

The Descriptive Epidemiology of Sexually Transmitted Infections and Blood-borne Pathogens in Manitoba: 2002-2003

MARCH 2005

COMMUNICABLE DISEASE CONTROL

Acknowledgements

This report on the descriptive epidemiology of sexually transmitted infections (STIs) and blood-borne pathogens (BBPs) in Manitoba (2002-2003) reflects the dedication and accomplishment of the staff of the Communicable Disease Control (CDC) Unit, Cadham Provincial Laboratory and regional public health staff. The CDC Unit is committed to making accessible the wealth of communicable disease information collected in Manitoba by laboratory technicians, physicians, infection control practitioners, public health nurses and numerous other health care providers.

The purpose of this report is to address the descriptive epidemiology of STIs and BBPs in Manitoba within a national and program-related context. The production of this report would not have been possible without the work and support of several key individuals and groups. The contribution of the following individuals and/or groups is indeed much appreciated:

- Ms. Sarah Cumberland, Ms. Gwen Pruden, Ms. Iris Yuzwa, – Surveillance Unit, CDC, Public Health Branch; responsible for data entry of all notifiable communicable diseases, including STIs and BBPs
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- Mr. Jason Edgerton – assisting in the analysis contained in this report

Manitoba Health funds the regional health authorities to provide direct client service which may include, but is not limited to: testing, case and contact follow-up, client education, community education, treatment, as well as the development of region-specific protocols and processes to guide each of these activities. The laboratory and hospital staff, physicians, nurses, public health nurses, public health managers, medical officers of health, and all regional health staff must be acknowledged for their time, effort and diligence in STI/BBP prevention, control and reporting in Manitoba.

Dr. Carole Beaudoin
Epidemiologist, Communicable Disease Control Unit

Ms. Trina Larsen
HIV/HCV Programme Co-ordinator, Communicable Disease Control Unit

Ms. Michelyn Wood
Field Surveillance Officer, Public Health Agency of Canada

Mission Statement: Communicable Disease Control Unit

Mission

To promote, support and facilitate the prevention and control of communicable diseases.

Objectives

- To provide leadership in the review and revision of legislation and disease protocols which describe the requirements for reporting and management of selected communicable diseases.
- To develop public health policies and strategies related to the prevention, control and management of communicable diseases.
- To develop, maintain and enhance provincial communicable disease surveillance systems.
- To provide timely epidemiological data and analyses to support outbreak investigation, case/contact management, and the development of policies and prevention strategies.
- To select and facilitate the purchase, safe storage, and distribution of biologics, vaccines and medications necessary to treat, prevent and/or control communicable diseases.
- To communicate quickly and effectively with health jurisdictions in Manitoba, Canada and North America in order to facilitate the prevention and control of communicable diseases.
- To provide support to local health jurisdictions with the goal of fostering local independence and self-reliance on routine matters related to the prevention, management and control of communicable diseases.
- To provide consultation to local health jurisdictions on unusual, non-routine matters related to the prevention, management and control of communicable diseases.
- To proactively communicate with the public on matters related to communicable diseases and public health.
- To participate in research that will assist in setting priorities and developing policies and prevention strategies that are effective and cost neutral.

Methodology

This report is a review of the incidence of STIs and BBPs in Manitoba during the calendar years 2002 and 2003 and the demographic characteristics of those infected. Each disease identified in this report is reportable to the Director of Communicable Disease Control, Manitoba Health under Regulation P210 of the *Public Health Act*.

The objectives of this report are to:

- provide an update of the descriptive epidemiology of STIs and BBPs in Manitoba;
- identify and describe patterns and trends in STI and BBP incidence; and
- provide policy-makers and program staff with evidence on which to formulate or guide their decisions.

While the focus of this report is on data from 2002 and 2003, a detailed retrospective analysis of rates is presented where possible. Additionally, information is provided describing age, sex and regional distributions of disease incidence.

The data presented in this report is based on information reported on and investigated by laboratories, physicians, infection control practitioners and public health nurses. The completeness and timeliness of reporting has a direct impact on the quality of the information contained within this document and ultimately impacts the effectiveness of disease surveillance, prevention and control. Continued efforts to enhance reporting will aid in optimal prevention and control activities.

The data reported on was collated and analyzed in the following manner:

- The number of cases across all reportable STIs and BBPs were compiled and verified by CDC Unit staff in conjunction with the federal field surveillance officer assigned to Manitoba. All STIs and BBPs reported here are laboratory-confirmed.
- Cases reported more than two months following the end of 2003 are not included in this report.
- The year for which cases are assigned is based on the earliest of: symptom onset date, specimen collection date or report date. For most cases, this will be the specimen collection date.
- Cases are assigned to a regional health authority (RHA) based on corresponding postal code denoting residence at time of diagnosis.
- Crude rates are calculated using Manitoba Health population data for the appropriate year. These numbers are gathered from the population registry for the provincial health insurance system. 2002 and 2003 rates are produced using June 1, 2002 population data provided by Decision Support Services, Manitoba Health. 1999-2001 rates are produced using June 1 population data from the appropriate year. Geography is assigned both for the numerator and denominator based on postal code only.
- Rates are shown only if there are five or more cases; otherwise, the rate is denoted as “unstable.”

- Where possible, disease rates are represented according to Aboriginal ethnicity. For all STIs and BBPs, with the exception of HIV, Aboriginal ethnicity is inferred from the Manitoba Health Population Registry, and includes individuals who self-declare First Nations Treaty Status to Manitoba Health and have a First Nations Treaty number or Band number or an “A” coded municipality code. This is a voluntary system and does not likely capture all Aboriginal Manitobans (ex: those not registered as First Nations, Métis). Compared to other methodologies (ex: Manitoba Centre for Health Policy; Statistics Canada 2001 Census), Manitoba Health estimates may undercount Aboriginal Manitobans by 23 per cent to 55 per cent. Although underestimation of individuals has limitations, for the purposes of rate calculation Manitoba Health data has been used in both the numerator and the denominator. For HIV data, because the data is collected non-nominally (i.e., without names or Personal Health Identification Numbers), Aboriginal ethnicity is defined as any Manitoban who self-reports as Aboriginal.

Due to differences in data capture, either by diagnostic code, geography, and/or capture date, these data may not be precisely the same as those reported elsewhere (ex: in other Manitoba Health and Health Canada reports). Differences however should be small and should not disturb overall rates and/or trends. This is particularly true for HIV data as non-nominal reporting makes data accuracy challenging and an evolving process.

For questions on the methodology used in this report, please contact Dr. Carole Beaudoin at CaBeaudoin@gov.mb.ca.

Table of Contents

Acknowledgements	i
Mission Statement	ii
Mission	ii
Objectives	ii
Methodology	iii
List of Figures	vi
List of Appendices	vii
Introduction	1
Chlamydia	1
National/Provincial Overview	1
Distribution by Age and Sex	2
Distribution by RHA	4
Distribution by Aboriginal Ethnicity	4
Gonorrhea	6
National/Provincial Overview	6
Distribution by Age and Sex	7
Distribution by RHA	8
Distribution by Aboriginal Ethnicity	8
Syphilis	10
Outbreak Description	11
Viral Hepatitis B	12
National/Provincial Overview	12
Viral Hepatitis C	13
National/Provincial Overview	13
Distribution by Age and Sex	15
Distribution by RHA	16
Distribution by Aboriginal Ethnicity	16
Human Immunodeficiency Virus	17
National/Provincial Overview	17
Distribution by Age and Sex	18
Distribution by RHA	19
Distribution by Ethnicity	19
Distribution by Risk Factors	20
HIV Testing	22
Acquired Immune Deficiency Syndrome	22
Provincial Responses and Strategic Direction	23
Manitoba Youth	23
Northern Manitobans	23
Aboriginal Manitobans	24
Correctional Facilities	24
Overall Provincial Strategic Direction	24
References	27
Appendices	29

List of Figures

1	Chlamydia Rates/100,000 in Canadian Provinces, 1999-2002	2
2	Chlamydia Cases and Rates in Manitoba, 1999-2003	2
3	Chlamydia Rates for Manitoba Females and Males by Age Group, 2002 and 2003	3
4	Chlamydia Rates (crude) by Manitoba Regional Health Authority, 2002 and 2003	4
5	Chlamydia Rates by Aboriginal Ethnicity, 1999-2003	5
6	Chlamydia Rates for Youth by Aboriginal Ethnicity, 1999-2003	5
7	Gonorrhoea Rates/100,000 in Canadian Provinces, 1999-2002	6
8	Gonorrhoea Cases and Rates in Manitoba, 1999-2003	7
9	Gonorrhoea Rates for Manitoba Females and Males by Age Group, 2002 and 2003	7
10	Gonorrhoea Rates (crude) by Manitoba Regional Health Authority, 2002 and 2003	8
11	Gonorrhoea Rates by Aboriginal Ethnicity, 1999-2003	9
12	Gonorrhoea Rates for Youth by Aboriginal Ethnicity, 1999-2003	9
13	Infectious Syphilis Rates/100,000 in Canadian Provinces, 1999-2002	10
14	Infectious Syphilis Cases and Rates in Manitoba, 1999-2003	11
15	Syphilis Outbreak Cases by Age and Sex in Manitoba, 2003	11
16	Distribution of Identified Syphilis Risk Factors among Outbreak Cases, 2003	12
17	Acute Viral Hepatitis B Rates/100,000 in Canada, 1999-2002	12
18	Acute Viral Hepatitis B Cases in Manitoba, 1999-2003	13
19	Viral Hepatitis C Rates/100,000 in Canada, 1999-2002	14
20	Viral Hepatitis C Cases and Rates in Manitoba, 2002-2003	14
21	Viral Hepatitis C Rates for Manitoba Females and Males by Age Group, 2002 and 2003	15
22	Viral Hepatitis C Rates (crude) by Manitoba Regional Health Authority, 2002 and 2003	16
23	Viral Hepatitis C Rates by Aboriginal Ethnicity, 2000-2003	17
24	HIV Cases and Rates/100,000 in Manitoba, 1999-2003	18
25	HIV Rates for Manitoba Females and Males by Age Group, 2002 and 2003	18
26	HIV Rates by Self-Reported Aboriginal Status, 1999-2003	19
27	Distribution of HIV Cases by Self-Reported Ethnicity, 1999-2003 (combined)	20
28	Distribution of HIV Cases by Self-Reported Transmission Risk Factor, 1985-2003 (combined)	21

List of Appendices

A	Age and Sex-specific Chlamydia Cases and Rates, Manitoba, 2002 and 2003	29
B	Regional Chlamydia Cases and Rates, Manitoba, 2002 and 2003	29
C	Age and Sex-specific Chlamydia Cases and Rates by Aboriginal Ethnicity, 2002 and 2003	30
D	Age and Sex-specific Gonorrhoea Cases and Rates, Manitoba, 2002 and 2003	30
E	Regional Gonorrhoea Cases and Rates, Manitoba, 2002 and 2003	31
F	Age and Sex-specific Gonorrhoea Cases and Rates by Aboriginal Ethnicity, 2002 and 2003	31
G	Age-specific Acute Viral Hepatitis B Cases, Manitoba, 2002 and 2003	32
H	Age and Sex-specific New Hepatitis C Cases and Rates, Manitoba, 2002 and 2003	32
I	Regional New Hepatitis C Cases and Rates, Manitoba, 2002 and 2003	33
J	Age and Sex-specific New Hepatitis C Cases and Rates by Aboriginal Ethnicity, 2002 and 2003	33
K	Age and Sex-specific HIV Cases and Rates, Manitoba, 2002 and 2003	34
L	Regional HIV Cases and Rates, Manitoba, 2002 and 2003	34
M	Age and Sex-specific HIV Cases and Rates by Self-reported Aboriginal Status, 2002 and 2003	35
N	Distribution of HIV Cases by Self-reported Ethnicity, 2002 and 2003	35
O	Distribution of HIV Cases by Self-reported Transmission Risk Factor, 2002 and 2003	36

Introduction

The purpose of this report is to address the descriptive epidemiology of sexually transmitted infections (STIs) and blood-borne pathogens (BBPs) in Manitoba within a national and program-related context. This report is a review of STI and BBP incidence in Manitoba during the 1999 to 2003 calendar years and the demographic characteristics of those infected, with particular focus on data from 2002 and 2003. The specific objectives of this report are to:

- provide an update of the descriptive epidemiology of STI and BBP in Manitoba;
- identify and describe patterns and trends in STI and BBP incidence; and
- provide policy-makers and program staff with evidence on which to formulate or guide their decisions.

In 1996 Manitoba Health released the *Provincial AIDS Strategy*, and in 2001 released the *Provincial STD Prevention and Control Strategy*. Feedback obtained from the regional health authorities encouraged Manitoba Health to integrate the implementation of both strategies. Based on the recommendations of the strategies and current epidemiology, programmatic efforts have focused on the following populations: North, youth, corrections and the inner city of Winnipeg. In order to achieve provincial and regional STI/BBP reduction goals, all regional health authorities submitted STI Reduction Plans in 2003 as part of the Regional Health Authority Performance Deliverables process. In 2005/06 all regions will be expected to outline STI reduction targets. These targets will help Manitoba to achieve Health Canada's national goals of eliminating gonorrhoea and locally acquired syphilis, and significantly reducing chlamydial infections by 2010.

