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TUBERCULOSIS IN CANADA



2001

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ACKNOWLEDGEMENT

The authors would like to acknowledge the provincial/territorial tuberculosis programs and their teams for their contribution to and participation in the Canadian Tuberculosis Reporting System (CTBRS).

The authors would also like to thank the Scientific Publication and Multimedia Services Section, Population and Public Health Branch, for its assistance in preparing this report.

Published by authority of the Minister of Health

© Minister of Public Works and Government Services Canada 2003

Cat. H49-108/2001
ISBN 0-662-67105-8

This publication can be made available in alternative formats upon request.

TUBERCULOSIS

IN CANADA

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PAEDIATRIC TUBERCULOSIS IN CANADA

OVERVIEW

Tuberculosis continues to be a significant cause of morbidity and mortality for children throughout the world. In Canada, TB in children steadily declined from 1970 to 1988 with a brief resurgence through the 1990s. The majority of children with TB acquire the disease from adults with whom they are in close contact. Although TB can have a profound impact on the affected children and their families, paediatric TB has a limited influence on the transmission of the disease, as children are rarely infectious. However, the occurrence of TB in children is a marker for recent and ongoing transmission of the disease in a population¹.

METHODS

TB case data reported to the Canadian Tuberculosis Reporting System (CTBRS) from 1970 to 2001 were examined. The reporting system is designed to capture information on every new active or relapsed case of TB occurring in Canada in all provinces and territories. Paediatric cases were defined as all cases occurring in individuals younger than 15 years of age. Cases within the CTBRS meet the *Canadian Tuberculosis Standards* case definition². Population estimates by origin were obtained from Statistics Canada, and Indian and Northern Affairs Canada (1991-2001). Ethnic origin for this report is defined as Status Indian, Non-status Indian/Metis and Inuit (Aboriginal), Canadian-born non-Aboriginal, and foreign-born. If ethnic origin was reported as unknown, the record was excluded from analysis. Diagnostic site follows the hierarchy established by the Surveillance Sub-committee of the Canadian Tuberculosis Committee and includes primary, miliary, meninges/central nervous system, respiratory (includes pulmonary and other respiratory), peripheral lymph node and other sites (see *Appendix I, Technical Notes* for ICD-9 codes related to this hierarchy).

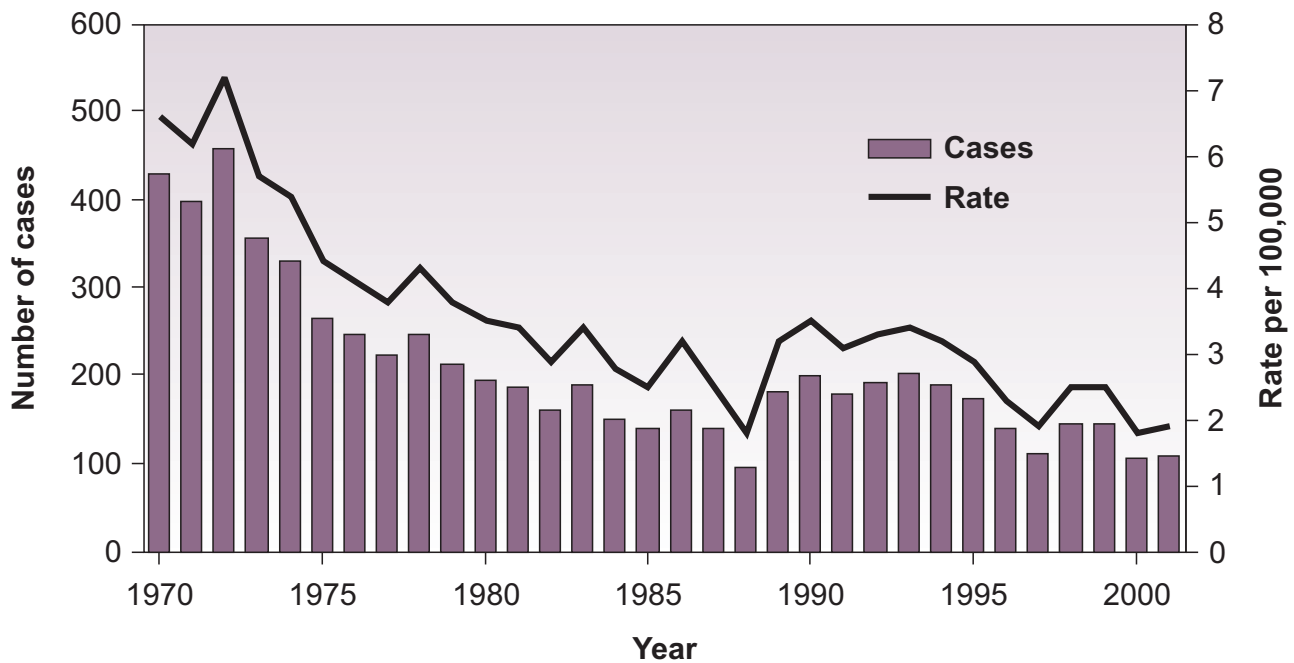
EPIDEMIOLOGY OF TB AMONG CHILDREN IN CANADA

The number of reported TB cases in children younger than 15 years of age declined from 430 in 1970 to 109 in 2001, an average annual decline of 4%. The incidence of TB disease in children has also decreased, from 6.6 per 100,000 in 1970 to 1.9 per 100,000 in 2001. An increase in the number of cases and incidence of TB among children was observed for the period of 1989 to 1999, mostly attributable to cases diagnosed in the Canadian-born Aboriginal population; however, this increasing trend has since reversed (Figures SR-1 and SR-3).



Figure SR-1

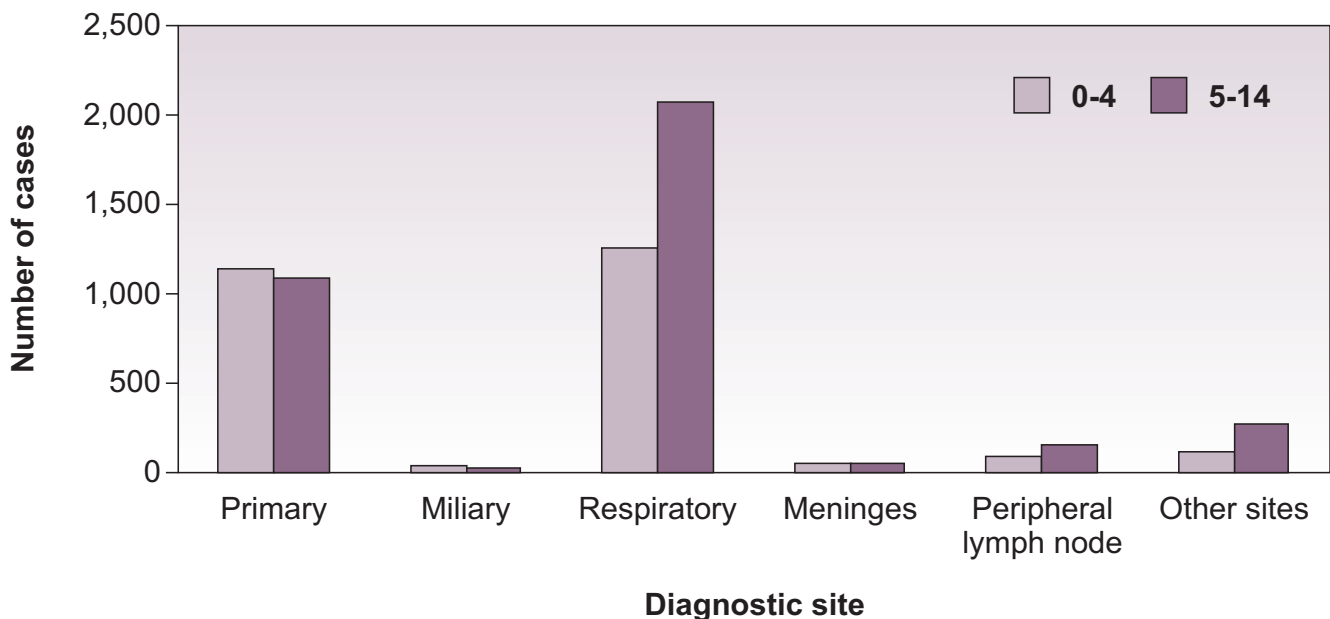
Paediatric tuberculosis cases and incidence in Canada, 1970–2001



From 1970 to 2001, 45% of TB in children occurred in the under 5 age category. Younger children were more likely to present with meningeal, miliary or primary TB, whereas older children more frequently presented with other non-pulmonary sites and respiratory TB (Figure SR-2). By sex, TB in children is uniformly distributed between males and females (51% male; 49% female).

Figure SR-2

Paediatric tuberculosis by diagnostic site and age, 1970–2001



TB disease case counts and rates were significantly higher among children of Aboriginal origin than among Canadian born non-Aboriginal and foreign-born populations (Table SR-A). Over time, the number of reported cases has measurably decreased among the Canadian-born non-Aboriginal population, remained constant in the foreign born and decreased, although less dramatically, in the Canadian-born Aboriginal group (Figure SR-3).

Table SR-A

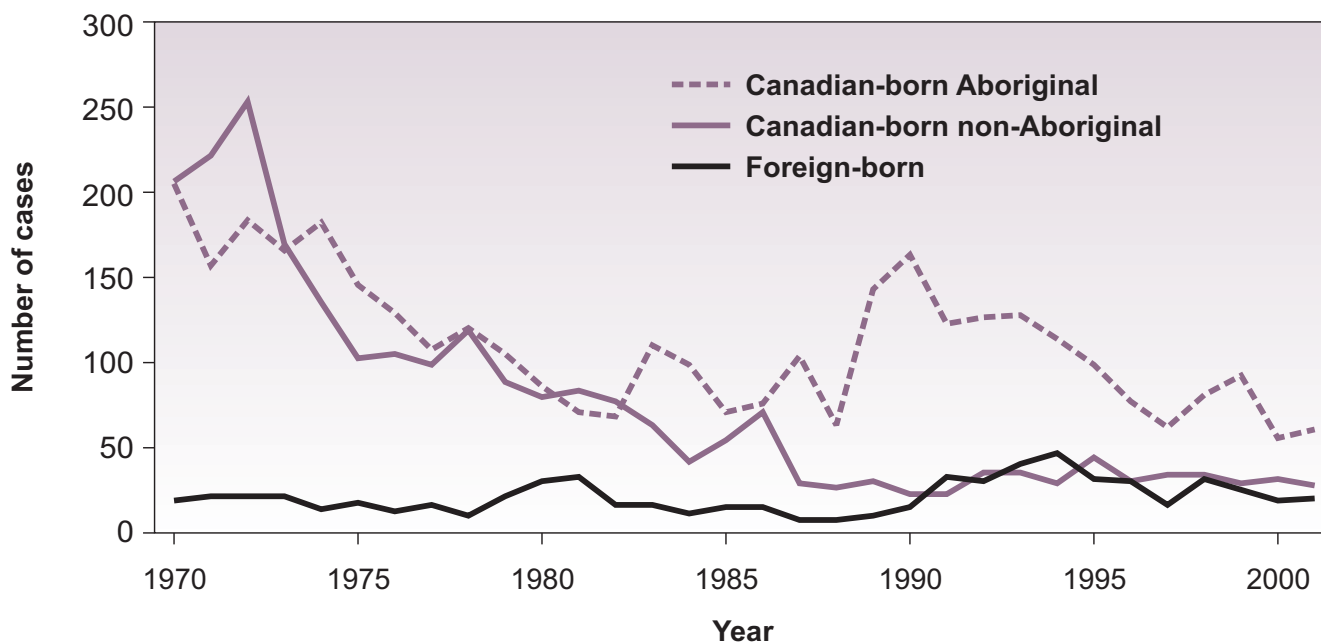
Distribution and incidence (2001) of paediatric tuberculosis cases by origin in Canada: 1970–2001

Origin	Number of cases, 1970–2001	Percentage of cases, 1970–2001	Number of cases, 2001	Percentage of cases, 2001	Percentage of paediatric population, 2001	Incidence rate per 100,000, 2001
Canadian-born Aboriginal	3,574	53.5	61	56.0	6.8	15.3
Canadian-born non-Aboriginal	2,429	36.4	28	25.7	78.5	0.6
Foreign born	679	10.2	20	18.3	14.6	2.3
TOTAL	6,682	100	109	100	100	1.9

Note: totals may not always equal 100 because of rounding.

Figure SR-3

Paediatric tuberculosis by origin, 1970–2001



SUMMARY

Infected children represent a large proportion of the pool from which future TB cases arise. Continued TB diagnosis in children is indicative of ongoing transmission of infection. The majority of paediatric TB cases in Canada occur in children of Aboriginal origin. By origin, TB disease in children mirrors the overall presentation of the disease in Canada over the past 30 years. TB case reporting has fallen dramatically among the Canadian-born non-Aboriginal population, less so among the Aboriginal population and has remained constant among the foreign-born.

TB disease in children is compounded by the difficulty in obtaining an accurate diagnosis and in differentiating between infection and disease. The most important manifestations of the disease are miliary and meningeal disease given the high morbidity and mortality associated with these forms.

Directions

The most likely factor contributing to this ongoing burden of disease in children is lack of access to health resources in remote areas, leading to slow identification and examination of infectious cases and close contacts. Ultimately, controlling TB in children is dependent upon the control of TB in adults. The prompt identification of pulmonary TB in adults followed by prompt and complete treatment as well as investigation of contacts is essential for interrupting transmission of the disease. Adequate resources and infrastructure must be in place to provide these necessary services. Continued education of health care professionals is also crucial to maintain awareness and suspicion of TB as a possible diagnosis in children who fail to gain weight or whose lower respiratory tract infections fail to resolve despite appropriate treatment.³

Members: Dr. V. Hoepfner (Chair); Dr. M. Baikie; Dr. C. Balram; Ms. C. Case; Dr. E. Ellis (Executive Secretary); Dr. R.K. Elwood (Past Chair); Ms. P. Gaba; Dr. B. Graham; Dr. B. Gushulak; Ms. C. Helmsley; Dr. E.S. Hershfield; Ms. R. Hickey; Dr. A. Kabani; Dr. B. Kawa; Dr. R. Long; Dr. F. Stratton; Ms. S. Black; Dr. L. Sweet; Dr. T.N. Tannenbaum.

This report was prepared by Ms. Melissa Phipers, Senior Epidemiologist, Tuberculosis Prevention and Control, Health Canada.

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1. Tuberculosis in children. In: Reichman LB, Hershfield ES, eds. *Tuberculosis: A comprehensive approach*. New York: Marcel Dekker, Inc, 2000: 553–5.
2. Long R. ed. *Canadian tuberculosis standards*, 5th edition. Ottawa: Canadian Lung Association, 2000.
3. *Tuberculosis in childhood*. In: Davies PDO, ed. *Clinical tuberculosis*. London: Chapman and Hall, 1996: 219.

EXECUTIVE SUMMARY

In 2001, a total of 1,704 cases (5.5 per 100,000) of new active and relapsed tuberculosis (TB) were reported to the Canadian Tuberculosis Reporting System (CTBRS). The highest rate, of 138.4 per 100,000, was in Nunavut. TB incidence was lowest in the Atlantic region (New Brunswick, Newfoundland and Labrador, Nova Scotia and Prince Edward Island, at 1.7 per 100,000). The three most populous provinces (British Columbia, Ontario and Quebec), which collectively make up 75% of Canada's population, accounted for 75% of the total reported cases.

By age group, individuals between the ages of 25 and 34 years made up the largest number of reported cases, accounting for 19% of the total. However, the corresponding case rate of 7.2 per 100,000 for this age group was surpassed by the age-specific rates of 9.9 and 14.1 per 100,000 for those in the older age groups of 65 to 74 years and greater than 74 years respectively.

Accurate information on the country of origin of TB cases in Canada has been available since 1970. In 2001, TB among foreign-born individuals accounted for 62% of all reported cases in Canada. Furthermore, 2001 marked the first time that the proportion of Canadian-born Aboriginal cases surpassed the proportion of cases reported among Canadian-born non-Aboriginal individuals (18% and 16% respectively). Birthplace was unknown for 3% of cases.

Respiratory TB was the most frequently reported main diagnostic site, representing 66% of reported cases in 2001, although diagnostic site varied by birthplace. TB of the peripheral lymph nodes was the second most commonly reported diagnostic site (13%), and 35% of these cases occurred in foreign-born individuals who originated in the World Health Organization (WHO) Western Pacific Region. Primary TB accounted for 7% of reported cases and was more common among Canadian-born Aboriginals.

The number of laboratory confirmed cases was 1,563 (92% of all cases). Of these cases, 1,345 (86%) were culture positive. Of these, 93% had no resistance to the drugs used to treat TB, 5% were resistant to one drug, and the remaining 3% showed patterns of resistance to two or more drugs prescribed. The most common type of mono-resistance was to isoniazid (INH), accounting for 36% of all reported resistance. Multi-drug resistant TB (defined as resistance to at least INH and rifampin) accounted for less than 1% of the positive cultures reported (*Appendix II, Table 15*).

Of the 1,695 cases diagnosed in 2000, 705 cases had a treatment outcome report. Where treatment outcome status was known, 567 cases (80%) were reported as being culture negative (cure) or having completed treatment. The vast majority of individuals given TB drug therapy in Canada received treatment as per the *Canadian Tuberculosis Standards*;¹ 94% of these cases received three or more anti-tuberculosis drugs.

¹ Long R. ed. *Canadian tuberculosis standards*, 5th edition. Ottawa: Canadian Lung Association, 2000.

INTRODUCTION

The *2001 Tuberculosis in Canada* annual report is a publication of Tuberculosis Prevention and Control (TBPC), Centre for Infectious Disease Prevention and Control, Population and Public Health Branch, Health Canada. Reports of new active and relapsed tuberculosis cases come to TBPC through the Canadian Tuberculosis Reporting System (CTBRS) from the 10 provinces and three territories.

TBPC stores and maintains surveillance reports on tuberculosis in Canada dating from the early 1920s. Health Canada assumed responsibility from Statistics Canada for the CTBRS in 1994.

The report contains information on the overall TB case counts and case rates for selected demographic and clinical characteristics. It outlines case and treatment outcome data on the following:

- province/territory
- gender
- age
- birthplace
- activity status
- main diagnostic site
- bacillary status
- method of detection
- immigration status
- HIV status
- patterns of drug resistance

Appendices to the report provide technical notes on the methodology of the report, including the definition of terms (*Appendix I*), data tables (*Appendix II*), population estimates for 2001 (*Appendix III*), the estimated incidence of TB from 22 high burden countries as designated by the WHO (*Appendix IV*). Further appendices include the World Health Organization (WHO) regions and their member countries (*Appendix V*), the tuberculosis case reporting form and the treatment outcome reporting form (*Appendix VI*), and the members of the Canadian Tuberculosis Committee (*Appendix VII*).

