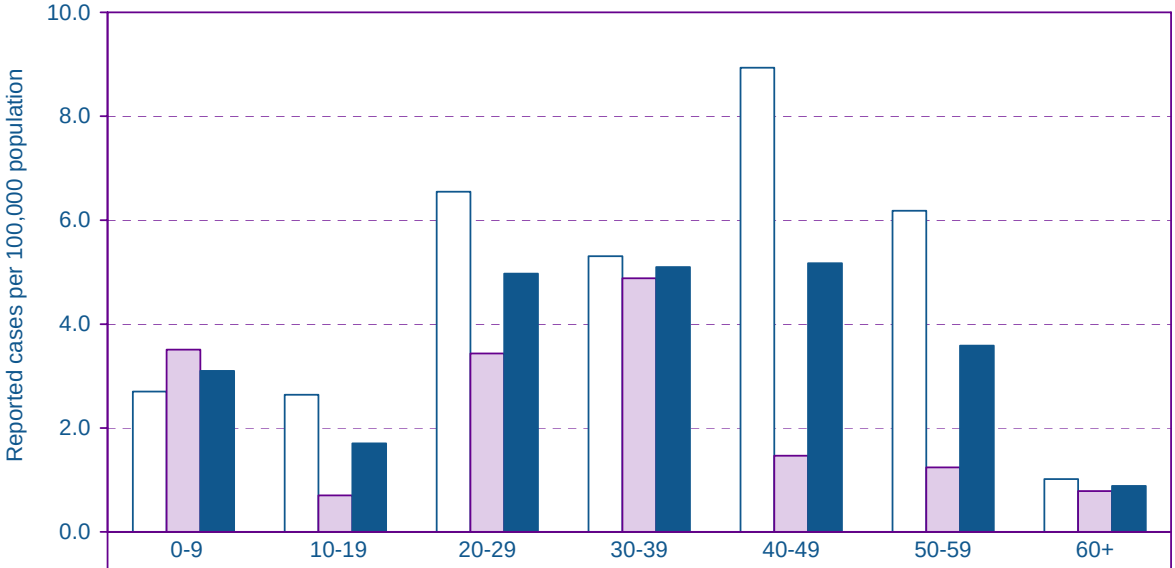


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto cases	140	124	213	239	85	75	97	86	82	93	93
Toronto rates	5.8	5.1	8.6	9.6	3.4	3.0	3.8	3.3	3.1	3.6	3.6
Ontario less Toronto rates	1.0	1.5	2.8	2.6	0.8	1.0	1.0	0.8	0.8	0.7	0.8
Canada rates	1.5	2.2	3.4	3.4	1.2	1.2	1.4	1.3	1.2	1.2	1.2

Year

*Canada data for 2003 does not include Saskatchewan, and for 2004 does not include Nunavut and Saskatchewan.

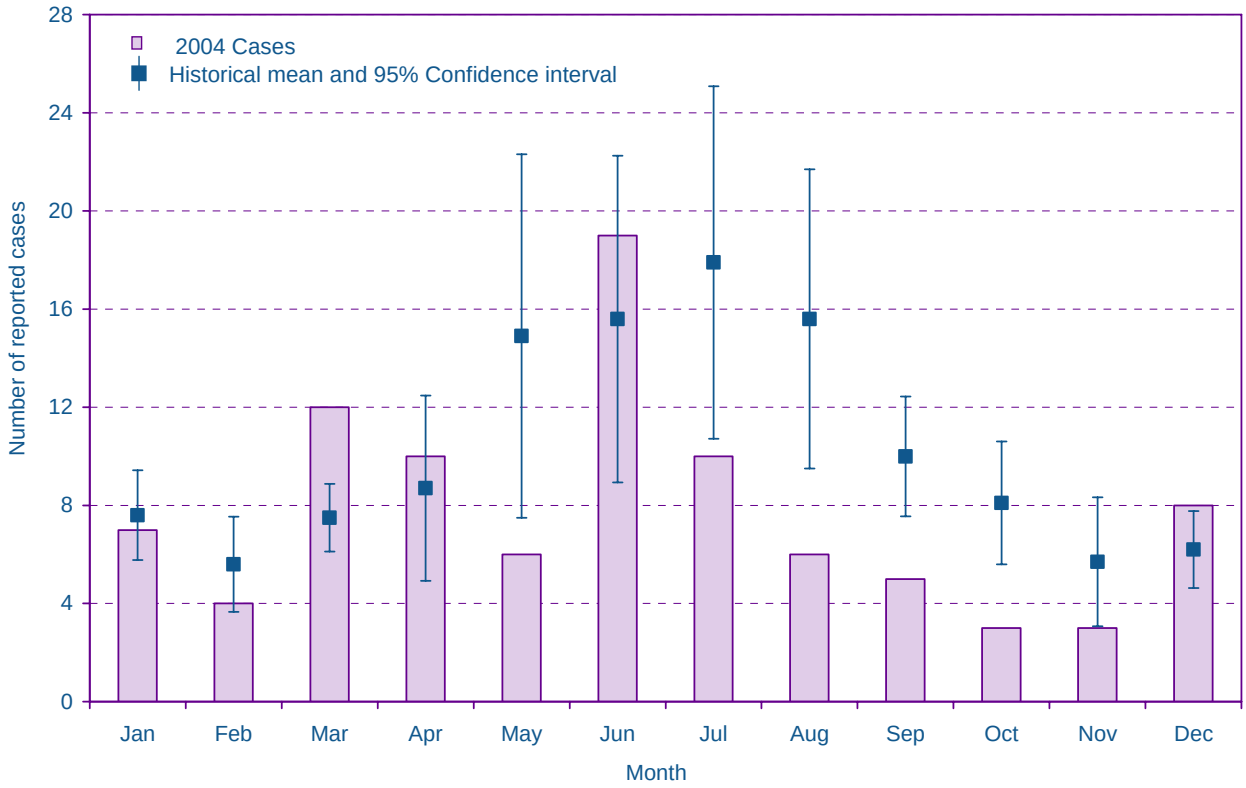
Figure 5.4: Incidence of malaria by age group and sex. Toronto, 2004



	0-9	10-19	20-29	30-39	40-49	50-59	60+
Male rates	2.7	2.6	6.5	5.3	8.9	6.2	1.0
Female rates	3.5	0.7	3.4	4.9	1.5	1.2	0.8
Overall rates	3.1	1.7	5.0	5.1	5.2	3.6	0.9
Male cases	4	4	13	12	18	9	2
Female cases	5	1	7	11	3	2	2

Age group (years)

Figure 5.5: Number of reported cases of malaria by month.
Toronto, 2004 compared to 1994 - 2003 mean



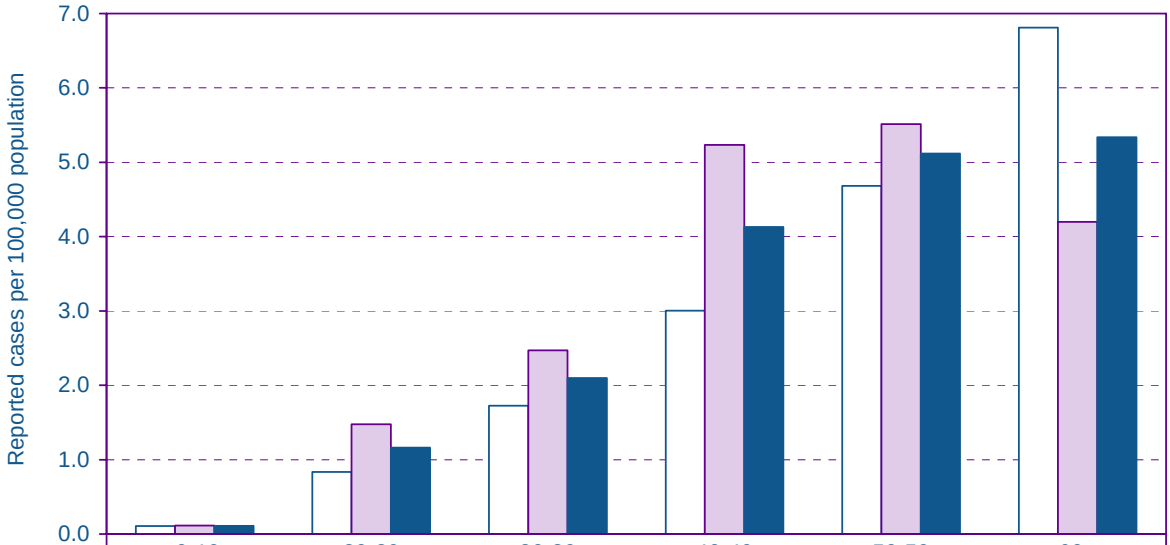
West Nile virus (WNv)

Table 5.4: West Nile virus summary data Toronto			
	2004	2003	2002
Number of reported cases	6	44	163
Incidence rate (per 100,000 population)			
Overall	0.2	1.7	6.2
Male	0.2	1.6	5.8
Female	0.3	1.8	6.6
Age at onset (years)	Summary statistics		
Mean	61	50	54
Median	59	50	52
Range	39 88	13 90	19 89
Hospitalization rate (%)	50	18	52
Case fatality (%)	0	0	6

Highlights

- In 2004, there were six confirmed reported cases of West Nile virus (WNv). This represented a decrease of 38 cases (86%) from the 2003 total of 44 cases (Table 5.4).
- Among WNv cases reported in 2004, 50% of all cases (n=3) were treated in hospital (Table 5.4). There were no reported deaths related to West Nile virus infection in 2004.
- The age group with the highest incidence rate of WNv in the combined years (2002-2004) was those 60 years and older (5.3 cases per 100,000) (Figure 5.6).
- In 2004, WNv human cases were reported in August, September and October (Figure 5.7).
- The most commonly reported risk settings were the home environment (66%) and visiting a local park or recreational area (17%) (Figure 5.8).

Figure 5.6: Incidence of West Nile virus by age group and sex. Toronto, 2002-2004 combined



	0-19	20-29	30-39	40-49	50-59	60+
Male rates	0.1	0.8	1.7	3.0	4.7	6.8
Female rates	0.1	1.5	2.5	5.2	5.5	4.2
Overall rates	0.1	1.2	2.1	4.1	5.1	5.3
Male cases	1	5	12	18	20	40
Female cases	1	9	17	32	26	32

Age group (years)

Figure 5.7: Number of reported cases of West Nile virus by month. Toronto, 2002 - 2004

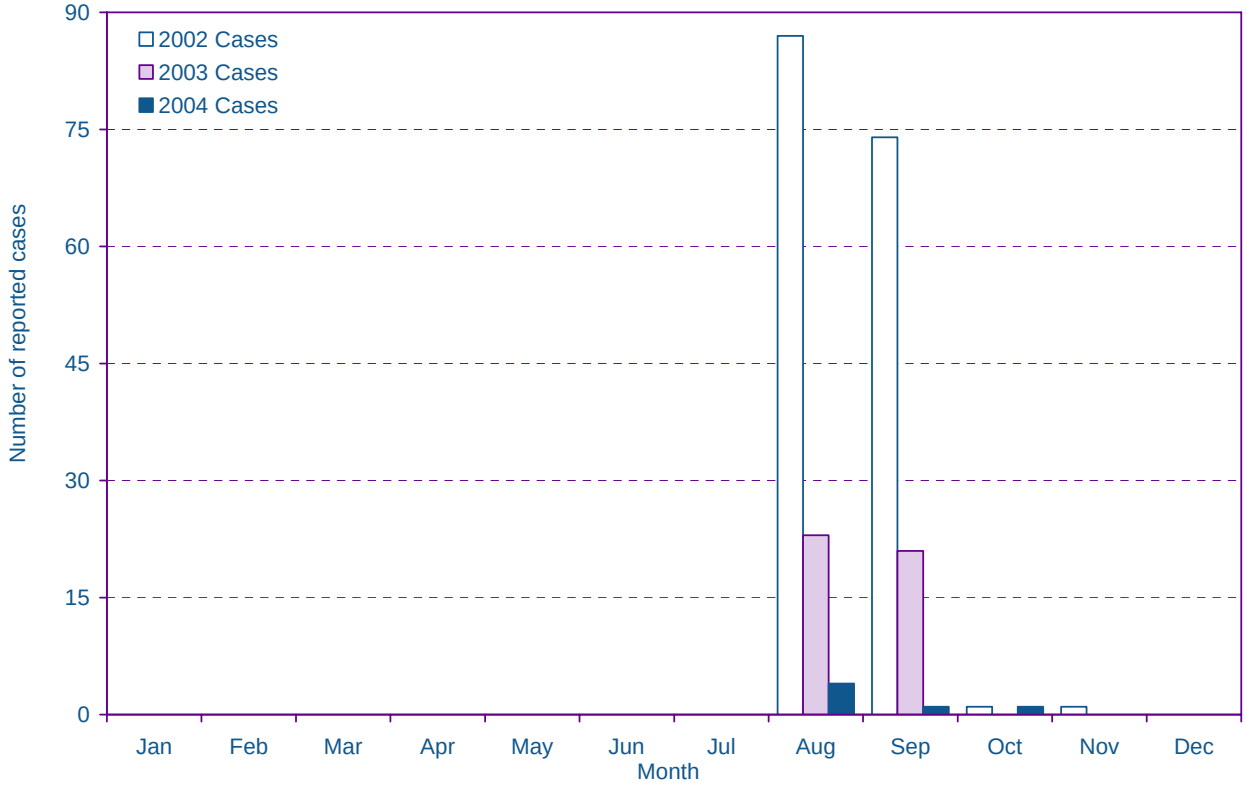
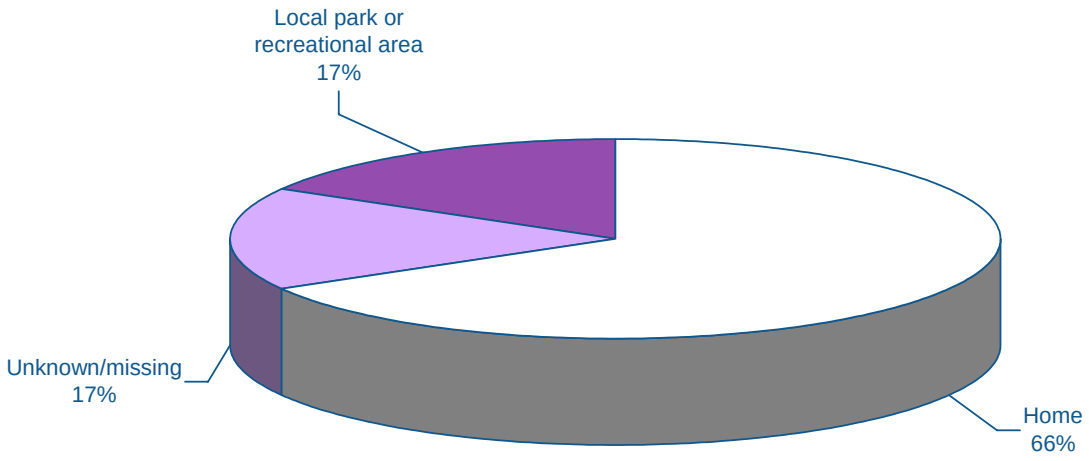


Figure 5.8: Proportion of reported cases of West Nile virus by reported risk setting. Toronto, 2004 (N=6)



Encephalitis/ Meningitis

Communicable Diseases in Toronto

2004

Toronto Public Health

Encephalitis / Meningitis

(excluding all other reportable diseases known to cause encephalitis / meningitis)

Table 6.1: Encephalitis/meningitis summary data

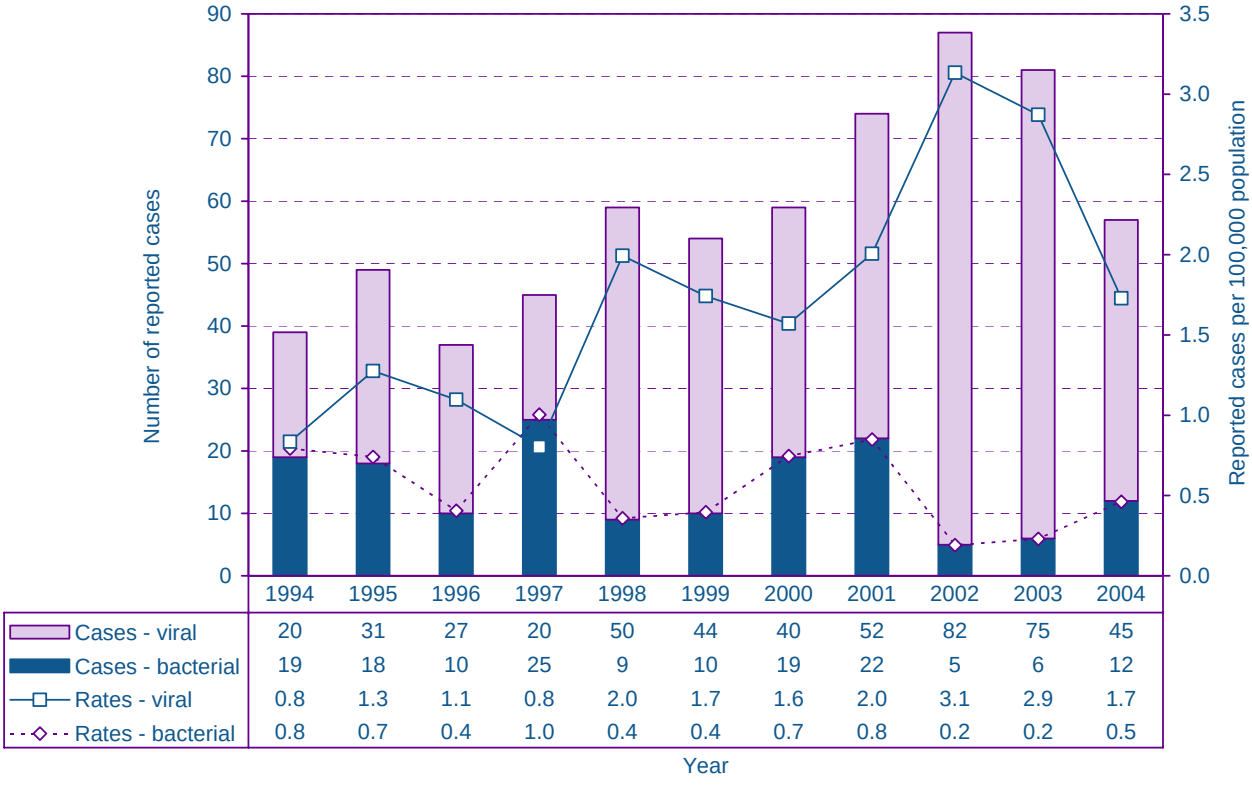
Toronto

	2004		5-yr period 1999-2003		10-yr period 1994-2003	
	Totals		Means			
	Bacterial	Viral	Bacterial	Viral	Bacterial	Viral
Number of reported cases	12	45	12	59	14	44
Incidence rate (per 100,000 population)						
Overall	0.5	1.7	0.5	2.3	0.6	1.8
Male	0.3	2.5	0.6	2.5	0.6	1.9
Female	0.6	1.0	0.4	2.0	0.5	1.6
Age at onset (years)	Summary statistics					
Mean	35	23	28	27	32	26
Median	41	15	25	24	34	24
Range	<1 - 45	<1 - 78	<1 - 84	<1 - 94	<1 - 84	<1 - 94
Case fatality (%)	8	2	10	3	15	2
*Other cases	7		3		7	
†Unclassified cases	8		7		7	

*Cases for which a fungal agent was identified.

†Cases for which no agent was identified.