Chlamydia

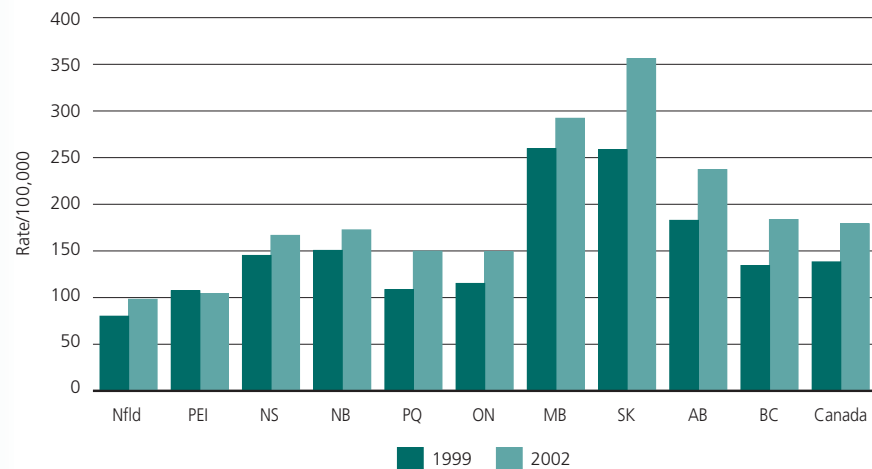
Chlamydia is one of the most frequently reported communicable diseases in North America (Centres for Disease Control, Atlanta, 1996; Health Canada, 1996). Many chlamydial infections—25 per cent for males and almost 70 per cent for females—are asymptomatic and, as a result, are less likely to be diagnosed and treated (Cates & Wasserheit, 1991; Chin, 2000). In addition to the potential sequelae associated with untreated infections—including infertility, epididymitis (males), ectopic pregnancy (females), and pelvic inflammatory disease (females)—chlamydial infections, particularly those with ulcerations, increase one's risk of contracting HIV (Chin, 2000; Dickerson, Johnson, Delea, White, & Andrews, 1996).

As with any sexually transmitted infection, chlamydia is transmitted via direct sexual contact from an infected person to a sex partner via oral, vaginal, rectal, cervical or urethral routes. Abstinence and/or consistent and proper condom usage are effective means of preventing chlamydial infection.

National/Provincial Overview

In 1997, Health Canada proposed a national reduction of chlamydia by approximately 56 per cent by the year 2010, resulting in a national rate of 50 cases per 100,000 population (Health Canada, 1997). Applying this reduction to the provincial rate, the *Provincial Sexually Transmitted Diseases Control Strategy* (Manitoba Health, 2001) proposed that by the year 2010 Manitoba's chlamydia rate should be 95 cases per 100,000 population. Indicated in Figure 1, neither the province nor the country has achieved these reductions. Indeed, chlamydial infections have increased from 1999 to 2002 in almost every jurisdiction in the country (Health Canada, 2003). The three prairie provinces (Manitoba, Saskatchewan, and Alberta) tend to have the highest rates of chlamydia compared to the other provinces, with Manitoba second only to Saskatchewan.

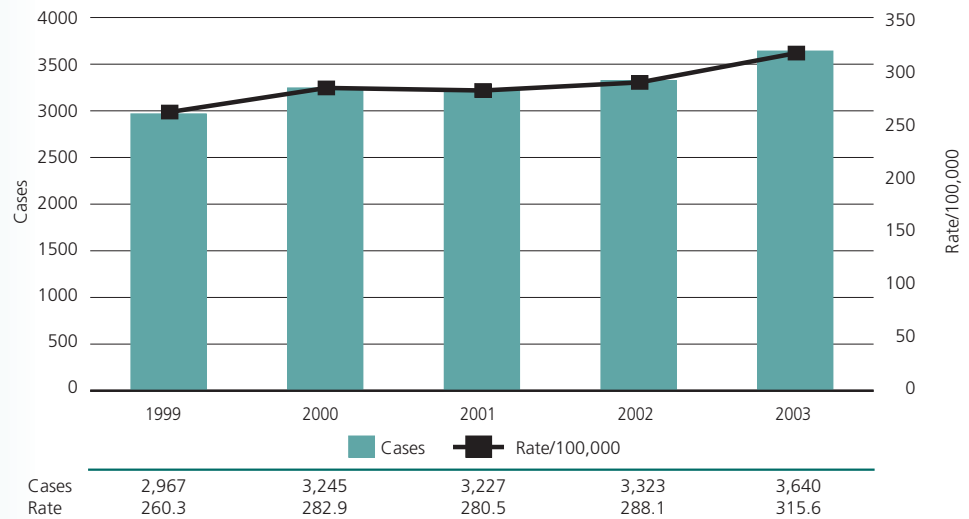
Figure 1. Chlamydia Rates/100,000 in Canadian Provinces*, 1999-2002



* National rates include all provinces and territories. In 2002, chlamydia rates for the territories were: Yukon = 473.1/100,000; Northwest Territories = 1451.0/100,000; Nunavut = 2904.3/100,000.

In 1999, 2,967 cases of chlamydia were reported to Manitoba Health. By 2003, this figure had increased to 3,640 cases. These figures reflect a rate increase of roughly 21 per cent over the last five years (see Figure 2). As will be explored in the sections that follow, the province's chlamydia rate is not evenly distributed by age, sex or geography.

Figure 2. Chlamydia Cases and Rates in Manitoba, 1999-2003

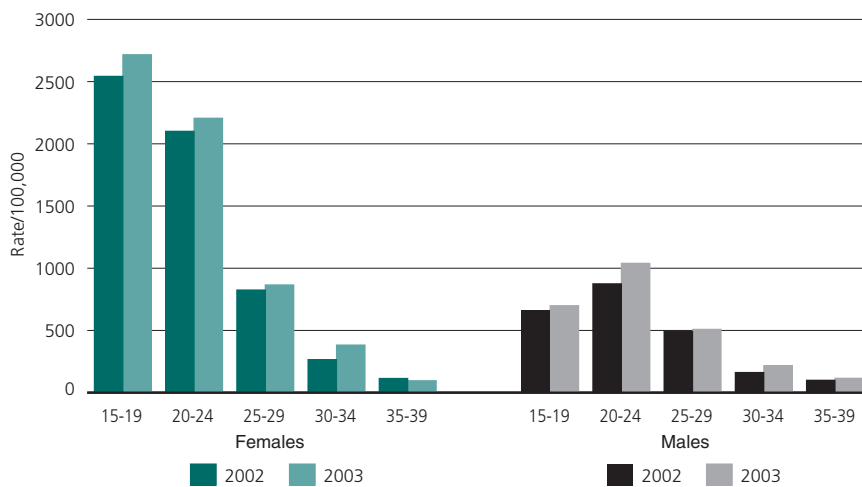


Distribution by Age and Sex

In Manitoba, rates of chlamydia are not evenly distributed throughout the population. In 2003, the chlamydia rate among 15-24 year old females (2,468.1/100,000) was more than seven times the overall provincial rate of 315.6/100,000. The rate for 15-24 year old males (862.2/100,000), although considerably less than that for their female counterparts, is about 2.5 times the provincial rate.

The *Provincial STD Control Strategy* (Manitoba Health, 2001) specifically targeted 15-24 year old females for a rate reduction, proposing as a goal a rate of 419.5 cases per 100,000 population. In 2003, the chlamydia rate among 15-24 year old females in Manitoba was 2,468.1/100,000, more than five times the 2010 goal. While the rate of chlamydia has increased in all age groups of Manitoba females, this increase is especially apparent in the 15-19 year age group (see Figure 3). A slightly different picture emerges for Manitoba males. While 15-19 year olds have the highest rates among females, the highest chlamydia rate in males is among 20-24 year olds (1,039.7/100,000 in 2003), and it is this age group that has witnessed the greatest increase (18 per cent) from 2002 to 2003. For more detailed information on the number of cases and associated rate per age and sex group, please refer to Appendix A.

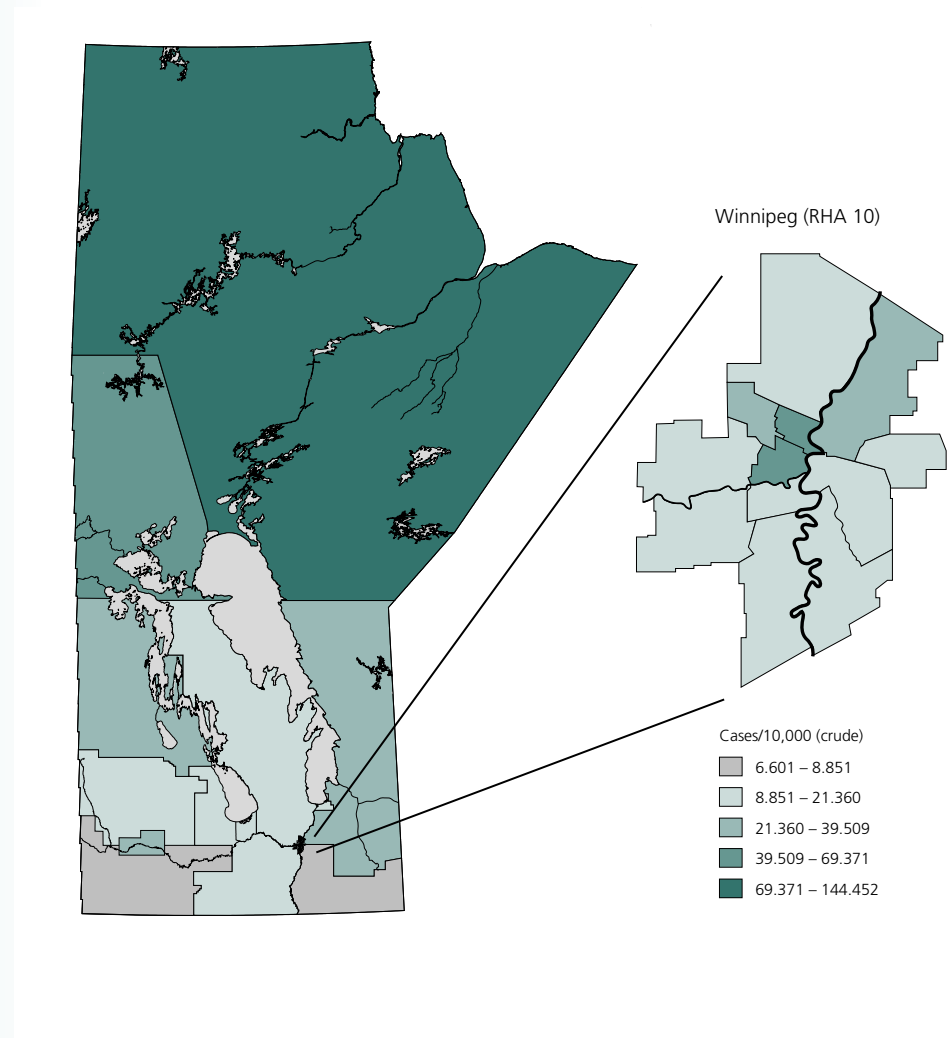
Figure 3. Chlamydia Rates for Manitoba Females and Males by Age Group, 2002 and 2003



Distribution by RHA

As shown in Figure 4, chlamydia rates in Manitoba are highest in northern Manitoba. The Burntwood region in particular (largest geographic region) had a chlamydia rate that was more than five times the provincial rate in 2003. Examining number of cases, as opposed to rates, chlamydia cases are concentrated in the Burntwood and Winnipeg regions. For more detailed information on the number of cases and associated rate by regional health authority, please refer to Appendix B.