The annual reports on TB have undergone and will continue to undergo revisions in format and content from year to year. It is our goal to continue to adapt and improve this publication in response to changes in the epidemiology and treatment of tuberculosis. We welcome any comments on the content or format of this document.

RESULTS

SECTION I – 2001 CASE REPORTING

NATIONAL TRENDS

After a peak in the epidemic in the early 1940s, the reported incidence of TB has shown continued decline (Figure 1). Over the past decade the reported incidence and number of cases of TB have continued to decrease (Figure 2; Table A). In 2001, 1,704 cases of TB were reported to the CTBRS, representing an incidence rate of 5.5 per 100,000. New active cases made up the vast majority of reported cases (4.9 per 100,000), relapsed cases accounting for the remainder (0.5 per 100,000).

Table A

Incidence of tuberculosis in Canada, 3-year moving average: 1990-2001

Year	Number of reported cases	Crude rate per 100,000	3-year moving average
1990	1,997	7.2	
1991	2,018	7.2	7.3
1992	2,108	7.4	7.3
1993	2,012	7.0	7.2
1994	2,074	7.1	6.7
1995	1,931	6.5	6.6
1996	1,868	6.3	6.5
1997	1,977	6.6	6.3
1998	1,791	5.9	6.1
1999	1,806	5.9	5.8
2000	1,695	5.5	5.6
2001	1,704	5.5	—

GEOGRAPHIC DISTRIBUTION

Several reporting jurisdictions reported case rates below the national rate. TB incidence remained lowest in the Atlantic provinces and highest in the Northwest Territories and Nunavut (Table B, Figure 3).

Figure 1

Tuberculosis incidence and mortality rates – Canada: 1924-2001

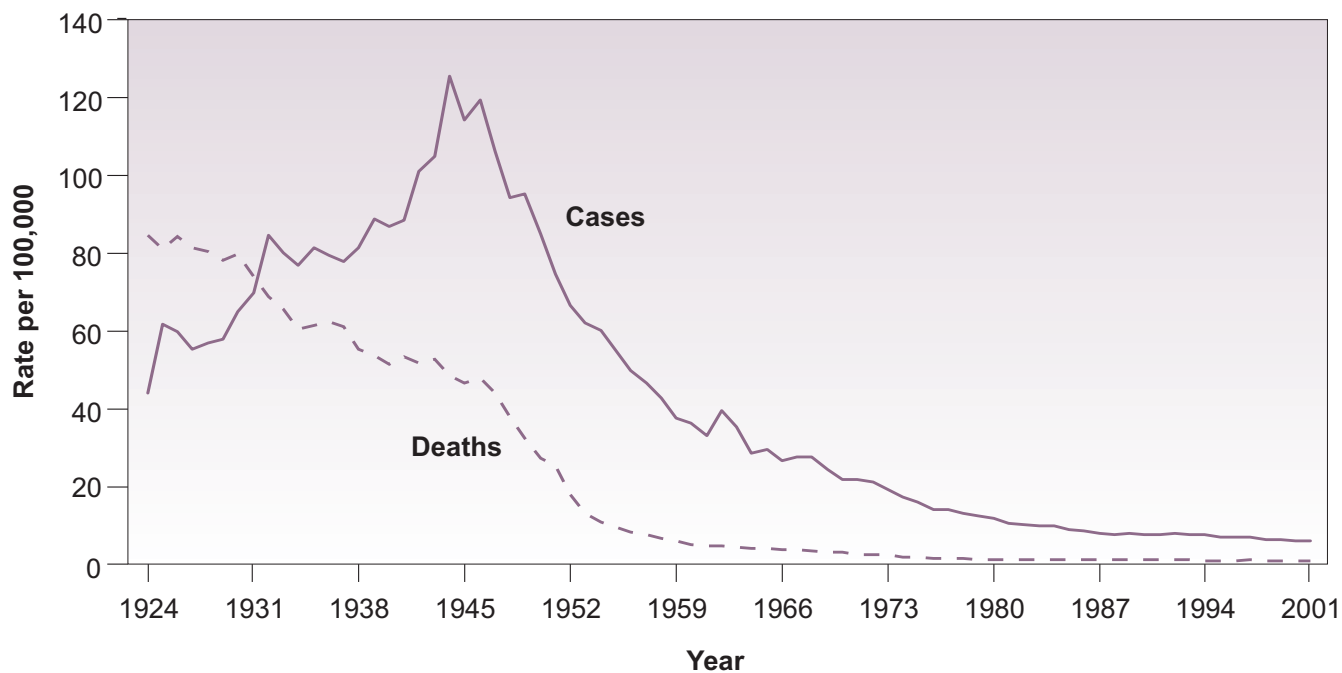


Figure 2

Tuberculosis cases and incidence – Canada: 1981-2001

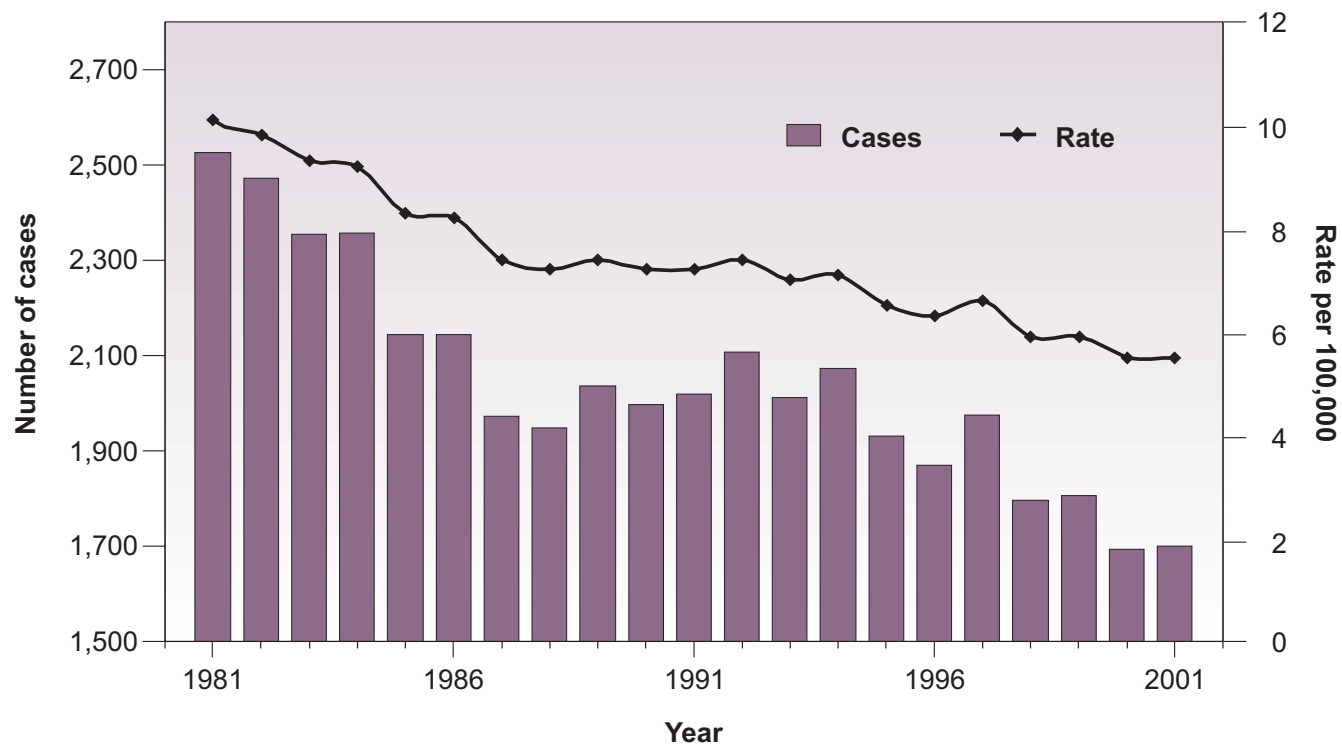


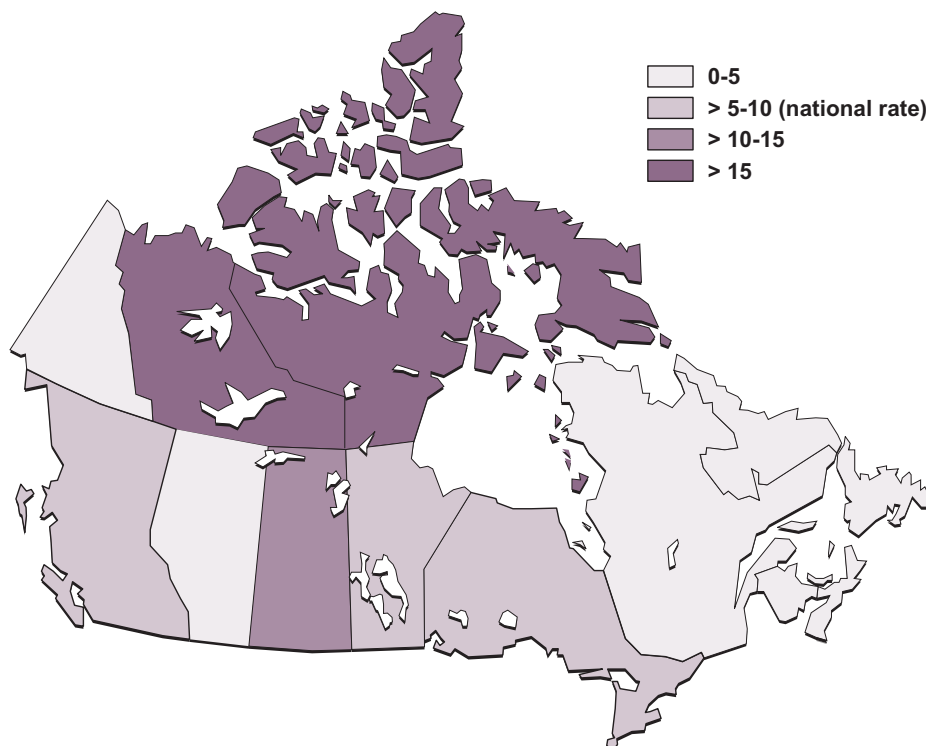
Table B

Ranked tuberculosis incidence in Canada – provinces/territories: 2001

Reporting province or territory	Rate per 100,000
Nunavut	138.4
Northwest Territories	19.6
Saskatchewan	11.2
Manitoba	10.0
British Columbia	9.3
Ontario	5.3
Alberta	3.8
Newfoundland and Labrador	3.6
Quebec	3.5
Prince Edward Island	2.2
New Brunswick	1.3
Nova Scotia	0.8
Yukon	0.0
CANADA	5.5

Figure 3

Tuberculosis incidence by province/territory as compared with national rate (5.5 per 100,000): 2001



SEX AND AGE GROUP DISTRIBUTION

Over the past two decades, incidence rates of TB in males and females have followed a similar pattern of decline. While case reporting and incidence have always been higher in males, there has been a noted decrease in the differential between males and females over the past several years (Figure 4; *Appendix II*, Tables 2B and 2C). In 2001, the presentation of tuberculosis by gender continued to reveal a larger number of reported cases among males (938 cases, 6.1 per 100,000) than among females (766 cases, 4.9 per 100,000) (*Appendix II*, Tables 5B and 5C).

In 2001, individuals aged 25 to 34 years made up the largest number of reported cases, accounting for 19% of the total. However, the corresponding case rate of 7.2 per 100,000 for this age group was surpassed by the age-specific rates of 9.9 and 14.1 per 100,000 for those in the older age groups of 65 to 74 and greater than 74 years respectively (Figure 5; *Appendix II*, Table 2A). Canadian-born non-Aboriginal cases were relatively older (median 56 years) than foreign-born (median 44 years) and Canadian-born Aboriginal TB cases (median 37 years).

By age group and sex, the incidence of TB was similar among males and females for all age groups with the exception of the oldest age group, in which the incidence among males was more than twice the incidence among females (Figure 6).

Figure 4

Tuberculosis incidence by sex – Canada: 1981–2001

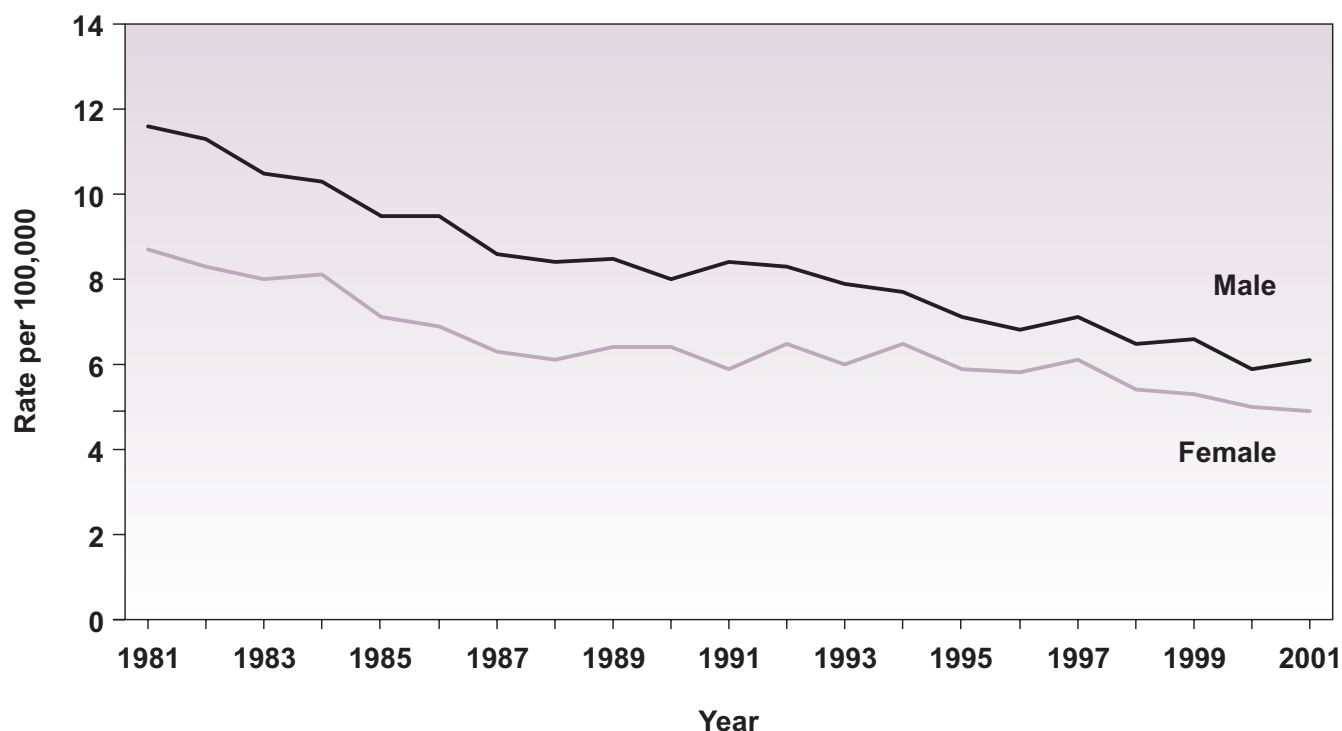


Figure 5

Tuberculosis incidence by age group – Canada: 2001

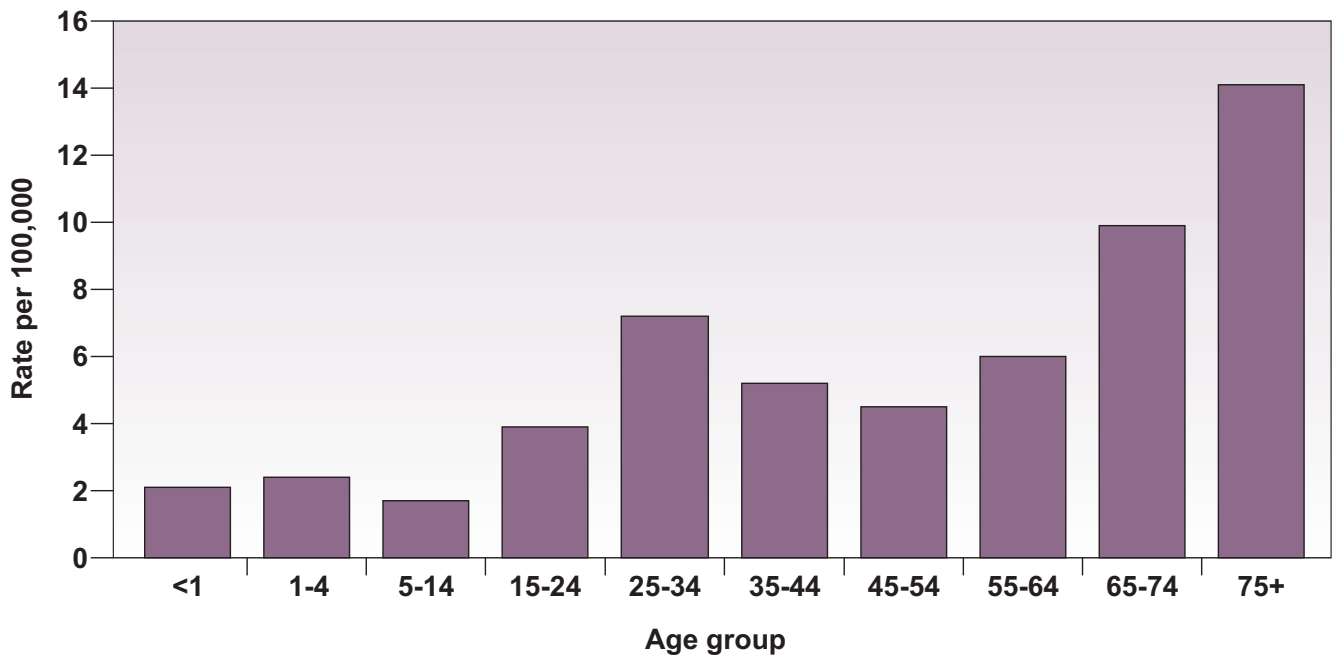
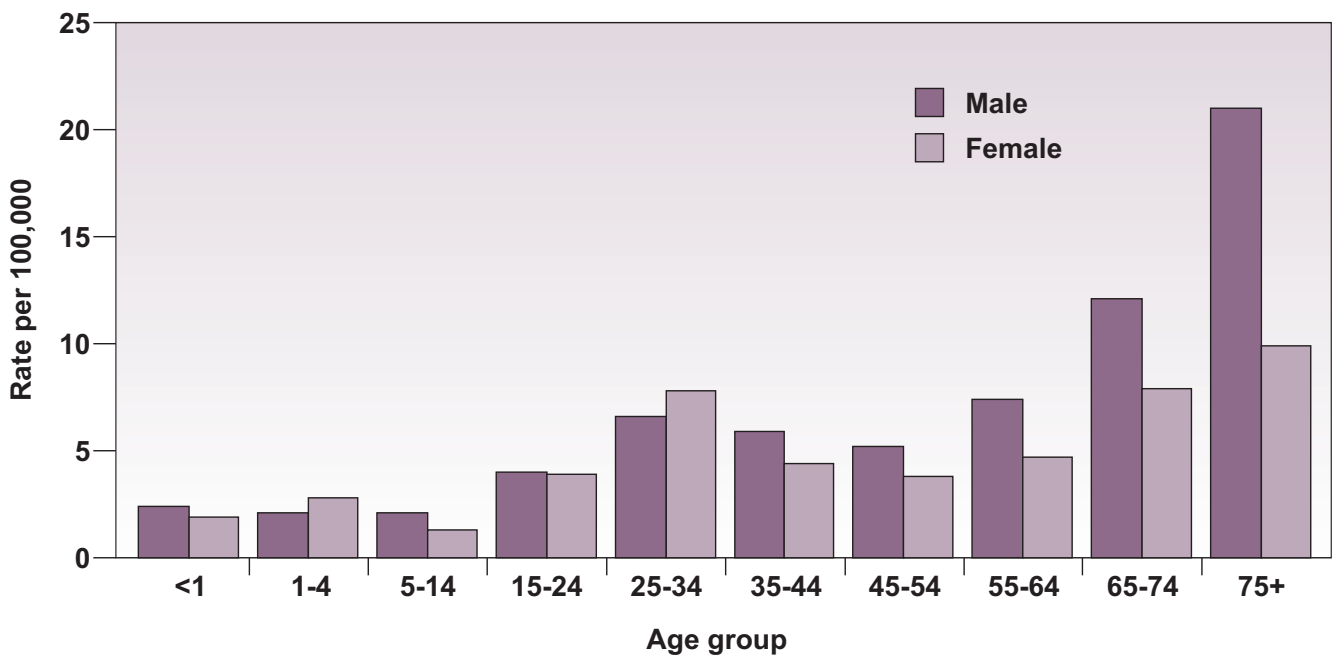