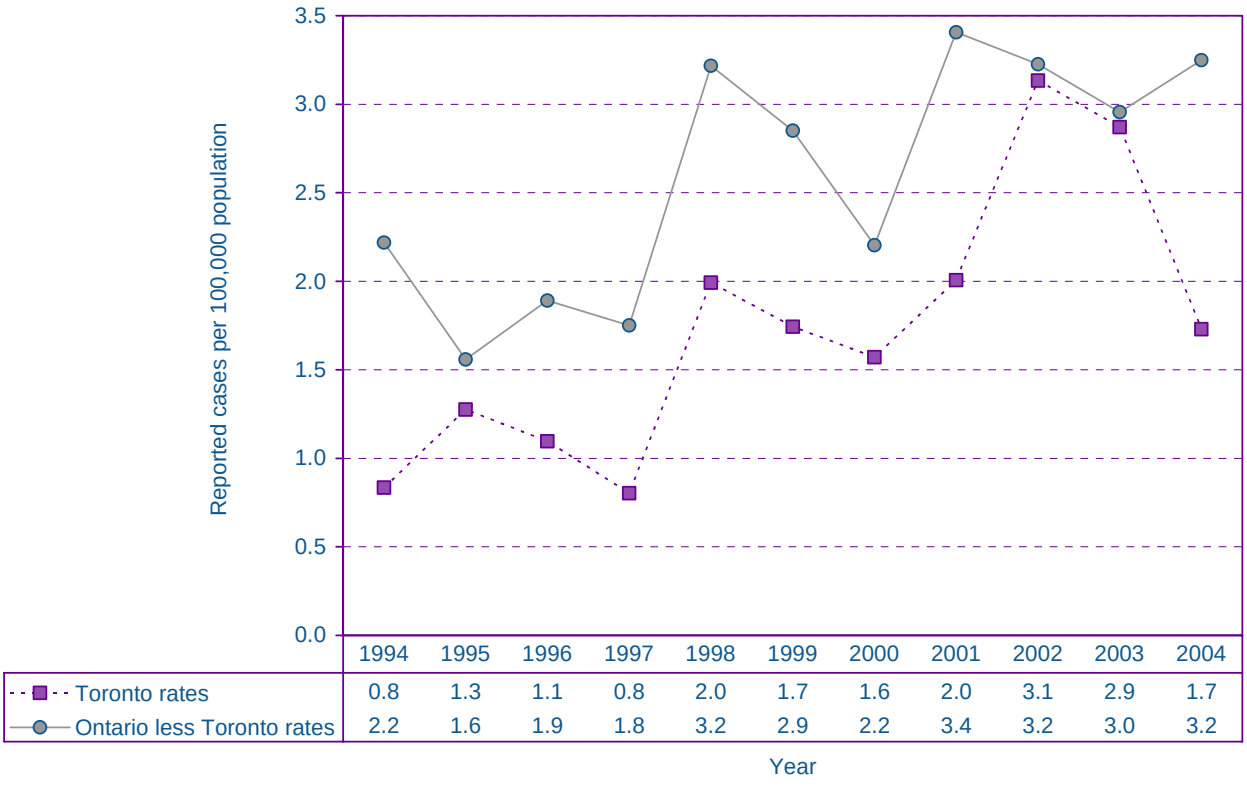
Figure 6.1: Incidence of encephalitis/meningitis, viral and bacterial causes by year. Toronto, 1994 - 2004



Highlights: Viral

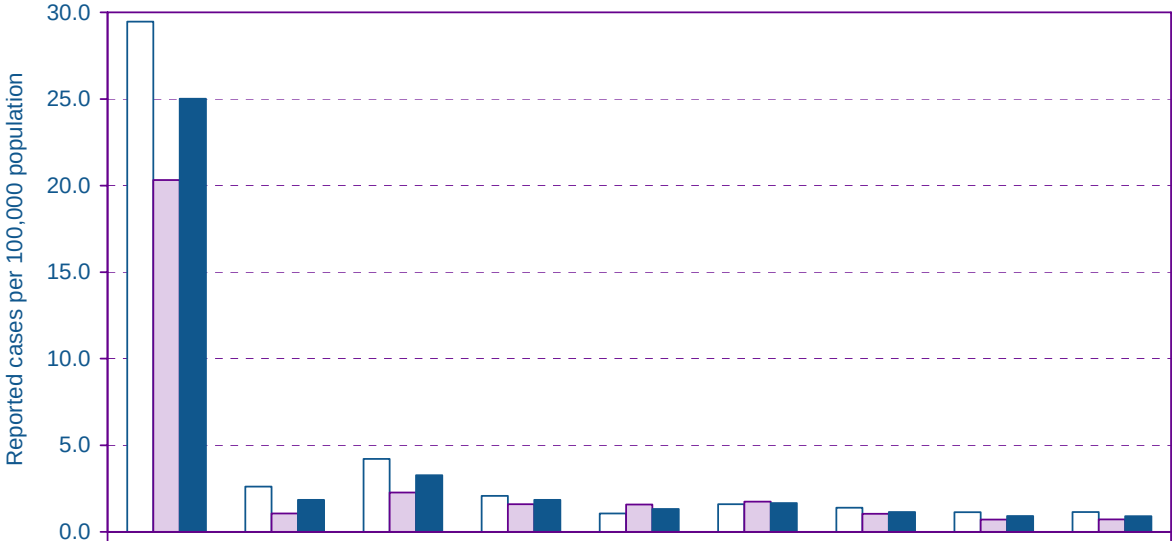
- In 2004, there were 45 reported cases (1.7 cases per 100,000) of viral encephalitis/meningitis. This represented a decrease of thirty cases (40%) from the 2003 total of 75 cases (Figure 6.1).
- Incidence rates of viral encephalitis/meningitis in infants under 1 year of age decreased from 54.5 cases per 100,000 in 2003 to 47.9 cases per 100,000 in 2004. This decrease was observed only in females in this age group.
- With the exception of September, October and December the number of reports for each month in 2004 was comparable to or higher than the historical mean (Figure 6.4). The highest number of reported cases was in August.
- The most commonly identified viral agents in 2004 were *Enterovirus* (31%) and *Herpes simplex virus* (29%) (Table 6.2).

Figure 6.2: Incidence rates of encephalitis/meningitis, viral by year. Toronto compared to the rest of Ontario, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto rates	0.8	1.3	1.1	0.8	2.0	1.7	1.6	2.0	3.1	2.9	1.7
Ontario less Toronto rates	2.2	1.6	1.9	1.8	3.2	2.9	2.2	3.4	3.2	3.0	3.2

Figure 6.3: Incidence of encephalitis/meningitis, viral by age group* and sex. Toronto, 1994 - 2004 combined



	<1	1-4	5-9	10-19	20-29	30-39	40-49	50-59	60+
Male rates	29.5	2.6	4.2	2.1	1.1	1.6	1.4	1.1	1.1
Female rates	20.3	1.1	2.3	1.6	1.6	1.7	1.0	0.7	0.7
Overall rates	25.0	1.9	3.3	1.8	1.3	1.7	1.1	0.9	0.9
Male cases	52	18	35	33	23	41	25	16	24
Female cases	34	7	18	24	35	44	22	11	20

*The age of four cases was not reported.

Age group (years)

Figure 6.4: Number of reported cases of encephalitis/meningitis, viral by month. Toronto, 2004 compared to 1994 - 2003 mean

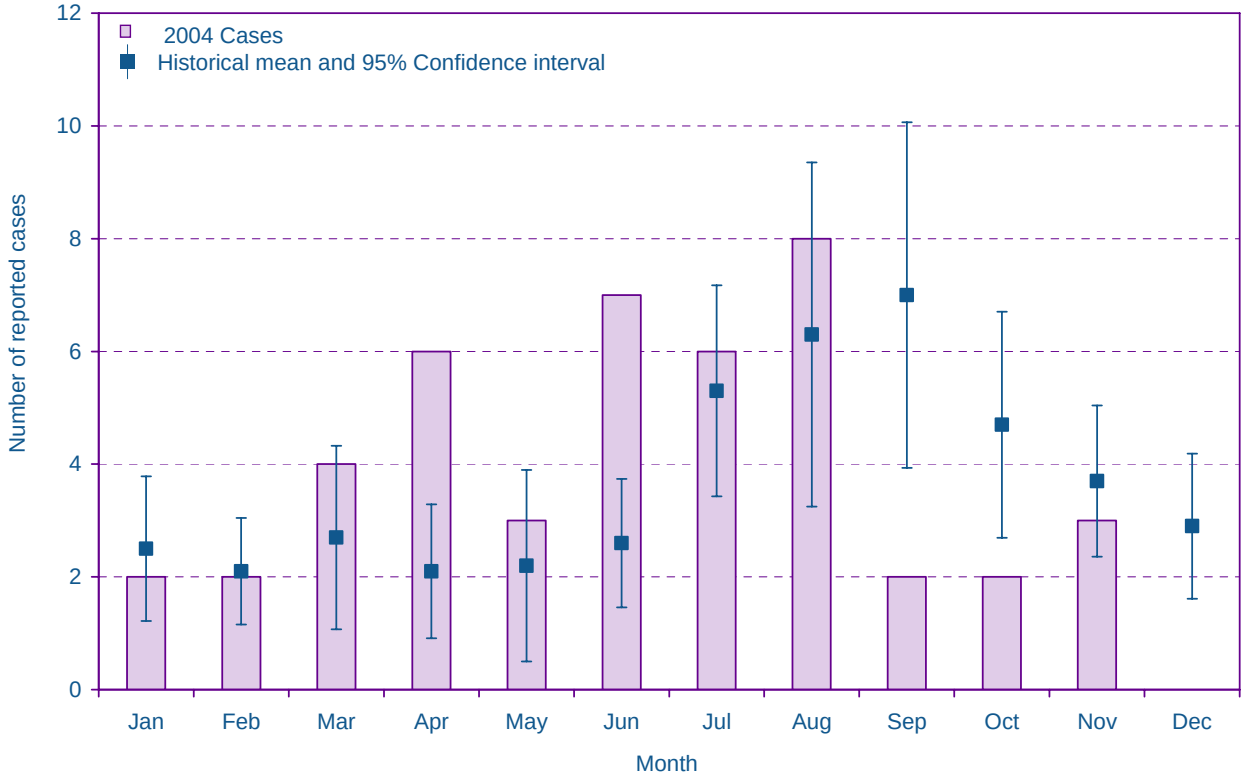


Table 6.2: Incidence of viral encephalitis/meningitis by agent. Toronto, 2004 cases compared to previous 5-year mean

Agent organism	Number of cases (%)	
	2004 (N=45)	5-yr mean 1999-2003 (N=59)
Suspect viral*	14 (31)	18 (31)
Enterovirus	14 (31)	12 (21)
Herpes simplex virus	13 (29)	11 (18)
Coxsackie virus	1 (2)	2 (4)
Dengue virus †	0 (0)	7 (11)
Echovirus	0 (0)	1 (2)
St. Louis virus	0 (0)	1 (2)
Other	3 (7)	7 (11)
Total	**45 (100)**	**59 (100)**

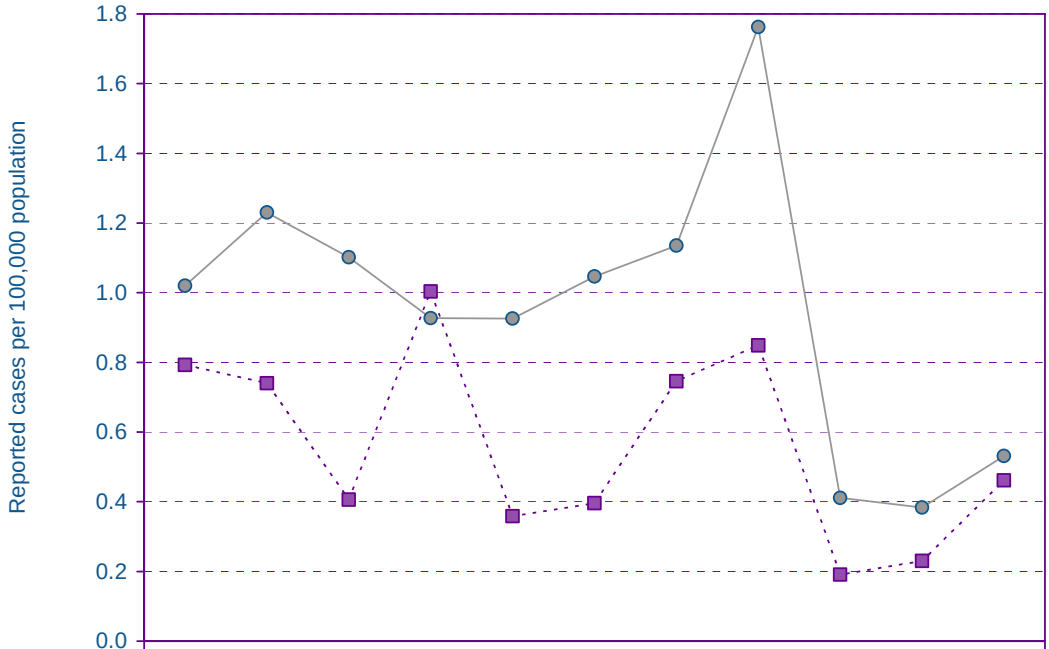
*Suspect viral cases were those without a confirmed viral agent but with clinical signs and symptoms indicating a viral infection.

†Not endemic.

Highlights: Bacterial

- In 2004, there were twelve cases (0.5 cases per 100,000) of bacterial encephalitis/meningitis reported. The incidence rate of bacterial encephalitis/meningitis was twice the rate reported for 2003 (Figure 6.1).
- Infants less than 1 year of age accounted for 33% (n=4) of all cases of bacterial encephalitis/meningitis in 2004.
- With the exception of August and December, the number of reports for each month in 2004 was comparable to or lower than the historical mean (Figure 6.7).
- The most common bacterial encephalitis/meningitis agent identified in 2004 was *Escherichia coli* (33%) (Table 6.3).

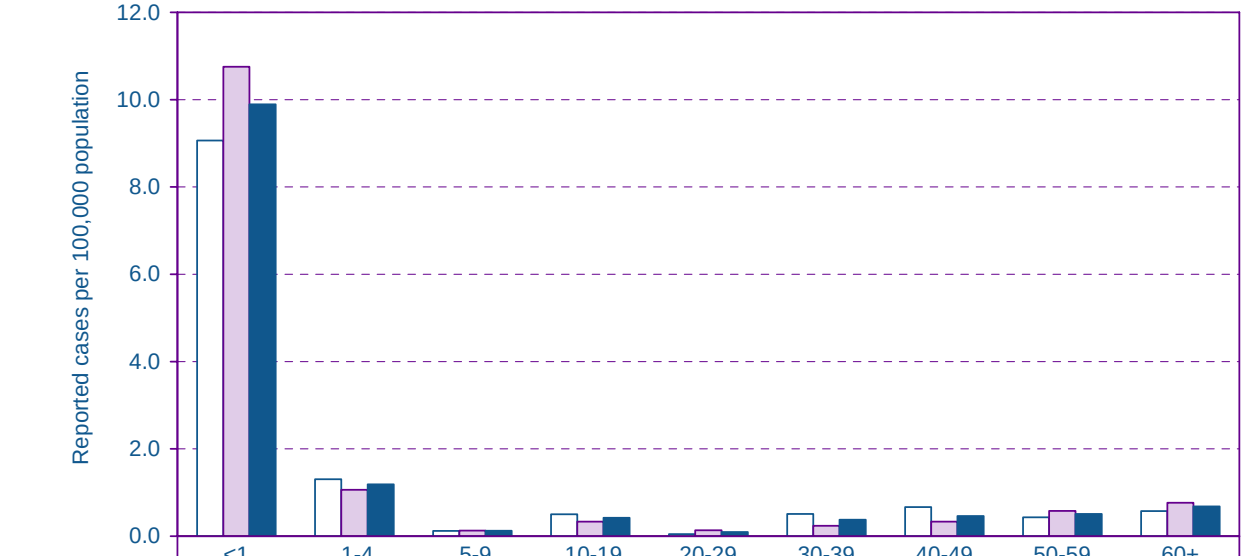
Figure 6.5: Incidence rates of encephalitis/meningitis, bacterial by year. Toronto compared to the rest of Ontario, 1994 - 2004



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Toronto rates	0.8	0.7	0.4	1.0	0.4	0.4	0.7	0.8	0.2	0.2	0.5
Ontario less Toronto rates	1.0	1.2	1.1	0.9	0.9	1.0	1.1	1.8	0.4	0.4	0.5

Year

Figure 6.6: Incidence of encephalitis/meningitis, bacterial by age group and sex. Toronto, 1994 - 2004 combined



	<1	1-4	5-9	10-19	20-29	30-39	40-49	50-59	60+
Male rates	9.1	1.3	0.1	0.5	<0.1	0.5	0.7	0.4	0.6
Female rates	10.8	1.1	0.1	0.3	0.1	0.2	0.3	0.6	0.8
Overall rates	9.9	1.2	0.1	0.4	0.1	0.4	0.5	0.5	0.7
Male cases	16	9	1	8	1	13	12	6	12
Female cases	18	7	1	5	3	6	7	9	21

Age group (years)

Figure 6.7: Number of reported cases of encephalitis/meningitis, bacterial by month. Toronto, 2004 compared to 1994 - 2003 mean

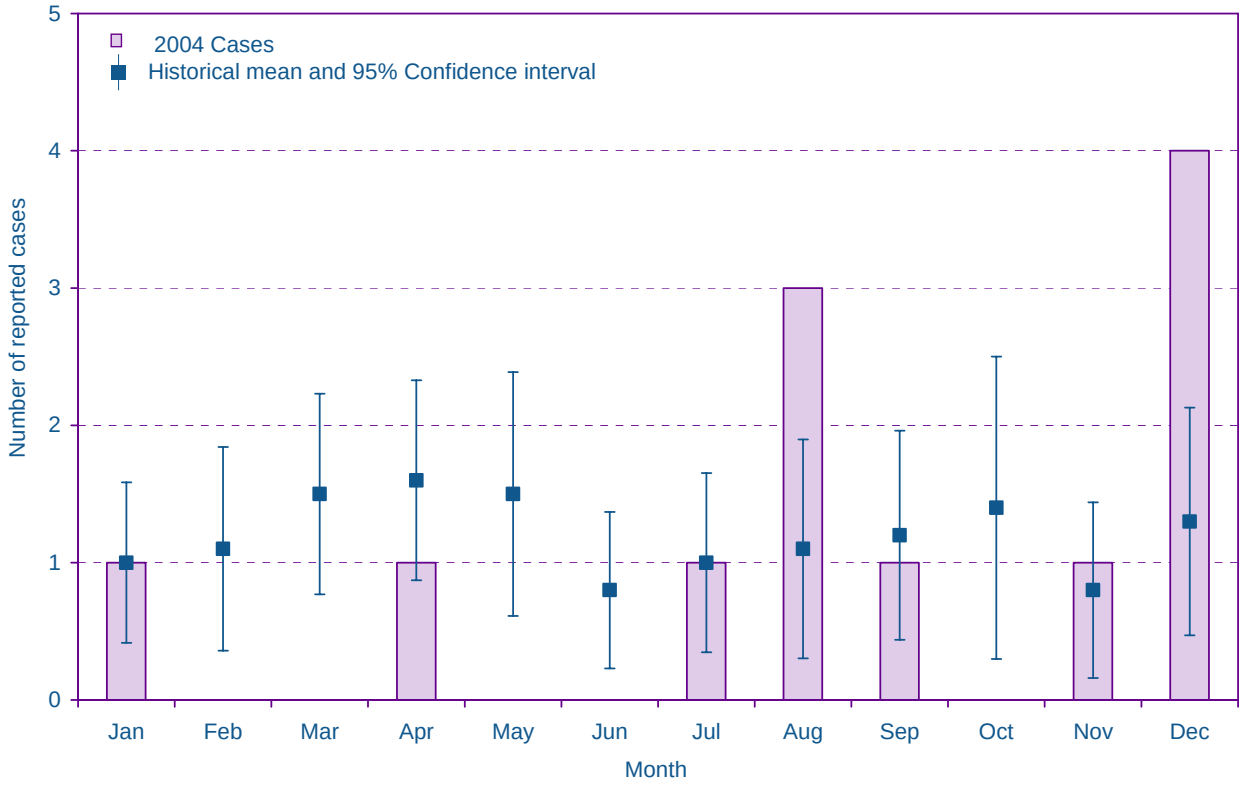


Table 6.3: Incidence of bacterial encephalitis/meningitis by agent. Toronto, 2004 cases compared to previous 5-year mean

Agent organism*	Number of cases (%)	
	2004 (N=12)	5-yr mean 1999-2003 (N=12)
Suspect bacterial†	5 (42)	3 (21)
Escherichia coli	4 (33)	<1 (6)
Staphylococcus aureus	2 (17)	<1 (5)
Enterobacter	1 (8)	<1 (2)
Streptococcus	0 (0)	5 (39)
Pneumococcus	0 (0)	2 (15)
Klebsiella	0 (0)	<1 (5)
Streptococcus other than S.pneumoniae/pneumococcus	0 (0)	<1 (2)
Serratia	0 (0)	<1 (2)
Salmonella	0 (0)	<1 (2)
Other	0 (0)	<1 (3)
Total	**12 (100)**	**12 (100)**

* Excludes encephalitis/meningitis caused by *Neisseria meningitidis.*

†Suspect bacterial cases were those without a confirmed bacterial agent but with clinical signs and symptoms indicating a bacterial infection.