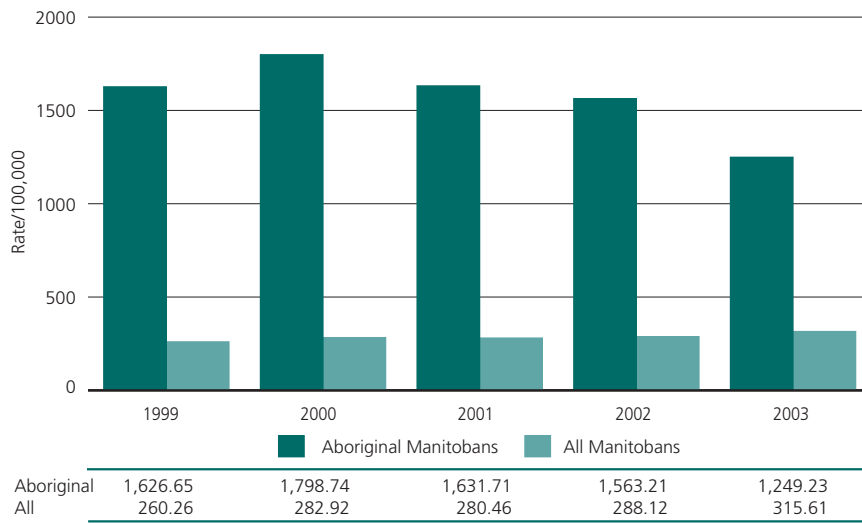
Figure 4. Chlamydia Rates (crude) by Manitoba Regional Health Authority, 2002 and 2003



Distribution by Aboriginal Ethnicity

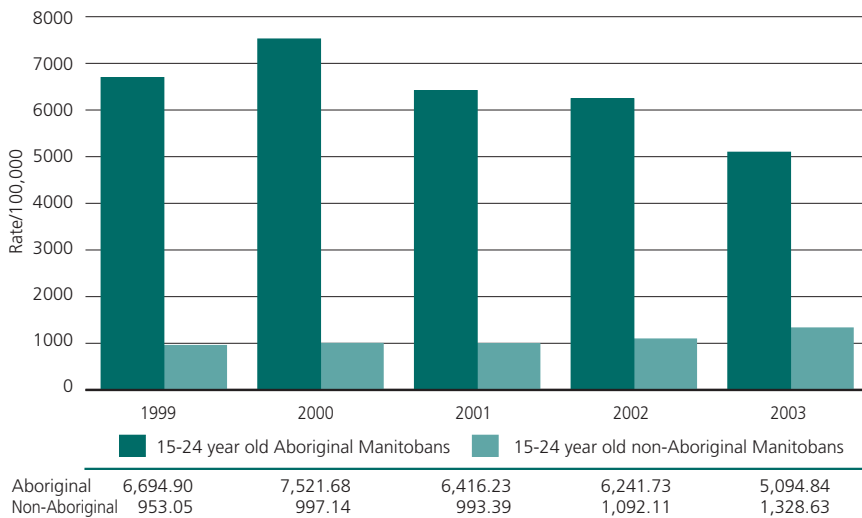
According to the provincial population registry, approximately 6.5 per cent of Manitobans are Aboriginal (see Methodology Section for determination of Aboriginal ethnicity). By contrast, more than one-third of the 3,640 chlamydia cases province-wide in 2003 were among Aboriginal people (n=931 cases). However, while the rate of chlamydia for all Manitobans has risen by 21 per cent from 1999 to 2003, the rate among Aboriginal Manitobans has decreased by 23 per cent during the same five-year period (Figure 5). Some age and sex-specific counts can be seen in Appendix C.

Figure 5. Chlamydia Rates by Aboriginal Ethnicity, 1999-2003



The decrease in chlamydia rates seen in Figure 5 among Aboriginal Manitobans is primarily driven by decreasing rates among 15-24 year olds. While the rate among Aboriginal 15-24 year olds decreased by about 24 per cent from 1999 to 2003 (Figure 6), the rate among all other Manitoba youth increased by 39 per cent during the same five-year period.

Figure 6. Chlamydia Rates for Youth by Aboriginal Ethnicity, 1999-2003



Gonorrhoea

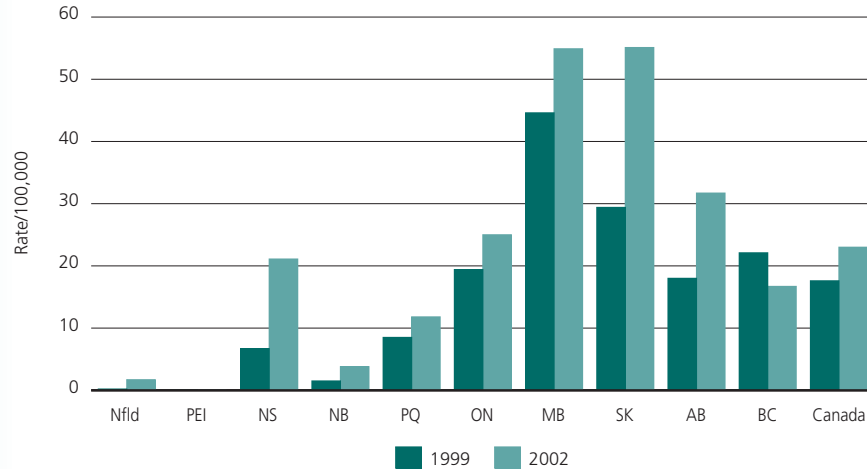
Gonorrhoea shares many of the same clinical features with chlamydia, most importantly, the sequelae of untreated infections. As with chlamydia, a large proportion of gonococcal infections are asymptomatic (Chin, 2000). Untreated infection may result in urethritis, epididymitis, and gonococcal arthritis in males, and pelvic inflammatory disease, ectopic pregnancy, and infertility in females (Berkow & Fletcher, 1992). As well, in women and homosexual males, pharyngeal and anorectal infections are common disease sequelae of untreated infections (Chin, 2000). In pregnant women, conjunctivitis of the newborn is common and may cause blindness if not rapidly treated (Chin, 2000). Similar to chlamydial infection, gonococcal infection also increases one's risk of contracting HIV (Chin, 2000; Dickerson *et al.*, 1996).

Like chlamydia, gonorrhoea is transmitted via direct sexual contact from an infected person to a sex partner via oral, vaginal, rectal, cervical or urethral routes. Abstinence and/or consistent and proper condom usage are effective means of preventing infection.

National/Provincial Overview

In 1997, Health Canada proposed that by the year 2010 locally-acquired gonorrhoea should be eliminated, and the *Provincial Sexually Transmitted Diseases Control Strategy* (Manitoba Health, 2001) adopted that elimination goal. Indicated in Figure 7, neither the province nor the country appears to be moving towards elimination. In fact, the national picture of gonorrhoea mirrors that of chlamydia, with almost every jurisdiction in the country showing an increase in rates from 1999 to 2002 (Health Canada, 2003). The three prairie provinces (Manitoba, Saskatchewan, and Alberta) in particular tend to have the highest rates of gonorrhoea compared to the other provinces.

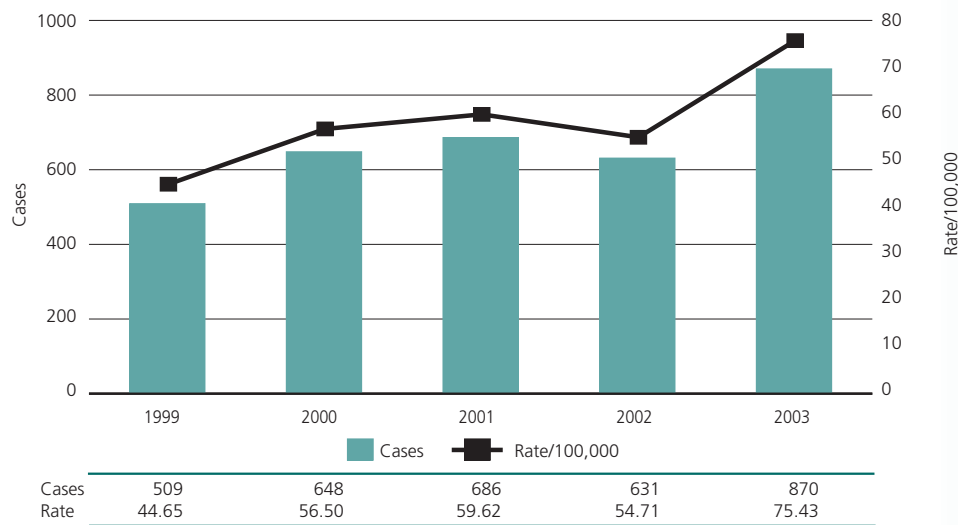
Figure 7. Gonorrhoea Rates/100,000 in Canadian Provinces*, 1999-2002



* National rates include all provinces and territories. In 2002, gonorrhoea rates for the territories were: Yukon = 36.9/100,000; Northwest Territories = 299.0/100,000; Nunavut = 272.9/100,000.

In 1999, 509 cases of gonorrhoea were reported to Manitoba Health. By 2003, this figure rose to 870 cases. These figures reflect a rate increase of roughly 69 per cent over the last five years (see Figure 8).

Figure 8. Gonorrhoea Cases and Rates in Manitoba, 1999-2003.

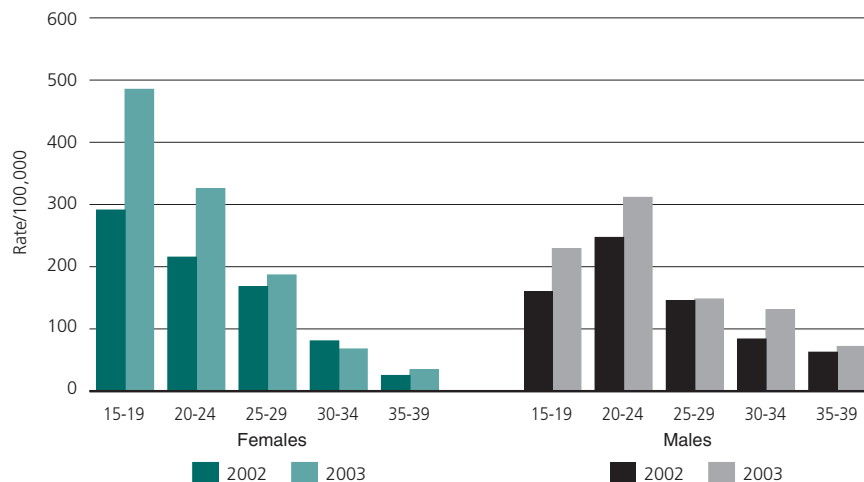


Distribution by Age and Sex

Like chlamydia, rates of gonorrhoea are not evenly distributed throughout the population. In 2003, the gonorrhoea rate among 15-24 year old females was 407.5/100,000, more than five times the overall provincial rate of 75.4/100,000. The rate for 15-24 year old males (268.5/100,000), although considerably less than that for their female counterparts, is about three times the provincial rate.

For Manitoba to reach its gonorrhoea elimination goal, it is clear that the highest risk group, 15-24 year olds, must be targeted for prevention efforts. While the rate of gonorrhoea has increased in most age groups, this increase is especially apparent among 15-19 year old females, who witnessed a 66 per cent increase from 2002 to 2003 (see Figure 9). Similar to chlamydia, the highest gonorrhoea rate in males is among 20-24 year olds (311.4/100,000 in 2003), although it was the age 15-19 group that witnessed the greatest increase (42 per cent) from 2002 to 2003. For more detailed information on the number of cases and associated rate per age and sex group, please refer to Appendix D.

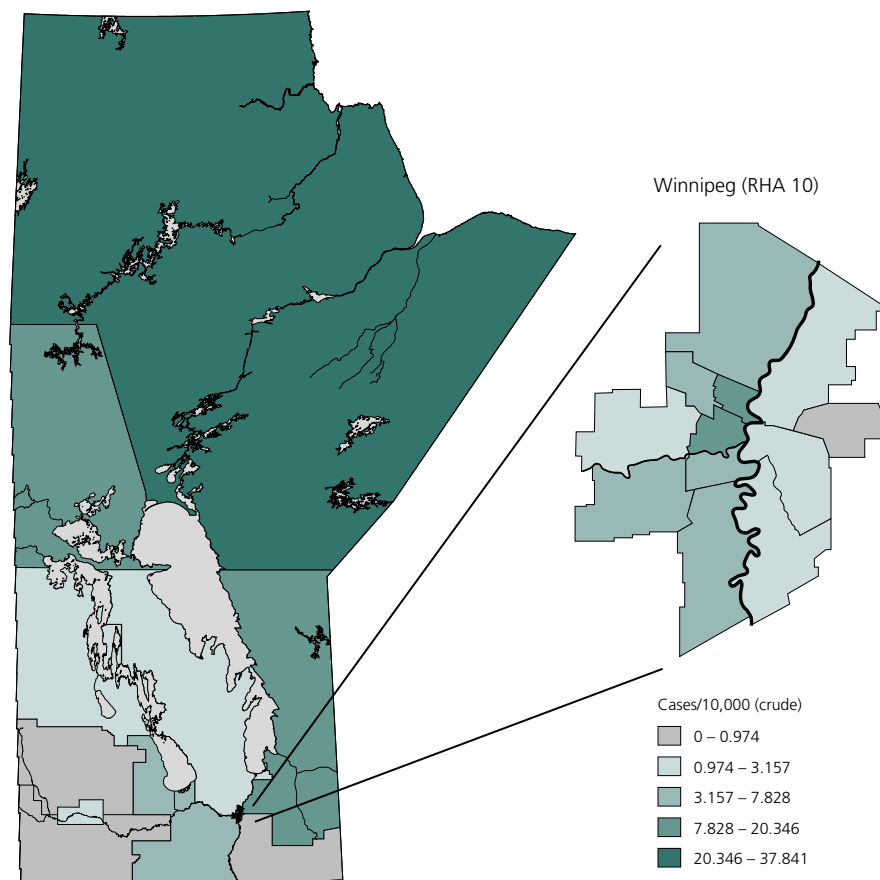
Figure 9. Gonorrhoea Rates for Manitoba Females and Males by Age Group, 2002 and 2003



Distribution by RHA

As shown in Figure 10, gonorrhoea rates in Manitoba are highest in northern Manitoba. The Burntwood region in particular had a gonorrhoea rate that was almost five times the provincial rate in 2003. Examining number of cases, as opposed to rates, gonorrhoea cases are concentrated in the Burntwood and Winnipeg regions. For more detailed information on the number of cases and associated rate by regional health authority, please refer to Appendix E.