Figure 6

Tuberculosis incidence by age group and sex – Canada: 2001

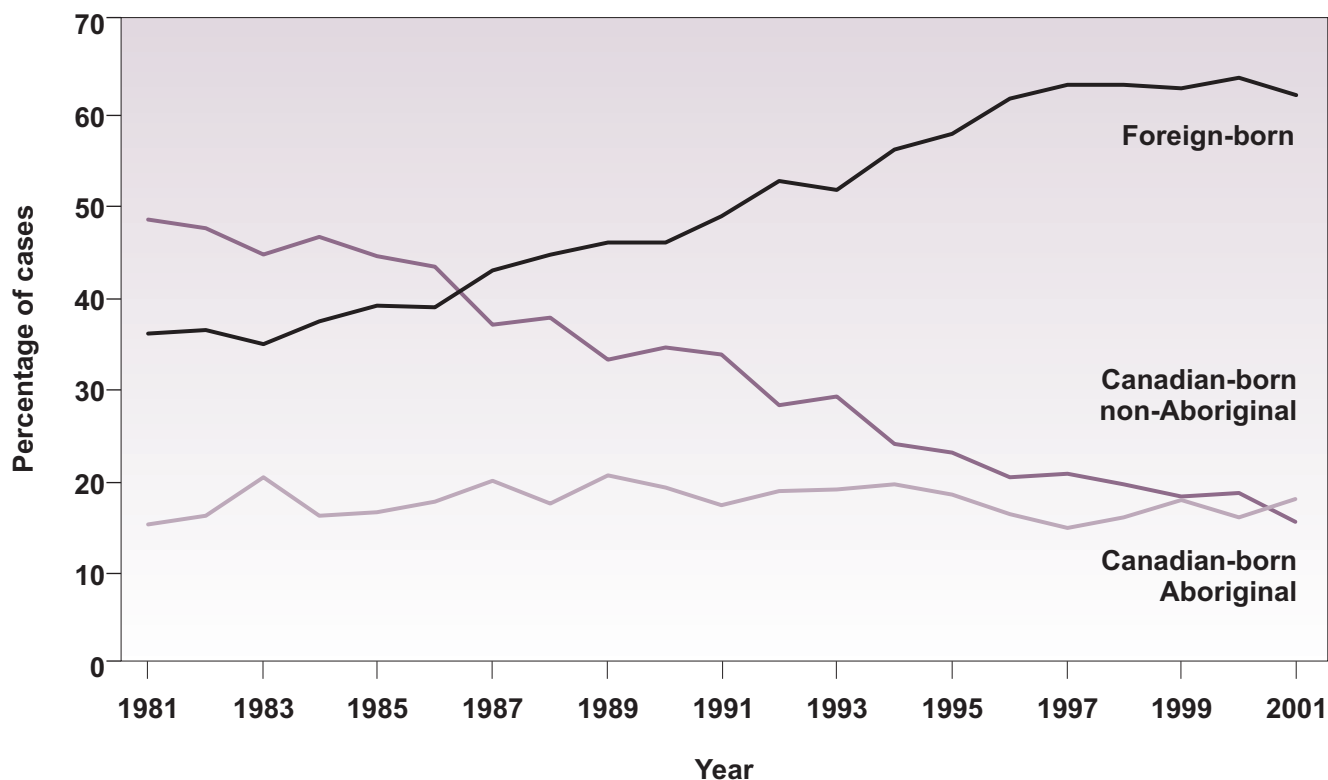


BIRTHPLACE DISTRIBUTION

Since the collection of the data variable origin (Canadian-born Aboriginal, Canadian-born non-Aboriginal and foreign-born), a steady increase in the proportion of reported TB cases in the foreign-born population has been noted. Conversely, a steady decline in the proportion of reported TB cases in Canadian-born non-Aboriginal cases is noted, whereas the proportion of reported TB cases in Canadian-born Aboriginals has remained relatively constant. The foreign-born population accounts for by far the largest proportion of individuals with TB disease. In 2001, the foreign-born represented 19% of the Canadian population but accounted for 62% of all reported TB cases in Canada. Canadian-born Aboriginal peoples represented 4% of the overall population whereas reported cases of TB in this group accounted for 18% of the disease burden. Canadian-born non-Aboriginal cases accounted for 16% of the reported cases. This reporting year marks the first time that the proportion of Canadian-born Aboriginal cases surpassed the proportion of cases reported among Canadian-born non-Aboriginal individuals. Birthplace was unknown for 3% of cases (Figure 7; Appendix II, Table 3).

Figure 7

Proportion of tuberculosis cases by origin – Canada: 1981-2001



TB incidence was highest in the Canadian-born Aboriginal population (24.3 per 100,000) followed by an incidence of 18.8 per 100,000 in the foreign-born population. In the Canadian-born non-Aboriginal population, TB incidence was 1.1 per 100,000 (Figure 8; Appendix II, Table 6).

In general, TB cases in the foreign-born most often occurred in the 25-34 age group, whereas Canadian-born non-Aboriginal cases were more often reported in the older demographic (75+). Canadian-born Aboriginal cases were found in the younger age groups (Figure 9; Appendix II, Table 8).

Figure 8

Tuberculosis incidence by origin – Canada: 1981-2001

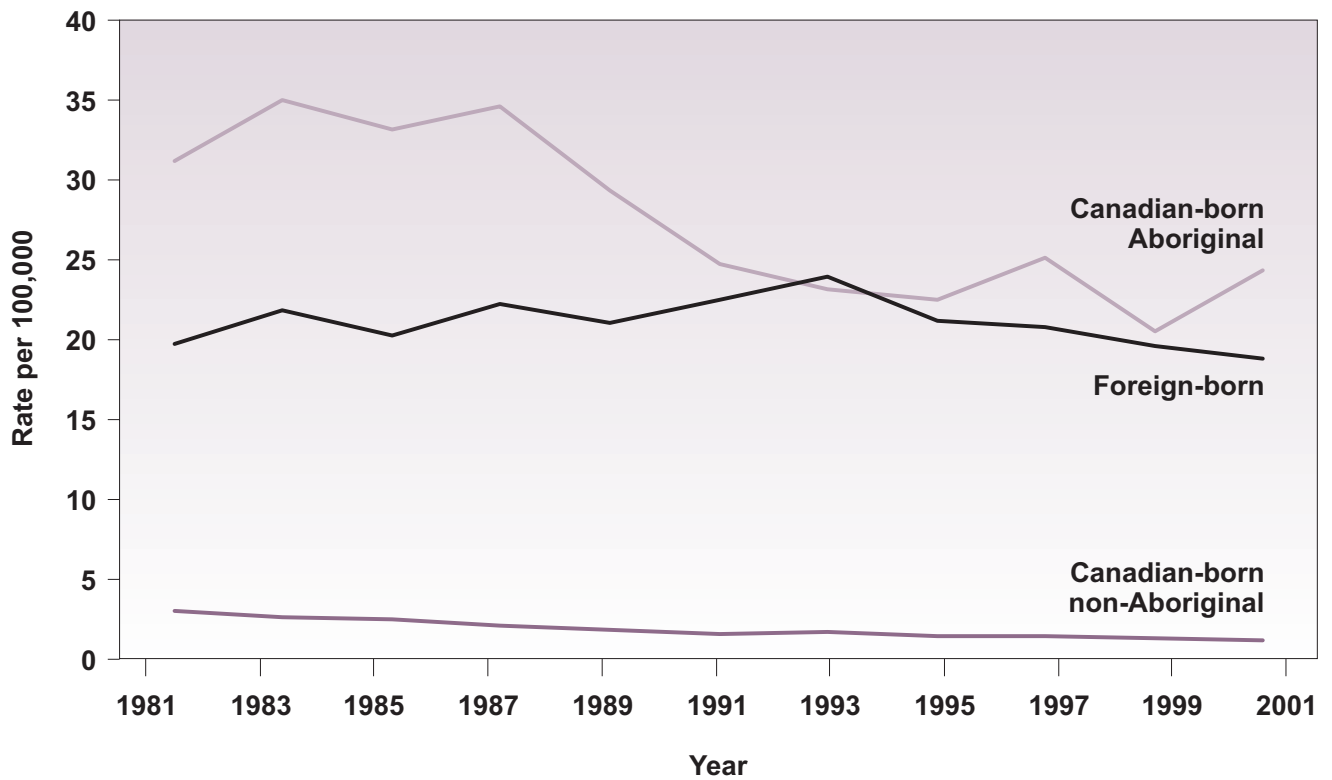
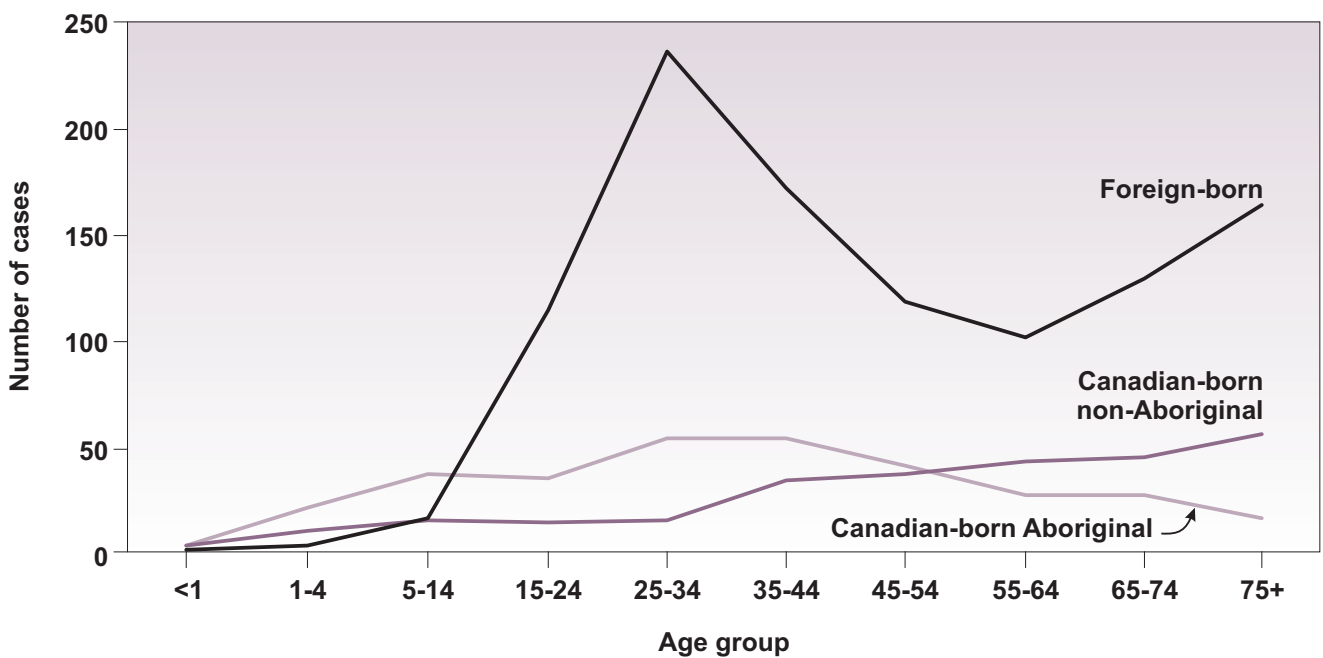


Figure 9

Tuberculosis cases by age group and origin – Canada: 2001



The distribution of TB cases by origin shows the provinces of Ontario and British Columbia reporting the highest proportions of foreign-born cases (81% and 75% respectively). In other jurisdictions foreign-born cases accounted for over half of all reported cases (Alberta 63%, Quebec 53%). In the Northwest Territories, Nunavut, Saskatchewan and Manitoba, cases in Canadian-born Aboriginal peoples contributed all or a large proportion of the reported cases (the Northwest Territories 100%, Nunavut 97%, Saskatchewan 84%, Manitoba 56%) (Figure 10; Table C; Appendix II, Table 6).

Figure 10

Distribution of tuberculosis cases by origin and incidence – provinces/territories: 2001

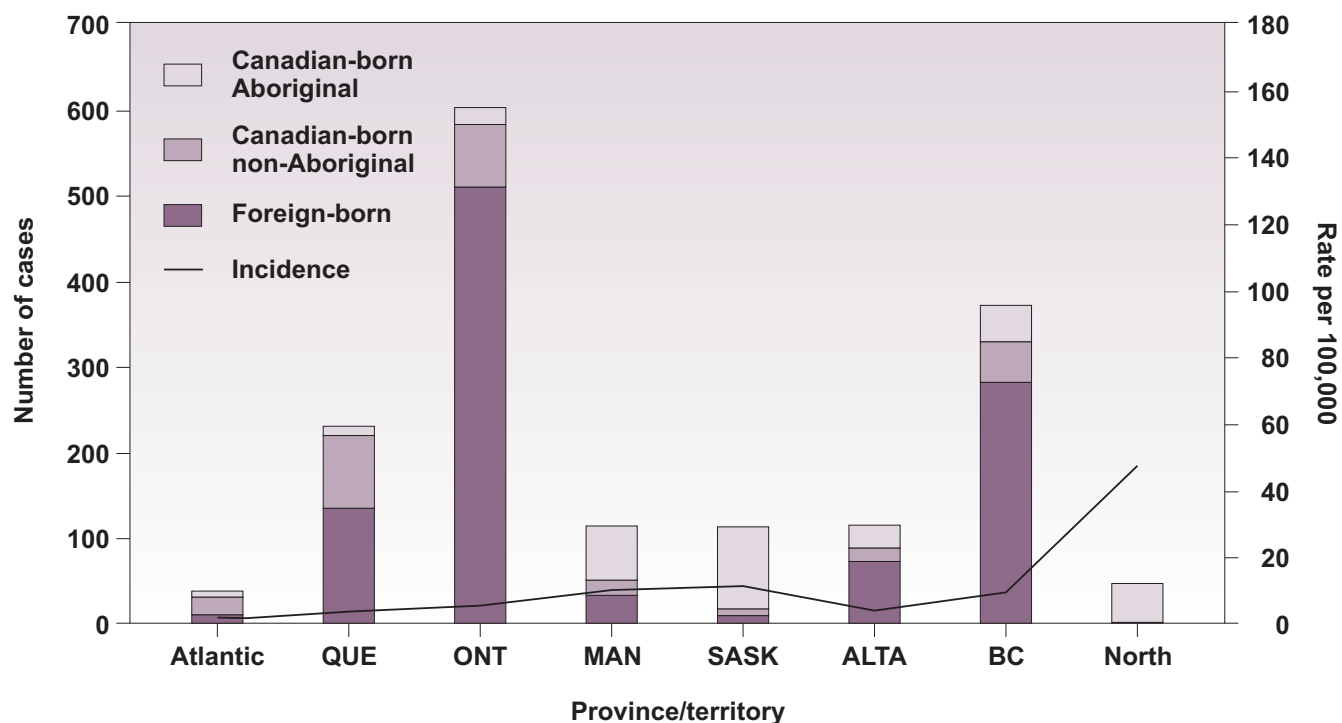


Table C**Proportion (%) of tuberculosis cases in Canada by origin – provinces/territories: 2001**

Reporting province or territory	Canadian-born Aboriginal	Canadian-born non-Aboriginal	Foreign-born	Unknown birthplace
Alberta	22.4	13.8	62.9	–
British Columbia	9.5	12.7	75.2	–
Manitoba	55.6	15.7	28.7	–
New Brunswick	–	40.0	40.0	20.0
Newfoundland	36.8	52.6	10.5	–
Northwest Territories	100.0	–	–	–
Nova Scotia	–	62.5	37.5	–
Nunavut	97.4	2.6	–	–
Ontario	3.2	11.7	81.4	3.9
Prince Edward Island	–	66.6	33.3	–
Quebec	4.2	33.2	52.5	10.0
Saskatchewan	84.2	7.0	7.8	–
Yukon	–	–	–	–
CANADA	16.4	65.4	15.1	1.1

Note: Totals may not always equal 100 due to rounding.

By World Health Organization (WHO) region, foreign-born case reporting was highest in individuals originating in the Western Pacific region (443 cases, 34.5 per 100,000). However, the highest incidence (46.9 per 100,000) was among individuals from the region of South East Asia. Cases of foreign-born TB reported in Canada from 1991 to 2001 are shown by WHO region in Figure 11. Reported rates of TB in Canada by WHO region are compared with reported TB incidence in the respective WHO region in Table D (Figure 12).

Table D**Comparison of reported WHO region rates (per 100,000) in Canada and notification rates in WHO region**

WHO region	Crude rate in Canada	Crude rate in region ^a
Africa	41.3	105
Americas	7.0	29
East Mediterranean	23.4	32
Europe	4.2	43
South East Asia	46.9	97
Western Pacific	34.5	49

^a *Global Tuberculosis Control: WHO Report 2003*. WHO/CDS/TB/2003.361 Geneva.