Rare Diseases

Communicable Diseases in Toronto

2004

Toronto Public Health

Rare Communicable Reportable Diseases

There are several reportable diseases that are rare in Toronto and have insufficient data to generate rates or trends across time. Some of these diseases were once widespread and have been successfully controlled through public health programs, evolving technologies and development of new medications, and increased awareness. Other diseases are not endemic to North America but contagious enough that their rare appearance is monitored. Table 7.1 summarizes SARS and all those diseases that had less than 50 cases reported over the last decade and/or less than five cases reported in 2004. These diseases vary in their modes of transmission, but are categorized according to the main chapters and sections of this report to which they correspond. They share several of the attributes of other diseases in these respective sections. ❑

Table 7.1: Summary of rare reportable diseases. Toronto, 1994 - 2004

Disease	Disease category	Year of last report	Total number of cases for period 1994 - 2004
Botulism	Enteric, food and waterborne	2004	6
Brucellosis	Vectorborne and zoonotic	2004	8
Cholera	Enteric, food and waterborne	1998	3
Cytomegalovirus infection, congenital	Sexually transmitted and bloodborne	2003	15
Haemophilus influenzae b disease, invasive	Preventable by routine vaccination	2004	19
Haemorrhagic fevers	Vectorborne and zoonotic	1997	2
Hepatitis D	Sexually transmitted and bloodborne	2004	26
Herpes, neonatal	Sexually transmitted and bloodborne	2004	13
Leprosy	Direct contact and respiratory	2003	25
Ophthalmia neonatorum	Sexually transmitted and bloodborne	2004	40
Psittacosis/Ornithosis	Vectorborne and zoonotic	1996	3
Q fever	Vectorborne and zoonotic	2004	10
Severe Acute Respiratory Syndrome	Direct contact and respiratory	2003	228
Rubella, congenital syndrome	Preventable by routine vaccination	2004	5
Tetanus	Preventable by routine vaccination	1997	2
Tularemia	Vectorborne and zoonotic	1997	1

Outbreaks

Communicable Diseases in Toronto

2004

TORONTO Public Health

Outbreaks

Table 8.1: Outbreak summary data Toronto						
	2004			5-yr period 1999-2003		
	Total			Mean		
	Enteric	Respiratory*	Other	Enteric	Respiratory*	Other
Number of reported outbreaks	184	186	1	170	112	3
Number of cases	3143	3694	2	4677	2533	43
Mean number of cases per outbreak	17	20	2	28	23	14
Number of deaths	16	106	2	6	52	6

*Seasonal year from July to June (i.e. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

Highlights: Enteric Outbreaks

- There were 184 enteric outbreaks reported in 2004. This represented an increase of 59 (47%) from 2003 when 125 outbreaks were reported (Table 8.2). The number of deaths increased almost three times over the previous year.
- Norovirus continued to be the most commonly identified agent (15%) causing an enteric outbreak (Table 8.2). In 2004, the proportion of enteric outbreaks associated with norovirus was comparable to previous 4 years with the exception of 2002, when increased norovirus activity was reported across parts of North America.
- In 2004, the largest number (n=107) of enteric outbreaks in Toronto were again reported in child care centres (Table 8.3). The proportion of outbreaks reported in long term care facilities continued to decline over the last 4 years.
- There were 3,143 people identified as cases in enteric outbreaks reported in 2004 (Table 8.4). This was comparable to the 3,211 cases reported in 2003. The mean and median number of cases per enteric outbreak dropped from 26 and 17 in 2003 to 17 and 12, respectively for 2004. LTCFs reported the highest number of cases and cases per outbreak in 2004 (Table 8.4).
- With the exception of February, May, June and November, the number of enteric outbreaks reported for each month of 2004 was comparable to or lower than the historical mean (Figure 8.1).

Table 8.2: Number and proportion of reported enteric outbreaks by agent. Toronto, 2000 - 2004

Etiological agent/disease	Number of reported outbreaks (%)											
	Overall		2000		2001		2002		2003		2004	
Bacteria												
Campylobacter spp.	9	(<1)	3	(2)	2	(1)	2	(<1)	0	(0)	2	(1)
Clostridium perfringens	6	(<1)	2	(1)	2	(1)	1	(<1)	1	(<1)	0	(0)
Clostridium difficile	6	(<1)	0	(0)	4	(3)	0	(0)	1	(<1)	1	(<1)
Salmonella spp.	5	(<1)	1	(<1)	3	(2)	0	(0)	1	(<1)	0	(0)
Shigella spp.	4	(<1)	1	(<1)	0	(0)	2	(<1)	1	(<1)	0	(0)
E. coli 0157:H7	3	(<1)	1	(<1)	2	(1)	0	(0)	0	(0)	0	(0)
Bacillus cereus	2	(<1)	1	(<1)	1	(<1)	0	(0)	0	(0)	0	(0)
Clostridium spp.	2	(<1)	2	(1)	0	(0)	0	(0)	0	(0)	0	(0)
Salmonella typhi	1	(<1)	0	(0)	1	(<1)	0	(0)	0	(0)	0	(0)
Total - Bacteria	**38**	**(4)**	**11**	**(7)**	**15**	**(10)**	**5**	**(2)**	**4**	**(3)**	**3**	**(2)**
Viruses												
Norovirus*	201	(22)	31	(19)	18	(12)	102	(34)	23	(18)	27	(15)
Rotavirus	39	(4)	10	(6)	8	(5)	6	(2)	8	(6)	7	(4)
Adenovirus	19	(2)	3	(2)	5	(3)	2	(1)	5	(4)	4	(2)
Enterovirus	6	(<1)	0	(0)	0	(0)	1	(<1)	3	(2)	2	(1)
Astrovirus	5	(<1)	0	(0)	0	(0)	4	(1)	1	(<1)	0	(0)
Hepatitis A Virus	4	(<1)	1	(<1)	2	(1)	1	(<1)	0	(0)	0	(0)
Picorna-like Virus	3	(<1)	0	(0)	1	(<1)	0	(0)	1	(<1)	1	(<1)
Echovirus	1	(<1)	0	(0)	1	(<1)	0	(0)	0	(0)	0	(0)
Total - Viruses	**278**	**(30)**	**45**	**(28)**	**35**	**(23)**	**116**	**(39)**	**41**	**(33)**	**41**	**(22)**
Parasites												
Giardia lamblia	1	(<1)	0	(0)	0	(0)	1	(<1)	0	(0)	0	(0)
Total - Parasites	**1**	**(<1)**	**0**	**(0)**	**0**	**(0)**	**1**	**(<1)**	**0**	**(0)**	**0**	**(0)**
Unknown etiology	600	(65)	105	(65)	99	(66)	176	(59)	80	(64)	140	(76)
Total number of outbreaks	**917**		**161**		**149**		**298**		**125**		**184**	

*Norovirus is the new official genus name for what was previously named 'Norwalk-like virus'. These terms may appear interchangeably in other publications.

Table 8.3: Number and proportion of reported enteric outbreaks by risk setting*.
Toronto, 2000 - 2004

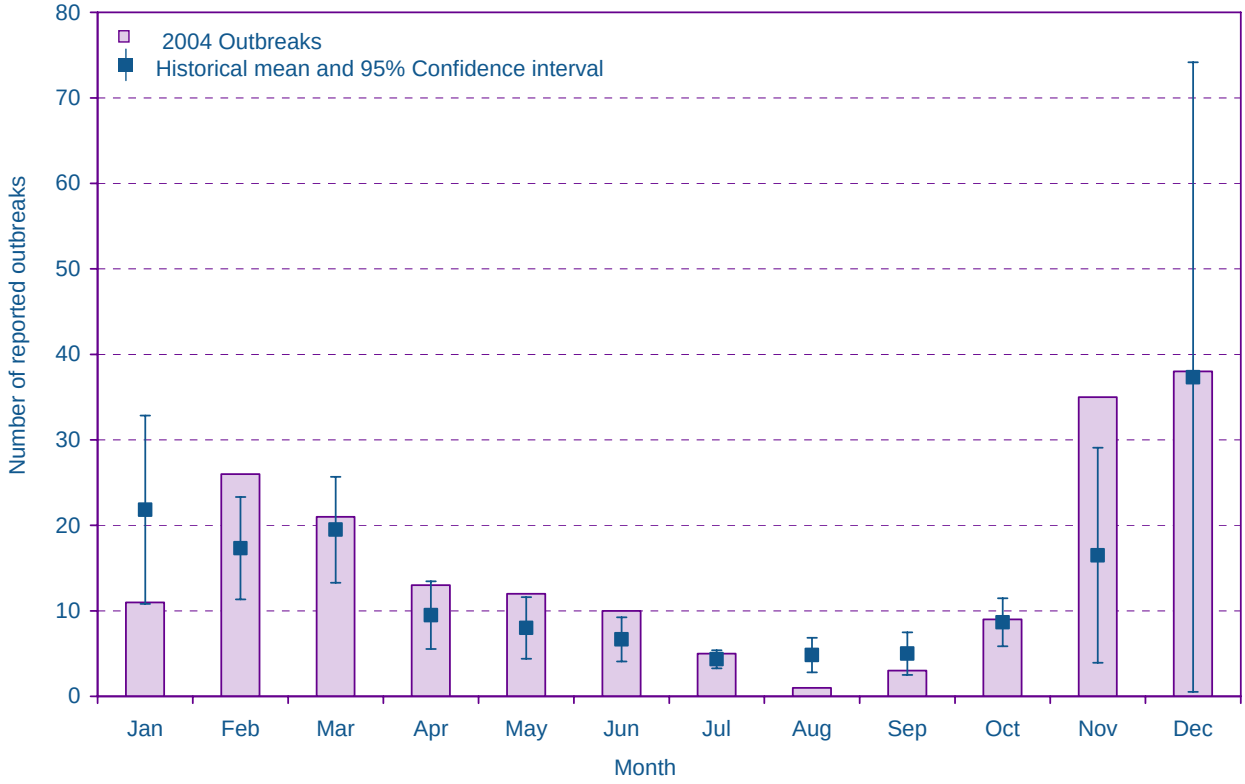
Risk setting	Number of reported outbreaks (%)											
	Overall		2000		2001		2002		2003		2004	
Institutional												
Long term care facility	346	(38)	61	(38)	66	(44)	120	(40)	47	(38)	52	(28)
Child care centre	339	(37)	29	(18)	44	(29)	106	(36)	53	(42)	107	(58)
Acute care hospital	60	(7)	6	(4)	7	(5)	29	(10)	10	(8)	8	(4)
School/college/university	26	(3)	6	(4)	4	(3)	10	(3)	2	(2)	4	(2)
Chronic care hospital	11	(1)	0	(0)	1	(<1)	3	(1)	2	(2)	5	(3)
Other (e.g. shelter, group home)	10	(1)	1	(<1)	3	(2)	5	(2)	0	(0)	1	(<1)
Total - Institutional	**792**	**(86)**	**103**	**(64)**	**125**	**(83)**	**273**	**(92)**	**114**	**(91)**	**177**	**(96)**
Community												
Food services	92	(10)	49	(30)	16	(11)	13	(4)	8	(6)	6	(3)
Other (e.g. camping, community centre)	34	(4)	9	(6)	9	(6)	12	(4)	3	(2)	1	(<1)
Total - Community	**126**	**(14)**	**58**	**(36)**	**25**	**(17)**	**25**	**(8)**	**11**	**(9)**	**7**	**(4)**
Grand Total	**918**	**(100)**	**161**	**(100)**	**150**	**(100)**	**298**	**(100)**	**125**	**(100)**	**184**	**(100)**

*Excludes family outbreaks.

Table 8.4: Enteric outbreaks by risk setting and average size.
Toronto, 2004

Risk setting	Total number			Mean per outbreak	
	Outbreaks	Cases	Deaths	Cases	Deaths
Institutional					
Child care centre	107	1345	0	13	0
Long term care facility	52	1506	15	29	<1
Acute care hospital	8	127	1	16	<1
Chronic care hospital	5	46	0	9	0
School/college/university	4	53	0	13	0
Other (e.g. camping, community centre)	1	5	0	5	0
Total - Institutional	**177**	**3082**	**16**	**17**	**<1**
Community					
Food services	6	54	0	9	0
Other (e.g. camping, community centre)	1	7	0	7	0
Total - Community	**7**	**61**	**0**	**9**	**0**
Grand Total	**184**	**3143**	**16**	**17**	**<1**

**Figure 8.1: Number of reported enteric outbreaks by month.
Toronto, 2004 compared to 1998 - 2003 mean**



Highlights: Respiratory Outbreaks

- There were 186 respiratory outbreaks reported during the 2004/05 season. This represented an increase of 11 (6%) from the 2003/04 season when 175 outbreaks were reported (Table 8.5).
- For the second consecutive season the number of respiratory outbreaks was the highest since outbreak data for the amalgamated city of Toronto became available in 1998.
- Influenza A was the most commonly identified agent (44%) in respiratory outbreaks reported during the 2004/05 season (Table 8.5). This was an increase over the 34% (n=60) of outbreaks reported for the previous season. Influenza B surpassed RSV as the second most identified agent in outbreaks, and was isolated in 16% of outbreaks.
- Long term care facilities (LTCF) again accounted for the majority (81%) of outbreak reports in the 2004/05 season (Table 8.6).
- The continued occurrence of outbreaks among the elderly in LTCFs contributed to a death rate of 3.1% comparable to the 2.8% reported last season.
- There were 3,694 people identified as cases in respiratory outbreaks reported in 2004/05 (Table 8.7). This was a decrease of 116 from the 3,810 reported cases in 2003/04. The mean and median number of cases per respiratory outbreak in 2004/05 season was 20 and 17, respectively.
- For every month except June, July, August, September, November and December the number of respiratory outbreaks reported each month was higher than the historical mean (Figure 8.2).

Table 8.5: Number and proportion of reported respiratory outbreaks by agent*. Toronto, 2000/01 - 2004/05

Etiological agent/disease	Number of reported outbreaks (%)											
	Overall		2000/01		2001/02		2002/03		2003/04		2004/05	
Bacteria												
Chlamydia pneumoniae	5	(<1)	1	(1)	0	(0)	1	(2)	3	(2)	0	(0)
Bordetella pertussis	5	(<1)	0	(0)	0	(0)	2	(3)	2	(1)	1	(<1)
Mycoplasma pneumoniae	3	(<1)	2	(2)	0	(0)	0	(0)	0	(0)	1	(<1)
Mycobacterium tuberculosis	2	(<1)	0	(0)	1	(<1)	0	(0)	0	(0)	1	(<1)
Streptococcus pneumoniae	2	(<1)	1	(1)	0	(0)	0	(0)	1	(<1)	0	(0)
Haemophilus influenzae	1	(<1)	1	(1)	0	(0)	0	(0)	0	(0)	0	(0)
Legionella spp.	1	(<1)	1	(1)	0	(0)	0	(0)	0	(0)	0	(0)
Pneumonia - bacterial origin	1	(<1)	1	(1)	0	(0)	0	(0)	0	(0)	0	(0)
Total - Bacteria	**20**	(3)	**7**	(8)	**1**	(<1)	**3**	(5)	**6**	(3)	**3**	(2)
Viruses												
Influenza A	179	(29)	1	(1)	32	(31)	5	(8)	60	(34)	81	(44)
Respiratory syncytial virus (RSV)	54	(9)	12	(13)	9	(9)	3	(5)	16	(9)	14	(8)
Influenza B	34	(6)	2	(2)	2	(2)	0	(0)	0	(0)	30	(16)
Parainfluenza virus type 3	25	(4)	7	(8)	2	(2)	4	(7)	5	(3)	7	(4)
Rhinovirus	18	(3)	6	(6)	1	(<1)	1	(2)	4	(2)	6	(3)
Parainfluenza virus type 4	4	(<1)	1	(1)	0	(0)	2	(3)	0	(0)	1	(<1)
Parainfluenza virus type 1	3	(<1)	1	(1)	0	(0)	1	(2)	0	(0)	1	(<1)
Measles	3	(<1)	1	(1)	0	(0)	1	(2)	1	(<1)	0	(0)
Parainfluenza virus type 2	2	(<1)	0	(0)	0	(0)	0	(0)	2	(1)	0	(0)
Enterovirus	2	(<1)	0	(0)	0	(0)	0	(0)	1	(<1)	1	(<1)
Chickenpox	1	(<1)	0	(0)	0	(0)	0	(0)	0	(0)	1	(<1)
Adenovirus	1	(<1)	0	(0)	0	(0)	0	(0)	1	(<1)	0	(0)
Severe acute respiratory syndrome (SARS) corona virus	1	(<1)	0	(0)	0	(0)	1	(2)	0	(0)	0	(0)
Total - Viruses	**327**	(53)	**31**	(33)	**46**	(45)	**18**	(31)	**90**	(51)	**142**	(76)
Unknown etiology	291	(47)	60	(65)	56	(54)	40	(68)	82	(47)	53	(28)
Total number of outbreaks	**616**		**93**		**103**		**59**		**175**		**186**	

*Between 2000/01 and 2004/05, multiple agents were isolated from 18 outbreaks. Therefore, the total number of agents (identified and unknown) will differ from the total number of outbreaks.

Table 8.6: Number and proportion of reported respiratory outbreaks* by risk setting. Toronto, 2000/01 - 2004/05

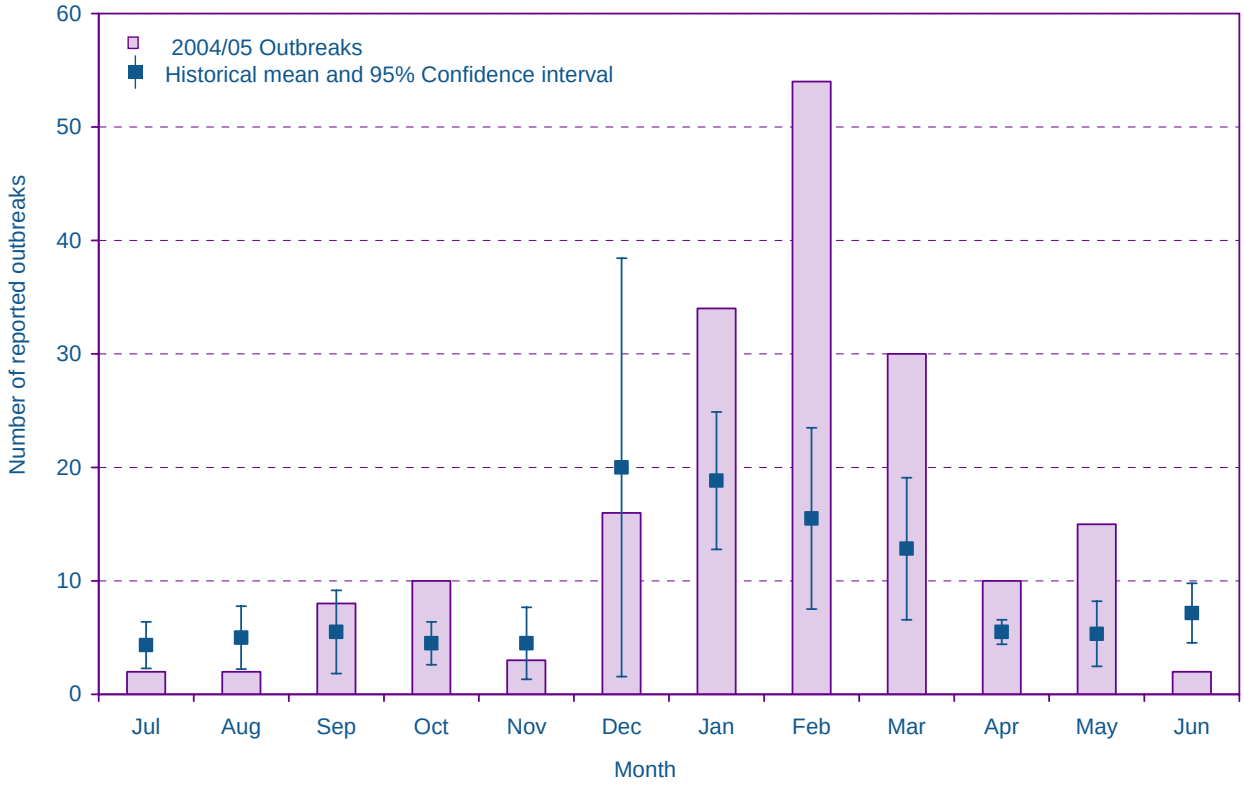
Risk setting	Number of reported outbreaks (%)											
	Overall		2000/01		2001/02		2002/03		2003/04		2004/05	
Institutional												
Long term care facility	500	(81)	80	(86)	71	(69)	48	(81)	150	(86)	151	(81)
Chronic care hospital	35	(6)	7	(8)	4	(4)	1	(2)	11	(6)	12	(6)
Child care centre	34	(6)	1	(1)	22	(21)	1	(2)	5	(3)	5	(3)
Acute care hospital	31	(5)	1	(1)	6	(6)	5	(8)	5	(3)	14	(8)
School/college /university	9	(1)	2	(2)	0	(0)	4	(7)	1	(<1)	2	(1.08)
Other (e.g. shelter, group home)	5	(<1)	1	(1)	0	(0)	0	(0)	2	(1)	2	(1.08)
Total - Institutional	**614**	**(99)**	**92**	**(99)**	**103**	**(100)**	**59**	**(100)**	**174**	**(99)**	**186**	**(100)**
Community	2	(<1)	1	(1)	0	(0)	0	(0)	1	(<1)	0	(0)
Grand Total	**616**	**(100)**	**93**	**(100)**	**103**	**(100)**	**59**	**(100)**	**175**	**(100)**	**186**	**(100)**

*Although SARS transmission was reported in chronic care hospital and community settings, given that the majority of SARS transmission occurred within acute care hospitals, the SARS outbreak has been included as a single outbreak occurring within this risk setting category.