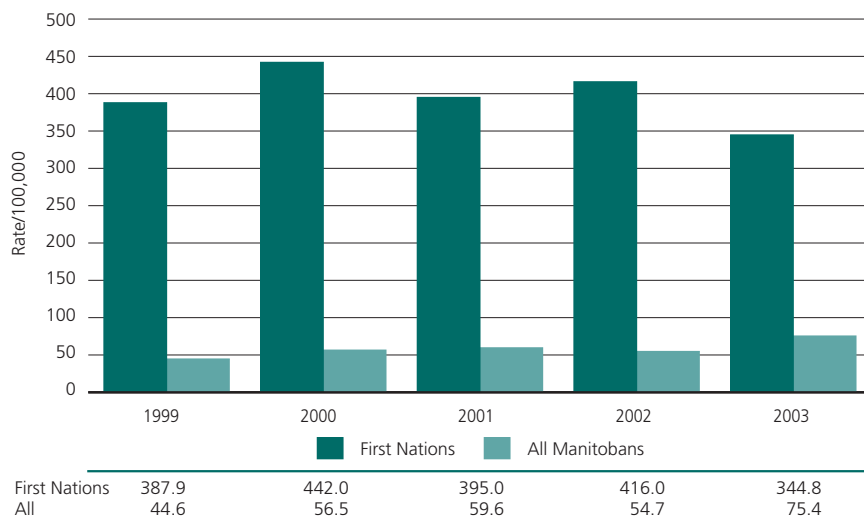
Figure 10. Gonorrhoea Rates (crude) by Manitoba Regional Health Authority, 2002 and 2003



Distribution by Aboriginal Ethnicity

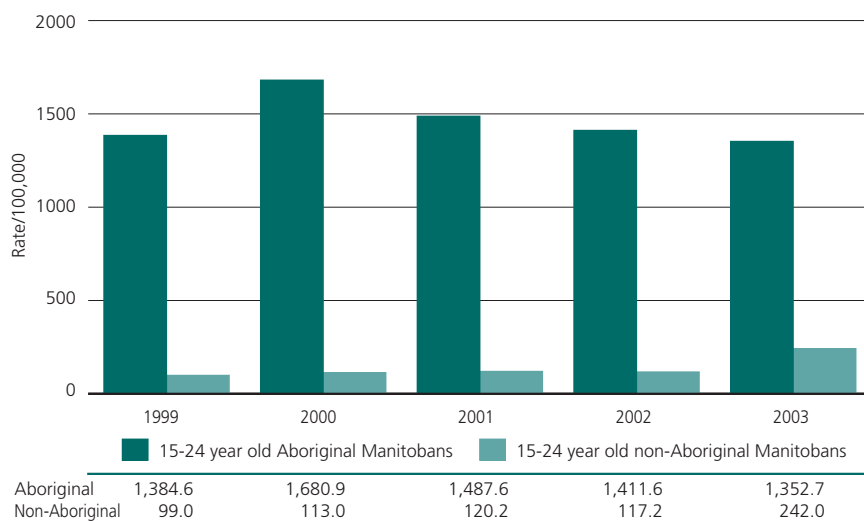
About 30 per cent of the 870 provincial cases of gonorrhoea were among Aboriginal people (n=257 cases). However, while the rate of gonorrhoea for all Manitobans has increased by 69 per cent from 1999 to 2003, the rate among Aboriginal Manitobans has decreased by 17 per cent during the same five-year period (Figure 11). Some age and gender-specific counts can be seen in Appendix F.

Figure 11. Gonorrhoea Rates by Aboriginal Ethnicity, 1999-2003



The decrease in gonorrhoea rates among Aboriginal Manitobans, as seen in Figure 11, is primarily driven by decreasing rates among 15-24 year olds. While the rate among Aboriginal 15-24 year olds has shown a slight decrease between 1999 and 2003 (Figure 12), the rate among all other Manitoba youth more than doubled during the same five-year period.

Figure 12. Gonorrhoea Rates for Youth by Aboriginal Ethnicity, 1999-2003

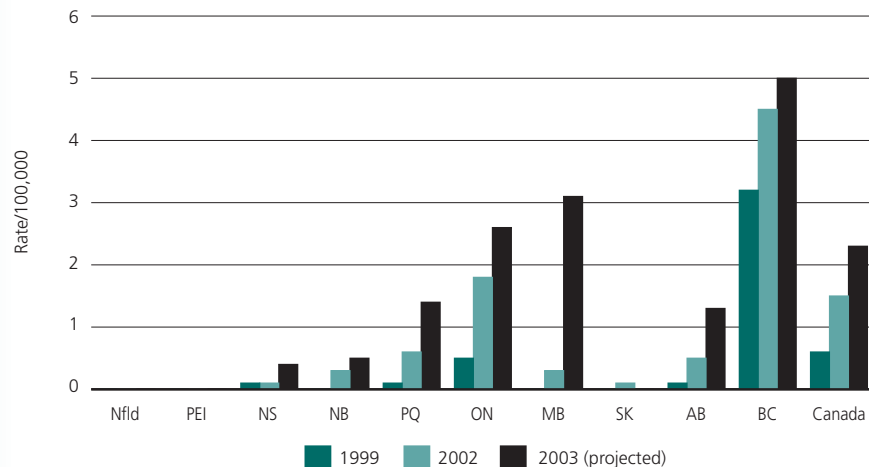


Syphilis

Like chlamydia and gonorrhoea, syphilis is a bacterial infection transmitted via direct sexual contact from an infected person to a sex partner via oral, vaginal, rectal, cervical or urethral routes. Sequelae of untreated infection may result in clinically latent syphilis with recurrence of infectious lesions of the skin and mucous membranes (Chin, 2000). Central nervous system disease may occur at any time in secondary or early latent syphilis. Latency may continue through life and may result in disabling lesions in the aorta (cardiovascular syphilis). In untreated early infections in pregnant women, fetal infections (congenital syphilis) occur with high frequency. In addition, the genital ulcers that may form are associated with a three- to five-fold increase in HIV risk (Chin, 2000).

The incidence of infectious syphilis both in Canada and in Manitoba was very low during the 1990s, with almost all cases being imported rather than locally acquired. In 1997, given national rates of 0.3/100,000, Health Canada proposed that the national goal for the year 2000 was to maintain disease rates for infectious syphilis below 0.5/100,000. By 1999 Manitoba had achieved this goal, establishing elimination of locally-acquired infectious syphilis, and adopted a near elimination rate of imported endemic cases (less than 0.5/100,000; Manitoba Health, 2001) as a target. However, since 1997 several provinces have experienced syphilis outbreaks that are often concentrated and resilient in specific populations. Figure 13 shows clearly which provinces have incurred recent outbreaks (Health Canada, 2003).

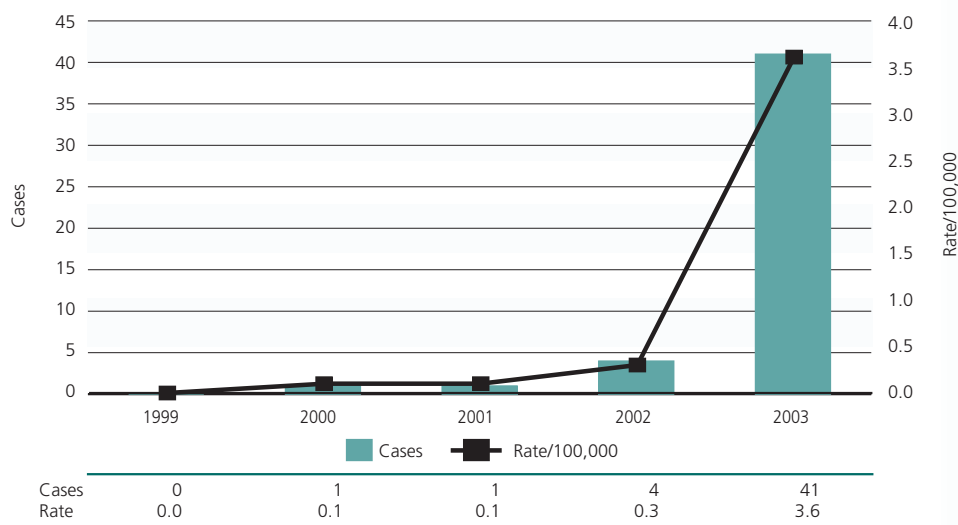
Figure 13. Infectious Syphilis Rates/100,000 in Canadian Provinces*, 1999-2002



* National rates include all provinces and territories. In 2002, rates of infectious syphilis for the territories were: Yukon = 20.1/100,000; Northwest Territories = 0.0/100,000; Nunavut = 0.0/100,000.

Between 1999 and 2002, six cases of primary or secondary infectious syphilis were reported to Manitoba Health, all of which were imported cases. In January 2003, Manitoba's outbreak of locally-acquired infectious syphilis began. By the end of 2003, 41 cases had been reported (Figure 14).

Figure 14. Infectious Syphilis Cases and Rates in Manitoba, 1999-2003



Outbreak Description

All 41 cases of infectious syphilis reported in 2003 resided in the Winnipeg region. The age distribution of syphilis outbreak cases in Manitoba is quite dissimilar to the age distribution for gonorrhoea or chlamydia, where 15-24 year olds have the highest rates. Rather, as shown in Figure 15, 40-44 year old males and 30-34 year old females comprised the majority of outbreak cases, with 30-34 year olds accounting for about one-quarter of all cases. Slightly more than one-quarter (26.8 per cent) of the syphilis outbreak cases in 2003 were among Aboriginal people.

Figure 15. Syphilis Outbreak Cases by Age and Sex in Manitoba, 2003

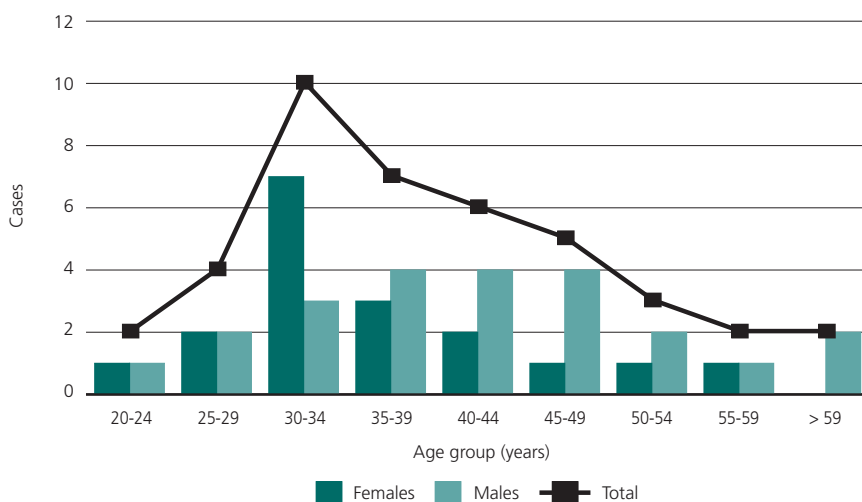
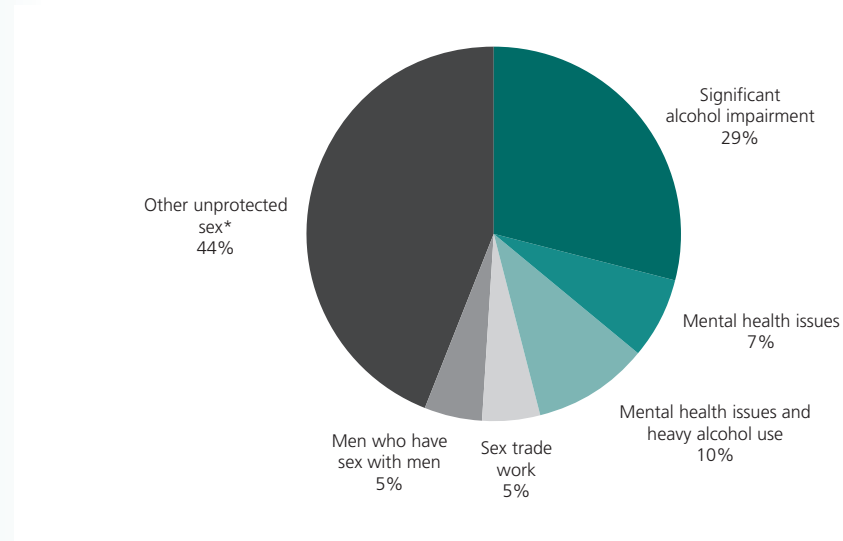


Figure 16 shows the distribution of risk factors among syphilis outbreak cases identified during 2003. The fact that 39 per cent of cases have been identified as engaging in heavy and frequent alcohol use has significantly hampered contact tracing efforts. Additionally, primary prevention efforts have had to work within the challenging context of casual unprotected sex during periods of intoxication.