Figure 11

Number of foreign-born tuberculosis cases by WHO region – Canada: 1991-2001

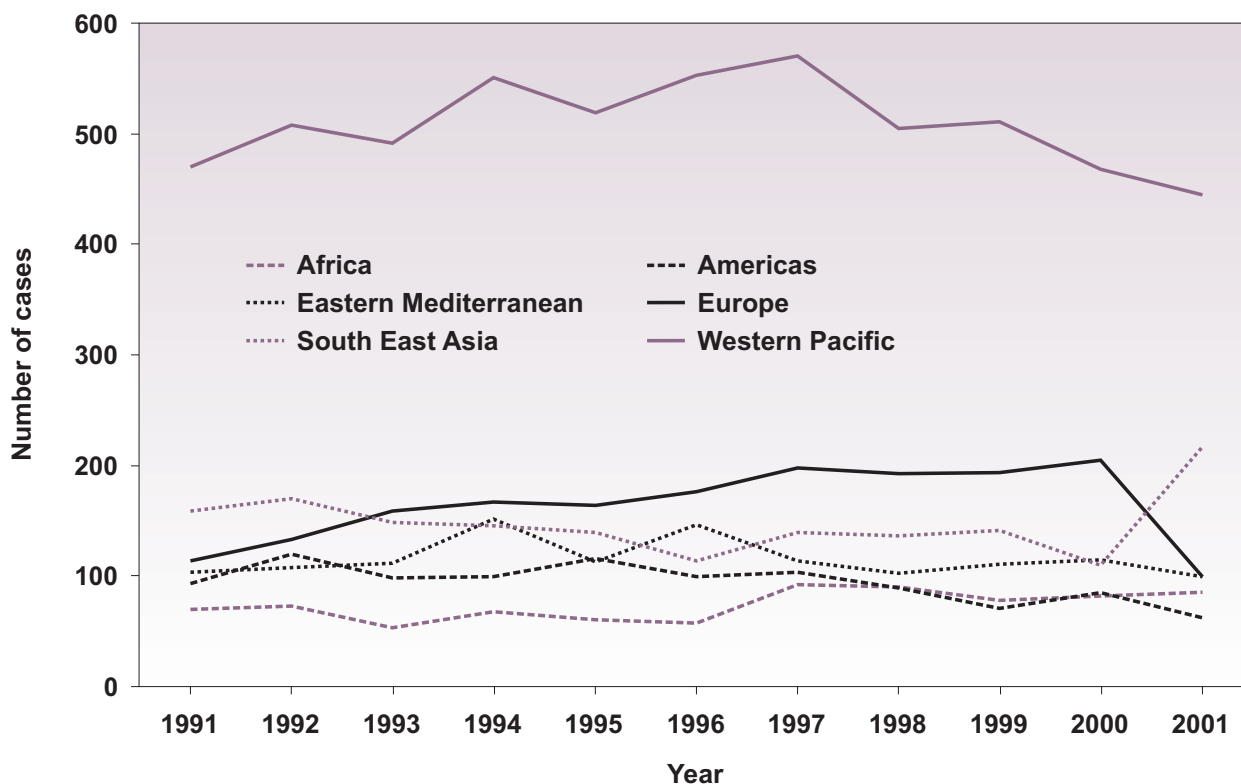
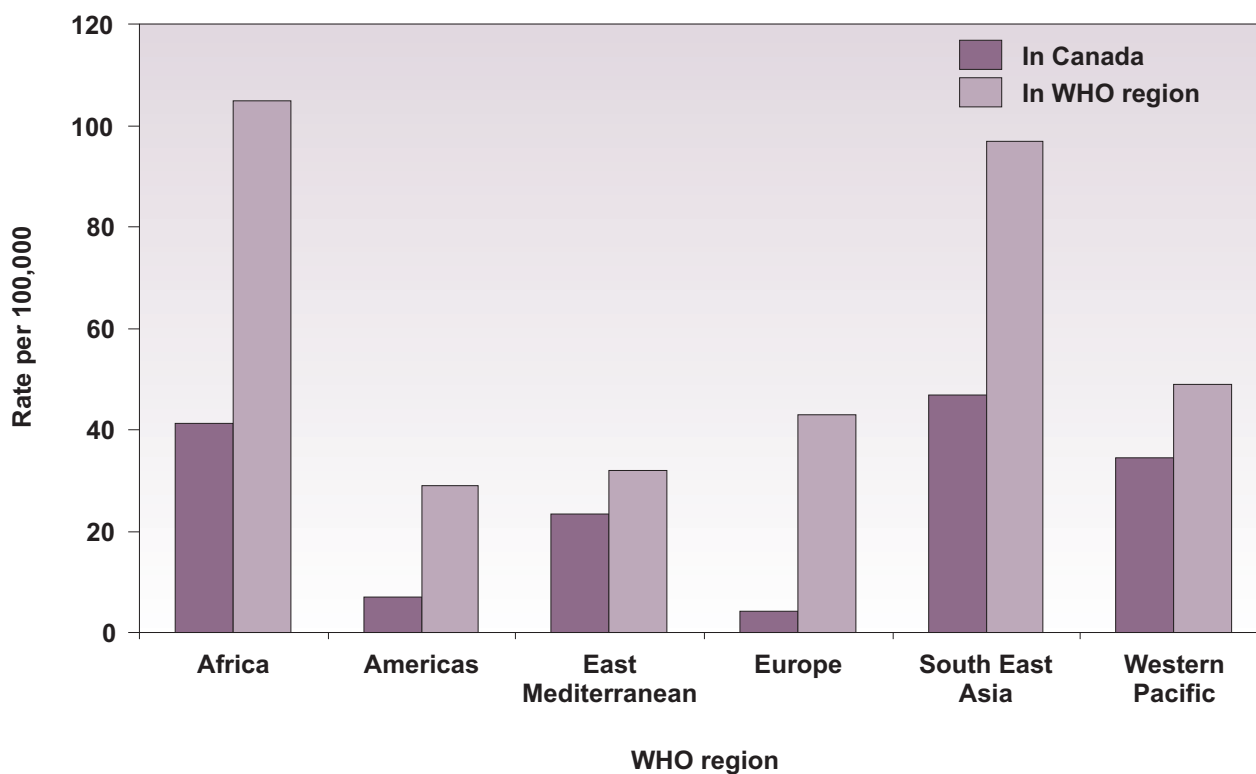


Figure 12

Comparison of tuberculosis incidence in WHO regions and among individuals from regions in Canada: 2001



DIAGNOSTIC DETAILS

Overall, respiratory TB (please see *Appendix I: Technical Notes* for definition) was the most frequently reported main diagnostic site, representing 66% of reported cases in 2001 (*Appendix II, Table 4*). The proportion of respiratory TB was similar in all categories of origin (70% of Canadian-born non-Aboriginal, 68% of Canadian-born Aboriginal cases and 66% of foreign-born cases), but differences were noted for other diagnostic sites. TB of the peripheral lymph nodes was the second most commonly reported diagnostic site (13%), and 35% of these cases occurred in foreign-born individuals who originated in the WHO Western Pacific Region. Primary TB accounted for 7% of the reported cases, 50% occurring in Canadian-born Aboriginal peoples (*Figure 13; Appendix II, Table 10*).

TB of the central nervous system (CNS) was rare, accounting for only 14 of the 1,704 reported cases, or less than 1%. Similarly, miliary/disseminated TB was infrequently diagnosed, representing 42 (2%) of the reported cases (*Table E; Appendix II, Table 4*).

Figure 13

Tuberculosis cases by main diagnostic site and origin – Canada: 2001

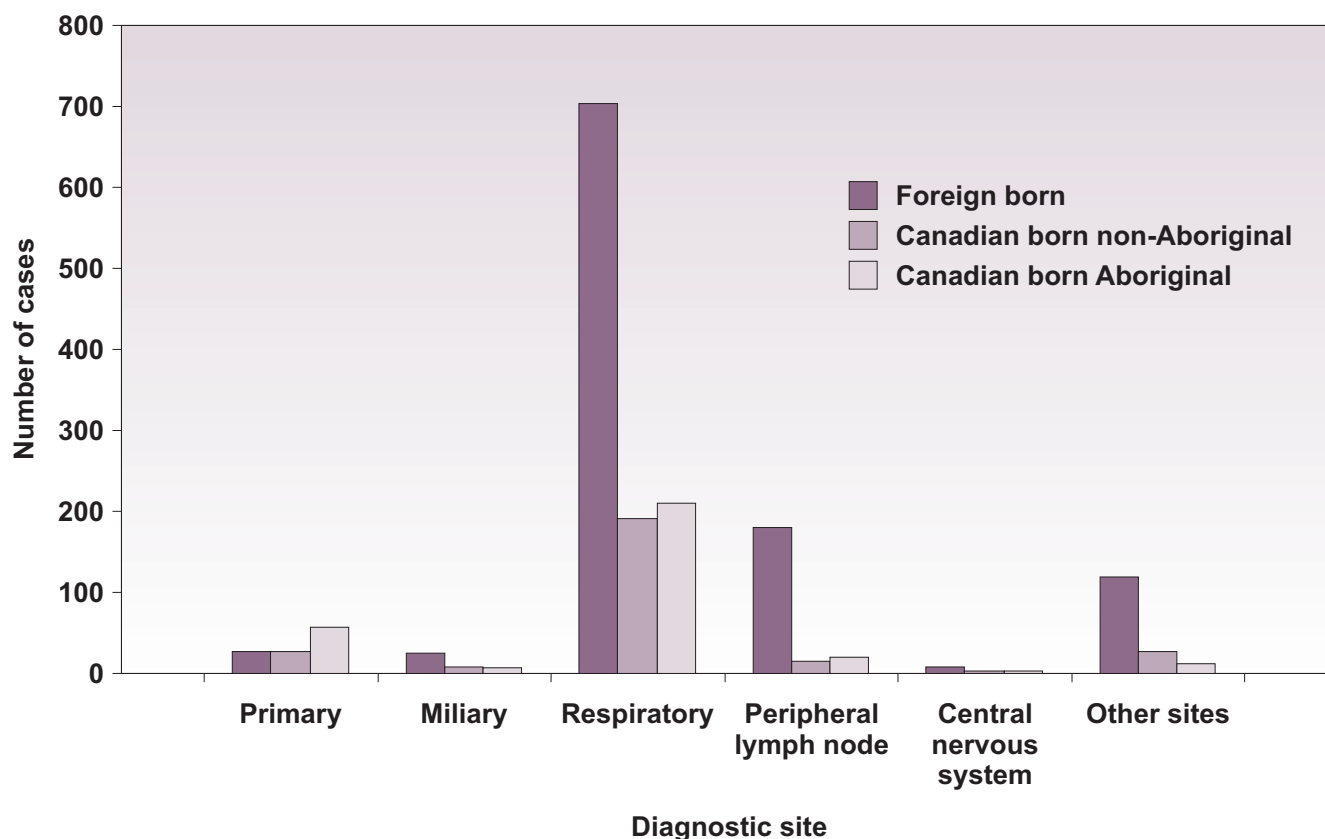


Table E**Tuberculosis cases by main diagnostic site in Canada: 2001**

Diagnostic site	Number of cases	Percent of total cases	Rate per 100,000
Primary	114	6.6	0.4
Miliary	42	2.4	0.1
Respiratory	1,125	66.1	3.6
Peripheral lymph node	222	13.0	0.7
Central nervous system	14	<1.0	–
Other/unknown	187	10.6	0.6
TOTAL	1,704	100.0	5.5

Of the 1,704 reported cases, 1,563 (92%) were laboratory confirmed. Of these 1,563 cases, 1,345 were culture positive and 756 were microscopy positive.

Of the 973 cases of pulmonary TB reported, 50% (485 cases) were smear positive, denoting probable infectious pulmonary TB. Over the past decade, the proportion of TB cases reported as pulmonary, smear positive has averaged approximately 30% of the total number of reported cases and 50% of the reported pulmonary cases (Figure 14).

Detection of the majority of reported cases is through presentation of symptoms to a medical professional (76%) (*Appendix II*, Table 17).

Of the 1,704 cases diagnosed in 2001, 126 were reported to have died in the same year. TB was the underlying cause of death in 28 cases (22%). TB contributed to death but was not the underlying cause in 56 cases (44%) (*Appendix II*, Table 23). The number of reported TB related deaths is an underestimate, however, as it includes only known deaths at the time of reporting in the same year of diagnosis.

HIV reporting continued to show improvements from previous reporting years. Since 1997, the number of TB cases for which HIV status was known increased from 5.7% to 17.3% in 2001 (Figure 15; *Appendix II*, Table 25).

Figure 14

Pulmonary sputum smear positive tuberculosis cases – Canada: 1991-2001

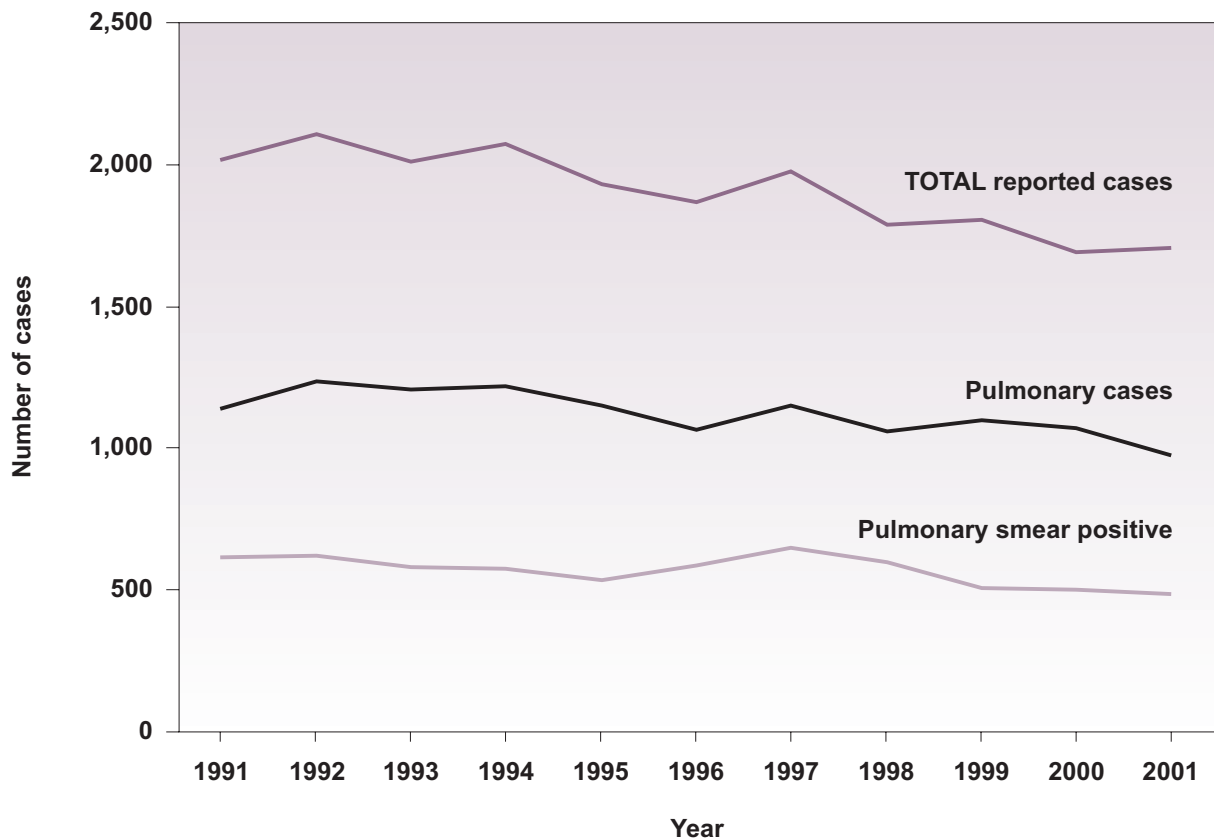
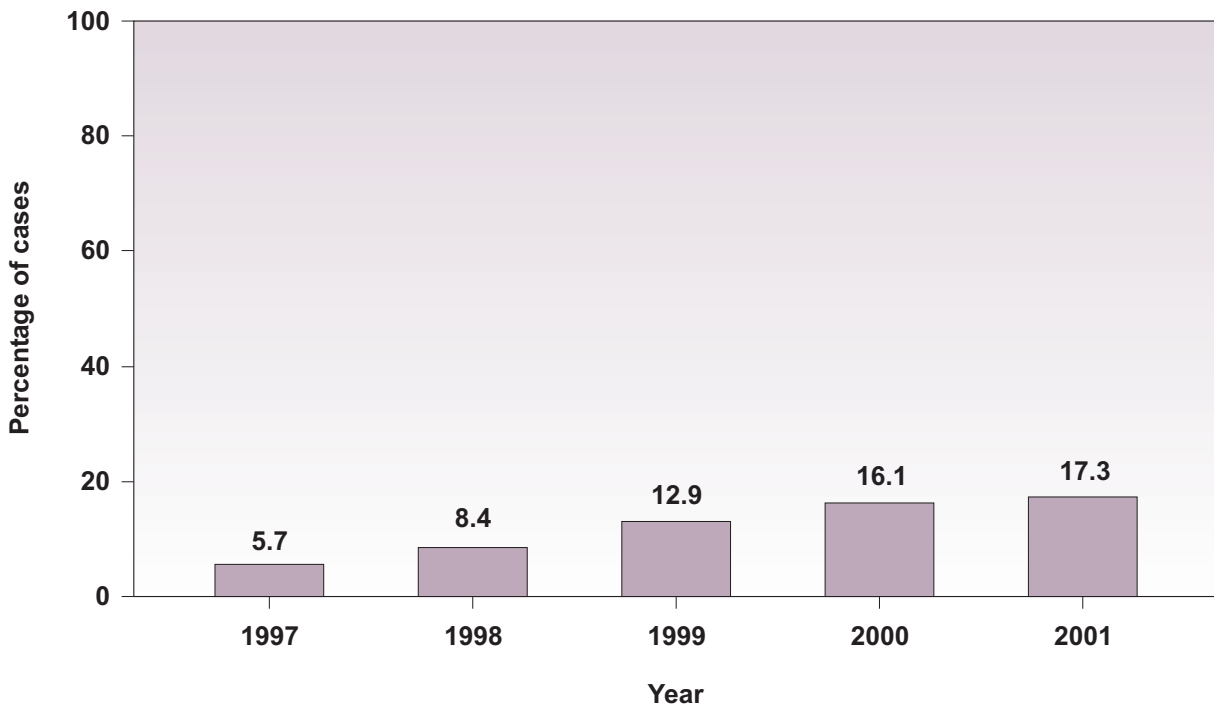


Figure 15

Proportion of tuberculosis cases for which HIV status is known – Canada: 1997-2001



RESISTANCE PATTERNS

Of the 1,704 cases reported in 2001, 1,345 cases were culture positive. Of these, 93% had no resistance to anti-tuberculosis drugs. Five percent were resistant to one drug, and the remaining 3% showed patterns of resistance to two or more drugs. The most common type of mono-resistance was resistance to isoniazid (INH), accounting for 36% of all reported drug resistance. Multi-drug resistant TB (resistance to INH and rifampin) accounted for less than 1% of all positive cultures (*Appendix II, Table 15*).