Table 8.7: Respiratory outbreaks by risk setting and average size. Toronto, 2004/05

Risk setting	Total number			Mean per outbreak	
	Outbreaks	Cases	Deaths	Cases	Deaths
Institutional					
Long term care facility	151	3178	100	21	<1
Acute care hospital	14	166	4	12	<1
Chronic care hospital	12	205	1	17	<1
Child care centre	5	75	0	15	0
Other (e.g. shelter, group home)	2	28	1	14	<1
School/college/university	2	42	0	21	0
Total - Institutional	**186**	**3694**	**106**	**20**	**<1**
Grand Total	**186**	**3694**	**106**	**20**	**<1**

**Figure 8.2: Number of reported respiratory outbreaks by month.
Toronto, 2004/05 compared to 1998/99 - 2003/04 mean**



Highlights: Other Outbreaks

- There was one other outbreak reported in Toronto in 2004 (Table 8.8). It was caused by *Streptococcus pyogenes*, group A streptococci (GAS).

**Table 8.8: Other reported outbreaks by agent/disease.
Toronto, 2000 - 2004**

Agent/disease	Number of reported outbreaks					
	Overall	2000	2001	2002	2003	2004
Streptococcus pyogenes , group A streptococci (GAS)	6	0	2	2	1	1
Vancomycin-resistant enterococci	2	0	0	0	2	0
Infectious syphilis	1	0	0	1	0	0
Methicillin-resistant *staphylococcus aureus* (MRSA)	1	0	0	0	1	0
Mycobacterium abscessus	1	0	0	1	0	0
Neisseria meningitidis	1	0	1	0	0	0
Stenotrophomonas maltophilia	1	0	1	0	0	0
West Nile virus	1	0	0	1	0	0
Total	**14**	**0**	**4**	**5**	**4**	**1**

Highlights: Disease Specific Outbreak Investigation

Tuberculosis

In 2004 two staff members at a large downtown shelter were diagnosed with active disease of the same TB strain as was found in the 2000 to 2002 TB outbreak among the homeless. TPH immediately conducted an active case finding blitz to detect unidentified cases in the shelter system. Residents, staff and volunteers from 59 of Toronto's homeless shelters and drop-ins (including men's, women's and co-ed shelters) were screened. Over 4500 individuals submitted sputum samples and a total of 11 additional cases of TB were detected in this high risk population: five cases through active case finding, two cases due to heightened awareness of the outbreak, and four cases through contact follow-up.

References

Communicable Diseases in Toronto

2004

Toronto Public Health

References

The resources and publications listed below by report section were referenced in the creation of this report.

Diseases Preventable by Routine Vaccination

Ministry of Health and Long-Term Care. *New Vaccinations to Keep Ontarians Healthy.* By internet: URL: **http://www.health.gov.on.ca/english/providers/program/immun/prof_immunization.html**

Bang H, Glismann S, Muscat M. *Measles in Europe in 2001-2002.* Eurosurveillance Monthly June 2003; Vol. 8. No. 6.

Centers for Disease Control and Prevention. *Epidemiology of Measles – United States, 2001-2003.* MMWR 2004; Vol. 53. Mo. 31. By internet: URL: **http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5331a3.htm**

Public Health Agency of Canada. *Vaccine Preventable Diseases.* By internet: URL: **http://www.phac-aspc.gc.ca/im/vpd-mev/index.html**

Nsubuga J, Winter AL. *Summary Report of the 2002/03 Ontario "Influenza and Respiratory Outbreak Surveillance Season".* PHERO 2004; Vol. 15 No. 2.

Diseases Transmitted by Direct Contact and Respiratory Routes

National Foundation for Infectious Disease. *Facts About Pneumococcal Disease.* By internet: URL: **http://www.nfid.org/factsheets/pneumofacts.html**

Immunization Action Coalition. *Vaccine Information for the Public and Health Professionals: Pneumococcal Disease.* By internet: URL: **http://www.vaccineinformation.org/pneumchild/qandadis.asp**

Diaz R. *Invasive Meningococcal Disease in Ontario, January 1, 2002 to December 31, 2003.* PHERO 2004; Vol. 15 No. 1.

Centers for Disease Control and Prevention. *Group B Strep Disease.* November 2002. By internet: URL: **http://www.cdc.gov/groupBstrep/gbs/gen_public_faq.htm**

Public Health Agency of Canada. *Tuberculosis Prevention and Control. Tuberculosis in Canada, 2002.* By internet: URL: **http://www.phac-aspc.gc.ca/publicat/tbcan02/**

Enteric, Food and Waterborne Diseases

Health Canada. *Canadian Integrated Surveillance Report: Salmonella, Campylobacter, pathogenic E. coli and Shigella, from 1996 to 1999.* CCDR 2003; 29S1.

Sexually Transmitted and Blood-borne Diseases

Canadian AIDS Society and Health Canada, Centre for Infectious Disease Prevention and Control. *A Guide to HIV/AIDS Epidemiological and Surveillance Terms.* July 2002. By internet: URL: **http://www.phac-aspc.gc.ca/publicat/haest-tesvs/index.html**

Public Health Agency of Canada. *HIV and AIDS in Canada: Surveillance Report to December 31, 2004.* By internet: URL: **http://www.phac-aspc.gc.ca/publicat/aids-sida/haic-vsac1204/**

Public Health Agency of Canada. *Lymphogranuloma Venereum (LGV) Epi Update, August 2005.* By internet: URL: **http://www.phac-aspc.gc.ca/publicat/epiu-aepi/std-mts/lgv_e.html**

Outbreaks

Do MT, Ratnasingham S. *Review of Reported Respiratory Infection Outbreaks in Institutions in Ontario 2001-2003.* PHERO 2004; Vol. 15 No. 3.

Centers for Disease Control and Prevention, National Center for Infectious Diseases. *CDC Technical Fact Sheet About Noroviruses.* By internet: URL: **http://www.cdc.gov/ncidod/dvrd/revb/gastro/norovirus-factsheet.htm**

Vectorborne and Zoonotic Diseases

Centers for Disease Control and Prevention, National Center for Infectious Diseases, Division of Bacterial and Mycotic Diseases. *Brucellosis – Technical Information.* By internet: URL: **http://www.cdc.gov/ncidod/dbmd/diseaseinfo/brucellosis_t.htm**

Centers for Disease Control and Prevention, National Center for Infectious Diseases, Division of Bacterial and Mycotic Diseases. *Brucellosis – General Information.* By internet: URL: **http://www.cdc.gov/ncidod/dbmd/diseaseinfo/brucellosis_g.htm**

General CD Summary Reports from other Public Health Departments

Haldimand-Norfolk Health Unit. *Haldimand-Norfolk Communicable Diseases Report 2004.*

Region of Peel. *Communicable Disease 2003 – A Peel Health Status Report.* 2003.

Public Health Agency of Canada. *Notifiable Diseases On-Line.* By internet: URL: **http://dsol-smed.phac-aspc.gc.ca/dsol-smed/ndis/list_e.html**

Other

Toronto Public Health. *Communicable Diseases in Toronto 2003.* City of Toronto: Toronto, Canada. May 2005.

Appendices

Communicable Diseases in Toronto

2004

Toronto Public Health

Data Sources and Technical Notes

Data Sources

Toronto data

Legal authority to collect
All reports of communicable disease for Toronto included in this summary were collected by Toronto Public Health (TPH) under the authority of the Health Protection and Promotion Act, Ontario Regulations 559/91, which mandates notification of all confirmed or suspect reportable diseases to the Medical Officer of Health where the patient resides (see page 189 for latest list). Reports of diseases included in this document are for individuals who lived in Toronto at the time of their illness.

Dates
Information on past episodes of disease can be added or updated at any time. The information summarized in this report represents what was known to TPH at the following times, by disease(s):

AIDS/HIV were extracted in August 2005.

All other Toronto data summarized in this report were extracted in July 2005.

Information Systems
Reportable Disease Information System (RDIS)
In 2004, each public health unit in Ontario utilized the Ministry of Health and Long-Term Care's (MOHTLC) Reportable Disease Information System (RDIS) to record and transmit aggregate-level information to the Province's Public Health Branch for the purpose of provincial and national surveillance. RDIS was first introduced in Ontario in 1990 and has since been used to store all reportable disease information for the city of Toronto. This system is used to record information for all reportable diseases except SARS.

Case and Contact Management System (CCMS)
During the SARS outbreak in 2003, Toronto developed an interim database to assist staff with tracking the large volumes of suspect cases and contacts that were being reported and needed follow-up. All SARS data summarized in this report are stored in the CCMS.

Ontario and Canadian data

Ontario and Canadian data summarized in this report were acquired from multiple sources:

Ontario

With the exception of HIV, all disease incidence data for 1994 through 2004 were provided directly by the MOHLTC with the proviso that these data are provisional and subject to change. HIV data were obtained from the Report on HIV/AIDS in Ontario 2003.

Canada

With the exception of AIDS/HIV and tuberculosis, all disease incidence data for 1994 through 2000 were obtained from Health Canada's *Notifiable Disease Annual Summary, 2000*. Data for 2001 through 2004 were provided directly by the Public Health Agency of Canada (PHAC) – Population and Public Health Branch with the proviso that summaries for 2001 to 2004 are provisional and subject to change. AIDS/HIV data for 1994 to 2004 were obtained from *HIV and AIDS in Canada, Surveillance Report to June 30, 2004*. Tuberculosis data for 1993 to 2002 were obtained from *Tuberculosis in Canada: Pre-release. 2002.*

Population data

Incidence rates were calculated using population estimates provided by Statistics Canada. These estimates adjust for census under-coverage, and include non-permanent residents (e.g. visa students, refugee claimants). Rates calculated for 1994-1999 were based on the July 2002 postcensal population estimates while rates calculated for 2000 and 2004 were based on the February 2005 postcensal estimates.

Data Limitations and Technical Notes

Amendments from the previous annual report

General considerations

Rates calculated for 2002 and 2003 may differ from the preceding 2003 report since rates for these years were previously calculated using the July 2004 postcensal estimates from Statistics Canada.

Sexually Transmitted and Bloodborne Diseases

A review was carried out on all cases of maternal-infant AIDS/HIV cases where the date of birth was

not indicated as the episode date. As a result, annual HIV and AIDS rates reported in previous reports may differ from those reported in the present report.

Direct Contact and Respiratory Diseases
The 2002 rate of bacterial encephalitis/meningitis for the rest of Ontario reported in the 2003 report was over estimated due to the misclassification of several cases of invasive Streptoccus pneumoniae as bacterial encephalitis/meningitis.

Reporting of disease

The number of cases and rates are underreported for several reasons including:

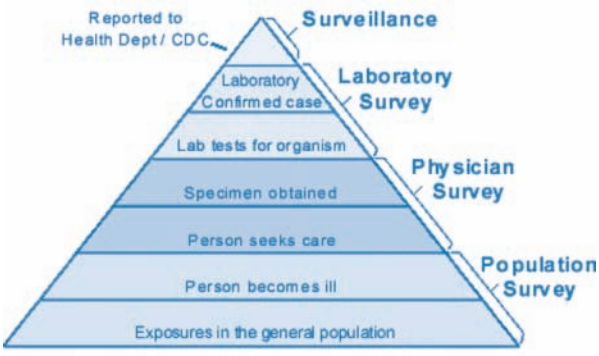
Not all infections with a reportable communicable disease cause clinical signs and symptoms.

Individuals who do experience illness do not all seek medical care.

Health care providers do not always recognize that a diagnostic laboratory test is warranted.

Reports rely on a passive surveillance system, wherein laboratories, physicians, other health care providers, and institution administrators are entrusted to know the regulations, recognize a disease they are suspecting is on the reportable disease list, and promptly inform public health.

The following burden of illness pyramid is often used to illustrate the fraction of communicable diseases that may actually get reported through traditional surveillance, and the type of surveys that might be useful to gain a better understanding of true disease burden.



Source: CDC website:
http://www.cdc.gov/foodnet/Surveys.htm

The proportion of cases that are not reported varies for each disease. For diseases with mild clinical manifestations such as some of the enteric diseases, the proportion of unreported cases may be quite high. More clinically severe infectious, such as meningococcal disease and invasive group A streptococcus are likely more accurately reflected in surveillance data.

Case definitions

Suspect cases of a reportable communicable disease are most commonly identified through laboratory notification of confirmed test results. Physicians are also required to report cases that fulfill laboratory and/or clinical case definitions.

Public health staff assess all suspect cases to see if they meet a case definition provided by the MOHLTC for the purposes of reporting. Case definitions are based on laboratory test results and/or clinical diagnostic criteria. Consistent application of the MOHLTC case definitions ensures that disease rates are comparable from region to region within Ontario, but does not necessarily apply to other provinces or the rest of Canada.

Episode dates

Dates for episodes of diseases refer to the best estimates for when the disease was acquired. The date of symptom onset is usually the preferred date, but when that is unavailable the date a specimen was collected or the date the report was made to TPH are used.

Data revisions

In some instances, the annual number of reported cases may change in succeeding annual publications due to periodic data quality assurance checks and corrections that result in the reclassification of reports.

Lag in reporting

Although theoretically the lag in reporting of disease can be as short as the time it takes to collect a specimen, carry out a diagnostic test, and inform the MOH, this is not the case for some diseases. As such, historic data for Toronto,

Ontario and Canada may change in future publications to reflect additional reports that are made for diseases that were acquired in previous years. For example, tuberculosis (TB) and AIDS can take up to 2 years to be reported from the time they were known to be acquired.

Place disease acquired

It should be recognized that the city where a disease was diagnosed may differ from where it was acquired. The known epidemiology and geographic distribution of each disease should be considered to truly understand the likelihood of community transmission (e.g. there is no evidence that malaria has been transmitted locally in recent years, due to the natural habitat of its vector). Cases summarized in this report reflect the city of residence of each individual at the time of their diagnosis, not necessarily where they acquired the disease.

Reliability of rare reports

Rare events and small numbers of reports are more likely to be unstable from year to year, and hence less reliable. The observation of zero reports in a specific sub-group or category can be especially uncertain. As such, rates based on diseases, years, and categories (e.g. males of a certain age group) with few or no reports should be interpreted with caution. Diseases that were seldom reported over a long period of time have been presented separately in this report.

Crude rates

Rates of disease are reported as crude rates. Although it may be more epidemiologically sound, rates were not adjusted to reflect the age distribution effects for Toronto's population. Crude rates and numbers were reported to allow a direct comparison with the relevant published data from the MOHLTC and PHAC.

Underestimated case fatality rates

Data for the field capturing deceased status were frequently missing. This was taken to indicate no death occurred, but may have resulted in an underestimate in the calculation of some case fatality rates.

With the exception of AIDS, cases of most diseases are not followed indefinitely by public health and illness may be a contributing factor in deaths that occur in much later years. Public health authorities are not notified of these deaths and as a result case fatality rates may be underestimated.

Underestimated hospitalization rates and proportion of outbreak associated cases

Data for the fields capturing hospitalization and outbreak association status were frequently missing. For these fields, missing data were assumed to indicate negative entries. This may have resulted in an underestimate in the calculation of hospitalization rates and the proportion of outbreak associated cases.

Population estimates

The population estimates used to calculate rates are based on a set of assumptions on the patterns of fertility, mortality, immigration, refugees, and internal mobility of population.

Therefore, the quality of the population estimates is dependent on the validity of these assumptions over time.

Missing data

Instances with large proportions of missing information for a particular data field (risk factor, risk setting, or source of infection for some diseases), could lead to summaries that may not be representative of the community. The proportions of available and missing data are indicated for each variable summarized.

Risk settings/risk factors

In RDIS, the risk setting and risk factor variables provide investigators with a pre-defined set of categories from which to choose. The specific subset of categories varies by disease but is often not adequate or specific enough. In some cases, the available categories are not consistent with standard categories used by the larger public health surveillance community or they may not be consistent with categories used by members of the community in which the disease is occurring. For example, the risk

factor category 'Homosexual/Bisexual' was not available as a valid RDIS risk factor category for gonorrhea until 2002.

Etiologic agents and outbreaks

In over half of the outbreaks reported to Toronto Public Health in each of the last five years, the responsible agent was unknown. There are many possible explanations why a responsible agent is not identified during an outbreak investigation. It is possible that for some of these outbreaks the agents known to cause illness may not have been identified because laboratory investigations were late or incomplete. In others, the responsible pathogen may have escaped detection even after thorough laboratory investigation, either because the pathogen may not have been recognized as a cause of disease or because the pathogen could not be identified by available laboratory techniques.

Interpreting differences between rates

Any differences noted between groups of data (years, age groups, sex, etc) are not implied to be statistically significant. Instead this report describes trends and compares crude rates and numbers. All comparative words are intended to describe absolute differences (e.g. four reports were less than five) with no statistical meaning. Any extrapolations about statistical inferences and decisions that might require this level of comparison are not warranted by what is presented in this report.

HIV infections and AIDS cases

Prior to 2002, only AIDS cases and not HIV infections were reportable in Ontario. In response to this change Toronto Public Health is continuing to review all of the HIV infections and AIDS cases that have ever been entered in the Reportable Disease Information System. The results of this review may lead to changes in the number of HIV infections and AIDS cases reported in future reports. This report includes HIV infections that have occurred among Toronto residents and those positive anonymous HIV test results that were identified in RDIS as having been received from Toronto area official anonymous test sites. People who tested positive for HIV while living in Toronto but who were subsequently diagnosed with AIDS while living outside of Toronto may not have been included in this report.

Outbreak associated cases

The number of outbreak associated cases reported in some disease sections may not match the number reported in the outbreak section. The outbreak associated cases reported in the disease sections may include cases that occurred in family outbreaks that were excluded from the outbreak section. ❑

Reportable Diseases 2004

The following specified Reportable Communicable Diseases (Ontario Regulations 559/91 and amendments under the Health Protection and Promotion Act) are to be reported to the local Medical Officer of Health:

Acquired Immunodeficiency Syndrome (AIDS)
Amebiasis
- **Anthrax**
- **Botulism**
- **Brucellosis**

Campylobacter enteritis
Chancroid
Chickenpox (Varicella)
Chlamydia trachomatis infections
- **Cholera**
- **Cryptosporidiosis**
- **Cyclosporiasis**

Cytomegalovirus infection, congenital
- **Diphtheria**
- **Encephalitis, including:**
- **1. Primary, viral**
  2. Post-infectious
  3. Vaccine-related
  4. Subacute sclerosing panencephalitis
  5. Unspecified
- **Food poisoning, all causes**
- **Gastroenteritis, institutional outbreaks**
- **Giardiasis, except asymptomatic cases**

Gonorrhea
- ***Haemophilus influenzae* b disease, invasive**
- **Hantavirus Pulmonary Syndrome**
- **Hemorrhagic fevers, including:**
  1. Ebola virus disease
  2. Marburg virus disease
  3. Other viral causes
- **Hepatitis, viral**
- **1. Hepatitis A**
  2. Hepatitis B
  3. Hepatitis C
  4. Hepatitis D (Delta hepatitis)

Herpes, neonatal
Influenza
- **Lassa fever**
- **Legionellosis**

Leprosy
- **Listeriosis**

Lyme disease
Malaria
- **Measles**
- **Meningitis, acute**
- **1. Bacterial**
  2. Viral
  3. Other
- **Meningococcal disease, invasive**

Mumps
Ophthalmia neonatorum
- **Paratyphoid fever**

Pertussis (Whooping Cough)
- **Plague**
- **Poliomyelitis, acute**

Psittacosis/Ornithosis
- **Q fever**
- **Rabies**
- **Respiratory infection outbreaks in institutions**

Rubella
Rubella, congenital syndrome
Salmonellosis
- **Severe Acute Respiratory Syndrome (SARS)**
- **Shigellosis**
- **Smallpox**
- **Streptococcal infections, Group A invasive**

Streptococcal infections, Group B neonatal
Streptococcus pneumoniae, invasive
Syphilis
Tetanus
Transmissible Spongiform Encephalophathy, including:
1. Creutzfeldt-Jakob Disease
2. Gerstsmann-Sträussler-Scheinker Syndrome
3. Fatal Familial Insomnia
4. Kuru

Trichinosis
Tuberculosis
- **Tularemia**

Typhoid fever
- **Verotoxin-producing *E. coli* infection indicator conditions including Hemolytic Uremic Syndrome (HUS)**
- **West Nile virus illness, including:**
  1. West Nile fever
  2. West Nile neurological manifestations
- **Yellow fever**

Yersiniosis

Note: Diseases marked "•" (and influenza in institutions) should be reported immediately to the Medical Officer of Health by telephone. Other diseases are to be reported by the next working day by fax or mail.