Figure 16. Distribution of Identified Syphilis Risk Factors among Outbreak Cases, 2003



* Other unprotected sex – indicates individuals with none of the other documented risk factors (ex: mental health issues, alcohol use, etc.).

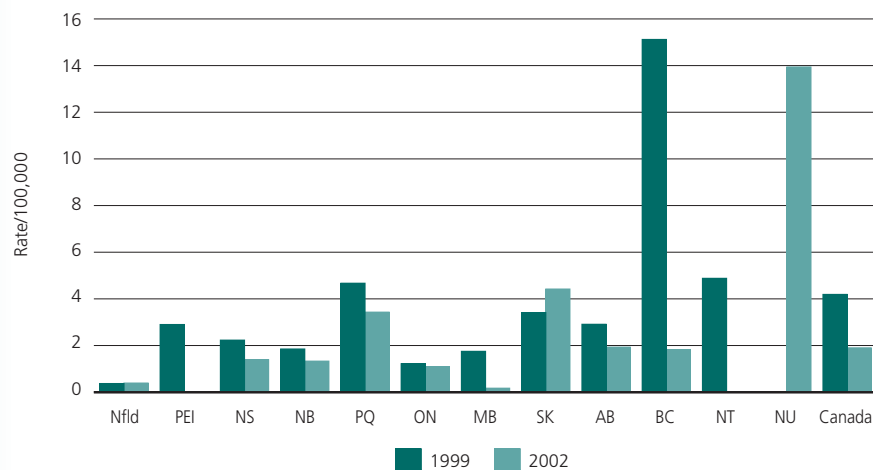
Viral Hepatitis B

Viral hepatitis B (HBV) is transmissible via blood, semen and vaginal fluids (Chin, 2000). Between 50 to 70 per cent of all adults infected with acute HBV are either asymptomatic, or their symptoms mimic a variety of flu-like illnesses (Laboratory Centre for Disease Control, 1998). As hepatitis B attacks the liver, it is associated with a wide spectrum of liver disease (Chin, 2000). Hepatitis B is entirely preventable through a highly effective vaccine. In Manitoba, widespread vaccination of school-aged children (Grade 4, in particular) and high-risk individuals (ex: injection drug users, street youth) has been under way since 1999 (Manitoba Health, 2001).

National/Provincial Overview

Indicated in Figure 17, most regions, with the exception of British Columbia, have very low rates of acute viral hepatitis B. Manitoba in particular has one of the lowest rates in the country.

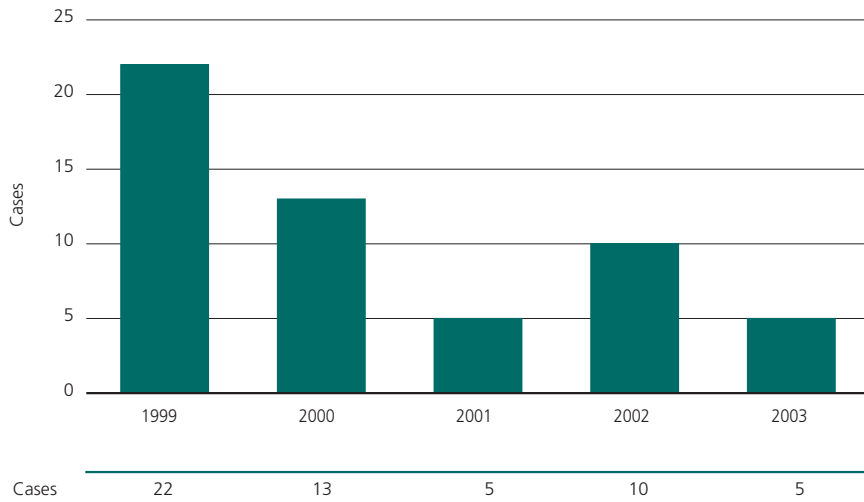
Figure 17. Acute Viral Hepatitis B Rates/100,000 in Canada, 1999-2002



* Data for Yukon unavailable at time of report. 2002 data for the Northwest Territories and 2003 data for Nunavut were also unavailable at time of report.

Since the introduction of the provincial viral hepatitis B vaccination program in 1999, very few cases of hepatitis B have been reported to Manitoba Health. From 1999 to 2003, there have been 55 cases, and the number of cases annually continues to remain low. Indeed, due to small numbers and the resultant potential for rate instability, only annual cases are reflected here (see Figure 18). Please refer to Appendix G for an age breakdown of cases for 2002 and 2003. Since 1999, 83 per cent of all acute HBV cases have occurred among Winnipeg area residents, as have all of the 2002 and 2003 cases.

Figure 18. Acute Viral Hepatitis B Cases in Manitoba, 1999-2003



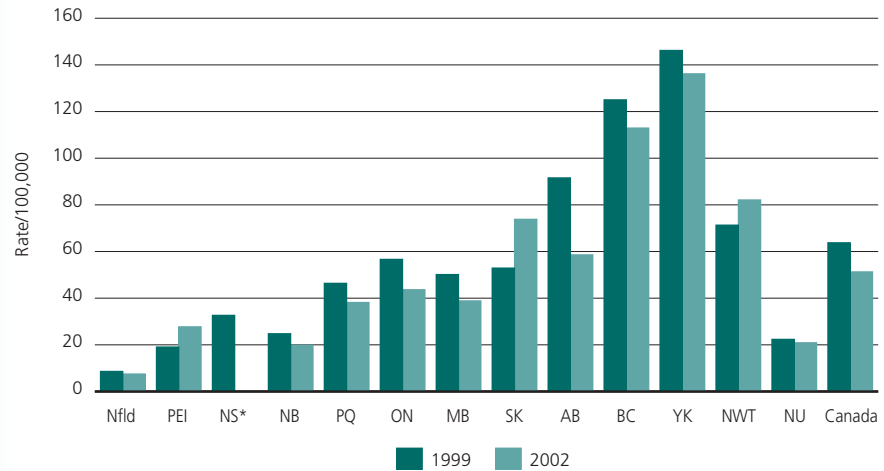
Viral Hepatitis C

Viral hepatitis C is primarily transmissible via blood (Chin, 2000), which currently makes the sharing of needles and other equipment for purposes of injection drug use, tattooing and body piercing the main risk factor. More than 90 per cent of initial infections are asymptomatic or mild, and between 50-80 per cent will develop a chronic infection (Chin, 2000). Of those who develop chronic infections, about half will eventually develop cirrhosis or cancer of the liver (Chin, 2000).

National/Provincial Overview

Indicated in Figure 19, rates of viral hepatitis C vary considerably across the country. Many regions have witnessed a decrease in rates over the last five years; Manitoba is no exception.

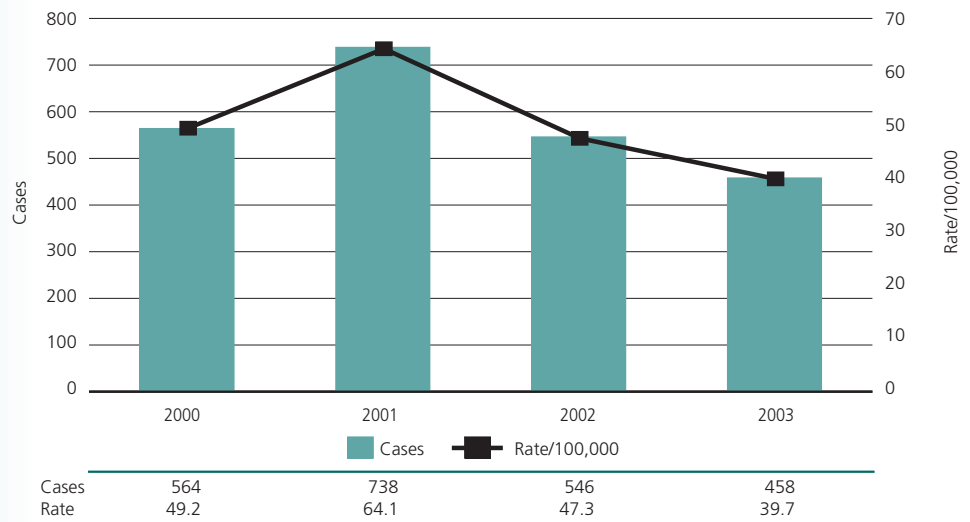
Figure 19. Viral Hepatitis C Rates/100,000 in Canada, 1999-2002



* 2002 rates for Nova Scotia were not available at time of report.

Hepatitis C became reportable in Manitoba in 1999, so the data from that year is considerably inflated as it incorporates all hepatitis C cases reported in 1999, regardless of year of actual infection; therefore the data presented here is only for 2000-2003. In 2000, 564 new cases of viral hepatitis C were reported to Manitoba Health. With the exception of 2001, this figure witnessed a steady decrease to 458 newly reported cases by 2003. These figures reflect a rate decrease of about 19 per cent over the last four years (see Figure 20).

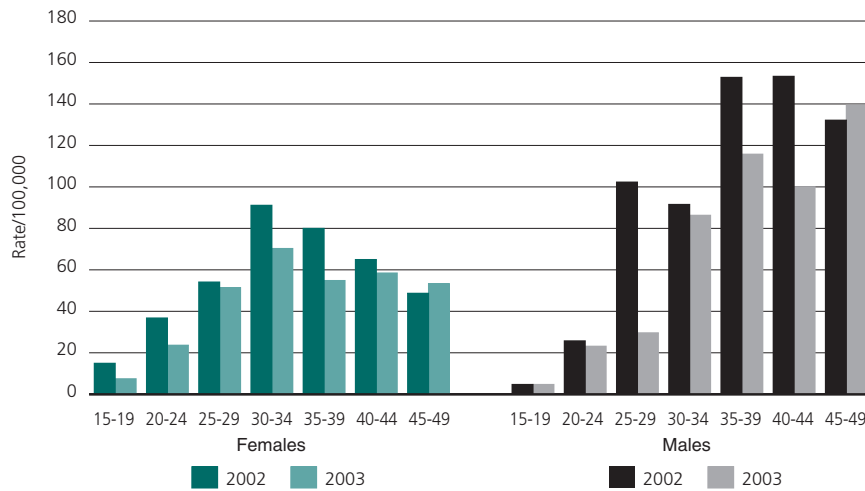
Figure 20. Viral Hepatitis C Cases and Rates in Manitoba, 2000-2003



Distribution by Age and Sex

The provincial viral hepatitis C rate is primarily driven by the rate among 40-49 year old males, who account for almost one-quarter of all cases. In 2003, the rate for 40-49 year old males (118.9/100,000) was about three times the overall provincial rate. Among females, the 30-39 year age group has the highest rate (62.1/100,000). Figure 21 shows the changes in rates of viral hepatitis C across sex and age from 2002 to 2003. While the rate of newly reported infections has decreased in almost all age groups for both sexes, this decrease is especially apparent for males aged 25-29 years, who witnessed a 71 per cent decrease between 2002 and 2003. A decrease of 37 per cent was also observed for males aged 40-44 years. For more detailed information on the number of cases and associated rate by age and gender, please refer to Appendix H.

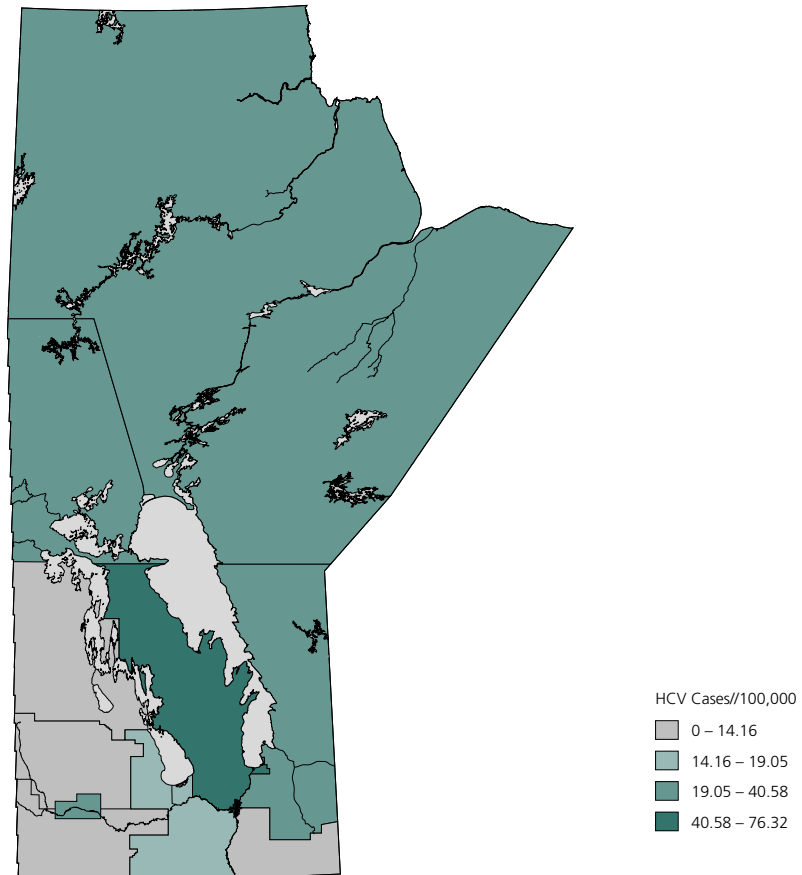
Figure 21. Viral Hepatitis C Rates for Manitoba Females and Males by Age Group, 2002 and 2003



Distribution by RHA

As shown in Figure 22, viral hepatitis C rates in Manitoba are highest in the Winnipeg and Interlake regions. The rate of newly reported infections in the Interlake region in particular (geographic region between Lakes Winnipeg and Manitoba) was more than 40 per cent greater than the 2002/2003 provincial rate. Examining number of cases, as opposed to rates, hepatitis C cases are concentrated in the Winnipeg and Interlake regions. For more detailed information on the number of cases and associated rate by regional health authority, please refer to Appendix I.