Foreign-born cases accounted for the majority of resistance to one or more drugs (86%); 10% of Canadian-born non-Aboriginal cases and 4% of Canadian-born Aboriginal cases were resistant to one or more first line anti-tuberculosis drugs (*Appendix II, Table 16*).

SECTION II – 2000 TREATMENT OUTCOMES

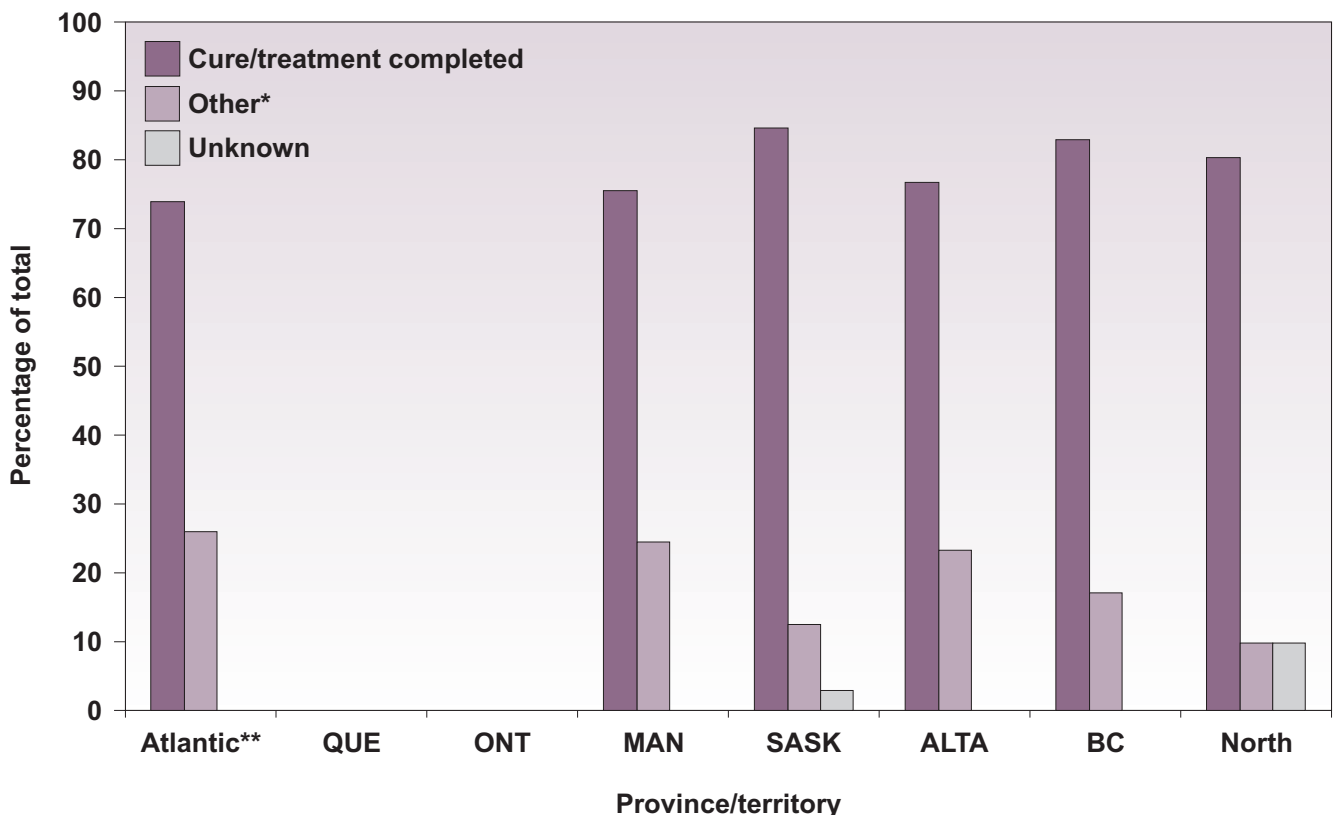
NATIONAL TRENDS

Treatment outcome data for new active and relapsed cases are reported to TBPC on a separate reporting form for the previous calendar year (*Appendix VI – Reporting forms*). Of the 1,695 cases diagnosed in 2000, 705 cases had a treatment outcome report. Where treatment outcome status was known, the majority of cases were reported as culture negative (cure) or treatment completed (567 cases, 80%). Of the remaining cases for which treatment outcome was known, 69 (10%) died before completing treatment (Figure 16; *Appendix II, Table 26*)

The majority of individuals were reported to have received treatment as per the *Canadian Tuberculosis Standards, 5th edition*¹. Drug regimen reporting was complete for 685 cases; 94% of these cases received three or more anti-tuberculosis drugs.

Figure 16

Treatment outcome status of tuberculosis cases by provinces/territories – Canada: 2000



* Other – died, absconded, transferred, treatment ongoing

** Atlantic – PEI excluded from analysis because of non-reporting

No data for ONT and QUE

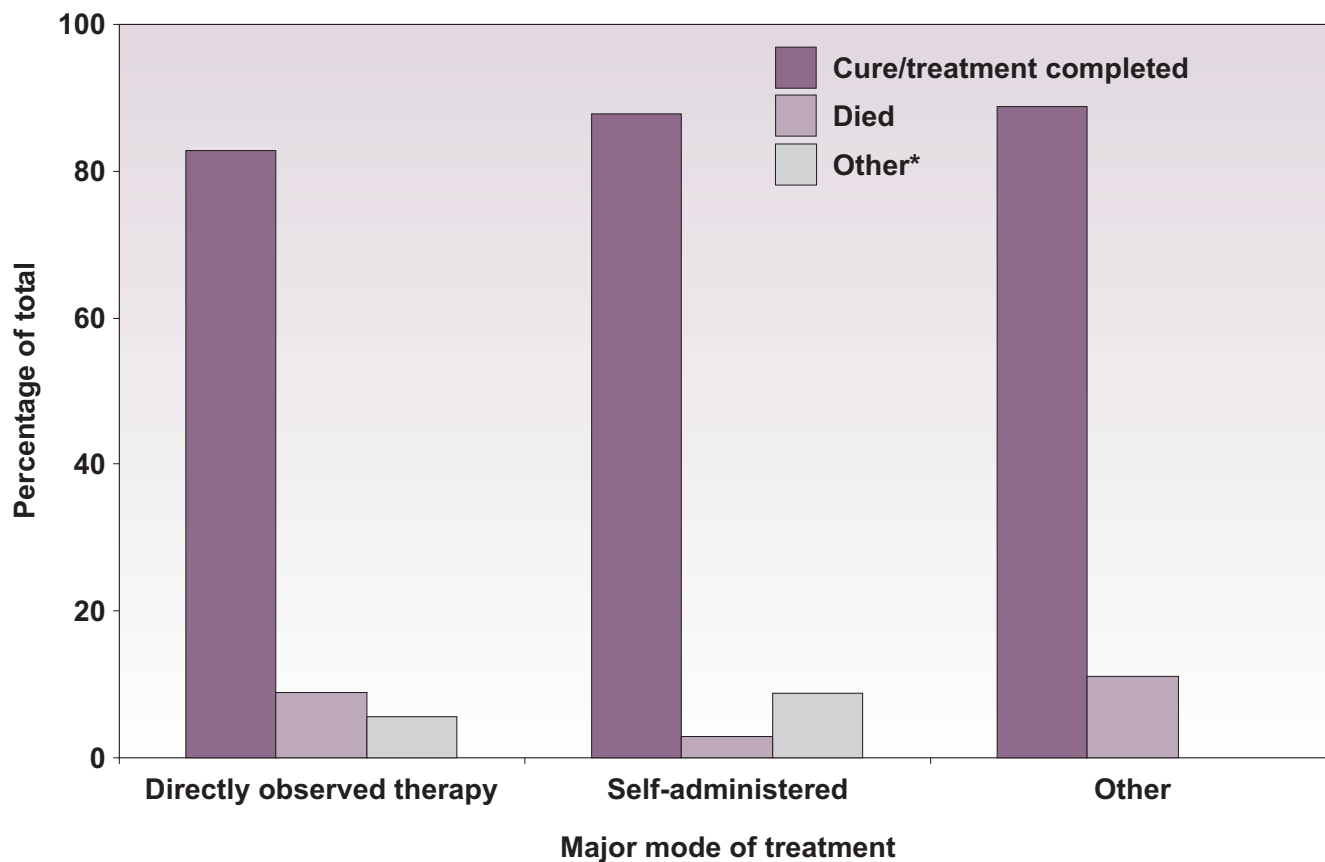
¹ Long, R. ed. *Canadian Tuberculosis Standards, 5th edition*. Canadian Lung Association, 2000.

Of those cases prescribed three or more anti-tuberculous drugs, 93% were reported as cure-culture negative or as having completed treatment (*Appendix II, Table 27*).

Fifty-eight percent of individuals in this cohort were undergoing Directly Observed Therapy (DOT). An additional 40% self-administered their medications (*Figure 17; Appendix II, Table 28*).

Figure 17

Treatment outcome status of tuberculosis cases by major mode of treatment – Canada: 2000



* Other – absconded, transferred, treatment ongoing

CONCLUSION

The total number of reported cases of TB in Canada has shown a continual decrease over the past decade. However, this decrease is mostly a reflection of a decreasing number of cases in the Canadian-born non-Aboriginal population. Cases in the Canadian-born Aboriginal population have shown a minimal decrease, whereas cases in the foreign-born population have remained relatively constant.

Respiratory TB continues to make up the majority of the cases reported by diagnostic site. Of these, 50% of the pulmonary cases were smear positive, denoting the most infectious form of TB.

Determining the incidence of TB-HIV co-infection from this surveillance system is not yet possible. Increasing trends in reporting are encouraging, and the continued practice of testing all TB infected individuals or TB disease cases for HIV status is recommended¹.

Drug resistance has not yet emerged as a significant problem. Cases of MDR-TB represent less than 1% of the culture-confirmed cases reported to this surveillance system. Treatment outcome data indicate that the majority of TB cases are cured or complete treatment.

As the epidemiology of TB in Canada evolves, the CTBRS and the annual report, *Tuberculosis in Canada*, will continue to undergo improvements in the quality and nature of the data reported.

¹ Canadian Tuberculosis Committee. *Recommendations for the screening and prevention of tuberculosis in patients with HIV and the screening for HIV in tuberculosis patients and their contacts*. *CCDR* 2002(ACS-7):1-6.

APPENDIX I

TECHNICAL NOTES

METHODOLOGY AND DATA QUALITY

Data collection

The Canadian Tuberculosis Reporting System (CTBRS) maintained by Tuberculosis Prevention and Control (TBPC), Centre for Infectious Disease Prevention and Control, Population and Public Health Branch, Health Canada, is derived from records of provincial/territorial tuberculosis registries. The reporting system captures information on every new active or relapsed case of tuberculosis (including treatment outcomes) diagnosed in Canada. All provinces and territories have legislation requiring physicians, laboratories and other health officials to report cases of tuberculosis to an office of tuberculosis control. Standard case notification and treatment outcome forms are used to collect information (please see *Appendix VI*) and report to TBPC in hard copy or electronic format. The Canadian Tuberculosis Committee (CTC) is responsible for determining the content of the database.

Data processing

Case notifications received at TBPC are checked for completeness and logged. Data are captured in a standard format, with validity and discrepancy follow-up being an integral part of the data entry process. Lists of cases together with any queries arising from edit failures are returned to provincial/territorial programs for review, correction of errors and to ascertain the completeness of case lists for the year. All provinces and territories have agreed to report their cases for the previous calendar year by June 1st of the current calendar year.

Calculation of rates

All rates expressed in this report are per 100,000 individuals. The rates used have been calculated using population figures provided by Statistics Canada and Indian and Northern Affairs Canada (see *Appendix III*). Population estimates are adjusted for net census under-coverage and to include non-permanent residents. For more information, see "Population Figures" in the *Definitions of Terms* section. Adjustments to the population estimates and updates to the reported number of cases in some provinces may result in case counts and rates in this report that differ slightly from those in previous reports emanating from TBPC.

Data quality

Several aspects of data quality affect the usefulness of the data: completeness of reporting (or coverage), completeness of item response, accuracy or validity of responses and timeliness.

An explicit review of this reporting system is forthcoming. Coverage can vary according to the vigilance of the provincial/territorial offices of tuberculosis control in their case-finding efforts. One form of coverage error may occur if cases that do not meet the criteria for inclusion (i.e. case definition) are included in the CTBRS. In addition, tabulations in annual

reports may be slightly incomplete because case notifications received after a cut-off date are not included.

Of the cases reported to TBPC, reporting of most core data items is virtually complete. Reporting is less complete for some of the data items introduced in 1997 (i.e. HIV status).

Users of this report should consider certain limitations. Definitions used for “origin”, specifically Status Indian, Non-status Indian or Metis, Inuit, and Other may not strictly correspond to the definitions used by Census Canada or by Indian and Northern Affairs Canada. The terms “new active” and “relapsed” may be interpreted differently in different provinces/territories; the definition of these terms were revised effective January 1, 1997 (see *Definitions of Terms*). Data in this report are tabulated according to year of diagnosis; however, since 1990, Ontario data have been tabulated according to episode date (which is the closest approximation of date of onset of illness). Since 1997, Quebec data have been tabulated according to report date. Finally, tables presenting drug resistance patterns are based on case reporting data, differing from the methodology used in the *TB Drug Resistance in Canada*¹ reports.

DEFINITION OF TERMS

Tuberculosis registry

The central organization within a province/territory that is in receipt of, records and accumulates information on TB cases, follows up all reported cases and maintains a register of persons with tuberculosis.

Notification

The receipt of a report concerning a new active or relapsed case of tuberculosis meeting the Canadian tuberculosis case definition.

Tuberculosis case definition

Effective January 1, 1997:

I TB case definition in the Canadian Tuberculosis Reporting System (CTBRS)

- a. Cases with *Mycobacterium tuberculosis* complex (i.e. *M. tuberculosis*, *M. bovis* [excluding BCG strain] or *M. africanum*) demonstrated on culture

OR

- b. In the absence of bacteriological proof, cases clinically compatible with active tuberculosis that have, for example:
- i chest x-ray changes compatible with active tuberculosis including idiopathic pleurisy with effusion
 - ii active extrapulmonary tuberculosis (meningeal, bone, kidney, peripheral lymph nodes etc.)
 - iii pathologic or post-mortem evidence of active tuberculosis

Note: Molecular biological techniques are research tools and are not included in the definition.

II Cases of tuberculosis diagnosed in Canada include all cases: Canadian born, immigrants, refugees, refugee claimants, students, visitors, migrant workers and illegal aliens.

Visitors = those non-Canadians travelling with or without a visa, stopping in Canada en route.

III New and relapsed (reactivated) cases of tuberculosis

New case: no documented evidence or history of previously active tuberculosis.

Relapsed (reactivated) case: documented evidence or history of previously active tuberculosis which became inactive.

Inactive tuberculosis:

- a. Cultures for *M. tuberculosis* negative for at least 6 months

OR

- b. In the absence of cultures, chest (or other) x-rays, stable for a minimum of 6 months.

Treatment outcomes

1. **Cure** – negative culture at completion of treatment
2. **Treatment completed** – patient who has completed treatment without culture at the end of treatment
3. **Died** – death during treatment and TB was the cause of death, TB contributed to death but was not the underlying cause or TB did not contribute to death
4. **Transfer** – patient transferred to new jurisdiction and the outcome of treatment is unknown
5. **Failure** – culture positive at 5 months or more
6. **Absconded** – patient was lost to follow-up before completion of 80% of doses, 8 months after treatment started
7. **Treatment ongoing**
8. **Other**
9. **Unknown**

Directly observed treatment (DOT)

A trained and supervised person observes the patient swallowing the medication.

Diagnostic classification

The classification used is from the *International Classification of Diseases, 9th Edition*. Up to five diagnoses per case are captured and used to determine the main diagnostic site using the following hierarchy: primary, miliary/disseminated, respiratory (includes pulmonary, pleurisy and other respiratory), meninges and central nervous system, peripheral lymph node and other sites.