Glossary of Terms

ACTIVE TRANSMISSION
The spread of an infectious agent from one person to another.

CASE
A case is an episode of disease. Each reportable disease has a case definition, created by the Ministry of Health and Long-Term Care, which outlines the criteria necessary to confirm that episode of disease.

CASE-FATALITY RATE
The proportion of persons with a particular condition (cases) who die from that condition in a given period of time. The denominator is the total number of cases in the time period; the numerator is the number of deaths among those cases and is determined for each disease based on RDIS category.

CARRIER
A person or animal without evident clinical disease who harbors an infectious agent and is able to transmit the agent to others.

CO-INFECTION
Having two infections at the same time. For example, a person infected with both HIV and tuberculosis (TB), has a co-infection. With co-infection the progression of both or either disease can potentially be accelerated as a result of infection with the other disease.

CONFIDENCE INTERVAL (CI)
In this report, 95% confidence intervals are used to demonstrate the annual variation in the mean number of cases for a particular disease, for a given month, during the period 1994 – 2003. The term confidence interval is abbreviated as CI.

CONTACT
A person who has been in such association with an infected person as to have had opportunity to acquire the infection.

DIRECT TRANSMISSION
The immediate transfer of an infectious agent from a reservoir to a host by direct contact or droplet spread (short-ranged large droplets produced by sneezing, coughing or talking).

ENDEMIC
The constant presence of a disease in a given geographic area or within a given population. It may also refer to a disease that is usually present at a relatively high prevalence and incidence rate in comparison with other areas or populations.

In the area of HIV/AIDS surveillance, there is another definition of the term endemic that is often used. Endemic may be used to refer to a country where the principal way people become infected with HIV is through heterosexual contact.

EXPOSURE CATEGORY
In HIV/AIDS surveillance, exposure category refers to the most likely way a person became infected with the HIV virus.

The exposure categories used in this report are explained below:

MSM
Men who report having had sex with men; this includes men who report either homosexual or bisexual.

MSM/IDU
Men who have had sex with men and have injected drugs.

IDU
People who inject drugs, also called injection drug users.

Perinatal Transmission
The transmission of HIV from an HIV-infected mother to her child either
- during pregnancy
- during labour
- at birth
- after birth through breastfeeding

Clotting factor/transfusion pre 1985
- Recipient of Blood/Blood Products before 1985
- Recipient of Clotting Factor before 1985

HIV-endemic
People who were born in a country in which the principal means of HIV transmission is heterosexual contact.

HET-partner
Heterosexual contact with a person at risk: a person who reports heterosexual contact with another person who is either HIV-infected or who is at increased risk for HIV infection. A person at increased risk for HIV infection would include someone who is an injection drug user, a bisexual man, a person born in a country in which the predominant means of HIV transmission is heterosexual contact, a person with hemophilia/coagulation disorder, or a person with suspected HIV infection or AIDS.

NIR-HET
If heterosexual contact is the only risk factor reported and nothing is known about the HIV-related risk factor(s) associated with the partner, the case would be classified as No Identified Risk-Heterosexual (NIR-HET).

Other
Used to classify a person whose mode of HIV transmission is known (e.g. occupational exposure, other medical procedure, non-medical or non-occupational exposure, blood transfusion after 1985, clotting factor after 1985) but who cannot be classified into any of the major exposure categories listed.

Unknown
Where the history of exposure to HIV through any of the other categories is unknown, or there is no reported history. This exposure category may include:

- people who are currently being followed up
- people whose exposure history is incomplete because they have died
- people whose exposure history is incomplete because they declined to be interviewed or were lost to follow-up
- people who cannot identify any mode of transmission

GROUPED MEAN

The mean for grouped data is

Mean = $\sum$xf ÷ $\sum$f

where:

The midpoint of each class interval is denoted by x1,x2…..xn.

The frequencies for each interval are denoted by f1,f2…..fn.

xf is the product of the midpoint of the interval, **x**, multiplied by the frequency, **f**, of the same interval. This approximation is required because we do not know the exact age of each case. As a result, we must treat all of the ages as if they were midpoints for their interval.

For example in the case where the grouped mean is calculated for a variable with 7 intervals:

$$\textbf{Mean} = \frac{(xf1 + xf2 + xf3 + xf4 + xf5 + xf6 + xf7)}{(f1 + f2 + f3 + f4 + f5 + f6 + f7)}$$

GROUPED MEDIAN

The median is the value that divides a set of numbers exactly in half when they are placed in order from lowest to highest. The grouped median can be calculated as follows:

$$\textbf{Median} = L + I * \frac{(N/2 - F)}{f}$$

where:

L = lower limit of the interval containing the median

I = width of the interval containing the median

N = total number of respondents

F = cumulative frequency corresponding to the lower limit

f = number of cases in the interval containing the median

INCIDENCE

Incidence is the number of new events of a specific disease during a specified period of time in a specified population.

INCIDENCE RATE

The incidence rate is the rate at which new events, or new cases, occur in a specified time in a defined population that is “at risk” of experiencing the condition or event.

$$\text{Incidence rate} = \frac{\text{Number of new cases in a specified period}}{\text{Number of people at risk in this period}}$$

INDIRECT TRANSMISSION

The transmission of an infectious agent carried from a reservoir to a susceptible host by air particles or by living (vector) or non-living (vehicle) intermediaries.

LUNG TUBERCULOSIS
Includes both tuberculosis that was reported as pulmonary or primary pulmonary tuberculosis.

MEAN
The mean or average is calculated by adding the individual results of the item being measured and then dividing by the total number of results.

MEDIAN
The median is the value that divides a set of numbers exactly in half when they are placed in order from lowest to highest. In other words, half of the values occur before the median and half of the values occur after the median.

MDR-TB
Tuberculosis (TB) bacteria with resistance to the two front-line drugs, isoniazid and rifampin, with or without resistance to other drugs.

NACI
The Canadian National Advisory Committee on Immunization.

NOTIFIABLE DISEASE or REPORTABLE DISEASE
A reportable disease is a disease that is considered to be of such importance to public health that its occurrence is required to be reported to public health authorities. In Ontario, regulation 599/91 under the Health Protection and Promotion Act, defines the diseases that are designated as reportable. Under this legislation, these diseases must be reported to the local public health unit by physicians, laboratories, hospitals, principals of schools, and superintendents of institutions. A list of diseases that are reportable in Ontario is provided on page 189 of this report.

OUTBREAK
Enteric Outbreaks: Outbreaks that involve instances of acute gastroenteritis (e.g. nausea, vomiting, diarrhea, etc.) and/or laboratory confirmation of agents known to cause these signs and symptoms.

Respiratory Outbreaks: Outbreaks that involve instances of respiratory tract signs and symptoms (e.g. cough, congestion, malaise, etc) and/or laboratory confirmation of agents known to cause these signs and symptoms.

Other Outbreaks: Outbreaks that involve agents and/or signs and symptoms that cannot be classified as either enteric or respiratory.

PROPORTION
A proportion is a type of ratio in which the numerator is included in the denominator. A proportion is calculated by dividing the number of people with a common characteristic at a given time period by the total population that shares the same event in the same time period.

RANGE
The range describes the spread of scores. In this report it is used to describe the highest and lowest scores.

RATE
A rate is an expression of the frequency with which an event occurs in a defined population in a specified period of time. A rate can be obtained by dividing the number of cases in a given time period by the population at risk in the same time period and then usually multiplying the result by a multiple of ten. In this report, 100,000 is used as this number. The rate can then be expressed as the number of people with the “disease” per 100,000 population.

RISK FACTOR
A risk factor is an aspect of someone’s behaviour or lifestyle, a characteristic that a person was born with, or an event that he or she has been exposed to, that is associated with a health-related condition.

RISK SETTING
The place or environment where the case acquired the infection. The risk settings reported by cases include:

Risk Setting	Definition
Day care	These include day care centre and nursery school.
Home	The location where the case resides.
Hospital	This category includes: acute care hospital, psychiatric hospital, rehabilitation hospital and chronic hospital
Local camping	Camping within Canada
Local vacation property	Cottage

Local park or recreational area	Any outdoor area or designated park or recreational facility.
Medical office	Medical office
Rendezvous outside usual domicile	A sexual encounter that occurs at a public place or environment (e.g. club, bar or bathhouse) typically used as a meeting place that is not someone's home.
Residential facility	A residential facility can include long-term care facilities, group home or a retirement home.
Restaurant or food vendor	A business establishment where meals or refreshments are served. In this report, restaurant or food vendor may also include banquet hall, catered event, social event and wedding reception.
School	Elementary or secondary school, college or university
Shelter/rooming house	Shelter/rooming house
Travel	Visiting or recently living in another country where the given disease is endemic
Workplace	The place or environment where the case works.

SPORADIC

A disease that occurs infrequently and irregularly.

TRENDS

Trends are changes in frequencies, proportions or rates of a disease, or an event observed over time. Trends may be irregular, flat or move in one direction. Trends can be expressed in many forms, including tables, graphs and pie charts.

VECTOR

An animate intermediary in the indirect transmission of an agent that carries the agent from a reservoir to a susceptible host. ❑

Errata

For all those readers who have a copy of the *Communicable Diseases in Toronto 2003,* we draw your attention to the following errata and amendments.

Chickenpox (Varicella)

On page 117, under Highlights, the second bullet should read as follows:

- Children less than 15 years of age continued to exhibit the highest rates of chickenpox infection, accounting for 97% (n=3230) of all cases for which an age is known.

On page 117, **Table 4.2: Chickenpox Summary Data**, the grouped medians were incorrectly calculated. Table 4.2 should read as follows:

Table 4.2: Chickenpox summary data*

Toronto

	2003	5-yr period 1998-2002	10-yr period 1993-2002
	Total	Means	
Number of reported cases	3403	3096	3286
Incidence rate (per 100,000 population)	130.3	121.2	131.9
Age at onset (years)	Summary statistics		
Grouped mean	7	7	7
Grouped median	7	7	7
Range	<1 29	<1 29	<1 29

*Reports of chickenpox are received in aggregate numbers based on defined age categories.

Influenza

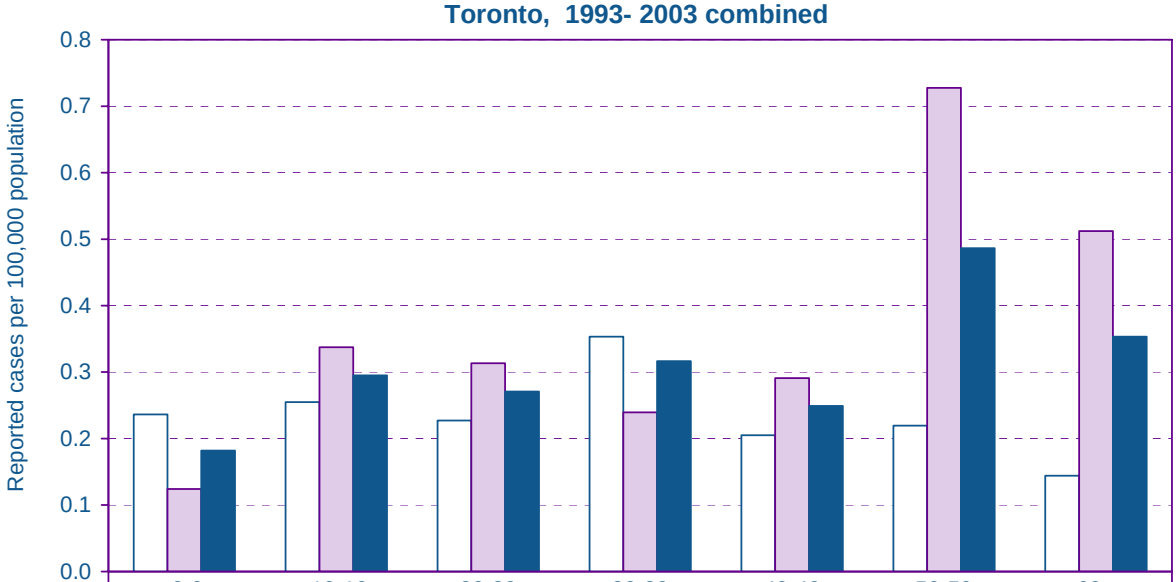
The Ontario less Toronto rate for the 2003/04 influenza season was incorrectly calculated. On page 99, the second sentence of the fifth bullet should read as follows:

The rate for Toronto during the 2003/04 influenza season was half the rate in the rest of Ontario.

Lyme disease

On page 154, **Figure 5.2: Incidence of lyme disease by age group and sex. Toronto, 1993 – 2003 combined**, the data points graphed are incorrect. Figure 5.2 should read as follows:

Figure 5.2: Incidence of lyme disease by age group and sex*.
Toronto, 1993- 2003 combined



	0-9	10-19	20-29	30-39	40-49	50-59	60+
Male rates	0.2	0.3	0.2	0.4	0.2	0.2	0.1
Female rates	0.1	0.3	0.3	0.2	0.3	0.7	0.5
Overall rates	0.2	0.3	0.3	0.3	0.2	0.5	0.4
Male cases	4	4	5	9	4	3	3
Female cases	2	5	7	6	6	11	14

*The sex was not reported for one case.

Age group (years)

Malaria

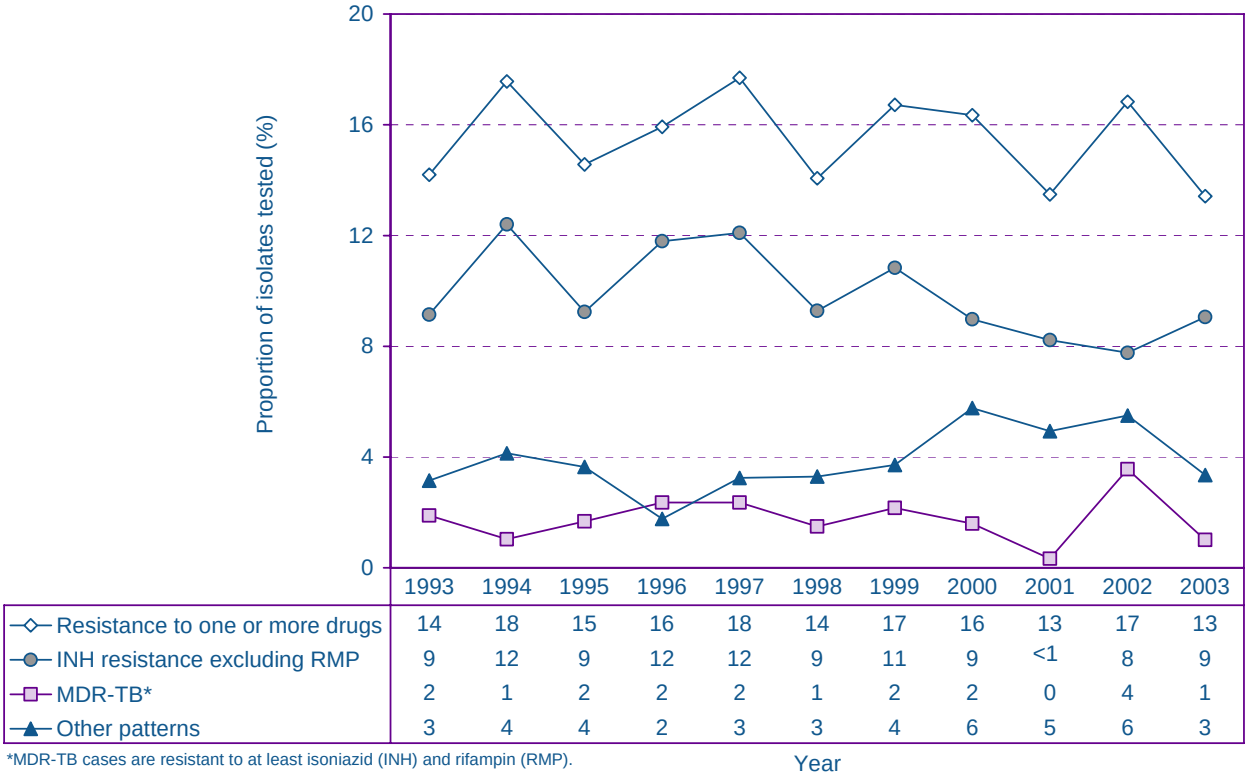
On page 155, under Highlights, the second sentence in the third bullet point should read as follows:

The largest increase was observed in males 50 to 59 years of age whose rate increased 11-fold from 0.7 cases per 100,000 in 2002 to 7.7 cases per 100,000 in 2003.

Tuberculosis

On page 148, **Figure 4.24: Proportion of drug resistant tuberculosis cases by year. Toronto, 1993 – 2003,** the data points graphed for 'MDR-TB' for 1998 and 2000 are incorrect. Figure 4.24 should read as follows:

Figure 4.24: Proportion of drug resistant tuberculosis cases by year. Toronto, 1993 - 2003



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Resistance to one or more drugs	14	18	15	16	18	14	17	16	13	17	13
INH resistance excluding RMP	9	12	9	12	12	9	11	9	<1	8	9
MDR-TB*	2	1	2	2	2	1	2	2	0	4	1
Other patterns	3	4	4	2	3	3	4	6	5	6	3

*MDR-TB cases are resistant to at least isoniazid (INH) and rifampin (RMP).

On page 143, under Highlights, in the sixth bullet the proportion of tuberculosis cases that occurred in the lungs was calculated incorrectly. This proportion included only pulmonary tuberculosis but should have included cases of pulmonary and primary pulmonary tuberculosis. Despite the error the bullet was correct as printed.

Outbreaks – Respiratory Outbreaks

In **Table 8.5: Number and proportion of reported respiratory outbreaks by agent. Toronto, 1999/00 – 2003/04** the bacterial agent listed in the third row, *Mycoplasma tuberculosis*, is incorrect. It should read *Mycobacterium tuberculosis*.