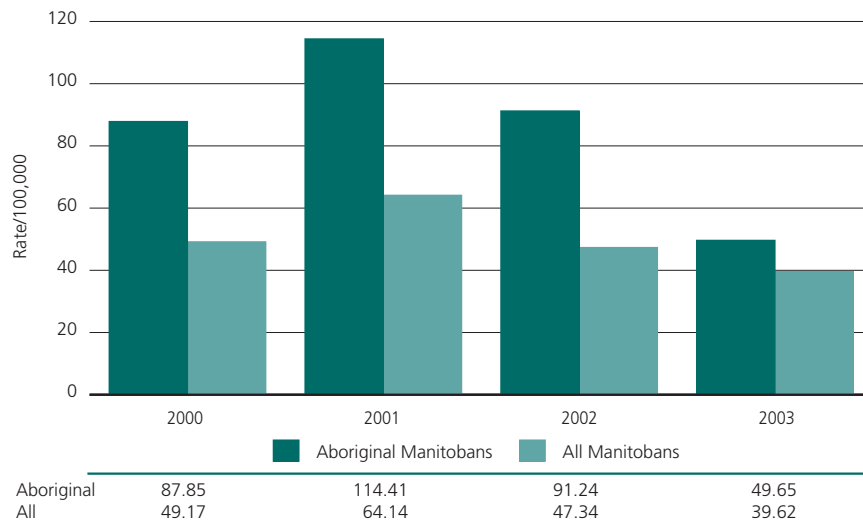
Figure 22. Viral Hepatitis C Rates (crude) by Manitoba Regional Health Authority, 2002 and 2003



Distribution by Aboriginal Ethnicity

Only eight per cent of the 458 new hepatitis C cases reported to the province in 2003 were among Aboriginal Manitobans (n=37 cases). The rate of newly reported infections among Aboriginal people has dropped considerably over the years, such that by 2003 the rate for Aboriginal Manitobans was very similar to the provincial rate. While the provincial hepatitis C rate decreased by 16 per cent between 2002 and 2003, the rate among Aboriginal people decreased by 45 per cent (Figure 23).

Figure 23. Viral Hepatitis C Rates by Aboriginal Ethnicity, 2000-2003



While males comprise the majority of new hepatitis C cases among the general population (roughly 63 per cent of all cases from 2000 to 2003), females account for more than half of all cases among Aboriginal people. Indeed, decreasing rates among females, 30-49 years, primarily drive the overall decrease in hepatitis C rates among Aboriginal Manitobans. For more detailed information, please refer to Appendix J for age and sex-specific counts and rates by Aboriginal ethnicity.

Human Immunodeficiency Virus

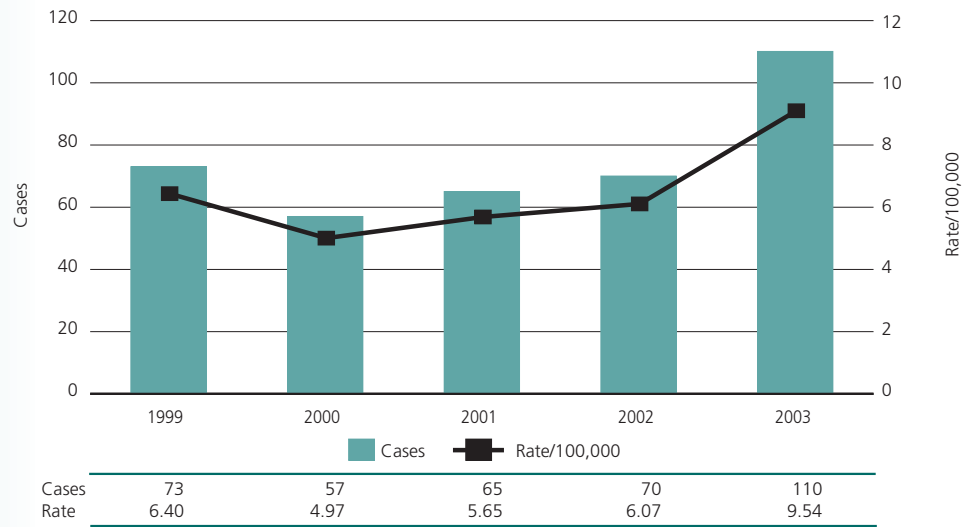
The human immunodeficiency virus (HIV) is a viral infection transmissible via both unprotected sexual activity and blood, usually through the sharing of needles and other equipment for the purposes of injecting drugs or body piercing/tattooing. Acquired immunodeficiency syndrome (AIDS) is a severe disease syndrome that represents the late clinical stage of infection with HIV. In the absence of anti-retroviral therapies, about 90 per cent of HIV-infected individuals develop AIDS, and 80 to 90 per cent die within three to five years after being diagnosed with AIDS. However, the routine use of highly active anti-retroviral therapies (HAART) in Canada has delayed the development of AIDS and AIDS-related deaths significantly (Chin, 2000).

National/Provincial Overview

As each province and territory has a different reporting structure for HIV and AIDS, and reports their data differently to Health Canada for the compilation of national statistics, national rates for HIV and AIDS are unavailable.

In 1999, 72 new cases of HIV were reported to Manitoba Health. This figure appeared to be decreasing until 2002, when the number of new cases rose to 70, and again to 110 cases in 2003. Overall, the number of new cases has risen 52.8 per cent within a five-year period (see Figure 24).

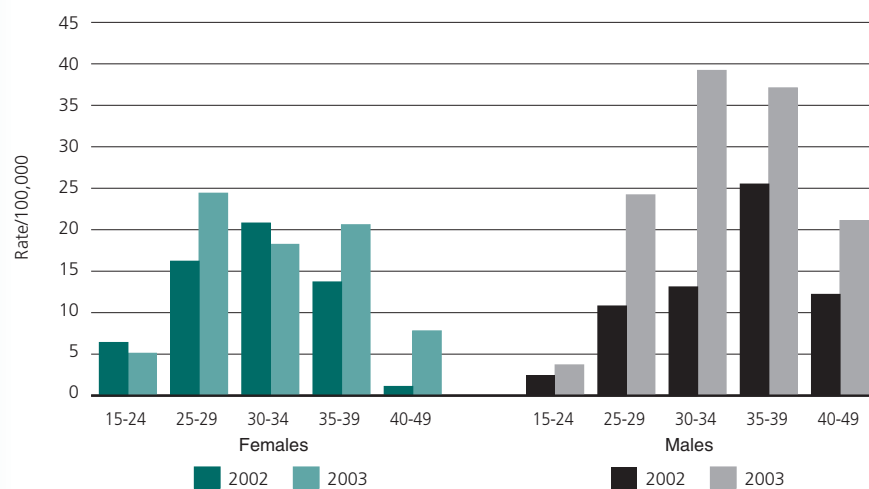
Figure 24. HIV Cases and Rates/100,000 in Manitoba, 1999-2003.



Distribution by Age and Sex

The provincial HIV rate is primarily driven by the rate among 30-39 year old males, who account for more than one-quarter of all cases. In 2003, the rate for 30-39 year old males (38.1/100,000) was almost four times the overall provincial rate. Among females, the infection rate in the 30-39 year age group (19.5/100,000) was twice the provincial rate. Figure 25 shows the changes in rates of HIV across sex and age from 2002 to 2003. While the rate of newly reported infections has increased in most age categories, this is especially apparent for males aged 30-39 years, who witnessed a near-doubling in infection rate between 2002 and 2003. For more detailed information on the number of cases and associated rate per age and gender, please refer to Appendix K.

Figure 25. HIV Rates for Manitoba Females and Males by Age Group, 2002 & 2003



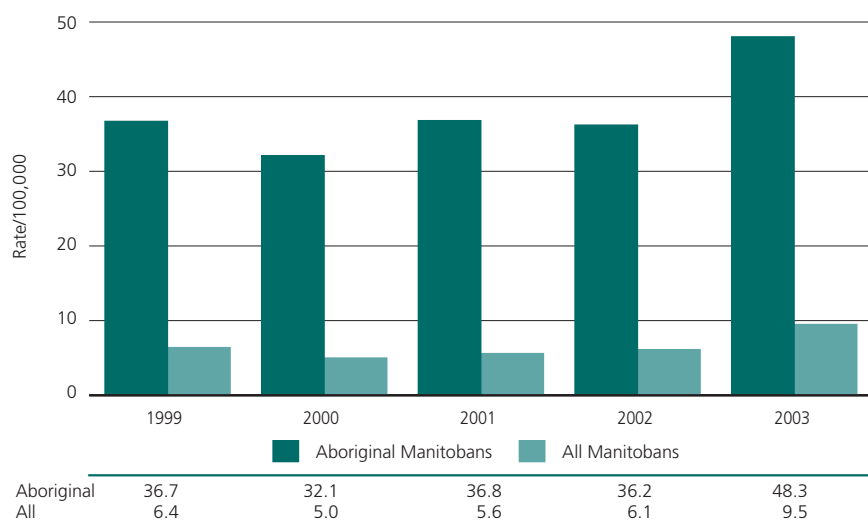
Distribution by RHA

As shown in Appendix L, the majority of HIV cases are reported in the Winnipeg region. It is important to note that HIV testing in Manitoba is currently non-nominal, where individuals seeking testing provide a client code that contains information about gender, year of birth, and the first three digits of the client's postal code. These data are self-reported and postal code information may often reflect the location of the medical facility where the client seeks testing rather than the client's true residence. In addition, small numbers prohibit the calculation of regional rates for many regions.

Distribution by Ethnicity

Almost one-third (32.7 per cent) of new HIV cases diagnosed in 2003 were among Manitobans who self-identified as Aboriginal (n=36 cases). Shown in Figure 26, the rate of newly reported infections has risen both provincially (48 per cent rate increase between 1999 and 2003) and among Aboriginal Manitobans (31 per cent rate increase between 1999 and 2003).

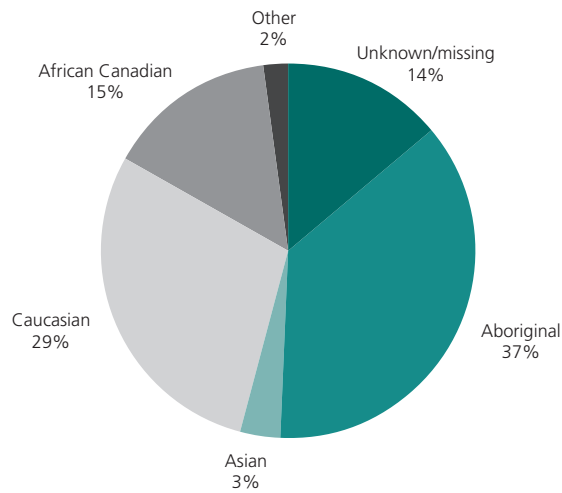
Figure 26. HIV Rates by Self-Reported Aboriginal Status, 1999-2003



While the rate of HIV infection has increased among Aboriginal Manitobans generally, and among Aboriginal males aged 30-39 years specifically, the greatest increase in rates is seen among non-Aboriginal Manitobans, where the population rate increased by 72 per cent from 2002 to 2003. This rate increase can be seen among all non-Aboriginal Manitobans, but most apparently among males, aged 30-49 years. For more detailed age and gender figures by Aboriginal status, please refer to Appendix M.

Beginning in 1999, the Provincial HIV Investigation Form also collects other self-reported ethnicity information. Figure 27 shows the distribution of newly diagnosed HIV cases for the five-year period from 1999 to 2003 by self-reported ethnicity.