ICD-9 CODES FOR TUBERCULOSIS

010 Primary Tuberculosis

- 010.0 Primary tuberculous complex
- 010.1 Tuberculous pleurisy in primary progressive tuberculosis
- 010.8 Other primary progressive tuberculosis (excl. tuberculous erythema nodosum {017.1})
- 010.9 Unspecified

011 Pulmonary Tuberculosis (with associated silicosis use code 502)

- 011.0 Tuberculosis of lung, infiltrative
- 011.1 Tuberculosis of lung, nodular
- 011.2 Tuberculosis of lung with cavitation
- 011.3 Tuberculosis of bronchus (excl. isolated bronchial TB {012.2})
- 011.4 Tuberculous fibrosis of lung
- 011.5 Tuberculous bronchiectasis
- 011.6 Tuberculous pneumonia (any form)
- 011.7 Tuberculous pneumothorax
- 011.8 Other pulmonary tuberculosis

- 011.9 Unspecified (respiratory tuberculosis not otherwise specified, tuberculosis of lung not otherwise specified)
- 012 Other Respiratory Tuberculosis** (excl. respiratory tuberculosis, unspecified {011.9})
- 012.0 Tuberculous pleurisy
- 012.1 Tuberculosis of intrathoracic lymph nodes
- 012.2 Isolated tracheal or bronchial tuberculosis
- 012.3 Tuberculous laryngitis
- 012.8 Other (incl. tuberculosis of: mediastinum, nasopharynx, nose (septum), sinus (any nasal))
- 013 Tuberculosis of Meninges and Central Nervous System**
- 013.0 Tuberculous meningitis (320.4) (excl. tuberculoma of meninges {013.1})
- 013.1 Tuberculoma of meninges (349.2)
- 013.8 Other (tuberculoma/tuberculosis of brain {348.8}, tuberculous abscess of brain {324.0}, tuberculous myelitis {323.4})
- 013.9 Unspecified (tuberculosis of central nervous system not otherwise specified)
- 014 Tuberculosis of Intestines, Peritoneum and Mesenteric Glands**
- Tuberculosis of: anus, intestine (large, small), rectum, retroperitoneal (lymph nodes)
- Tuberculous: ascites, enteritis, peritonitis (567.0)
- 015 Tuberculosis of Bones and Joints**
- Incl. tuberculous: arthritis (711.4), necrosis of bone (730.0), osteitis (730.0), osteomyelitis (730.0), synovitis (727.0), tenosynovitis (727.0).
- 015.0 Vertebral column
- Pott's: curvature (737.4), disease (730.4)
- Tuberculous: kyphosis (737.4), spondylitis (720.8)
- 015.1 Hip
- 015.2 Knee
- 015.7 Other bone (tuberculous dactylitis, mastoiditis {383.1})
- 015.8 Other joint
- 015.9 Unspecified
- 016 Tuberculosis of Genitourinary System**
- 016.0 Kidney (tuberculous pyelitis {590.8}, tuberculous pyelonephritis {590.8})
- 016.1 Other urinary organs (tuberculosis of bladder {595.4}, tuberculosis of ureter {593.8})
- 016.2 Epididymis (604.9)
- 016.3 Other male genital organs (tuberculosis of: prostate {601.4}, seminal vesicle {608.8}, testis {608.8})
- 016.4 Female genital organs (tuberculous: oophoritis {614.2}, salpingitis {614.2})
- 016.9 Unspecified
- 017 Tuberculosis of Other Organs**
- 017.0 Skin and subcutaneous cellular tissue
- Lupus: not otherwise specified, exedens, vulgaris, Scrofuloderma (excl. lupus erythematosus {695.4}, disseminated {710.0})
- Tuberculosis: colliquativa, cutis, lichenoides, papulonecrotica, verrucosa cutis
- 017.1 Erythema nodosum with hypersensitivity reaction in tuberculosis
- Bazin's disease, Tuberculosis indurativa

- Erythema: induratum, nodosum (tuberculous)
- Excl. erythema nodosum not otherwise specified (695.2)
- 017.2 Peripheral lymph nodes (scrofula, scrofulous abscess, tuberculous adenitis)
- 017.3 Eye
 - Tuberculous: chorioretinitis, disseminated (363.1), episcleritis (379.0), interstitial
 - keratitis (370.5), iridocyclitis (chronic) (364.1), keratoconjunctivitis (phlyctenular) (370.3)
- 017.4 Ear
 - Tuberculosis of ear (382.3), otitis media (382.3) (excl. Tuberculous mastoiditis {015.7})
- 017.5 Thyroid gland
- 017.6 Adrenal glands (255.4), Addison's disease (tuberculous)
- 017.7 Spleen
- 017.8 Other
 - Tuberculosis of: endocardium [any valve] (424.-), oesophagus (530.1), myocardium (422.0), pericardium (420.0)

018 Miliary Tuberculosis

Incl.: tuberculosis: disseminated, generalized, miliary (whether of a single specified site, multiple sites or unspecified site), polyserositis

- 018.0 Acute
- 018.8 Other
- 018.9 Unspecified

137 Late Effects of Tuberculosis

- 137.0 Late effects of respiratory or unspecified tuberculosis
- 137.1 Late effects of central nervous system tuberculosis
- 137.2 Late effects of genitourinary tuberculosis
- 137.3 Late effects of tuberculosis of bones and joints
- 137.4 Late effects of tuberculosis of other specified organs

502 Pneumoconiosis due to other silica or silicates (see Pulmonary Tuberculosis {011})

- Pneumoconiosis due to talc
- Silicotic fibrosis (massive) of lung
- Silicosis (simple) (complicated)

Deaths

This report contains statistics on deaths from the Canadian Tuberculosis Reporting System, which introduced new questions in 1990 concerning deaths of persons registered as cases of active tuberculosis. These statistics are shown in *Appendix II*, Tables 23 and 24 and are based on the patient's status at time of reporting.

Population figures

In 1993, Statistics Canada introduced a new series of population estimates that include non-permanent residents and adjustments for net census under-coverage. The series for provinces and territories comprises annual population estimates beginning with 1971.

In this report, the 2000 overall population estimates for Canada and provinces/territories by sex and age group are based on adjusted 1996 census data. Population estimates of Canadian-born Aboriginal people are based on Projections of Population with Aboriginal Ancestry, Canada, Provinces/Regions and Territories, 1991-2016 (Statistics Canada), and Population Projections of Registered Indians, 1991-2015 (Indian and Northern Affairs Canada).

Population estimates of foreign-born people by birthplace are based on intercensal population projections (Statistics Canada).

The 2000 population estimates of total Canadian-born people are calculated by subtracting the foreign-born figures from the total 2000 population estimates (Statistic Canada). The 2000 population estimates of Canadian-born non-Aboriginal people are calculated by subtracting the total Aboriginal estimates from total Canadian-born estimates.

Population

The population consists of people whose usual place of residence is somewhere in Canada or who are non-permanent residents. In census years this is the enumerated population adjusted for net census under-coverage, while population estimates are used for inter-census years.

Non-permanent residents

The following five groups of persons residing in Canada, referred to globally as “non-permanent residents”, were added to the census population universe in 1991: persons claiming refugee status, persons holding a student authorization, persons holding an employment authorization, persons holding a minister’s permit and all non-Canadian-born dependants of the aforementioned individuals.

Net census under-coverage

This is the difference between census under-coverage and census over-coverage. The former refers to persons not enumerated in the census who were part of the census universe, while the latter refers to persons either enumerated more than once or enumerated but not part of the census universe. Under-coverage exceeds over-coverage with few exceptions at all levels of demographic and geographic disaggregation.

More information

More information on the definitions and coding instructions used is available upon request from Tuberculosis Prevention and Control, Population and Public Health Branch, at Health Canada. Medical terminology regarding bacteriological aspects, diagnosis, dissemination, treatment, prevention, screening and control of tuberculosis is well documented in the *Canadian Tuberculosis Standards, Fifth Edition, 2000*, available from the Canadian Lung Association².

References

1. *Tuberculosis drug resistance in Canada, 2001*. Ottawa: Minister of Public Works and Government Services Canada, 2002.
2. Long R. ed. *Canadian tuberculosis standards*, 5th edition. Ottawa: Canadian Lung Association, 2000.

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Table 1A

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 – Canada and provinces/territories: 1991-2001

Year of diagnosis		CANADA	Province/territory							
			Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
1991	Cases	2,018	81	400	769	101	184	173	280	30
	Rate	7.2	3.4	5.6	7.3	9.1	18.3	6.7	8.3	33.2
1992	Cases	2,109	69	424	822	86	133	222	323	30
	Rate	7.4	2.9	5.9	7.7	7.7	13.2	8.4	9.3	32.3
1993	Cases	2,013	100	352	769	108	153	156	337	38
	Rate	7.0	4.2	4.9	7.1	9.6	15.1	5.8	9.4	40.4
1994	Cases	2,074	42	361	831	116	147	178	324	75
	Rate	7.1	1.7	5.0	7.6	10.3	14.5	6.6	8.8	79.4
1995	Cases	1,931	34	380	766	108	155	126	308	54
	Rate	6.5	1.4	5.2	6.9	9.5	15.3	4.6	8.2	56.2
1996	Cases	1,868	57	332	771	97	113	140	316	42
	Rate	6.3	2.4	4.6	6.9	8.6	11.1	5.0	8.1	42.2
1997	Cases	1,976	34	360	761	96	121	166	405	33
	Rate	6.6	1.4	4.9	6.8	8.4	11.8	5.8	10.2	33.0
1998	Cases	1,791	37	289	724	116	98	158	329	40
	Rate	5.9	1.6	3.9	6.3	10.1	9.5	5.4	8.2	39.9
1999	Cases	1,806	44	314	684	132	116	149	328	39
	Rate	5.9	1.9	4.3	5.9	11.5	11.3	5.0	8.1	39.2
2000	Cases	1,695	25	318	670	98	104	133	286	61
	Rate	5.5	1.0	4.3	5.7	8.5	10.1	4.4	7.0	61.1
2001	Cases	1,704	40	259	634	115	114	116	379	47
	Rate	5.5	1.7	3.5	5.3	10.0	11.2	3.8	9.3	47.5

Table 1B**Reported new active tuberculosis cases and incidence rate per 100,000 – Canada and provinces/territories: 1991–2001**

Year of diagnosis		CANADA	Province/territory							
			Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
1991	Cases	1,806	69	382	661	89	170	152	253	30
	Rate	6.4	2.9	5.4	6.3	8.0	16.9	5.8	7.5	33.2
1992	Cases	1,866	59	399	692	81	121	201	291	22
	Rate	6.5	2.5	5.6	6.5	7.2	12.0	7.6	8.4	23.7
1993	Cases	1,773	91	311	653	95	145	143	304	31
	Rate	6.1	3.8	4.3	6.0	8.5	14.3	5.3	8.5	32.9
1994	Cases	1,838	39	306	723	107	141	160	294	68
	Rate	6.3	1.6	4.2	6.6	9.5	13.9	5.9	8.0	72.0
1995	Cases	1,726	28	348	657	96	143	116	290	48
	Rate	5.8	1.2	4.7	5.9	8.4	14.1	4.2	7.7	49.9
1996	Cases	1,671	44	294	689	84	109	129	287	35
	Rate	5.6	1.8	4.0	6.2	7.4	10.7	4.6	7.4	35.2
1997	Cases	1,770	28	323	687	86	110	150	360	26
	Rate	5.9	1.2	4.4	6.1	7.6	10.8	5.3	9.1	26.0
1998	Cases	1,617	32	262	642	104	91	146	306	34
	Rate	5.3	1.3	3.6	5.6	9.1	8.8	5.0	7.6	33.9
1999	Cases	1,631	38	278	604	123	110	141	304	33
	Rate	5.3	1.6	3.8	5.2	10.8	10.7	4.7	7.5	33.2
2000	Cases	1,523	23	297	582	88	100	120	263	50
	Rate	4.9	1.0	4.0	5.0	7.6	9.7	4.0	6.4	50.1
2001	Cases	1,517	34	233	556	108	104	105	335	42
	Rate	4.9	1.4	3.1	4.7	9.4	10.2	3.4	8.2	42.5

NB: Cases for which activity status is unknown are included in the total (Table 1A).

Table 1C**Reported relapsed tuberculosis cases and incidence rate per 100,000 – Canada and provinces/territories: 1991-2001**

Year of diagnosis		CANADA	Province/territory							
			Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
1991	Cases	206	12	18	102	12	14	21	27	-
	Rate	0.7	0.5	0.3	1.0	1.1	1.4	0.8	0.8	-
1992	Cases	241	10	25	128	5	12	21	32	8
	Rate	0.8	0.4	0.3	1.2	0.4	1.2	0.8	0.9	8.6
1993	Cases	238	9	41	114	13	8	13	33	7
	Rate	0.8	0.4	0.6	1.1	1.2	0.8	0.5	0.9	7.4
1994	Cases	228	3	55	100	9	6	18	30	7
	Rate	0.8	0.1	0.8	0.9	0.8	0.6	0.7	0.8	7.4
1995	Cases	195	6	28	103	12	12	10	18	6
	Rate	0.7	0.2	0.4	0.9	1.1	1.2	0.4	0.5	6.2
1996	Cases	178	11	36	72	9	4	11	29	6
	Rate	0.6	0.5	0.5	0.6	0.8	0.4	0.4	0.7	6.0
1997	Cases	197	6	34	70	10	11	16	43	7
	Rate	0.7	0.3	0.5	0.6	0.9	1.1	0.6	1.1	7.0
1998	Cases	156	5	22	69	12	7	12	23	6
	Rate	0.5	0.2	0.3	0.6	1.0	0.7	0.4	0.6	6.0
1999	Cases	158	4	33	69	9	6	8	23	6
	Rate	0.5	0.2	0.4	0.6	0.8	0.6	0.3	0.6	6.0
2000	Cases	145	1	18	67	10	4	13	22	10
	Rate	0.5	0.0	0.2	0.6	0.9	0.4	0.4	0.5	10.0
2001	Cases	139	6	16	46	5	10	11	40	5
	Rate	0.5	0.3	0.2	0.4	0.4	1.0	0.4	1.0	5.1

NB: Cases for which activity status is unknown are included in the total (Table 1A).

Table 2A**Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – Canada: 1991-2001**

Year of diagnosis		TOTAL	Age group										
			< 1	1 – 4	5 – 14	15 – 24	25 – 34	35 – 44	45 – 54	55 – 64	65 – 74	75 +	Age unk.
1991	Cases	2,018	48	71	60	227	399	282	188	223	279	240	1
	Rate	7.2	11.9	4.6	1.6	5.6	7.8	6.3	6.2	9.2	14.5	18.6	-
1992	Cases	2,109	25	83	85	242	405	286	192	224	276	290	1
	Rate	7.4	6.2	5.3	2.2	6.0	7.9	6.2	6.0	9.2	14.0	21.8	-
1993	Cases	2,013	26	69	108	234	386	270	210	215	257	237	1
	Rate	7.0	6.6	4.3	2.7	5.8	7.6	5.7	6.2	8.7	12.7	17.3	-
1994	Cases	2,074	20	72	98	274	411	261	224	212	271	231	-
	Rate	7.1	5.2	4.5	2.5	6.8	8.2	5.4	6.4	8.5	13.2	16.4	-
1995	Cases	1,931	27	64	85	229	325	314	201	209	251	225	1
	Rate	6.5	7.1	4.0	2.1	5.7	6.6	6.4	5.5	8.3	12.0	15.3	-
1996	Cases	1,868	11	68	63	214	356	304	191	193	250	218	-
	Rate	6.3	2.9	4.3	1.6	5.3	7.5	6.1	5.0	7.6	12.0	14.6	-
1997	Cases	1,976	9	50	58	214	385	292	216	227	246	279	-
	Rate	6.6	2.5	3.2	1.4	5.3	8.2	5.7	5.5	8.8	11.7	18.0	-
1998	Cases	1,791	19	61	71	186	307	302	180	171	235	259	-
	Rate	5.9	3.6	4.0	1.7	4.5	6.7	5.8	4.4	6.4	11.0	16.1	-
1999	Cases	1,806	27	59	63	200	329	260	187	181	236	264	-
	Rate	5.9	7.9	4.0	1.5	4.8	7.4	4.9	4.4	6.6	11.1	15.9	-
2000	Cases	1,695	10	56	42	206	308	277	204	150	199	243	-
	Rate	5.5	3.0	3.5	1.0	5.0	7.0	5.2	4.7	5.3	9.3	14.2	-
2001	Cases	1,704	7	34	70	164	316	274	202	175	213	249	-
	Rate	5.5	2.1	2.4	1.7	3.9	7.2	5.2	4.5	6.0	9.9	14.1	-

Table 2B

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – males – Canada: 1991-2001

Year of diagnosis		TOTAL	Age group										
			< 1	1 – 4	5 – 14	15 – 24	25 – 34	35 – 44	45 – 54	55 – 64	65 – 74	75 +	Age unk.
1991	Cases	1,174	30	38	31	135	235	162	107	119	179	137	1
	Rate	8.4	14.5	4.8	1.6	6.6	9.1	7.2	7.1	9.9	20.8	28.2	-
1992	Cases	1,179	16	39	35	129	222	178	117	133	157	153	-
	Rate	8.3	7.7	4.8	1.8	6.3	8.6	7.7	7.3	11.0	17.7	30.6	-
1993	Cases	1,135	13	35	62	124	207	154	130	132	144	133	1
	Rate	7.9	6.5	4.2	3.1	6.0	8.1	6.5	7.7	10.9	15.8	25.9	-
1994	Cases	1,121	9	36	52	140	203	151	133	117	150	130	-
	Rate	7.7	4.6	4.3	2.6	6.8	8.0	6.3	7.5	9.5	16.0	24.6	-
1995	Cases	1,044	9	30	40	112	166	191	118	122	145	111	-
	Rate	7.1	4.6	3.7	2.0	5.5	6.7	7.7	6.4	9.8	15.2	20.2	-
1996	Cases	1,005	7	32	35	106	180	158	106	104	144	133	-
	Rate	6.8	3.6	3.9	1.7	5.1	7.5	6.3	5.6	8.3	15.0	23.9	-
1997	Cases	1,051	6	27	25	93	193	158	118	129	139	163	-
	Rate	7.1	3.3	3.4	1.2	4.5	8.2	6.2	6.0	10.1	14.3	28.2	-
1998	Cases	963	14	32	37	78	162	161	99	104	128	148	-
	Rate	6.3	3.8	4.1	1.8	3.7	7.0	6.2	4.9	8.0	13.0	24.7	-
1999	Cases	992	17	30	26	95	173	143	114	102	140	152	-
	Rate	6.6	9.8	3.9	1.2	4.5	7.7	5.4	5.4	7.6	14.1	24.4	-
2000	Cases	915	8	29	22	99	164	152	112	86	99	144	-
	Rate	5.9	4.7	3.2	1.0	4.6	7.4	5.7	5.2	6.2	9.9	22.3	-
2001	Cases	938	4	15	44	85	147	157	117	106	123	140	-
	Rate	6.1	2.4	2.1	2.1	4.0	6.6	5.9	5.2	7.4	12.1	21.0	-

Table 2C

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – females – Canada: 1991-2001

Year of diagnosis		TOTAL	Age group										
			< 1	1 – 4	5 – 14	15 – 24	25 – 34	35 – 44	45 – 54	55 – 64	65 – 74	75 +	Age unk.
1991	Cases	844	18	33	29	92	164	120	81	104	100	103	-
	Rate	6.0	9.2	4.4	1.5	4.6	6.5	5.4	5.4	8.4	9.5	12.8	-
1992	Cases	930	9	44	50	113	183	108	75	91	119	137	1
	Rate	6.5	4.6	5.7	2.6	5.7	7.3	4.7	4.7	7.4	11.0	16.4	-
1993	Cases	878	13	34	46	110	179	116	80	83	113	104	-
	Rate	6.0	6.8	4.3	2.4	5.6	7.2	5.0	4.8	6.7	10.2	12.1	-
1994	Cases	953	11	36	46	134	208	110	91	95	121	101	-
	Rate	6.5	5.9	4.6	2.4	6.8	8.5	4.6	5.2	7.6	10.8	11.4	-
1995	Cases	887	18	34	45	117	159	123	83	87	106	114	1
	Rate	5.9	9.7	4.4	2.3	5.9	6.5	5.0	4.5	6.9	9.3	12.4	-
1996	Cases	863	4	36	28	108	176	146	85	89	106	85	-
	Rate	5.8	2.1	4.7	1.4	5.5	7.5	5.8	4.5	6.9	9.4	9.1	-
1997	Cases	925	3	23	33	121	192	134	98	98	107	116	-
	Rate	6.1	1.7	3.0	1.7	6.1	8.3	5.2	5.0	7.5	9.4	11.9	-
1998	Cases	828	5	29	34	108	145	141	81	67	107	111	-
	Rate	5.4	3.0	3.9	1.7	5.4	6.4	5.4	4.0	5.0	9.4	11.0	-
1999	Cases	814	10	29	37	105	156	117	73	79	96	112	-
	Rate	5.3	6.0	4.0	1.9	5.2	7.1	4.4	3.4	5.7	8.4	10.8	-
2000	Cases	780	2	27	20	107	144	125	92	64	100	99	-
	Rate	5.0	1.2	3.8	1.0	5.3	6.6	4.7	4.2	4.5	8.8	9.2	-
2001	Cases	766	3	19	26	79	169	117	85	69	90	109	-
	Rate	4.9	1.9	2.8	1.3	3.9	7.8	4.4	3.8	4.7	7.9	9.9	-