Appendix Table 1: Number of cases and incidence rates* by disease. Toronto, 1994 - 2004

Disease	1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004	
	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
AIDS	400	16.7	390	16.0	273	11.1	146	5.9	124	4.9	114	4.5	86	3.4	99	3.8	88	3.4	98	3.8	93	3.6
HIV	634	26.5	632	26.0	535	21.7	441	17.7	410	16.3	424	16.8	448	17.6	506	19.5	612	23.4	572	21.9	567	21.8
Amebiasis	398	16.6	399	16.4	363	14.7	459	18.4	382	15.2	355	14.1	489	19.2	399	15.4	379	14.5	424	16.2	324	12.4
Botulism	0	0.0	1	<0.1	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	2	<0.1	2	<0.1
Brucellosis	0	0.0	1	<0.1	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	<0.1	2	<0.1	2	<0.1
Campylobacter enteritis	2159	90.1	1806	74.3	1653	67.1	1589	63.8	1770	70.5	1312	52.0	1491	58.5	1561	60.2	1361	52.0	1125	43.1	975	37.5
Chickenpox	4695	195.9	3433	141.2	2165	87.9	4049	162.6	3801	151.5	2509	99.4	3586	140.8	2689	103.7	2895	110.6	3403	130.3	5317	204.3
Chlamydial	4600	192.0	4277	175.9	4019	163.2	3924	157.5	4640	184.9	5157	204.2	5380	211.3	5724	220.8	6295	240.5	6289	240.7	6287	241.5
Cholera	0	0.0	2	<0.1	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cryptosporidiosis	NR		NR		29	1.2	43	1.7	18	0.7	34	1.3	44	1.7	45	1.7	37	1.4	35	1.3	49	1.9
Cyclosporiasis	NR		NR		NR		NR		NR		NR		NR		NR		28	1.1	14	0.5	30	1.2
Cytomegalovirus infection, congenital	0	0.0	1	<0.1	3	0.1	2	<0.1	3	0.1	3	0.1	1	<0.1	0	0.0	0	0.0	2	<0.1	0	0.0
Encephalitis/ Meningitis: bacterial	19	0.8	18	0.7	10	0.4	25	1.0	9	0.4	10	0.4	19	0.7	22	0.8	5	0.2	6	0.2	12	0.5
Encephalitis/ Meningitis: viral	20	0.8	31	1.3	27	1.1	20	0.8	50	2.0	44	1.7	40	1.6	52	2.0	82	3.1	75	2.9	45	1.7
Encephalitis/ Meningitis: other	17	0.7	19	0.8	9	0.4	1	<0.1	5	0.2	3	0.1	2	<0.1	5	0.2	4	0.2	3	0.1	7	0.3
Encephalitis/ Meningitis: unclassified	16	0.7	6	0.2	2	<0.1	7	0.3	1	<0.1	6	0.2	6	0.2	5	0.2	8	0.3	11	0.4	8	0.3
Giardiasis	620	25.9	672	27.6	637	25.9	509	20.4	511	20.4	489	19.4	532	20.9	593	22.9	609	23.3	529	20.2	521	20.0
Gonorrhea	2112	88.1	1845	75.9	1534	62.3	1199	48.1	1441	57.4	1399	55.4	1754	68.9	1758	67.8	1780	68.0	1847	70.7	1734	66.6
Haemophilus influenzae b disease, invasive	1	<0.1	2	<0.1	1	<0.1	1	<0.1	0	0.0	0	0.0	5	0.2	3	0.1	0	0.0	3	0.1	3	0.1
Hemorrhagic fevers	0	0.0	1	<0.1	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis A	111	4.6	203	8.3	267	10.8	194	7.8	108	4.3	90	3.6	56	2.2	74	2.9	64	2.4	35	1.3	48	1.8
Hepatitis B cases	95	4.0	114	4.7	82	3.3	47	1.9	26	1.0	24	1.0	26	1.0	33	1.3	49	1.9	50	1.9	38	1.5
Hepatitis B carriers	3433	143.3	3111	128.0	2654	107.8	2112	84.8	1998	79.6	2111	83.6	2036	80.0	2231	86.1	2385	91.1	1947	74.5	1936	74.4
Hepatitis B unclassified reports	231	9.6	471	19.4	407	16.5	215	8.6	281	11.2	316	12.5	442	17.4	488	18.8	396	15.1	381	14.6	683	26.2
Hepatitis C	2022	84.4	2640	108.6	2661	108.1	2241	90.0	2022	80.6	1809	71.6	1566	61.5	1525	58.8	1450	55.4	1298	49.7	1340	51.5
Hepatitis D	0	0.0	1	<0.1	3	0.1	3	0.1	0	0.0	3	0.1	5	0.2	5	0.2	4	0.2	1	<0.1	1	<0.1
Herpes, neonatal	1	<0.1	0	0.0	0	0.0	0	0.0	1	<0.1	3	0.1	0	0.0	1	<0.1	2	<0.1	0	0.0	5	0.2
Influenza†	520	21.7	94	3.9	249	10.1	497	20.0	345	13.7	475	18.8	107	4.2	296	11.4	204	7.8	616	23.6	941	36.1
Legionellosis	17	0.7	12	0.5	11	0.4	20	0.8	18	0.7	23	0.9	19	0.7	10	0.4	4	0.2	10	0.4	3	0.1
Leprosy	6	0.3	4	0.2	4	0.2	2	<0.1	1	<0.1	3	0.1	0	0.0	2	<0.1	1	<0.1	2	<0.1	0	0.0
Listeriosis	6	0.3	12	0.5	5	0.2	7	0.3	14	0.6	5	0.2	11	0.4	9	0.3	14	0.5	8	0.3	14	0.5
Lyme disease	9	0.4	7	0.3	9	0.4	6	0.2	6	0.2	10	0.4	10	0.4	5	0.2	12	0.5	4	0.2	4	0.2
Malaria	140	5.8	124	5.1	213	8.6	239	9.6	85	3.4	75	3.0	97	3.8	86	3.3	82	3.1	93	3.6	93	3.6
Measles	45	1.9	286	11.8	25	1.0	5	0.2	3	0.1	1	<0.1	6	0.2	3	0.1	0	0.0	10	0.4	1	<0.1
Meningococcal disease, invasive	24	1.0	16	0.7	20	0.8	19	0.8	6	0.2	21	0.8	22	0.9	26	1.0	13	0.5	8	0.3	6	0.2
Mumps	15	0.6	34	1.4	16	0.6	21	0.8	3	0.1	4	0.2	9	0.4	1	<0.1	3	0.1	4	0.2	2	<0.1

* Rates per 100,000 population. NR = Not reportable.

† Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

‡ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 1: Number of cases and incidence rates* by disease. Toronto, 1994 - 2004

Disease	1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004	
	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
Ophthalmia neonatorum	6	0.3	3	0.1	6	0.2	3	0.1	4	0.2	4	0.2	7	0.3	1	<0.1	1	<0.1	2	<0.1	3	0.1
Paratyphoid fever	8	0.3	9	0.4	7	0.3	3	0.1	4	0.2	5	0.2	2	<0.1	6	0.2	10	0.4	10	0.4	16	0.6
Pertussis	172	7.2	150	6.2	104	4.2	90	3.6	149	5.9	128	5.1	154	6.0	85	3.3	83	3.2	31	1.2	92	3.5
Psittacosis/ Ornithosis	0	0.0	0	0.0	3	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
Q fever	0	0.0	2	<0.1	0	0.0	0	0.0	1	<0.1	3	0.1	0	0.0	1	<0.1	0	0.0	2	<0.1	1	<0.1
Rubella	8	0.3	13	0.5	22	0.9	4	0.2	9	0.4	0	0.0	5	0.2	12	0.5	1	<0.1	4	0.2	1	<0.1
Rubella, congenital syndrome	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	1	<0.1	1	<0.1	1	<0.1
Salmonellosis	806	33.6	888	36.5	830	33.7	855	34.3	999	39.8	644	25.5	658	25.8	671	25.9	637	24.3	535	20.5	481	18.5
Severe acute respiratory syndrome (SARS)	NR		NR		NR		NR		NR		NR		NR		NR		NR		228	8.7	0	0.0
Shigellosis	175	7.3	176	7.2	146	5.9	154	6.2	160	6.4	103	4.1	120	4.7	89	3.4	350	13.4	98	3.8	100	3.8
Streptococcal infections, Group A invasive	NR		NR		40	1.6	72	2.9	65	2.6	54	2.1	76	3.0	72	2.8	105	4.0	70	2.7	52	2.0
Streptococcal infections, Group B neonatal	NR		NR		14	0.6	12	0.5	3	0.1	11	0.4	10	0.4	23	0.9	20	0.8	18	0.7	16	0.6
Streptococcus pneumoniae , invasive	NR		NR		NR		NR		NR		NR		NR		NR		276	10.5	235	9.0	264	10.1
Syphilis, infectious	62	2.6	68	2.8	61	2.5	35	1.4	19	0.8	32	1.3	34	1.3	29	1.1	195	7.5	327	12.5	371	14.3
Syphilis, late latent	196	8.2	169	7.0	126	5.1	120	4.8	103	4.1	118	4.7	153	6.0	120	4.6	163	6.2	132	5.1	142	5.5
Syphilis, congenital	1	<0.1	0	0.0	0	0.0	0	0.0	1	<0.1	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
Syphilis, other‡	2	<0.1	8	0.3	3	0.1	2	<0.1	4	0.2	3	0.1	3	0.1	1	<0.1	11	0.4	12	0.5	17	0.7
Tetanus	0	0.0	1	<0.1	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tuberculosis	480	20.0	492	20.2	455	18.5	453	18.2	414	16.5	384	15.2	380	14.9	371	14.3	382	14.6	364	13.9	358	13.8
Tularemia	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Typhoid fever	23	1.0	24	1.0	12	0.5	16	0.6	15	0.6	19	0.8	24	0.9	31	1.2	30	1.1	25	1.0	28	1.1
Verotoxin-producing *E.coli* infection	82	3.4	107	4.4	76	3.1	91	3.7	73	2.9	66	2.6	60	2.4	69	2.7	46	1.8	55	2.1	50	1.9
West Nile virus	NR		NR		NR		NR		NR		NR		NR		NR		163	6.2	44	1.7	6	0.2
Yersiniosis	177	7.4	186	7.7	148	6.0	153	6.1	125	5.0	144	5.7	142	5.6	124	4.8	147	5.6	125	4.8	92	3.5

* Rates per 100,000 population. NR = Not reportable.

† Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

‡ Excludes infectious, late latent and congenital syphilis.

Appendix Table 2: Number of cases and incidence rates* by disease and sex†. Toronto, 1994 - 2004

Disease	Sex	1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004	
		#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
AIDS	Female	20	1.6	21	1.7	30	2.4	10	0.8	19	1.5	16	1.2	8	0.6	21	1.6	15	1.1	16	1.2	20	1.5
	Male	380	32.6	369	31.2	243	20.3	136	11.2	105	8.6	98	8.0	78	6.3	78	6.2	73	5.7	82	6.4	73	5.8
	Total	400	16.7	390	16.0	273	11.1	146	5.9	124	4.9	114	4.5	86	3.4	99	3.8	88	3.4	98	3.8	93	3.6
HIV	Female	75	6.1	72	5.8	68	5.4	66	5.2	74	5.7	54	4.2	86	6.6	113	8.5	137	10.2	114	8.5	136	10.2
	Male	559	48.0	559	47.3	462	38.7	375	31.0	335	27.5	365	29.7	354	28.5	390	30.8	473	37.0	456	35.8	431	34.0
	Total	634	26.5	632	26.0	535	21.7	441	17.7	410	16.3	424	16.8	448	17.6	506	19.5	612	23.4	572	21.9	567	21.8
Amebiasis	Female	101	8.2	120	9.6	105	8.3	115	9.0	100	7.8	92	7.1	117	9.0	99	7.5	108	8.1	110	8.2	92	6.9
	Male	297	25.5	278	23.5	256	21.4	342	28.3	282	23.1	263	21.4	372	30.0	300	23.7	271	21.2	314	24.6	232	18.3
	Total	398	16.6	399	16.4	363	14.7	459	18.4	382	15.2	355	14.1	489	19.2	399	15.4	379	14.5	424	16.2	324	12.4
Botulism	Female	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0.1	1	<0.1
	Male	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
	Total	0	0.0	1	<0.1	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	2	<0.1	2	<0.1
Brucellosis	Female	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0
	Male	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	2	0.2	2	0.2
	Total	0	0.0	1	<0.1	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	<0.1	2	<0.1	2	<0.1
Campylobacter *enteritis*	Female	1018	82.7	886	70.9	771	60.8	746	58.3	799	62.0	642	49.5	710	54.4	694	52.3	632	47.2	487	36.4	447	33.5
	Male	1133	97.2	911	77.1	880	73.6	838	69.2	969	79.4	669	54.5	780	62.9	864	68.3	729	57.1	638	50.1	527	41.5
	Total	2159	90.1	1806	74.3	1653	67.1	1589	63.8	1770	70.5	1312	52.0	1491	58.5	1561	60.2	1361	52.0	1125	43.1	975	37.5
Chickenpox	Total	4695	195.9	3433	141.2	2165	87.9	4049	162.6	3801	151.5	2509	99.4	3586	140.8	2689	103.7	2895	110.6	3403	130.3	5317	204.3
Chlamydial	Female	3412	277.3	3187	255.1	2997	236.5	2825	220.6	3123	242.3	3355	258.7	3476	266.2	3636	273.8	3895	290.7	3832	286.4	3781	283.3
	Male	1188	101.9	1090	92.2	1021	85.4	1099	90.8	1515	124.2	1801	146.6	1903	153.4	2085	164.9	2400	187.9	2457	192.8	2504	197.4
	Total	4600	192.0	4277	175.9	4019	163.2	3924	157.5	4640	184.9	5157	204.2	5380	211.3	5724	220.8	6295	240.5	6289	240.7	6287	241.5
Cholera	Female	0	0.0	1	<0.1	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Male	0	0.0	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
	Total	0	0.0	2	<0.1	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cryptosporidiosis	Female	NR		NR		10	0.8	9	0.7	12	0.9	17	1.3	3	0.2	19	1.4	8	0.6	17	1.3	10	0.7
	Male	NR		NR		19	1.6	34	2.8	6	0.5	17	1.4	41	3.3	26	2.1	29	2.3	18	1.4	39	3.1
	Total	NR		NR		29	1.2	43	1.7	18	0.7	34	1.3	44	1.7	45	1.7	37	1.4	35	1.3	49	1.9
Cyclosporiasis	Female	NR		NR		NR		NR		NR		NR		NR		NR		14	1.0	4	0.3	16	1.2
	Male	NR		NR		NR		NR		NR		NR		NR		NR		14	1.1	10	0.8	14	1.1
	Total	NR		NR		NR		NR		NR		NR		NR		NR		28	1.1	14	0.5	30	1.2
Cytomegalovirus infection, congenital	Female	0	0.0	1	<0.1	1	<0.1	2	0.2	2	0.2	3	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Male	0	0.0	0	0.0	2	0.2	0	0.0	1	<0.1	0	0.0	1	<0.1	0	0.0	0	0.0	2	0.2	0	0.0
	Total	0	0.0	1	<0.1	3	0.1	2	<0.1	3	0.1	3	0.1	1	<0.1	0	0.0	0	0.0	2	<0.1	0	0.0
Encephalitis/ Meningitis: bacterial	Female	9	0.7	5	0.4	5	0.4	17	1.3	6	0.5	8	0.6	9	0.7	7	0.5	2	0.1	1	<0.1	8	0.6
	Male	10	0.9	13	1.1	5	0.4	8	0.7	3	0.2	2	0.2	10	0.8	15	1.2	3	0.2	5	0.4	4	0.3
	Total	19	0.8	18	0.7	10	0.4	25	1.0	9	0.4	10	0.4	19	0.7	22	0.8	5	0.2	6	0.2	12	0.5
Encephalitis/ Meningitis: viral	Female	8	0.7	14	1.1	19	1.5	10	0.8	18	1.4	18	1.4	20	1.5	22	1.7	38	2.8	36	2.7	13	1.0
	Male	12	1.0	17	1.4	8	0.7	10	0.8	32	2.6	26	2.1	20	1.6	30	2.4	44	3.4	39	3.1	32	2.5
	Total	20	0.8	31	1.3	27	1.1	20	0.8	50	2.0	44	1.7	40	1.6	52	2.0	82	3.1	75	2.9	45	1.7
Encephalitis/ Meningitis: other	Female	0	0.0	0	0.0	2	0.2	0	0.0	1	<0.1	0	0.0	0	0.0	1	<0.1	2	0.1	0	0.0	2	0.1
	Male	17	1.5	19	1.6	7	0.6	1	<0.1	4	0.3	3	0.2	2	0.2	4	0.3	2	0.2	3	0.2	5	0.4
	Total	17	0.7	19	0.8	9	0.4	1	<0.1	5	0.2	3	0.1	2	0.1	5	0.2	4	0.2	3	0.1	7	0.3

* Rates per 100,000 population. NR = Not reportable.

† Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

‡ Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

§ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 2: Number of cases and incidence rates* by disease and sex†. Toronto, 1994 - 2004

Disease	Sex	1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004	
		#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
Encephalitis/ Meningitis: unclassified	Female	9	0.7	4	0.3	1	<0.1	2	0.2	0	0.0	2	0.2	4	0.3	2	0.2	3	0.2	8	0.6	3	0.2
	Male	7	0.6	2	0.2	1	<0.1	5	0.4	1	<0.1	4	0.3	2	0.2	3	0.2	5	0.4	3	0.2	5	0.4
	Total	16	0.7	6	0.2	2	<0.1	7	0.3	1	<0.1	6	0.2	6	0.2	5	0.2	8	0.3	11	0.4	8	0.3
Giardiasis	Female	222	18.0	281	22.5	246	19.4	188	14.7	190	14.7	177	13.6	195	14.9	225	16.9	204	15.2	187	14.0	192	14.4
	Male	398	34.1	391	33.1	391	32.7	321	26.5	321	26.3	312	25.4	337	27.2	368	29.1	405	31.7	342	26.8	329	25.9
	Total	620	25.9	672	27.6	637	25.9	509	20.4	511	20.4	489	19.4	532	20.9	593	22.9	609	23.3	529	20.2	521	20.0
Gonorrhea	Female	805	65.4	716	57.3	628	49.5	451	35.2	543	42.1	503	38.8	635	48.6	605	45.6	565	42.2	594	44.4	533	39.9
	Male	1307	112.1	1129	95.5	906	75.8	748	61.8	897	73.5	896	72.9	1119	90.2	1153	91.2	1214	95.0	1253	98.3	1199	94.5
	Total	2112	88.1	1845	75.9	1534	62.3	1199	48.1	1441	57.4	1399	55.4	1754	68.9	1758	67.8	1780	68.0	1847	70.7	1734	66.6
Haemophilus influenzae b disease, invasive	Female	1	<0.1	2	0.2	1	<0.1	1	<0.1	0	0.0	0	0.0	2	0.2	1	<0.1	0	0.0	1	<0.1	1	<0.1
	Male	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0.2	2	0.2	0	0.0	2	0.2	2	0.2
	Total	1	<0.1	2	<0.1	1	<0.1	1	<0.1	0	0.0	0	0.0	5	0.2	3	0.1	0	0.0	3	0.1	3	0.1
Hemorrhagic fevers	Female	0	0.0	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
	Male	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Total	0	0.0	1	<0.1	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis A	Female	52	4.2	83	6.6	82	6.5	44	3.4	33	2.6	32	2.5	27	2.1	29	2.2	29	2.2	19	1.4	16	1.2
	Male	58	5.0	119	10.1	184	15.4	150	12.4	75	6.1	58	4.7	29	2.3	45	3.6	35	2.7	16	1.3	32	2.5
	Total	111	4.6	203	8.3	267	10.8	194	7.8	108	4.3	90	3.6	56	2.2	74	2.9	64	2.4	35	1.3	48	1.8
Hepatitis B cases	Female	24	2.0	38	3.0	24	1.9	19	1.5	11	0.9	8	0.6	6	0.5	13	1.0	13	1.0	18	1.3	15	1.1
	Male	69	5.9	76	6.4	58	4.9	28	2.3	15	1.2	16	1.3	20	1.6	20	1.6	36	2.8	32	2.5	23	1.8
	Total	95	4.0	114	4.7	82	3.3	47	1.9	26	1.0	24	1.0	26	1.0	33	1.3	49	1.9	50	1.9	38	1.5
Hepatitis B carriers	Female	1514	123.0	1384	110.8	1166	92.0	973	76.0	905	70.2	991	76.4	939	71.9	1007	75.8	1041	77.7	916	68.5	898	67.3
	Male	1842	158.0	1666	141.0	1442	120.7	1114	92.0	1073	87.9	1105	90.0	1078	86.9	1196	94.6	1329	104.0	1022	80.2	1033	81.4
	Total	3433	143.3	3111	128.0	2654	107.8	2112	84.8	1998	79.6	2111	83.6	2036	80.0	2231	86.1	2385	91.1	1947	74.5	1936	74.4
Hepatitis B unclassfied reports	Female	106	8.6	199	15.9	183	14.4	99	7.7	120	9.3	145	11.2	190	14.5	205	15.4	159	11.9	158	11.8	303	22.7
	Male	115	9.9	261	22.1	220	18.4	111	9.2	156	12.8	169	13.8	238	19.2	274	21.7	232	18.2	219	17.2	378	29.8
	Total	231	9.6	471	19.4	407	16.5	215	8.6	281	11.2	316	12.5	442	17.4	488	18.8	396	15.1	381	14.6	683	26.2
Hepatitis C	Female	733	59.6	979	78.3	961	75.8	769	60.1	726	56.3	643	49.6	555	42.5	533	40.1	548	40.9	531	39.7	519	38.9
	Male	1272	109.1	1646	139.3	1684	140.9	1455	120.2	1288	105.6	1159	94.4	987	79.6	974	77.0	900	70.4	763	59.9	817	64.4
	Total	2022	84.4	2640	108.6	2661	108.1	2241	90.0	2022	80.6	1809	71.6	1566	61.5	1525	58.8	1450	55.4	1298	49.7	1340	51.5
Hepatitis D	Female	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	2	0.2	0	0.0	2	0.1	0	0.0	1	<0.1
	Male	0	0.0	1	<0.1	3	0.3	2	0.2	0	0.0	3	0.2	3	0.2	5	0.4	2	0.2	1	<0.1	0	0.0
	Total	0	0.0	1	<0.1	3	0.1	3	0.1	0	0.0	3	0.1	5	0.2	5	0.2	4	0.2	1	<0.1	1	<0.1
Herpes, neonatal	Female	1	<0.1	0	0.0	0	0.0	0	0.0	1	<0.1	2	0.2	0	0.0	0	0.0	1	<0.1	0	0.0	4	0.3
	Male	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	1	<0.1	1	<0.1	0	0.0	1	<0.1
	Total	1	<0.1	0	0.0	0	0.0	0	0.0	1	<0.1	3	0.1	0	0.0	1	<0.1	2	<0.1	0	0.0	5	0.2
Influenza‡	Female	373	30.3	42	3.4	125	9.9	258	20.2	169	13.1	237	18.3	52	4.0	163	12.3	90	6.7	331	24.7	520	39.0
	Male	145	12.4	51	4.3	124	10.4	239	19.7	175	14.3	237	19.3	55	4.4	133	10.5	114	8.9	285	22.4	421	33.2
	Total	520	21.7	94	3.9	249	10.1	497	20.0	345	13.7	475	18.8	107	4.2	296	11.4	204	7.8	616	23.6	941	36.1
Legionellosis	Female	3	0.2	3	0.2	2	0.2	6	0.5	10	0.8	8	0.6	5	0.4	3	0.2	2	0.1	5	0.4	2	0.1
	Male	14	1.2	9	0.8	9	0.8	14	1.2	8	0.7	15	1.2	14	1.1	7	0.6	2	0.2	5	0.4	1	<0.1
	Total	17	0.7	12	0.5	11	0.4	20	0.8	18	0.7	23	0.9	19	0.7	10	0.4	4	0.2	10	0.4	3	0.1

* Rates per 100,000 population. NR = Not reportable.

† Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

‡ Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

§ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 2: Number of cases and incidence rates* by disease and sex†. Toronto, 1994 - 2004

Disease	Sex	1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004	
		#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
Leprosy	Female	3	0.2	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Male	3	0.3	4	0.3	4	0.3	2	0.2	1	<0.1	2	0.2	0	0.0	2	0.2	1	<0.1	2	0.2	0	0.0
	Total	6	0.3	4	0.2	4	0.2	2	<0.1	1	<0.1	3	0.1	0	0.0	2	<0.1	1	<0.1	2	<0.1	0	0.0
Listeriosis	Female	1	<0.1	5	0.4	1	<0.1	3	0.2	7	0.5	4	0.3	6	0.5	7	0.5	10	0.7	3	0.2	10	0.7
	Male	5	0.4	7	0.6	4	0.3	4	0.3	7	0.6	1	<0.1	5	0.4	2	0.2	4	0.3	5	0.4	4	0.3
	Total	6	0.3	12	0.5	5	0.2	7	0.3	14	0.6	5	0.2	11	0.4	9	0.3	14	0.5	8	0.3	14	0.5
Lyme disease	Female	8	0.7	6	0.5	5	0.4	4	0.3	4	0.3	4	0.3	7	0.5	2	0.2	7	0.5	2	0.1	2	0.1
	Male	1	<0.1	1	<0.1	4	0.3	2	0.2	2	0.2	6	0.5	2	0.2	3	0.2	5	0.4	2	0.2	2	0.2
	Total	9	0.4	7	0.3	9	0.4	6	0.2	6	0.2	10	0.4	10	0.4	5	0.2	12	0.5	4	0.2	4	0.2
Malaria	Female	53	4.3	54	4.3	86	6.8	96	7.5	35	2.7	21	1.6	26	2.0	23	1.7	21	1.6	25	1.9	31	2.3
	Male	86	7.4	70	5.9	122	10.2	142	11.7	50	4.1	54	4.4	71	5.7	63	5.0	61	4.8	68	5.3	62	4.9
	Total	140	5.8	124	5.1	213	8.6	239	9.6	85	3.4	75	3.0	97	3.8	86	3.3	82	3.1	93	3.6	93	3.6
Measles	Female	19	1.5	128	10.2	9	0.7	2	0.2	2	0.2	0	0.0	3	0.2	1	<0.1	0	0.0	5	0.4	1	<0.1
	Male	26	2.2	158	13.4	16	1.3	3	0.2	1	<0.1	1	<0.1	3	0.2	2	0.2	0	0.0	5	0.4	0	0.0
	Total	45	1.9	286	11.8	25	1.0	5	0.2	3	0.1	1	<0.1	6	0.2	3	0.1	0	0.0	10	0.4	1	<0.1
Meningococcal disease, invasive	Female	13	1.1	7	0.6	10	0.8	9	0.7	3	0.2	14	1.1	13	1.0	13	1.0	8	0.6	3	0.2	5	0.4
	Male	11	0.9	9	0.8	10	0.8	10	0.8	3	0.2	7	0.6	9	0.7	13	1.0	5	0.4	5	0.4	1	<0.1
	Total	24	1.0	16	0.7	20	0.8	19	0.8	6	0.2	21	0.8	22	0.9	26	1.0	13	0.5	8	0.3	6	0.2
Mumps	Female	6	0.5	16	1.3	5	0.4	11	0.9	1	<0.1	2	0.2	6	0.5	1	<0.1	2	0.1	1	<0.1	2	0.1
	Male	9	0.8	18	1.5	11	0.9	10	0.8	2	0.2	2	0.2	3	0.2	0	0.0	1	<0.1	3	0.2	0	0.0
	Total	15	0.6	34	1.4	16	0.6	21	0.8	3	0.1	4	0.2	9	0.4	1	<0.1	3	0.1	4	0.2	2	<0.1
Ophthalmia neonatorum	Female	4	0.3	3	0.2	3	0.2	0	0.0	3	0.2	1	<0.1	2	0.2	1	<0.1	1	<0.1	1	<0.1	2	0.1
	Male	2	0.2	0	0.0	3	0.3	3	0.2	1	<0.1	3	0.2	5	0.4	0	0.0	0	0.0	1	<0.1	1	<0.1
	Total	6	0.3	3	0.1	6	0.2	3	0.1	4	0.2	4	0.2	7	0.3	1	<0.1	1	<0.1	2	<0.1	3	0.1
Paratyphoid fever	Female	6	0.5	4	0.3	1	<0.1	0	0.0	2	0.2	4	0.3	0	0.0	1	<0.1	5	0.4	5	0.4	8	0.6
	Male	2	0.2	5	0.4	6	0.5	3	0.2	2	0.2	1	<0.1	2	0.2	5	0.4	5	0.4	5	0.4	8	0.6
	Total	8	0.3	9	0.4	7	0.3	3	0.1	4	0.2	5	0.2	2	<0.1	6	0.2	10	0.4	10	0.4	16	0.6
Pertussis	Female	93	7.6	81	6.5	60	4.7	44	3.4	73	5.7	56	4.3	77	5.9	50	3.8	42	3.1	12	0.9	45	3.4
	Male	79	6.8	68	5.8	44	3.7	46	3.8	76	6.2	72	5.9	77	6.2	35	2.8	41	3.2	19	1.5	46	3.6
	Total	172	7.2	150	6.2	104	4.2	90	3.6	149	5.9	128	5.1	154	6.0	85	3.3	83	3.2	31	1.2	92	3.5
Psittacosis/ Ornithosis	Female	0	0.0	0	0.0	2	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Male	0	0.0	0	0.0	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
	Total	0	0.0	0	0.0	3	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
Q fever	Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	1	<0.1	0	0.0	1	<0.1	0	0.0
	Male	0	0.0	2	0.2	0	0.0	0	0.0	1	<0.1	2	0.2	0	0.0	0	0.0	0	0.0	1	<0.1	1	<0.1
	Total	0	0.0	2	<0.1	0	0.0	0	0.0	1	<0.1	3	0.1	0	0.0	1	<0.1	0	0.0	2	<0.1	1	<0.1
Rubella	Female	7	0.6	7	0.6	9	0.7	3	0.2	6	0.5	0	0.0	2	0.2	6	0.5	0	0.0	2	0.1	0	0.0
	Male	1	<0.1	6	0.5	13	1.1	1	<0.1	3	0.2	0	0.0	3	0.2	6	0.5	1	<0.1	2	0.2	1	<0.1
	Total	8	0.3	13	0.5	22	0.9	4	0.2	9	0.4	0	0.0	5	0.2	12	0.5	1	<0.1	4	0.2	1	<0.1
Rubella, congenital syndrome	Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	1	<0.1	1	<0.1	1	<0.1
	Male	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	<0.1
	Total	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	1	<0.1	1	<0.1	1	<0.1

* Rates per 100,000 population. NR = Not reportable.

† Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

‡ Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

§ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 2: Number of cases and incidence rates* by disease and sex†. Toronto, 1994 - 2004

Disease	Sex	1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004	
		#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
Salmonellosis	Female	385	31.3	471	37.7	428	33.8	429	33.5	551	42.7	308	23.8	355	27.2	316	23.8	318	23.7	271	20.3	229	17.2
	Male	417	35.8	410	34.7	397	33.2	424	35.0	446	36.6	332	27.0	303	24.4	355	28.1	319	25.0	264	20.7	251	19.8
	Total	806	33.6	888	36.5	830	33.7	855	34.3	999	39.8	644	25.5	658	25.8	671	25.9	637	24.3	535	20.5	481	18.5
Severe acute respiratory syndrome (SARS)	Female	NR		NR		NR		NR		NR		NR		NR		NR		NR		147	11.0	0	0.0
	Male	NR		NR		NR		NR		NR		NR		NR		NR		NR		81	6.4	0	0.0
	Total	NR		NR		NR		NR		NR		NR		NR		NR		NR		228	8.7	0	0.0
Shigellosis	Female	91	7.4	72	5.8	74	5.8	77	6.0	92	7.1	48	3.7	56	4.3	30	2.3	183	13.7	32	2.4	42	3.1
	Male	84	7.2	103	8.7	71	5.9	76	6.3	68	5.6	55	4.5	64	5.2	59	4.7	166	13.0	66	5.2	58	4.6
	Total	175	7.3	176	7.2	146	5.9	154	6.2	160	6.4	103	4.1	120	4.7	89	3.4	350	13.4	98	3.8	100	3.8
Streptococcal infections, Group A invasive	Female	NR		NR		17	1.3	34	2.7	34	2.6	30	2.3	35	2.7	31	2.3	45	3.4	39	2.9	28	2.1
	Male	NR		NR		23	1.9	37	3.1	31	2.5	24	2.0	40	3.2	41	3.2	59	4.6	31	2.4	24	1.9
	Total	NR		NR		40	1.6	72	2.9	65	2.6	54	2.1	76	3.0	72	2.8	105	4.0	70	2.7	52	2.0
Streptococcal infections, Group B neonatal	Female	NR		NR		9	0.7	5	0.4	3	0.2	8	0.6	3	0.2	11	0.8	12	0.9	10	0.7	7	0.5
	Male	NR		NR		5	0.4	7	0.6	0	0.0	3	0.2	7	0.6	11	0.9	8	0.6	8	0.6	9	0.7
	Total	NR		NR		14	0.6	12	0.5	3	0.1	11	0.4	10	0.4	23	0.9	20	0.8	18	0.7	16	0.6
Streptococcus pneumoniae, invasive	Female	NR		NR		NR		NR		NR		NR		NR		NR		125	9.3	110	8.2	98	7.3
	Male	NR		NR		NR		NR		NR		NR		NR		NR		150	11.7	125	9.8	165	13.0
	Total	NR		NR		NR		NR		NR		NR		NR		NR		276	10.5	235	9.0	264	10.1
Syphilis, infectious	Female	22	1.8	25	2.0	27	2.1	15	1.2	9	0.7	10	0.8	11	0.8	9	0.7	7	0.5	17	1.3	7	0.5
	Male	40	3.4	43	3.6	34	2.8	20	1.7	10	0.8	22	1.8	23	1.9	20	1.6	188	14.7	310	24.3	364	28.7
	Total	62	2.6	68	2.8	61	2.5	35	1.4	19	0.8	32	1.3	34	1.3	29	1.1	195	7.5	327	12.5	371	14.3
Syphilis, late latent	Female	92	7.5	75	6.0	62	4.9	58	4.5	50	3.9	54	4.2	76	5.8	58	4.4	74	5.5	46	3.4	47	3.5
	Male	104	8.9	94	8.0	64	5.4	62	5.1	53	4.3	63	5.1	77	6.2	62	4.9	88	6.9	86	6.7	95	7.5
	Total	196	8.2	169	7.0	126	5.1	120	4.8	103	4.1	118	4.7	153	6.0	120	4.6	163	6.2	132	5.1	142	5.5
Syphilis, congenital	Female	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Male	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
	Total	1	<0.1	0	0.0	0	0.0	0	0.0	1	<0.1	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	1	<0.1
Syphilis, other§	Female	1	<0.1	3	0.2	1	<0.1	1	<0.1	2	0.2	2	0.2	0	0.0	0	0.0	2	0.1	2	0.1	1	<0.1
	Male	1	<0.1	5	0.4	2	0.2	1	<0.1	2	0.2	1	<0.1	3	0.2	1	<0.1	9	0.7	10	0.8	16	1.3
	Total	2	<0.1	8	0.3	3	0.1	2	<0.1	4	0.2	3	0.1	3	0.1	1	<0.1	11	0.4	12	0.5	17	0.7
Tetanus	Female	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
	Male	0	0.0	1	<0.1	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Total	0	0.0	1	<0.1	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tuberculosis	Female	247	20.1	226	18.1	214	16.9	225	17.6	196	15.2	190	14.7	171	13.1	151	11.4	187	14.0	170	12.7	166	12.4
	Male	233	20.0	266	22.5	241	20.2	228	18.8	218	17.9	194	15.8	209	16.8	220	17.4	195	15.3	194	15.2	192	15.1
	Total	480	20.0	492	20.2	455	18.5	453	18.2	414	16.5	384	15.2	380	14.9	371	14.3	382	14.6	364	13.9	358	13.8
Tularemia	Female	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
	Male	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Total	0	0.0	0	0.0	0	0.0	1	<0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Typhoid fever	Female	13	1.1	11	0.9	5	0.4	6	0.5	6	0.5	8	0.6	15	1.1	13	1.0	15	1.1	14	1.0	16	1.2
	Male	9	0.8	13	1.1	7	0.6	10	0.8	9	0.7	11	0.9	9	0.7	18	1.4	15	1.2	11	0.9	12	0.9
	Total	23	1.0	24	1.0	12	0.5	16	0.6	15	0.6	19	0.8	24	0.9	31	1.2	30	1.1	25	1.0	28	1.1

* Rates per 100,000 population. NR = Not reportable.

† Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

‡ Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

§ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 2: Number of cases and incidence rates* by disease and sex†. Toronto, 1994 - 2004

Disease	Sex	1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004	
		#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate	#	Rate
Verotoxin-producing *E. coli* infection	Female	39	3.2	49	3.9	34	2.7	50	3.9	39	3.0	37	2.9	29	2.2	40	3.0	26	1.9	25	1.9	29	2.2
	Male	43	3.7	58	4.9	42	3.5	41	3.4	34	2.8	29	2.4	31	2.5	29	2.3	20	1.6	30	2.4	21	1.7
	Total	82	3.4	107	4.4	76	3.1	91	3.7	73	2.9	66	2.6	60	2.4	69	2.7	46	1.8	55	2.1	50	1.9
West Nile virus	Female	NR		NR		NR		NR		NR		NR		NR		NR		89	6.6	24	1.8	4	0.3
	Male	NR		NR		NR		NR		NR		NR		NR		NR		74	5.8	20	1.6	2	0.2
	Total	NR		NR		NR		NR		NR		NR		NR		NR		163	6.2	44	1.7	6	0.2
Yersiniosis	Female	80	6.5	84	6.7	70	5.5	63	4.9	43	3.3	69	5.3	62	4.7	51	3.8	71	5.3	58	4.3	40	3.0
	Male	94	8.1	102	8.6	78	6.5	90	7.4	82	6.7	75	6.1	80	6.4	73	5.8	76	5.9	67	5.3	52	4.1
	Total	177	7.4	186	7.7	148	6.0	153	6.1	125	5.0	144	5.7	142	5.6	124	4.8	147	5.6	125	4.8	92	3.5

* Rates per 100,000 population. NR = Not reportable.

† Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

‡ Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

§ Excludes infectious, late latent and congenital syphilis.

Appendix Table 3: Number of cases by disease, sex* and age group. Toronto, 2004

Disease	Sex	Age group (years)																				
		Total	<1	01-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Unk.
AIDS	Female	20	1	0	0	0	0	0	1	4	5	4	2	1	1	0	1	0	0	0	0	0
	Male	73	0	0	0	0	0	1	6	10	13	16	8	8	7	4	0	0	0	0	0	0
	Total	93	1	0	0	0	0	1	7	14	18	20	10	9	8	4	1	0	0	0	0	0
HIV	Female	136	1	0	0	2	5	17	29	27	19	15	10	2	3	1	4	0	0	0	0	1
	Male	431	0	0	0	1	3	26	49	86	106	76	34	27	10	7	3	0	1	1	0	1
	Total	567	1	0	0	3	8	43	78	113	125	91	44	29	13	8	7	0	1	1	0	2
Amebiasis	Female	92	0	2	4	3	1	10	16	10	13	11	6	2	4	4	3	1	0	0	2	0
	Male	232	0	4	7	4	8	14	26	29	38	42	26	6	14	4	6	2	2	0	0	0
	Total	324	0	6	11	7	9	24	42	39	51	53	32	8	18	8	9	3	2	0	2	0
Botulism	Female	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	Male	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	Total	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
Brucellosis	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
	Total	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Campylobacter *enteritis*	Female	447	8	27	28	20	26	36	62	40	21	27	26	33	24	16	17	12	14	7	3	0
	Male	527	9	62	44	28	28	41	39	48	44	37	41	26	25	19	13	8	8	4	3	0
	Total	975	17	89	72	48	54	77	101	88	65	64	67	59	49	36	30	20	22	11	6	0
Chickenpox	Total	5317	37	1280	3157	630	68	32	45	0	0	0	0	0	0	0	0	0	0	0	0	68
Chlamydial	Female	3781	0	1	1	20	979	1317	702	370	192	108	49	26	12	1	2	0	1	0	0	0
	Male	2504	0	0	0	2	275	778	528	360	281	141	72	38	15	4	6	4	0	0	0	0
	Total	6287	0	1	1	22	1254	2097	1230	730	473	249	121	64	27	5	8	4	1	0	0	0
Cholera	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cryptosporidiosis	Female	10	0	4	1	0	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0
	Male	39	0	9	6	1	0	1	3	2	6	7	3	0	1	0	0	0	0	0	0	0
	Total	49	0	13	7	1	1	1	5	4	6	7	3	0	1	0	0	0	0	0	0	0
Cyclosporiasis	Female	16	0	0	0	0	0	3	3	1	2	0	2	0	1	1	1	1	1	0	0	0
	Male	14	0	0	0	0	0	1	0	2	0	0	2	3	2	0	1	1	1	1	0	0
	Total	30	0	0	0	0	0	4	3	3	2	0	4	3	3	1	2	2	2	1	0	0
Cytomegalovirus infection, congenital	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Encephalitis/ Meningitis: bacterial	Female	8	3	0	0	0	0	0	0	1	0	0	0	2	0	0	0	1	1	0	0	0
	Male	4	1	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0
	Total	12	4	0	0	0	0	0	0	1	1	0	1	3	0	0	0	1	1	0	0	0
Encephalitis/ Meningitis: viral	Female	13	4	0	0	1	1	0	0	2	0	1	2	0	0	1	1	0	0	0	0	0
	Male	32	10	2	3	2	1	1	3	0	3	1	2	1	1	0	0	0	1	1	0	0
	Total	45	14	2	3	3	2	1	3	2	3	2	4	1	1	1	1	0	1	1	0	0
Encephalitis/ Meningitis: other	Female	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
	Male	5	0	0	0	0	0	0	0	0	0	0	1	1	2	0	1	0	0	0	0	0
	Total	7	0	0	0	0	0	0	1	0	1	0	1	1	2	0	1	0	0	0	0	0

* Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

† Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

‡ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 3: Number of cases by disease, sex* and age group. Toronto, 2004

Disease	Sex	Age group (years)																				
		Total	<1	01-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Unk.
Encephalitis/ Meningitis: unclassified	Female	3	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	5	2	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0
	Total	8	3	0	2	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0
Giardiasis	Female	192	1	29	32	8	10	14	21	12	13	14	5	4	8	11	4	4	1	0	1	0
	Male	329	3	40	31	24	8	29	30	30	36	24	24	10	17	6	9	2	2	1	3	0
	Total	521	4	69	63	32	18	43	51	42	49	38	29	14	25	17	13	6	3	1	4	0
Gonorrhea	Female	533	0	0	1	4	190	169	79	44	17	11	10	6	0	0	1	0	0	0	0	1
	Male	1199	0	0	0	1	110	291	206	183	167	117	60	32	20	8	3	1	0	0	0	0
	Total	1734	0	0	1	5	300	460	287	227	184	128	70	38	20	8	4	1	0	0	0	1
Haemophilus influenzae b disease, invasive	Female	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
	Male	2	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
	Total	3	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0
Hemorrhagic fevers	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hepatitis A	Female	16	0	1	3	3	0	0	1	1	1	1	2	1	0	0	0	1	1	0	0	0
	Male	32	0	4	7	3	3	2	2	3	2	3	1	0	0	0	1	0	0	0	1	0
	Total	48	0	5	10	6	3	2	3	4	3	4	3	1	0	0	1	1	1	0	1	0
Hepatitis B cases	Female	15	1	0	0	0	0	1	1	2	3	2	3	2	0	0	0	0	0	0	0	0
	Male	23	0	0	1	0	0	0	3	7	3	2	3	2	0	0	1	0	1	0	0	0
	Total	38	1	0	1	0	0	1	4	9	6	4	6	4	0	0	1	0	1	0	0	0
Hepatitis B carriers	Female	898	0	1	5	10	35	111	136	179	106	93	77	45	38	26	10	10	8	5	3	0
	Male	1033	0	0	6	9	45	78	112	183	158	138	118	64	47	29	22	16	6	0	2	0
	Total	1936	0	1	11	19	80	189	248	363	266	233	195	109	85	55	32	26	14	5	5	0
Hepatitis B unclassfied reports	Female	303	0	0	2	4	11	43	53	50	43	22	20	10	16	11	7	4	4	3	0	0
	Male	378	1	1	2	5	21	23	45	66	72	39	33	17	11	16	18	2	5	0	0	1
	Total	683	1	1	4	9	32	66	99	116	116	61	53	27	27	27	25	6	9	3	0	1
Hepatitis C	Female	519	2	0	2	0	5	27	42	50	70	59	65	62	36	25	19	17	17	18	3	0
	Male	817	4	2	1	4	2	26	44	71	111	136	162	120	58	18	15	11	21	8	3	0
	Total	1340	6	2	3	4	7	53	87	121	182	195	227	183	94	43	34	28	38	26	6	1
Hepatitis D	Female	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Herpes, neonatal	Female	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Influenza†	Female	520	38	56	28	12	13	7	14	11	12	14	11	13	8	14	12	21	37	72	127	0
	Male	421	40	57	34	11	8	2	7	9	6	17	13	3	14	10	12	18	48	46	66	0
	Total	941	78	113	62	23	21	9	21	20	18	31	24	16	22	24	24	39	85	118	193	0
Legionellosis	Female	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0
	Male	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	Total	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0

* Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

† Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

‡ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 3: Number of cases by disease, sex* and age group. Toronto, 2004

Disease	Sex	Age group (years)																				
		Total	<1	01-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Unk.
Leprosy	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Listeriosis	Female	10	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	3	0	2	1	0
	Male	4	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0
	Total	14	1	0	0	0	0	0	1	0	0	0	1	0	0	1	3	4	0	2	1	0
Lyme disease	Female	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
	Male	2	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	Total	4	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	0	0	0	0
Malaria	Female	31	2	1	2	1	0	3	4	4	7	3	0	1	1	1	0	0	0	1	0	0
	Male	62	0	2	2	2	2	6	7	7	5	8	10	6	3	0	0	2	0	0	0	0
	Total	93	2	3	4	3	2	9	11	11	12	11	10	7	4	1	0	2	0	1	0	0
Measles	Female	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Meningococcal disease, invasive	Female	5	0	0	0	0	0	1	1	0	0	0	1	1	0	0	1	0	0	0	0	0
	Male	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	Total	6	0	0	0	0	0	1	1	0	0	0	1	1	0	0	2	0	0	0	0	0
Mumps	Female	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Ophthalmia neonatorum	Female	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paratyphoid fever	Female	8	0	1	0	0	0	1	1	0	4	0	0	1	0	0	0	0	0	0	0	0
	Male	8	0	0	0	1	0	1	3	2	1	0	0	0	0	0	0	0	0	0	0	0
	Total	16	0	1	0	1	0	2	4	2	5	0	0	1	0	0	0	0	0	0	0	0
Pertussis	Female	45	7	3	4	13	5	0	1	0	4	1	2	0	0	1	1	1	2	0	0	0
	Male	46	14	1	6	15	2	1	1	0	0	2	0	0	0	3	0	1	0	0	0	0
	Total	92	21	4	10	28	7	1	2	0	4	3	2	0	0	4	1	3	2	0	0	0
Psittacosis/ Ornithosis	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Q fever	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	Total	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Rubella	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	Total	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Rubella, congenital syndrome	Female	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

† Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

‡ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 3: Number of cases by disease, sex* and age group. Toronto, 2004

Disease	Sex	Age group (years)																				
		Total	<1	01-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Unk.
Salmonellosis	Female	229	15	41	20	5	11	17	19	16	11	18	5	6	12	11	6	8	3	4	1	0
	Male	251	14	52	42	22	9	12	13	9	14	9	12	8	8	7	6	7	4	2	1	0
	Total	481	29	93	62	27	20	29	32	25	25	27	18	14	20	18	12	15	7	6	2	0
Severe acute respiratory syndrome (SARS)	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shigellosis	Female	42	1	3	5	5	0	1	3	4	4	5	4	1	2	3	0	1	0	0	0	0
	Male	58	0	3	6	3	1	3	6	7	5	8	6	5	1	2	1	0	1	0	0	0
	Total	100	1	6	11	8	1	4	9	11	9	13	10	6	3	5	1	1	1	0	0	0
Streptococcal infections, Group A invasive	Female	28	0	1	3	0	0	0	2	5	1	3	1	1	2	3	1	1	1	1	2	0
	Male	24	0	0	2	1	1	2	0	0	2	1	1	1	1	0	2	3	1	3	3	0
	Total	52	0	1	5	1	1	2	2	5	3	4	2	2	3	3	3	4	2	4	5	0
Streptococcal infections, Group B neonatal	Female	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Streptococcus pneumoniae, invasive	Female	98	1	14	2	2	0	2	0	2	5	2	3	5	6	6	11	10	5	9	13	0
	Male	165	8	13	6	1	1	2	2	5	9	13	12	15	11	12	14	9	13	7	12	0
	Total	264	10	27	8	3	1	4	2	7	14	15	15	20	17	18	25	19	18	16	25	0
Syphilis, infectious	Female	7	0	0	0	0	0	5	0	0	0	1	1	0	0	0	0	0	0	0	0	0
	Male	364	0	0	0	0	0	22	25	56	86	79	46	27	15	6	1	1	0	0	0	0
	Total	371	0	0	0	0	0	27	25	56	86	80	47	27	15	6	1	1	0	0	0	0
Syphilis, late latent	Female	47	0	0	0	0	0	4	4	2	2	3	4	5	4	7	2	3	3	3	1	0
	Male	95	0	0	0	0	0	7	11	13	11	11	12	9	6	6	1	1	3	2	2	0
	Total	142	0	0	0	0	0	11	15	15	13	14	16	14	10	13	3	4	6	5	3	0
Syphilis, congenital	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	Total	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Syphilis, other‡	Female	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
	Male	16	0	0	0	0	0	0	2	2	2	3	3	1	3	0	0	0	0	0	0	0
	Total	17	0	0	0	0	0	0	2	2	2	3	3	1	3	0	0	1	0	0	0	0
Tetanus	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tuberculosis	Female	166	0	2	0	0	8	21	29	22	15	14	15	6	9	7	3	5	7	1	2	0
	Male	192	0	3	4	1	1	14	17	21	26	17	9	14	8	8	10	10	13	11	5	0
	Total	358	0	5	4	1	9	35	46	43	41	31	24	20	17	15	13	15	20	12	7	0
Tularemia	Female	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Typhoid fever	Female	16	0	2	1	4	1	2	0	0	1	3	0	2	0	0	0	0	0	0	0	0
	Male	12	0	1	2	1	3	1	0	1	0	0	1	2	0	0	0	0	0	0	0	0
	Total	28	0	3	3	5	4	3	0	1	1	3	1	4	0	0	0	0	0	0	0	0

* Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

† Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

‡ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 3: Number of cases by disease, sex* and age group. Toronto, 2004

Disease	Sex	Age group (years)																				
		Total	<1	01-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Unk.
Verotoxin-producing *E. coli* infections	Female	29	1	8	3	1	1	2	3	1	3	0	1	0	1	1	2	0	1	0	0	0
	Male	21	0	8	3	3	0	1	1	0	0	0	0	1	1	0	0	2	0	1	0	0
	Total	50	1	16	6	4	1	3	4	1	3	0	1	1	2	1	2	2	1	1	0	0
West Nile virus	Female	4	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0
	Male	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
	Total	6	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	0	1	0	1	0
Yersiniosis	Female	40	1	16	6	1	1	2	4	1	2	0	2	1	1	1	1	0	0	0	0	0
	Male	52	9	10	9	4	1	6	1	6	1	1	1	1	1	1	0	0	0	0	0	0
	Total	92	10	26	15	5	2	8	5	7	3	1	3	2	2	2	1	0	0	0	0	0

* Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

† Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

‡ Excludes infectious, late latent and congenital syphilis.

Appendix Table 4: 5-year and 10-year means and incidence rates* by disease and sex†. Toronto, 1994 - 2003

Disease	Sex	5-year mean 1994-1998		5-year mean 1999-2003		10-year mean 1994-2003	
		#	Rate	#	Rate	#	Rate
AIDS	Female	20	1.6	15	1.2	18	1.4
	Male	247	20.6	82	6.5	164	13.4
	Total	267	10.8	97	3.8	182	7.2
HIV	Female	71	5.6	101	7.6	86	6.6
	Male	458	38.3	408	32.4	433	35.3
	Total	530	21.6	512	19.9	521	20.7
Amebiasis	Female	108	8.6	105	8.0	107	8.3
	Male	291	24.4	304	24.2	298	24.3
	Total	400	16.3	409	15.9	405	16.1
Botulism	Female	<1	<0.1	<1	<0.1	<1	<0.1
	Male	<1	<0.1	0	0.0	<1	<0.1
	Total	<1	<0.1	<1	<0.1	<1	<0.1
Brucellosis	Female	<1	<0.1	<1	<0.1	<1	<0.1
	Male	<1	<0.1	<1	<0.1	<1	<0.1
	Total	<1	<0.1	<1	<0.1	<1	<0.1
Campylobacter enteritis	Female	844	66.8	633	47.9	739	57.1
	Male	946	79.2	736	58.5	841	68.6
	Total	1795	73.0	1370	53.1	1583	62.8
Chickenpox	Total	3629	147.6	3016	117.0	3323	131.9
Chlamydial	Female	3109	246.1	3639	275.3	3374	261.0
	Male	1183	99.0	2129	169.4	1656	135.1
	Total	4292	174.6	5769	223.7	5031	199.7
Cholera	Female	<1	<0.1	0	0.0	<1	<0.1
	Male	<1	<0.1	0	0.0	<1	<0.1
	Total	<1	<0.1	0	0.0	<1	<0.1
Cryptosporidiosis	Female	NR		13	1.0	NR	
	Male	NR		26	2.1	NR	
	Total	NR		39	1.5	NR	
Cyclosporiasis	Female	NR		NR		NR	
	Male	NR		NR		NR	
	Total	NR		NR		NR	
Cytomegalovirus infection, congenital	Female	1	<0.1	<1	<0.1	<1	<0.1
	Male	<1	<0.1	<1	<0.1	<1	<0.1
	Total	2	<0.1	1	<0.1	2	<0.1
Encephalitis/Meningitis: bacterial	Female	8	0.7	5	0.4	7	0.5
	Male	8	0.7	7	0.6	7	0.6
	Total	16	0.7	12	0.5	14	0.6
Encephalitis/Meningitis: viral	Female	14	1.1	27	2.0	20	1.6
	Male	16	1.3	32	2.5	24	1.9
	Total	30	1.2	59	2.3	44	1.8
Encephalitis/Meningitis: other	Female	<1	<0.1	<1	<0.1	<1	<0.1
	Male	10	0.8	3	0.2	6	0.5
	Total	10	0.4	3	0.1	7	0.3

* Rates per 100,000 population. NR = Not reportable.

† Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

‡ Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

§ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 4: 5-year and 10-year means and incidence rates* by disease and sex†. Toronto, 1994 - 2003

Disease	Sex	5-year mean 1994-1998		5-year mean 1999-2003		10-year mean 1994-2003	
		#	Rate	#	Rate	#	Rate
Encephalitis/Meningitis: unclassified	Female	3	0.3	4	0.3	4	0.3
	Male	3	0.3	3	0.3	3	0.3
	Total	6	0.3	7	0.3	7	0.3
Giardiasis	Female	225	17.8	198	15.0	212	16.4
	Male	364	30.5	353	28.1	359	29.3
	Total	590	24.0	550	21.3	570	22.6
Gonorrhea	Female	629	49.8	580	43.9	605	46.8
	Male	997	83.5	1127	89.7	1062	86.6
	Total	1626	66.2	1708	66.2	1667	66.2
Haemophilus influenzae b disease, invasive	Female	1	<0.1	<1	<0.1	<1	<0.1
	Male	0	0.0	1	0.1	<1	<0.1
	Total	1	<0.1	2	<0.1	2	<0.1
Hemorrhagic fevers	Female	<1	<0.1	0	0.0	<1	<0.1
	Male	<1	<0.1	0	0.0	<1	<0.1
	Total	<1	<0.1	0	0.0	<1	<0.1
Hepatitis A	Female	59	4.7	27	2.1	43	3.3
	Male	117	9.8	37	2.9	77	6.3
	Total	177	7.2	64	2.5	120	4.8
Hepatitis B cases	Female	23	1.8	12	0.9	17	1.3
	Male	49	4.1	25	2.0	37	3.0
	Total	73	3.0	36	1.4	55	2.2
Hepatitis B carriers	Female	1188	94.1	979	74.1	1084	83.8
	Male	1427	119.5	1146	91.2	1287	105.0
	Total	2662	108.3	2142	83.1	2402	95.4
Hepatitis B unclassified reports	Female	141	11.2	171	13.0	156	12.1
	Male	173	14.4	226	18.0	200	16.3
	Total	321	13.1	405	15.7	363	14.4
Hepatitis C	Female	834	66.0	562	42.5	698	54.0
	Male	1469	123.0	957	76.1	1213	98.9
	Total	2317	94.3	1530	59.3	1923	76.4
Hepatitis D	Female	<1	<0.1	<1	<0.1	<1	<0.1
	Male	1	0.1	3	0.2	2	0.2
	Total	1	<0.1	4	0.1	3	<0.1
Herpes, neonatal	Female	<1	<0.1	<1	<0.1	<1	<0.1
	Male	0	0.0	<1	<0.1	<1	<0.1
	Total	<1	<0.1	1	<0.1	<1	<0.1
Influenza‡	Female	193	15.3	175	13.2	184	14.2
	Male	147	12.3	165	13.1	156	12.7
	Total	341	13.9	340	13.2	340	13.5
Legionellosis	Female	5	0.4	5	0.3	5	0.4
	Male	11	0.9	9	0.7	10	0.8
	Total	16	0.6	13	0.5	14	0.6

* Rates per 100,000 population. NR = Not reportable.

† Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

‡ Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

§ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 4: 5-year and 10-year means and incidence rates* by disease and sex†. Toronto, 1994 - 2003

Disease	Sex	5-year mean 1994-1998		5-year mean 1999-2003		10-year mean 1994-2003	
		#	Rate	#	Rate	#	Rate
Leprosy	Female	<1	<0.1	<1	<0.1	<1	<0.1
	Male	3	0.2	1	0.1	2	0.2
	Total	3	0.1	2	<0.1	3	<0.1
Listeriosis	Female	3	0.3	6	0.5	5	0.4
	Male	5	0.5	3	0.3	4	0.4
	Total	9	0.4	9	0.4	9	0.4
Lyme disease	Female	5	0.4	4	0.3	5	0.4
	Male	2	0.2	4	0.3	3	0.2
	Total	7	0.3	8	0.3	8	0.3
Malaria	Female	65	5.1	23	1.8	44	3.4
	Male	94	7.9	63	5.0	79	6.4
	Total	160	6.5	87	3.4	123	4.9
Measles	Female	32	2.5	2	0.1	17	1.3
	Male	41	3.4	2	0.2	22	1.8
	Total	73	3.0	4	0.2	38	1.5
Meningococcal disease, invasive	Female	8	0.7	10	0.8	9	0.7
	Male	9	0.7	8	0.6	8	0.7
	Total	17	0.7	18	0.7	18	0.7
Mumps	Female	8	0.6	2	0.2	5	0.4
	Male	10	0.8	2	0.1	6	0.5
	Total	18	0.7	4	0.2	11	0.4
Ophthalmia neonatorum	Female	3	0.2	1	<0.1	2	0.1
	Male	2	0.2	2	0.1	2	0.1
	Total	4	0.2	3	0.1	4	0.1
Paratyphoid fever	Female	3	0.2	3	0.2	3	0.2
	Male	4	0.3	4	0.3	4	0.3
	Total	6	0.3	7	0.3	6	0.3
Pertussis	Female	70	5.6	47	3.6	59	4.5
	Male	63	5.2	49	3.9	56	4.5
	Total	133	5.4	96	3.7	115	4.6
Psittacosis/Ornithosis	Female	<1	<0.1	0	0.0	<1	<0.1
	Male	<1	<0.1	0	0.0	<1	<0.1
	Total	<1	<0.1	0	0.0	<1	<0.1
Q fever	Female	0	0.0	<1	<0.1	<1	<0.1
	Male	<1	<0.1	<1	<0.1	<1	<0.1
	Total	<1	<0.1	1	<0.1	<1	<0.1
Rubella	Female	6	0.5	2	0.2	4	0.3
	Male	5	0.4	2	0.2	4	0.3
	Total	11	0.5	4	0.2	8	0.3
Rubella, congenital syndrome	Female	0	0.0	<1	<0.1	<1	<0.1
	Male	<1	<0.1	0	0.0	<1	<0.1
	Total	<1	<0.1	<1	<0.1	<1	<0.1

* Rates per 100,000 population. NR = Not reportable.

† Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

‡ Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

§ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 4: 5-year and 10-year means and incidence rates* by disease and sex†. Toronto, 1994 - 2003

Disease	Sex	5-year mean 1994-1998		5-year mean 1999-2003		10-year mean 1994-2003	
		#	Rate	#	Rate	#	Rate
Salmonellosis	Female	453	35.8	314	23.7	383	29.6
	Male	419	35.1	315	25.0	367	29.9
	Total	876	35.6	629	24.4	752	29.9
Severe acute respiratory syndrome (SARS)	Female	NR		NR		NR	
	Male	NR		NR		NR	
	Total	NR		NR		NR	
Shigellosis	Female	81	6.4	70	5.3	76	5.8
	Male	80	6.7	82	6.5	81	6.6
	Total	162	6.6	152	5.9	157	6.2
Streptococcal infections, Group A invasive	Female	NR		36	2.7	NR	
	Male	NR		39	3.1	NR	
	Total	NR		75	2.9	NR	
Streptococcal infections, Group B neonatal	Female	NR		9	0.7	NR	
	Male	NR		7	0.6	NR	
	Total	NR		16	0.6	NR	
Streptococcus pneumoniae, invasive	Female	NR		NR		NR	
	Male	NR		NR		NR	
	Total	NR		NR		NR	
Syphilis, infectious	Female	20	1.6	11	0.8	15	1.2
	Male	29	2.5	113	9.0	71	5.8
	Total	49	2.0	123	4.8	86	3.4
Syphilis, late latent	Female	67	5.3	62	4.7	65	5.0
	Male	75	6.3	75	6.0	75	6.1
	Total	143	5.8	137	5.3	140	5.6
Syphilis, congenital	Female	<1	<0.1	0	0.0	<1	<0.1
	Male	<1	<0.1	<1	<0.1	<1	<0.1
	Total	<1	<0.1	<1	<0.1	<1	<0.1
Syphilis, other§	Female	2	0.1	1	<0.1	1	0.1
	Male	2	0.2	5	0.4	4	0.3
	Total	4	0.2	6	0.2	5	0.2
Tetanus	Female	0	0.0	0	0.0	0	0.0
	Male	<1	<0.1	0	0.0	<1	<0.1
	Total	<1	<0.1	0	0.0	<1	<0.1
Tuberculosis	Female	222	17.5	174	13.1	198	15.3
	Male	237	19.9	202	16.1	220	17.9
	Total	459	18.7	376	14.6	418	16.6
Tularemia	Female	0	0.0	0	0.0	0	0.0
	Male	<1	<0.1	0	0.0	<1	<0.1
	Total	<1	<0.1	0	0.0	<1	<0.1
Typhoid fever	Female	8	0.6	13	1.0	11	0.8
	Male	10	0.8	13	1.0	11	0.9
	Total	18	0.7	26	1.0	22	0.9

* Rates per 100,000 population. NR = Not reportable.

† Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

‡ Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

§ Excludes infectious, late latent and congenital syphilis.

Continued

Appendix Table 4: 5-year and 10-year means and incidence rates* by disease and sex†. Toronto, 1994 - 2003

Disease	Sex	5-year mean 1994-1998		5-year mean 1999-2003		10-year mean 1994-2003	
		#	Rate	#	Rate	#	Rate
Verotoxin-producing *E.coli* infection	Female	42	3.3	31	2.4	37	2.8
	Male	44	3.6	28	2.2	36	2.9
	Total	86	3.5	59	2.3	73	2.9
West Nile virus	Female	NR		NR		NR	
	Male	NR		NR		NR	
	Total	NR		NR		NR	
Yersiniosis	Female	68	5.4	62	4.7	65	5.0
	Male	89	7.5	74	5.9	82	6.7
	Total	158	6.4	136	5.3	147	5.8

* Rates per 100,000 population. NR = Not reportable.

† Due to missing sex data, the total number of cases reported by sex may not correspond with the total number of cases reported for a disease.

‡ Seasonal year from July to June (eg. 2004/05 includes cases from July 1, 2004 to June 30, 2005).

§ Excludes infectious, late latent and congenital syphilis.