Figure 27. Distribution of HIV Cases by Self-Reported Ethnicity, 1999-2003 (combined)

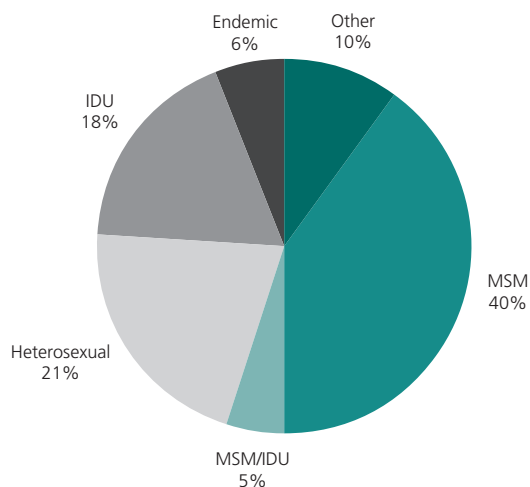


Overall, individuals self-reporting as Aboriginal account for more than one-third of all newly reported HIV cases from 1999 to 2003; it should also be noted that the ethnic group witnessing the largest proportional increase is African/African-Canadian. In 1999, 5.5 per cent of all newly reported HIV cases self-identified as African/African-Canadian. By 2003, this proportion had increased to 26.4 per cent of all new cases (see Appendix N).

Distribution by Risk Factors

Since HIV became a reportable disease in Manitoba in 1985, transmission risk factor information has been collected on all individuals testing HIV antibody positive. Figure 28 shows the distribution of newly diagnosed HIV cases for the five-year period from 1999 to 2003 by self-reported risk factor.

Figure 28. Distribution of HIV Cases by Self-Reported Transmission Risk Factor*, 1985-2003 (combined)



* Endemic – individual either immigrated from or likely contracted the virus while visiting a country in which HIV infection rates have reached endemic proportions

MSM – individual is a male who has had sex with other males

IDU – individual engages in injection drug use

MSM/IDU – individual is a male who has had sex with other males and engages in injection drug use

Heterosexual – individual has had unprotected sex with members of the opposite sex, or has had sex with opposite-sexed partners who themselves are at risk for contracting HIV (e.g., are injection drug users)

Other – includes perinatal transmission (individual born of HIV-infected mother); recipient of blood/blood products (individual has received blood/blood products prior to the induction of the blood screening program); and individuals in which no risk was identified

While males who report having sex with other males (MSM) account for about 40 per cent of all newly reported HIV cases from 1985 to 2003 combined, it should be noted that in both 2002 and 2003, this proportion had decreased significantly. In 2003, 10.8 per cent of new cases reported MSM as their primary risk factor. As a proportion of risk, individuals reporting unprotected sex with an opposite-sexed partner (heterosexual) accounted for 27.9 per cent of all new cases in 2003. Individuals immigrating from or having travelled to an endemic country accounted for almost one-fifth of all new cases in 2003, compared to 4.2 per cent from 1985-2001. See Appendix O for a full breakdown of risk factor information for 2002 and 2003 by gender.

HIV Testing

Currently, Manitoba is the only province to only offer non-nominal (confidential code) HIV antibody testing. In 2003, Cadham Provincial Laboratory (the only provincial lab that does HIV antibody testing) performed 32,688 HIV antibody tests, reflecting a 12 per cent increase in testing volume from the previous year. The majority (almost 70 per cent) of HIV testing occurs for females, partly due to prenatal testing. In 2002, Manitoba Health consulted with community groups and health professionals regarding prenatal HIV testing. The policy was revised and now reads:

“It is strongly recommended that all health care providers provide appropriate information and offer HIV testing to all pregnant women as part of routine prenatal care. The decision *not* to be tested should be voluntary and based on informed choice.”

With appropriate treatment maternal transmission of HIV can be significantly reduced. In April 2002, physicians received a letter informing them of the changes in the HIV Prenatal testing policy; they were also provided with educational pamphlets and posters on HIV prenatal testing to share with their patients.

To increase access to HIV testing and prevention resources for all Manitobans, Manitoba Health is currently working with the regional health authorities and community stakeholders to expand HIV testing options to include nominal (name-based) and anonymous HIV antibody testing.

Acquired Immune Deficiency Syndrome

Between 1985 (the year in which HIV/AIDS became reportable in Manitoba) and December 2003, Manitoba Health has been notified of 228 individuals who have been diagnosed with AIDS. Three-quarters of these individuals (76.8 per cent) have since died. Because of delays in reporting of AIDS cases, the number of reported cases and deaths may not necessarily reflect the true number of cases diagnosed or deaths occurring from 1985 to 2003. Of those who have been diagnosed with AIDS, almost half (46.9 per cent) of all cases are in the 30-39 year age range, and 89.5 per cent of the cases are males.

Provincial Responses and Strategic Direction

The epidemiological evidence presented in this report reflects a sobering reality of increasing STI and HIV rates throughout the province, and most particularly among youth, individuals living in northern Manitoba, and Aboriginal Manitobans. Each of these populations, as well as persons in correctional facilities, has been targeted for STI and/or BBP reductions by the Communicable Disease Control Unit of Manitoba Health.

Manitoba Youth

Targeting youth as a strategic focus in provincial STI reduction plans, Manitoba Health funded *Teen Talk* to design and implement a consultative process with youth from across the province in 2003. As part of this consultative process, Manitoba Health and Health Canada co-sponsored a youth forum in October 2003 that focused on STI, HIV and hepatitis C prevention. The information gathered will form the foundation of an STI/BBP prevention social marketing campaign targeted to youth. Manitoba Health is continuing to work with *Teen Talk* to implement peer-based training in communities with high rates of STI/BBP among youth.

The *Provincial Sexually Transmitted Diseases Control Strategy* (Manitoba Health, 2001) suggests the widespread use of urine-based testing for STI as an important secondary prevention tool. In 1999, Manitoba began urine-based testing, with an official targeted roll-out (to be offered by public health practitioners, offered in Burntwood and Winnipeg health regions, and offered in correctional facilities) in 2002. In 2002, Cadham Provincial Laboratory performed 1,048 urine tests for Gc and/or Ct. This figure more than doubled in 2003 (2,414 tests), however urine-based testing only accounted for 3.2 per cent of all Gc/Ct tests performed. In other words, urethral or cervical swabs still accounted for almost 97 per cent of Gc/Ct testing. Consultations with youth indicate that urine-based testing is preferable to swabbing. By increasing access to urine-based testing, it is expected that more youth will seek testing for chlamydia and gonorrhoea in Manitoba. Full provincial roll-out of this program to all health practitioners began in January, 2004. These data will continue to be monitored for enhanced uptake of urine-based testing.

To further understand the changing epidemiology of STI among youth in general, and among inner-city, street-involved youth in particular, Manitoba Health has participated in three phases (Phases II, III and IV) of a federally-funded, national, multi-centred, cross-sectional surveillance study. The purpose of this ongoing research is to understand the incidence of STIs among this vulnerable population and the factors that place them at greater risk of contracting an STI. Manitoba results from the second phase of this study are available on the Communicable Disease Control Unit website (www.gov.mb.ca/health/publichealth/cdc/index.html).

Northern Manitobans

To determine causes and risk factors of the high numbers of chlamydia and gonorrhoea in the North, a comprehensive assessment of current surveillance data, systems and programs was undertaken in 2003. In partnership with Manitoba Health, the Burntwood Regional Health Authority recruited an epidemiologist to design, plan and implement an intensive STI Assessment Project in that health region. The results of this assessment indicated that a Northern STI Co-ordinator was required to work with all regional partners so that prevention, education, treatment programs and communication could be enhanced throughout the region. The new Northern STI Coordinator began work in spring 2004.

To increase communication among northern partners, an Inter-jurisdictional Steering Group was created in 2003 to enhance implementation of the provincial strategies. Membership included Manitoba Health, Burntwood Regional Health Authority, Keewatin Tribal Council, and the First Nations and Inuit Health Branch. It is crucial that these major stakeholders are in strategic alliance to effectively reduce STIs in northern Manitoba, and develop culturally appropriate programs that serve Manitoba's Aboriginal population.

Aboriginal Manitobans

The *Manitoba Provincial AIDS Strategy* (Manitoba Health, 1996) committed to focus on the development of a complementary strategy to address HIV/AIDS issues affecting Aboriginal peoples. The Aboriginal Health Branch, Manitoba Health assumed the lead role in developing an Aboriginal component to the Provincial AIDS Strategy with consultative support from the Communicable Disease Control Unit, Manitoba Health. The development of this document included an extensive discussion process with key Aboriginal, community and government leaders, including Manitoba Justice/Corrections. To further assist in the development of *An Aboriginal Strategy on HIV/AIDS*, Health Canada and Manitoba Health partnered to provide support to the *Northern AIDS Initiative* for a northern regional conference on HIV/AIDS and to the *Manitoba AIDS Co-operative* for a special session on the development of an Aboriginal strategy on HIV/AIDS in Manitoba in 2003. Participants included representatives from surrounding First Nation communities, Manitoba Métis Federation, Keewatin Tribal Council, Population and Public Health Branch, Health Canada, Burntwood Regional Health Authority, local school educators and various community organizations. This strategy proposes strategic directions for prevention and education, care and treatment, and research. The strategy also provides guides for action intended to assist communities in addressing HIV/AIDS.

Correctional Facilities

In spring 2003, Manitoba Health partnered with Manitoba Justice and the Central, Brandon, and North Eastman regional health authorities to establish an STI Public Health pilot program in Headingley Correctional Centre, Portage Women's Correctional Centre, Agassiz Youth Centre, Milner Ridge Correctional Centre and Brandon Correctional Centre. Manitoba is only the second province in Canada to have a formal public health and corrections partnership. An evaluation of the program is in development. Current services include prevention education, testing, counselling and the development of a provincial resource package for offenders upon release from institutions.

Manitoba Health also co-funded the *Partners in Caring Conference*, in partnership with Health Canada, Correctional Services Canada (CSC), and First Nations and Inuit Health Branch in February 2003.

Overall Provincial Strategic Direction

In 2002, Manitoba Health funded the Winnipeg Regional Health Authority to conduct a roundtable discussion on harm reduction for Manitoba. Nine Circles Community Health Centre carried out the work and produced a final report with recommendations. The main recommendation was that Manitoba Health provide leadership to the process of implementing a Manitoba Harm Reduction Strategy. Specifically, it was suggested that Manitoba Health, in consultation with the Winnipeg Regional Health Authority and Nine Circles Community Health Centre, identify seven or eight stakeholder representatives to:

- a) develop a definition and principles of harm reduction;
- b) develop an engagement strategy;
- c) develop an action plan;
- d) develop a communication strategy; and
- e) hire a co-ordinator/facilitator (Harm Reduction Roundtable Report, 2002).

Following these recommendations, Manitoba Health became Chair of the *Manitoba Harm Reduction Network* in 2003 (formerly the Winnipeg Harm Reduction Working Group). There are over 110 network members from throughout the province. The goal of this network is to support activities that aim to reduce the harms associated with injection drug use and high-risk sexual behaviour throughout the province. Manitoba Health, Health Canada, Winnipeg Regional Health Authority, Addictions Foundation of Manitoba and Nine Circles Community Health Centre partnered to secure a contract Harm Reduction Consultant and organize an action planning session in February 2004.

In their efforts to control the spread of HIV in the province, Manitoba Health and the regional health authorities are also engaged co-operatively in a number of education-focused strategies. For example, in 2003 Manitoba Health provided “platinum sponsorship” to the *HIV/AIDS in Care: Thinking Globally – Acting Locally* conference. The conference was co-ordinated jointly by the St. Boniface Hospital and the Health Sciences Centre in Winnipeg. Other Manitoba Health activities include provision of a scholarship for HIV/AIDS frontline workers and individuals infected with HIV/AIDS to attend the *Canadian AIDS Society Skill Building Symposium* in November 2003, and support to the *NorMan AIDS Working Group* in 2003 for the *Play it Safer* conference. The *NorMan AIDS Working Group* organizes and supports education and prevention activities around HIV/AIDS and harm reduction.

Finally, Manitoba Health funds each of the province’s 11 regional health authorities to provide services within their geographic area. The planning and implementation of these services is the responsibility of each regional health authority. In 2003, each regional health authority designed region-specific plans addressing STI and/or HIV reductions. Both the province and the health authorities will continue to address STI and HIV as per the prevention strategies outlined in the *Provincial Sexually Transmitted Diseases Control Strategy* (Manitoba Health, 2001) and the *Manitoba Provincial AIDS Strategy* (Manitoba Health, 1996).

As the province, regional health units and communities strengthen their resolve to better control the transmission of sexually transmitted infections and blood-borne pathogens, continued efforts must be focused on those populations where rates are highest and previous progress has been halted. In addressing these subpopulations, there must be recognition that underlying each of the high-risk groups identified are disparities in the determinants of health. Some of these include adequate housing, employment, social support for families and youth, and access to age and culturally-appropriate prevention tools. Addressing these broader determinants of risk is key to stemming the rise of sexually transmitted infections and blood-borne pathogens in Manitoba.