Table 3**Reported new active and relapsed tuberculosis cases by birthplace – Canada: 1991-2001**

Birthplace			Year of diagnosis										
			1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Canadian-born	Aboriginal												
	Status Indian	Cases	259	322	260	268	265	219	212	190	248	168	200
		Rate	60.1	72.2	56.3	56.2	53.9	43.2	40.6	35.4	45.0	29.7	34.5
	Non-Status Indian/Métis	Cases	58	39	55	95	56	51	52	53	39	36	63
		Rate	9.6	6.4	9.0	15.3	9.0	8.1	8.2	8.3	6.1	5.6	9.6
	Inuit	Cases	22	26	58	35	24	26	18	35	28	57	52
		Rate	44.0	50.6	109.6	64.5	43.1	45.5	30.9	58.7	45.9	91.5	82.1
	Total	Cases	339	387	373	398	345	296	282	278	315	261	315
		Rate	31.2	35.0	33.1	34.6	29.4	24.8	23.2	22.5	25.1	20.5	24.3
	Non-Aboriginal	Cases	670	588	577	490	435	371	400	348	324	307	272
Rate		3.1	2.6	2.6	2.2	1.9	1.6	1.7	1.5	1.4	1.3	1.1	
Total	Cases	1,009	975	950	888	780	667	682	626	639	568	587	
	Rate	4.4	4.2	4.0	3.7	3.2	2.7	2.8	2.5	2.6	2.2	2.3	
Foreign-born (WHO region)	Africa	Cases	70	73	53	68	60	57	92	90	78	82	85
		Rate	-	-	-	-	-	34.8	55.1	53.0	45.0	46.4	41.3
	Americas	Cases	93	120	98	99	116	99	103	89	71	85	62
		Rate	-	-	-	-	-	11.5	11.8	10.0	7.8	9.2	7.0
	East Mediterranean	Cases	103	108	112	152	113	146	114	102	111	115	101
		Rate	-	-	-	-	-	44.5	34.1	30.0	32.0	32.5	23.4
	Europe	Cases	159	170	148	145	139	114	139	136	141	110	99
		Rate	-	-	-	-	-	4.7	38.5	5.4	5.5	4.2	4.2
	South East Asia	Cases	114	133	159	167	164	176	198	193	193	205	216
		Rate	-	-	-	-	-	49.7	8.0	52.5	51.4	53.5	46.9
	Western Pacific	Cases	470	508	491	551	519	553	570	505	511	469	443
		Rate	-	-	-	-	-	50.7	51.2	44.6	44.2	39.8	34.5

...cont'd

Table 3 *Cont'd***Reported new active and relapsed tuberculosis cases by birthplace – Canada: 1991–2001**

Birthplace			Year of diagnosis										
			1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Foreign-born (WHO region) (<i>cont'd</i>)	Unknown region	Cases	-	22	2	4	29	25	57	35	46	37	56
		Rate	-	-	-	-	-	-	-	-	-	-	-
	Total	Cases	1,009	1,134	1,063	1,186	1,140	1,170	1,273	1,150	1,151	1,103	1,062
		Rate	19.8	21.9	20.3	22.2	21.0	22.5	23.9	21.2	20.8	19.6	18.8
Unknown birthplace		Cases	-	-	-	-	11	31	21	15	16	24	55
		Rate	-	-	-	-	-	-	-	-	-	-	-
TOTAL		Cases	2,018	2,109	2,013	2,074	1,931	1,868	1,976	1,791	1,806	1,695	1,704
		Rate	7.2	7.4	7.0	7.1	6.5	6.3	6.6	5.9	5.9	5.5	5.5

Table 4

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by main diagnostic site – Canada: 1991-2001

Main diagnostic site		Year of diagnosis										
		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Primary	Cases	206	193	189	152	163	120	131	130	155	101	114
	Rate	0.7	0.7	0.7	0.5	0.6	0.4	0.4	0.4	0.5	0.3	0.4
Miliary/disseminated	Cases	43	60	58	65	48	57	73	41	38	40	42
	Rate	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Respiratory (pulm/other resp)*	Cases	1,217	1,352	1,260	1,325	1,244	1,155	1,230	1,150	1,171	1,139	1,125
	Rate	4.3	4.7	4.4	4.5	4.2	3.9	4.1	3.8	3.8	3.7	3.6
Meninges and CNS	Cases	15	17	19	18	22	19	25	24	15	15	14
	Rate	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Peripheral lymph node	Cases	223	259	281	301	249	242	266	271	239	254	222
	Rate	0.8	0.9	1.0	1.0	0.8	0.8	0.9	0.9	0.8	0.8	0.7
Other sites*	Cases	242	220	203	206	199	263	248	165	180	144	186
	Rate	0.9	0.8	0.7	0.7	0.7	0.9	0.8	0.5	0.6	0.5	0.6
Unknown	Cases	72	8	3	7	6	12	3	10	8	2	1
	Rate	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	Cases	2,018	2,109	2,013	2,074	1,931	1,868	1,976	1,791	1,806	1,695	1,704
	Rate	7.2	7.4	7.0	7.1	6.5	6.3	6.6	5.9	5.9	5.5	5.5

* Please refer to Technical Notes for definition.

Table 5A

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – Canada and provinces/territories: 2001

Age group		CANADA	Province/territory							
			Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
< 1	Cases	7	-	1	3	1	2	-	-	-
	Rate	2.1	0.0	1.4	2.3	7.1	16.0	0.0	0.0	0.0
1 – 4	Cases	34	-	7	4	2	14	3	3	1
	Rate	2.4	0.0	2.3	0.7	3.5	27.4	1.9	1.7	15.5
5 – 14	Cases	70	1	4	22	11	17	1	10	4
	Rate	1.7	0.3	0.4	1.4	6.6	11.2	0.2	2.0	20.8
15 – 24	Cases	164	7	20	65	11	11	9	35	6
	Rate	3.9	2.1	2.0	4.2	6.9	7.3	2.0	6.4	38.3
25 – 34	Cases	316	2	47	133	21	19	20	56	18
	Rate	7.2	0.6	4.7	7.7	13.4	14.8	4.3	9.7	112.0
35 – 44	Cases	274	3	45	96	21	20	20	64	5
	Rate	5.2	0.8	3.5	4.7	11.6	13.0	3.8	9.1	29.6
45 – 54	Cases	202	1	26	63	14	13	17	62	6
	Rate	4.5	0.3	2.3	3.8	8.9	9.8	4.0	10.0	48.0
55 – 64	Cases	175	5	27	63	18	6	15	38	3
	Rate	6.0	2.1	3.5	5.8	17.7	7.0	6.1	9.8	47.9
65 – 74	Cases	213	9	45	75	8	5	19	49	3
	Rate	9.9	5.5	8.3	9.1	10.3	6.9	10.9	17.1	109.4
75 +	Cases	249	12	37	110	8	7	12	62	1
	Rate	14.1	8.4	8.9	16.5	10.3	9.3	8.8	24.4	69.2
TOTAL	Cases	1,704	40	259	634	115	114	116	379	47
	Rate	5.5	1.7	3.5	5.3	10.0	11.2	3.8	9.3	47.5

Table 5B

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – males – Canada and provinces/territories: 2001

Age group		CANADA	Province/territory							
			Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
< 1	Cases	4	-	1	2	-	1	-	-	-
	Rate	2.4	0.0	2.8	3.0	0.0	16.0	0.0	0.0	0.0
1 – 4	Cases	15	-	4	1	-	8	1	1	-
	Rate	2.1	0.0	2.5	0.4	0.0	31.1	1.2	1.1	0.0
5 – 14	Cases	44	1	2	13	9	11	-	7	1
	Rate	2.1	0.7	0.4	1.6	10.5	14.2	0.0	2.7	10.3
15 – 24	Cases	85	6	11	30	5	11	4	14	4
	Rate	4.0	3.6	2.2	3.8	6.1	14.1	1.7	5.0	49.4
25 – 34	Cases	147	1	18	64	7	11	7	25	14
	Rate	6.6	0.6	3.5	7.4	8.7	17.1	2.9	8.7	174.6
35 – 44	Cases	157	2	26	52	11	11	14	39	2
	Rate	5.9	1.0	4.0	5.1	12.0	14.2	5.2	11.1	23.0
45 – 54	Cases	117	1	12	37	10	7	11	36	3
	Rate	5.2	0.6	2.1	4.5	12.8	10.4	5.0	11.6	44.9
55 – 64	Cases	106	3	15	39	10	4	12	20	3
	Rate	7.4	2.6	4.0	7.3	19.9	9.5	9.8	10.4	86.8
65 – 74	Cases	123	4	29	47	6	4	7	23	3
	Rate	12.1	5.2	11.3	12.1	16.4	11.5	8.2	16.5	210.2
75 +	Cases	140	8	24	57	6	4	8	33	-
	Rate	21.0	15.0	16.2	22.5	20.7	13.5	15.1	32.8	0.0
TOTAL	Cases	938	26	142	342	64	72	64	198	30
	Rate	6.1	2.2	3.9	5.8	11.2	14.3	4.1	9.7	58.8

Table 5C

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – females – Canada and provinces/territories: 2001

Age group		CANADA	Province/territory							
			Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
< 1	Cases	3	-	-	1	1	1	-	-	-
	Rate	1.9	0.0	0.0	1.6	14.6	16.1	0.0	0.0	0.0
1 – 4	Cases	19	-	3	3	2	6	2	2	1
	Rate	2.8	0.0	2.0	1.1	7.1	23.6	2.6	2.4	32.1
5 – 14	Cases	26	-	2	9	2	6	1	3	3
	Rate	1.3	0.0	0.4	1.2	2.5	8.1	0.5	1.2	31.6
15 – 24	Cases	79	1	9	35	6	-	5	21	2
	Rate	3.9	0.6	1.9	4.6	7.7	0.0	2.2	7.8	26.4
25 – 34	Cases	169	1	29	69	14	8	13	31	4
	Rate	7.8	0.6	6.0	8.0	18.3	12.5	5.8	10.8	49.7
35 – 44	Cases	117	1	19	44	10	9	6	25	3
	Rate	4.4	0.5	3.0	4.3	11.2	11.8	2.3	7.2	36.7
45 – 54	Cases	85	-	14	26	4	6	6	26	3
	Rate	3.8	0.0	2.5	3.1	5.1	9.2	2.9	8.4	51.7
55 – 64	Cases	69	2	12	24	8	2	3	18	-
	Rate	4.7	1.7	3.1	4.3	15.6	4.6	2.5	9.2	0.0
65 – 74	Cases	90	5	16	28	2	1	12	26	-
	Rate	7.9	5.8	5.4	6.4	4.9	2.6	13.4	17.7	0.0
75 +	Cases	109	4	13	53	2	3	4	29	1
	Rate	9.9	4.5	4.8	12.8	4.1	6.6	4.8	19.0	136.4
TOTAL	Cases	766	14	117	292	51	42	52	181	17
	Rate	4.9	1.2	3.1	4.9	8.8	8.2	3.4	8.8	35.5

Table 6

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by birthplace – Canada and provinces/territories: 2001

Birthplace			CANADA	Province/territory								
				Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North	
Canadian-born	Aboriginal											
	Status Indian	Cases	200	-	2	19	61	53	22	35	8	
		Rate	34.5	0.0	3.3	16.1	69.2	64.8	26.5	33.2	39.8	
	Non-Status Indian/Métis	Cases	63	-	3	1	3	44	4	8	-	
		Rate	9.6	0.0	2.8	0.5	5.1	98.9	3.7	8.0	0.0	
	Inuit	Cases	52	7	6	-	-	-	1	-	38	
		Rate	82.1	74.5	55.0	0.0	0.0	0.0	27.8	0.0	131.9	
	Total	Cases	315	7	11	20	64	97	27	43	46	
		Rate	24.3	10.9	6.1	6.3	43.2	76.4	13.8	20.7	83.6	
	Non-Aboriginal	Cases	272	21	86	74	18	8	16	48	1	
		Rate	1.1	0.9	1.3	0.9	2.1	1.0	0.7	1.7	2.6	
	Total	Cases	587	28	97	94	82	105	43	91	47	
Rate		2.3	1.2	1.5	1.1	8.1	10.9	1.6	3.0	50.6		
Foreign-born (WHO region)	Africa	Cases	85	4	21	40	6	2	3	9	-	
		Rate	41.3	178.6	43.8	40.0	141.8	84.4	14.6	32.0	0.0	
	Americas	Cases	62	-	29	29	-	-	2	2	-	
		Rate	7.0	0.0	18.4	5.7	0.0	0.0	3.2	2.1	0.0	
	East Mediterranean	Cases	101	1	19	64	1	1	10	5	-	
		Rate	23.4	16.9	17.8	25.6	31.3	47.2	39.8	13.4	0.0	
	Europe	Cases	99	4	17	59	4	-	5	10	-	
		Rate	4.2	10.2	5.5	4.3	6.2	0.0	2.6	2.8	0.0	
	South East Asia	Cases	216	-	16	109	3	-	11	77	-	
		Rate	46.9	0.0	47.0	38.8	46.0	0.0	36.7	73.5	0.0	
	Western Pacific	Cases	443	1	30	189	19	6	42	156	-	
		Rate	34.5	14.3	33.2	31.6	56.3	60.9	33.6	37.4	0.0	

...cont'd

Table 6 *Cont'd*

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by birthplace – Canada and provinces/territories: 2001

Birthplace			CANADA	Province/territory							
				Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
Foreign-born (WHO region) <i>(cont'd)</i>	Unknown region	Cases	56	-	4	26	-	-	-	26	-
		Rate	-	-	-	-	-	-	-	-	-
	Total	Cases	1,062	10	136	516	33	9	73	285	-
		Rate	18.8	12.3	18.2	16.5	23.9	17.7	16.0	27.2	0.0
Unknown birthplace		Cases	55	2	26	24	-	-	-	3	-
		Rate	-	-	-	-	-	-	-	-	-
TOTAL		Cases	1,704	40	259	634	115	114	116	379	47
		Rate	5.5	1.7	3.5	5.3	10.0	11.2	3.8	9.3	47.5

Table 7

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by main diagnostic site – Canada and provinces/territories: 2001

Main diagnostic site		CANADA	Province/territory							
			Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
Primary	Cases	114	4	4	44	12	32	6	6	6
	Rate	0.4	0.2	0.1	0.4	1.0	3.2	0.2	0.1	6.1
Miliary/ disseminated	Cases	42	-	7	6	1	1	4	23	-
	Rate	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.6	0.0
Respiratory (pulm/other resp)*	Cases	1,125	26	177	397	79	71	76	260	39
	Rate	3.6	1.1	2.4	3.3	6.9	7.0	2.5	6.3	39.4
Meninges and CNS	Cases	14	-	3	3	2	-	2	3	1
	Rate	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.1	1.0
Peripheral lymph node	Cases	222	3	30	98	13	3	18	57	-
	Rate	0.7	0.1	0.4	0.8	1.1	0.3	0.6	1.4	0.0
Other sites*	Cases	186	7	37	86	8	7	10	30	1
	Rate	0.6	0.3	0.5	0.7	0.7	0.7	0.3	0.7	1.0
Unknown	Cases	1	-	1	-	-	-	-	-	-
	Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	Cases	1,704	40	259	634	115	114	116	379	47
	Rate	5.5	1.7	3.5	5.3	10.0	11.2	3.8	9.3	47.5

* Please refer to Technical Notes for definition.

Table 8**Reported new active and relapsed tuberculosis cases by birthplace, gender and age group – Canada: 2001**

Birthplace			TOTAL	Age group										
				< 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 +	Unk.
Canadian-born	Aboriginal													
	Status Indian	Male	106	-	8	15	11	14	17	16	10	8	7	-
		Female	94	1	10	5	8	19	16	12	10	6	7	-
		Total	200	1	18	20	19	33	33	28	20	14	14	-
	Non-Status Indian/Métis	Male	44	1	1	7	6	5	11	5	2	4	2	-
		Female	19	-	-	4	-	2	5	2	2	4	-	-
		Total	63	1	1	11	6	7	16	7	4	8	2	-
	Inuit	Male	34	1	-	3	7	11	3	2	2	5	-	-
		Female	18	-	2	3	3	3	2	4	1	-	-	-
		Total	52	1	2	6	10	14	5	6	3	5	-	-
	Total	Male	184	2	9	25	24	30	31	23	14	17	9	0
		Female	131	1	12	12	11	24	23	18	13	10	7	0
		Total	315	3	21	37	35	54	54	41	27	27	16	0
	Non-Aboriginal	Male	183	1	5	11	6	8	24	26	33	28	41	-
		Female	89	2	5	4	8	7	10	11	10	17	15	-
		Total	272	3	10	15	14	15	34	37	43	45	56	-
	Total	Male	367	3	14	36	30	38	55	49	47	45	50	-
		Female	220	3	17	16	19	31	33	29	23	27	22	-
Total		587	6	31	52	49	69	88	78	70	72	72	-	
Foreign-born (WHO region)	Africa	Male	50	-	-	2	16	20	9	1	1	1	-	-
		Female	35	-	-	1	6	14	11	1	-	2	-	-
		Total	85	-	-	3	22	34	20	2	1	3	-	-
	Americas	Male	30	-	1	1	2	3	13	3	3	1	3	-
		Female	32	-	-	1	3	13	5	1	4	2	3	-
		Total	62	-	1	2	5	16	18	4	7	3	6	-

...cont'd

Table 8 *Cont'd***Reported new active and relapsed tuberculosis cases by birthplace, gender and age group – Canada: 2001**

Birthplace		TOTAL	Age group											
			< 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 +	Unk.	
Foreign-born (WHO region) (<i>cont'd</i>)	East Mediterranean	Male	43	-	-	1	4	13	7	2	3	7	6	-
		Female	58	-	1	4	12	15	7	5	5	7	2	-
		Total	101	-	1	5	16	28	14	7	8	14	8	-
	Europe	Male	52	-	-	-	1	5	6	4	11	13	12	-
		Female	47	-	-	-	-	10	7	1	6	7	16	-
		Total	99	-	-	-	1	15	13	5	17	20	28	-
	South East Asia	Male	98	-	-	1	10	23	12	16	13	10	13	-
		Female	118	-	-	3	22	27	15	12	12	14	13	-
		Total	216	-	-	4	32	50	27	28	25	24	26	-
	Western Pacific	Male	236	1	-	2	19	38	44	34	25	33	40	-
		Female	207	-	1	-	15	46	34	33	15	24	39	-
		Total	443	1	1	2	34	84	78	67	40	57	79	-
	Unknown region	Male	31	-	-	-	3	4	2	4	2	5	11	-
		Female	25	-	-	-	2	7	1	2	2	4	7	-
		Total	56	-	-	-	5	11	3	6	4	9	18	-
	Total	Male	539	1	1	7	55	106	93	64	58	70	85	-
		Female	522	-	2	9	60	132	80	55	44	60	80	-
		Total	1,062	1	3	16	115	238	173	119	102	130	165	-
Unknown birthplace	Male	31	-	-	1	-	3	9	4	1	8	5	-	
	Female	24	-	-	1	-	6	4	1	2	3	7	-	
	Total	55	-	-	2	-	9	13	5	3	11	12	-	
TOTAL	Male	938	4	15	44	85	147	157	117	106	123	140	-	
	Female	766	3	19	26	79	169	117	85	69	90	109	-	
	Total	1,704	7	34	70	164	316	274	202	175	213	249	-	

Table 9

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group and main diagnostic site – Canada: 2001

Age group		TOTAL	Main diagnostic site						
			Primary	Miliary/ disseminated	Respiratory (pulm/ other resp)*	Meninges and CNS	Peripheral lymph node	Other sites*	Unknown
< 1	Cases	7	4	1	2	-	-	-	-
	Rate	2.1	1.2	0.3	0.6	0.0	0.0	0.0	0.0
1 – 4	Cases	34	23	1	8	-	2	-	-
	Rate	2.4	1.6	0.1	0.6	0.0	0.1	0.0	0.0
5 – 14	Cases	70	41	-	19	-	6	4	-
	Rate	1.7	1.0	0.0	0.5	0.0	0.1	0.1	0.0
15 – 24	Cases	164	14	-	113	-	24	13	-
	Rate	3.9	0.3	0.0	2.7	0.0	0.6	0.3	0.0
25 – 34	Cases	316	3	9	218	2	46	38	-
	Rate	7.2	0.1	0.2	5.0	0.0	1.0	0.9	0.0
35 – 44	Cases	274	6	11	175	4	40	38	-
	Rate	5.2	0.1	0.2	3.3	0.1	0.8	0.7	0.0
45 – 54	Cases	202	5	4	131	4	37	21	-
	Rate	4.5	0.1	0.1	2.9	0.1	0.8	0.5	0.0
55 – 64	Cases	175	3	5	117	2	31	17	-
	Rate	6.0	0.1	0.2	4.0	0.1	1.1	0.6	0.0
65 – 74	Cases	213	6	4	150	1	24	27	1
	Rate	9.9	0.3	0.2	7.0	0.0	1.1	1.3	0.0
75 +	Cases	249	9	7	192	1	12	28	-
	Rate	14.1	0.5	0.4	10.8	0.1	0.7	1.6	0.0
TOTAL	Cases	1,704	114	42	1,125	14	222	186	1
	Rate	5.5	0.4	0.1	3.6	0.0	0.7	0.6	0.0

* Please refer to Technical Notes for definition.