References

- Berkow, R. and Fletcher, A. J. (Eds.). (1992). *The Merck manual of diagnosis and therapy* (16th ed.). Rahway, N.J.: Merck Research Laboratories.
- Cates, W. and Wasserheit, J. N. (1991). Genital chlamydial infections: Epidemiology and reproductive sequelae. *American Journal of Obstetrics and Gynecology*, 164, 1771-1781.
- Centres for Disease Control and Prevention (Atlanta). (1996). Ten leading nationally notifiable infectious diseases – United States, 1995. *Morbidity and Mortality Weekly Report*, 45, 883-884.
- Chin, J. (2000). *Control of communicable diseases manual*, 17th Ed. Washington, D.C.: American Public Health Association.
- Dickerson, M., Johnson, J., Delea, T., White, A. and Andrews, E. (1996). The casual role for genital ulcer disease as a risk factor for transmission of human immunodeficiency virus: An application of the Bradford Hill criteria. *Sexually Transmitted Diseases*, 23, 429-440.
- Health Canada. (1997). *National goals for the prevention and control of sexually transmitted diseases in Canada*. (Health Canada Publication No. 1188-4169). Ottawa, Ontario: Government Printing Office.
- Health Canada. (1998). [Enhanced STD Surveillance in Canadian Street Youth Protocol]. Available from the Communicable Disease Control Unit, Public Health Branch, Manitoba Health, 4th floor - 300 Carlton Street, Winnipeg, Manitoba, CANADA, R3B 3M9.
- Health Canada. (2003). *Reported cases and rates of notifiable STI from January 1 to December 31, 2002 and January 1 to December 31, 2003*. [online] Available: www.hc-sc.gc.ca/pphb-dgsp/std-mts/stdcases-casmts/index.html
- Manitoba Health. (1996). Manitoba's provincial AIDS strategy. [online] Available: www.gov.mb.ca/health/aids/strategy.pdf
- Manitoba Health. (2001). Provincial sexually transmitted diseased control strategy. [online] Available: www.gov.mb.ca/health/publichealth/cdc/provstd.html

Appendix A

Age and Sex-specific Chlamydia Cases and Rates Manitoba, 2002 and 2003

	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Females, Total	2,364	404.1	2,546	435.2
<15 years	61	52.7	81	70.0
15-19 years	1,022	2,542.4	1,092	2,716.5
20-24 years	800	2,100.9	840	2,205.9
25-29 years	305	825.2	320	865.8
30-34 years	102	265.6	147	382.7
35-39 years	50	114.3	42	96.0
40-44 years	16	34.6	13	28.2
45-49 years	5	–	9	–
>49 years	3	–	2	–
Males, Total	959	168.7	1,094	192.5
<15 years	9	7.4	5	–
15-19 years	280	661.5	296	699.2
20-24 years	340	875.0	404	1,039.7
25-29 years	183	492.7	189	508.8
30-34 years	62	162.2	83	217.1
35-39 years	43	99.6	50	115.8
40-44 years	23	49.0	42	89.4
45-49 years	10	23.2	12	27.9
>49 years	9	4.9	13	8.3

Appendix B

Regional Chlamydia Cases and Rates Manitoba, 2002 and 2003

	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Winnipeg	1,745	268.4	1,820	279.9
Brandon	138	290.5	154	324.2
North Eastman	155	392.6	156	395.1
South Eastman	56	99.1	45	79.7
Interlake	138	177.0	147	188.6
Central	185	185.4	174	174.4
Assiniboine	75	107.6	85	123.3
Parkland	98	231.4	128	302.2
Nor-Man	154	615.6	193	771.5
Burntwood and Churchill	578	1,267.9	738	1,618.9
MANITOBA	3,323	288.1	3,640	315.6

Appendix C

Age and Sex-specific Chlamydia Cases and Rates by Aboriginal Ethnicity, 2002 and 2003

	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Aboriginal Manitobans, Total	1,165	1,563.2	931	1,249.2
Females, Total	843	2,252.9	648	1,731.7
Females, 15-24 years	619	9,201.7	495	7,358.4
Males, Total	322	867.8	283	762.7
Males, 15-24 years	230	3,345.4	198	2,880.0
Non-Aboriginal Manitobans, Total	2,158	200.0	2,709	251.1
Females, Total	1,521	277.8	1,898	346.6
Females, 15-24 years	1,203	1,681.3	1,437	2,008.4
Males, Total	637	119.9	811	152.7
Males, 15-24 years	390	524.8	502	675.5

Appendix D

Age and Sex-specific Gonorrhoea Cases and Rates Manitoba, 2002 and 2003

	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Females, Total	315	53.8	456	78.0
<15 years	7	6.0	20	17.3
15-19 years	117	291.0	195	485.1
20-24 years	82	215.3	124	325.6
25-29 years	62	167.8	69	186.7
30-34 years	31	80.7	26	67.7
35-39 years	11	25.1	15	34.3
40-44 years	2	–	5	–
45-49 years	3	–	2	–
>49 years	0	–	0	–
Males, Total	316	55.6	414	72.8
<15 years	1	–	0	–
15-19 years	68	160.6	97	229.1
20-24 years	96	247.0	121	311.4
25-29 years	54	145.4	55	148.1
30-34 years	32	83.7	50	130.8
35-39 years	27	62.5	31	71.8
40-44 years	21	44.7	38	80.9
45-49 years	7	16.3	8	18.6
>49 years	10	6.4	14	8.9

Appendix E

Regional Gonorrhoea Cases and Rates Manitoba, 2002 and 2003

	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Winnipeg	284	43.7	496	76.3
Brandon	12	25.3	18	37.9
North Eastman	63	159.6	68	172.2
South Eastman	5	8.8	6	10.6
Interlake	20	25.6	17	21.8
Central	33	33.1	35	35.1
Assiniboine	3	4.3	4	5.8
Parkland	4	9.4	14	33.1
Nor-Man	33	131.9	41	163.9
Burntwood and Churchill	174	381.7	171	375.1
MANITOBA	631	54.7	870	75.4

Appendix F

Age and Sex-specific Gonorrhoea Cases and Rates by Aboriginal Ethnicity, 2002 and 2003

	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Aboriginal Manitobans, Total	310	416.0	257	344.8
Females, Total	168	449.0	141	376.8
Females, 15-24 years	104	1,546.0	101	1,501.4
Males, Total	142	382.7	116	312.6
Males, 15-24 years	88	1,280.0	83	1,207.3
Non-Aboriginal Manitobans, Total	321	29.8	613	56.8
Females, Total	147	26.8	315	57.5
Females, 15-24 years	95	132.8	218	304.7
Males, Total	174	32.8	298	56.1
Males, 15-24 years	76	102.3	135	181.7

Appendix G

Age-specific Acute Viral Hepatitis B Cases Manitoba, 2002 and 2003

	2002 Cases	2003 Cases
<15 years	1	0
15-19 years	1	2
20-24 years	1	0
25-29 years	3	1
30-34 years	0	0
35-39 years	0	1
40-44 years	3	1
45-49 years	0	0
>49 years	1	0
Total	10	5

Appendix H

Age and Sex-specific New Hepatitis C Cases and Rates Manitoba, 2002 and 2003

	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Females, Total	191	32.65	170	29.06
<15 years	1	unstable	2	unstable
15-19 years	6	14.93	3	unstable
20-24 years	14	36.77	9	23.64
25-29 years	20	54.11	19	51.41
30-34 years	35	91.12	27	70.29
35-39 years	35	79.98	24	54.84
40-44 years	30	64.96	27	58.46
45-49 years	21	48.69	23	53.33
>49 years	29	15.89	36	19.72
Males, Total	355	62.46	287	50.50
<15 years	1	unstable	0	0.00
15-19 years	2	unstable	2	unstable
20-24 years	10	25.74	9	23.16
25-29 years	38	102.31	11	29.62
30-34 years	35	91.54	33	86.31
35-39 years	66	152.81	50	115.77
40-44 years	72	153.32	47	100.04
45-49 years	57	132.17	60	139.40
>49 years	74	47.11	75	47.74

Appendix I

Regional New Hepatitis C Cases and Rates Manitoba, 2002 and 2003

	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Winnipeg	357	54.90	321	49.37
Brandon	13	27.36	19	39.99
North Eastman	19	48.12	4	unstable
South Eastman	7	12.39	7	12.39
Interlake	83	106.46	36	46.18
Central	21	21.05	17	17.04
Assiniboine	9	12.91	7	10.04
Parkland	6	14.16	6	14.16
Nor-Man	3	unstable	11	43.97
Burntwood and Churchill	19	41.68	18	39.49
MANITOBA	546	47.34	458	39.71

Appendix J

Age and Sex-specific New Hepatitis C Cases and Rates by Aboriginal Ethnicity, 2002 and 2003

	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Aboriginal Manitobans, Total	68	91.24	37	49.65
Females, Total	39	104.22	21	56.12
Females, 30-39 years	19	329.91	7	121.54
Males, Total	29	78.15	16	43.11
Males, 40-49 years	8	217.45	5	135.9
Non-Aboriginal Manitobans, Total	478	44.31	421	39.02
Females, Total	152	27.75	149	27.21
Females, 30-39 years	51	66.74	44	57.58
Males, Total	225	42.35	270	50.82
Males, 40-49 years	121	140.14	102	118.13

Appendix K

Age and Sex-specific HIV Cases and Rates Manitoba, 2002 and 2003

	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Females, Total	29	4.96	40	6.84
<15 years	1	unstable	3	unstable
15-19 years	2	unstable	0	unstable
20-24 years	3	unstable	4	unstable
25-29 years	6	16.23	9	24.35
30-34 years	8	20.83	7	18.23
35-39 years	6	13.71	9	20.57
40-44 years	1	unstable	6	12.99
45-49 years	0	unstable	1	unstable
>49 years	2	unstable	1	unstable
Males, Total	41	7.21	70	12.32
<15 years	0	unstable	1	unstable
15-19 years	1	unstable	0	unstable
20-24 years	1	unstable	3	unstable
25-29 years	4	unstable	9	24.23
30-34 years	5	13.08	15	39.24
35-39 years	11	25.47	16	37.05
40-44 years	6	12.77	11	23.41
45-49 years	5	11.62	8	18.59
>49 years	8	21.33	7	18.67

Appendix L

Regional HIV Cases and Rates Manitoba, 2002 and 2003

Region	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Winnipeg	60	9.23	97	14.92
Brandon	1	unstable	1	unstable
North Eastman	1	unstable	1	unstable
South Eastman	1	unstable	1	unstable
Interlake	2	unstable	1	unstable
Central	4	unstable	3	unstable
Assiniboine	0	unstable	1	unstable
Parkland	0	unstable	0	unstable
Nor-Man	1	unstable	0	unstable
Burntwood & Churchill	0	unstable	3	unstable
Unknown/Missing	0	N/A	2	N/A
MANITOBA	70	6.07	110	9.54

Appendix M

Age and Sex-specific HIV Cases and Rates by Self-reported Aboriginal Status, 2002 and 2003

	2002		2003	
	Cases	Rate/100,000	Cases	Rate/100,000
Aboriginal Manitobans, Total	27	36.2	36	48.3
Females, Total	10	26.7	15	40.1
Females, 30-39 years	5	86.8	6	104.2
Males, Total	17	45.8	21	56.6
Males, 30-39 years	7	133.5	11	209.7
Non-Aboriginal Manitobans, Total	43	4.0	74	6.9
Females, Total	19	3.5	25	4.6
Females, 30-39 years	9	11.8	10	13.1
Males, Total	24	4.5	49	9.2
Males, 30-39 years	9	11.8	20	26.3

Appendix N

Distribution of HIV Cases by Self-reported Ethnicity, 2002 and 2003

	2002		2003	
	Cases	Per cent of all cases	Cases	Per cent of all cases
Caucasian	19	27.1	23	20.9
Aboriginal	27	38.6	36	32.7
African	10	14.3	29	26.4
Asian	5	7.1	3	2.7
Other	1	1.4	3	2.7
Missing	8	11.4	16	14.5
Total	70		110	

Appendix O

Distribution of HIV Cases by Self-reported Transmission Risk Factor, 2002 and 2003

	2002		2003	
	Males	Females	Males	Females
MSM	10	n/a	12	n/a
MSM/IDU	0	n/a	4	n/a
IDU	12	10	13	6
Heterosexual	12	9	15	16
Endemic	2	9	11	11
Perinatal	0	0	0	0
Recipient of Blood/Blood Products	2	0	0	1
No Risk Identified	3	1	15	6
Total	41	29	70	40

MSM – individual is a male who has had sex with other males

IDU – individual engages in injection drug use

MSM/IDU – individual is a male who has had sex with other males and engages in injection drug use

Heterosexual – individual has had unprotected sex with members of the opposite sex, or has had sex with opposite-sexed partners who themselves are at risk for contracting HIV (e.g., are injection drug users)

Endemic – individual either immigrated from or likely contracted the virus while visiting a country in which HIV infection rates have reached endemic proportions

Perinatal – individual born of HIV-infected mother

Recipient of blood/blood products – individual has received blood/blood products prior to the induction of the blood screening programme

No risk identified – individuals in which no risk was identified