Table 10**Reported new active and relapsed tuberculosis cases by birthplace and main diagnostic site – Canada: 2001**

Birthplace		TOTAL	Main diagnostic site						
			Primary	Miliary/ disseminated	Respiratory (pulm/ other resp)*	Meninges and CNS	Peripheral lymph node	Other sites*	Unknown
Canadian-born	Aboriginal								
	Status Indian	200	34	3	134	1	18	10	-
	Non-Status Indian/Métis	63	13	4	40	1	2	3	-
	Inuit	52	10	-	41	1	-	-	-
	Total	315	57	7	215	3	20	13	-
	Non-Aboriginal	272	27	8	191	3	15	27	1
	Total	587	84	15	406	6	35	40	1
Foreign-born (WHO region)	Africa	85	5	5	49	-	12	14	-
	Americas	62	-	2	42	1	8	9	-
	East Mediterranean	101	3	1	62	-	20	15	-
	Europe	99	4	-	77	1	9	8	-
	South East Asia	216	6	2	132	2	46	28	-
	Western Pacific	443	6	8	309	2	78	40	-
	Unknown region	56	3	7	32	2	7	5	-
	Total	1,062	27	25	703	8	180	119	-
Unknown birthplace		55	3	2	16	-	7	27	-
TOTAL		1,704	114	42	1,125	14	222	186	1

* Please refer to Technical Notes for definition.

Table 11**Reported new active and relapsed tuberculosis cases by birthplace and activity status – Canada: 2001**

Birthplace		TOTAL	Activity status		
			New active cases	Relapsed cases	Unknown status
Canadian-born	Aboriginal				
	Status Indian	200	179	18	3
	Non-Status Indian/Métis	63	58	5	-
	Inuit	52	45	7	-
	Total	315	282	30	3
	Non-Aboriginal	272	246	19	7
	Total	587	528	49	10
Foreign-born (WHO region)	Africa	85	78	4	3
	Americas	62	58	2	2
	East Mediterranean	101	95	4	2
	Europe	99	87	10	2
	South East Asia	216	202	10	4
	Western Pacific	443	385	54	4
	Unknown region	56	49	5	2
	Total	1,062	954	89	19
Unknown birthplace		55	35	1	19
TOTAL		1,704	1,517	139	48

Table 12**Reported new active and relapsed tuberculosis cases by bacillary status – Canada and provinces/territories: 2001**

Bacillary status	CANADA	Province/territory							
		Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
1. Culture positive									
a. Microscopy positive	648	16	99	230	47	45	45	153	13
b. Microscopy negative	429	9	75	115	36	25	37	103	29
c. Microscopy not done/unk.	268	3	43	140	8	16	2	56	-
Total	1,345	28	217	485	91	86	84	312	42
2. Culture negative									
a. Microscopy positive	29	-	6	9	-	4	1	8	1
b. Microscopy negative	104	6	19	17	8	17	10	25	2
c. Microscopy not done/unk.	6	-	1	5	-	-	-	-	-
Total	139	6	26	31	8	21	11	33	3
3. Culture not done/unk.									
a. Microscopy positive	59	3	5	33	9	1	-	8	-
b. Microscopy negative	20	-	5	14	-	-	-	1	-
c. Microscopy not done/unk.	141	3	6	71	7	6	21	25	2
Total	220	6	16	118	16	7	21	34	2
TOTAL	1,704	40	259	634	115	114	116	379	47

Table 13**Reported new active and relapsed tuberculosis cases by bacillary status and birthplace – Canada: 2001**

Bacillary status	TOTAL	Birthplace			
		Canadian-born Aboriginal	Canadian-born non-Aboriginal	Foreign-born	Unknown birthplace
1. Culture positive					
a. Microscopy positive	648	126	105	404	13
b. Microscopy negative	429	87	62	271	9
c. Microscopy not done/unk.	268	34	39	169	26
Total	1,345	247	206	844	48
2. Culture negative					
a. Microscopy positive	29	6	2	21	-
b. Microscopy negative	104	31	18	55	-
c. Microscopy not done/unk.	6	-	2	4	-
Total	139	37	22	80	0
3. Culture not done/unk.					
a. Microscopy positive	59	6	12	39	2
b. Microscopy negative	20	-	5	13	2
c. Microscopy not done/unk.	141	25	27	86	3
Total	220	31	44	138	7
TOTAL	1,704	315	272	1,062	55

Table 14**Reported new active and relapsed tuberculosis cases by bacillary status and main diagnostic site – Canada: 2001**

Bacillary status	TOTAL	Main diagnostic site						
		Primary	Miliary/ disseminated	Respiratory (pulm/ other resp)*	Meninges and CNS	Peripheral lymph node	Other sites*	Unknown
1. Culture positive								
a. Microscopy positive	648	18	28	502	4	50	46	-
b. Microscopy negative	429	20	4	329	3	58	15	-
c. Microscopy not done/unk.	268	18	4	96	2	69	78	1
Total	1,345	56	36	927	9	177	139	1
2. Culture negative								
a. Microscopy positive	29	6	1	14	-	5	3	-
b. Microscopy negative	104	17	2	71	3	8	3	-
c. Microscopy not done/unk.	6	-	-	6	-	-	-	-
Total	139	23	3	91	3	13	6	0
3. Culture not done/unk.								
a. Microscopy positive	59	3	2	38	2	10	4	-
b. Microscopy negative	20	1	-	17	-	1	1	-
c. Microscopy not done/unk.	141	31	1	52	-	21	36	-
Total	220	35	3	107	2	32	41	0
TOTAL	1,704	114	42	1,125	14	222	186	1

* Please refer to Technical Notes for definition.

Table 15

Pattern of reported drug resistance to first-line anti-tuberculosis drugs at time of reporting – Canada and provinces/territories*: 2001

Drug pattern	CANADA	Province/territory							
		Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Total positive cultures	1,345 (100)	28 (100)	217 (100)	485 (100)	91 (100)	86 (100)	84 (100)	312 (100)	42 (100)
No resistance	1,244 (92.5)	27 (96.4)	212 (97.7)	444 (91.5)	85 (93.4)	82 (95.3)	70 (83.3)	283 (90.7)	41 (97.6)
Resistance to one or more drugs	101 (7.5)	1 (3.6)	5 (2.3)	41 (8.5)	6 (6.6)	4 (4.7)	14 (16.7)	29 (9.3)	1 (2.4)
Monoresistance									
INH	36 (2.7)	-	1 (0.5)	16 (3.3)	1 (1.1)	3 (3.5)	5 (6)	9 (2.9)	1 (2.4)
SM	24 (1.8)	-	1 (0.5)	10 (2.1)	3 (3.3)	-	3 (3.6)	7 (2.2)	-
EMB	2 (0.1)	-	-	1 (0.2)	-	-	-	1 (0.3)	-
RMP	1 (0.1)	-	-	-	-	-	-	1 (0.3)	-
PZA	2 (0.1)	-	-	2 (0.4)	-	-	-	-	-
Total monoresistance	65 (4.8)	-	2 (0.9)	29 (6)	4 (4.4)	3 (3.5)	8 (9.5)	18 (5.8)	1 (2.4)
Multi-drug resistant (MDR) TB**									
INH & RMP	2 (0.1)	-	-	-	-	-	-	2 (0.6)	-
INH & SM & RMP	1 (0.1)	-	-	-	-	-	-	1 (0.3)	-
INH & RMP & PZA	3 (0.2)	-	3 (1.4)	-	-	-	-	-	-

* Not all provinces/territories routinely test for resistance to all first-line anti-tuberculosis drugs (see Technical Notes).

** MDR-TB is defined as resistance to at least INH and RMP.

...cont'd

Table 15 *Cont'd*

Pattern of reported drug resistance to first-line anti-tuberculosis drugs at time of reporting – Canada and provinces/territories*: 2001

Drug pattern	CANADA	Province/territory							
		Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
INH & EMB & RMP & PZA	1 (0.1)	-	-	1 (0.2)	-	-	-	-	-
INH & SM & EMB & RMP	1 (0.1)	-	-	-	-	-	-	1 (0.3)	-
INH & SM & RMP & PZA	1 (0.1)	-	-	-	-	-	-	1 (0.3)	-
INH & SM & EMB & RMP & PZA	2 (0.1)	-	-	-	1 (1.1)	-	1 (1.2)	-	-
Total MDR-TB**	11 (0.8)	-	3 (1.4)	1 (0.2)	1 (1.1)	-	1 (1.2)	5 (1.6)	-
Other patterns									
INH & SM	17 (1.3)	-	-	8 (1.6)	1 (1.1)	1 (1.2)	3 (3.6)	4 (1.3)	-
INH & SM & EMB	2 (0.1)	-	-	2 (0.4)	-	-	-	-	-
INH & PZA	2 (0.1)	1 (3.6)	-	1 (0.2)	-	-	-	-	-
INH & SM & PZA	4 (0.3)	-	-	-	-	-	2 (2.4)	2 (0.6)	-
Total other patterns	25 (1.9)	1 (3.6)	-	11 (2.3)	1 (1.1)	1 (1.2)	5 (6)	6 (1.9)	-

* Not all provinces/territories routinely test for resistance to all first-line anti-tuberculosis drugs (SM – Quebec, Nova Scotia, New Brunswick, Prince Edward Island; PZA – British Columbia, Saskatchewan, Yukon).

** MDR-TB is defined as resistance to at least INH and RMP.

Table 16

Pattern of reported drug resistance to first-line anti-tuberculosis drugs at time of reporting by birthplace – Canada*: 2001

Drug pattern	TOTAL	Canadian-born		Foreign-born	Unknown birthplace
		Aboriginal	Non-Aboriginal		
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Total positive cultures	1,345 (100)	206 (100)	247 (100)	844 (100)	48 (100)
No resistance	1,244 (92.5)	196 (95.1)	243 (98.4)	758 (89.8)	47 (97.9)
Resistance to one or more drugs	101 (7.5)	10 (4.9)	4 (1.6)	86 (10.2)	1 (2.1)
Mono-resistance					
INH	36 (2.7)	3 (1.5)	4 (1.6)	29 (3.4)	-
SM	24 (1.8)	1 (0.5)	-	22 (2.6)	1 (2.1)
EMB	2 (0.1)	1 (0.5)	-	1 (0.1)	-
RMP	1 (0.1)	-	-	1 (0.1)	-
PZA	2 (0.1)	-	-	2 (0.2)	-
Total mono-resistance	65 (4.8)	5 (2.4)	4 (1.6)	55 (6.5)	1 (2.1)
Multi-drug resistant (MDR) TB**					
INH & RMP	2 (0.1)	1 (0.5)	-	-	-
INH & SM & RMP	1 (0.1)	-	-	2 (0.2)	-
INH & RMP & PZA	3 (0.2)	1 (0.5)	-	2 (0.2)	-
INH & SM & RMP & PZA	1 (0.1)	-	-	1 (0.1)	-
INH & EMB & RMP & PZA	1 (0.1)	-	-	1 (0.1)	-
INH & SM & EMB & RMP	1 (0.1)	-	-	1 (0.1)	-
INH & SM & EMB & RMP & PZA	2 (0.1)	1 (0.5)	-	1 (0.1)	-
Total MDR-TB**	11 (0.8)	3 (1.5)	-	8 (0.9)	-
Other patterns					
INH & SM	17 (1.3)	1 (0.5)	-	16 (1.9)	-
INH & PZA	2 (0.1)	1 (0.5)	-	1 (0.1)	-

* Not all provinces/territories routinely test for resistance to all first-line anti-tuberculosis drugs (SM – Quebec, Nova Scotia, New Brunswick, Prince Edward Island; PZA – British Columbia, Saskatchewan, Yukon).

** MDR-TB is defined as resistance to at least INH and RMP.

...cont'd

Table 16 *Cont'd***Pattern of reported drug resistance to first-line anti-tuberculosis drugs at time of reporting by birthplace – Canada*: 2001**

Drug pattern	TOTAL	Canadian-born		Foreign-born	Unknown birthplace
		Aboriginal	Non-Aboriginal		
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
INH & SM & EMB	2 (0.1)	-	-	2 (0.2)	-
INH & SM & PZA	4 (0.3)	-	-	4 (0.5)	-
Total other patterns	25 (1.9)	2 (1.0)	-	23 (2.7)	-

* Not all provinces/territories routinely test for resistance to all first-line anti-tuberculosis drugs (SM – Quebec, Nova Scotia, New Brunswick, Prince Edward Island; PZA – British Columbia, Saskatchewan, Yukon).

** MDR-TB is defined as resistance to at least INH and RMP.

Table 17**Reported new active and relapsed tuberculosis cases by method of detection – Canada and provinces/territories: 2001**

Method of detection	CANADA	Province/territory							
		Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
Immigration	97	-	-	62	-	1	9	25	-
Symptoms/incidental findings	1,296	31	188	467	90	86	94	318	22
Post-mortem	21	1	4	5	4	-	-	7	-
Contact investigation	129	7	10	29	17	18	12	18	18
Screening	71	-	16	26	3	9	1	9	7
Other	42	1	14	24	1	-	-	2	-
Unknown	48	-	27	21	-	-	-	-	-
TOTAL	1,704	40	259	634	115	114	116	379	47

Table 18**Reported new active and relapsed tuberculosis cases by method of detection and birthplace – Canada: 2001**

Method of detection	TOTAL	Birthplace					
		Canadian-born				Foreign-born	Unknown birthplace
		Status Indian	Non-Status Indian/Métis	Inuit	Non-Aboriginal		
Immigration	97	1	-	-	-	96	-
Symptoms/incidental findings	1,296	149	50	22	197	855	23
Post-mortem	21	2	1	-	7	11	-
Contact investigation	129	32	12	25	43	17	-
Screening	71	14	-	5	6	45	1
Other	42	1	-	-	13	26	2
Unknown	48	1	-	-	6	12	29
TOTAL	1,704	200	63	52	272	1,062	55

Table 19**Reported new active and relapsed foreign-born tuberculosis cases by birthplace and year of arrival in Canada: 2001**

Birthplace (WHO region)	TOTAL	Year of arrival													
		≤ 1962	1963-1972	1973-1982	1983-1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Unk.
Africa	85	-	-	3	11	-	2	3	2	5	5	5	17	27	5
Americas	62	1	2	4	20	1	-	3	4	-	2	3	9	9	4
East Mediterranean	101	-	1	5	16	1	4	1	9	3	6	8	18	21	8
Europe	99	34	17	5	14	-	2	-	2	1	-	5	3	6	10
South East Asia	216	-	6	22	42	13	6	9	5	12	11	21	29	22	18
Western Pacific	443	7	9	72	131	21	20	15	21	18	20	21	30	28	30
Unknown region	56	2	2	2	6	-	-	1	1	-	1	-	1	7	33
TOTAL	1,062	44	37	113	240	36	34	32	44	39	45	63	107	120	108

Table 20

Reported new active and relapsed foreign-born tuberculosis cases by immigration status – Canada and provinces/territories: 2001

Immigration status	CANADA	Province/territory							
		Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
Landed immigrant or Canadian citizen	318	3	-	-	32	-	65	218	-
Refugee claimant	7	2	-	-	-	-	2	3	-
Non-resident (visitor, student, illegal alien)	24	4	-	-	1	-	5	14	-
Other	2	-	-	-	-	-	-	2	-
Unknown	711	1	136	516	-	9	1	48	-
TOTAL	1,062	10	136	516	33	9	73	285	-

Table 21

Reported relapsed tuberculosis cases by length of inactive interval – Canada and provinces/territories: 2001

Interval	CANADA	Province/territory							
		Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
< 2 years	2	-	-	-	-	-	1	1	-
2-5 years	13	-	1	-	1	1	1	9	-
6-9 years	10	-	3	-	2	-	-	5	-
10-19 years	5	-	2	-	-	1	-	2	-
20+ years	55	5	6	-	2	8	8	21	5
Unknown	54	1	4	46	-	-	1	2	-
TOTAL	139	6	16	46	5	10	11	40	5

Table 22**Reported new active and relapsed tuberculosis cases and number of diagnoses by main diagnostic site – Canada: 2001**

Main diagnostic site (expanded)	Multiple site(s)	Main diagnostic site						
		Primary	Miliary/ disseminated	Respiratory (pulm/ other resp)	Meninges/ CNS	Peripheral lymph nodes	Other sites	Unknown
Primary	Primary only	109	-	-	-	-	-	-
	Primary & pulmonary	3	-	-	-	-	-	-
	Primary & genitourinary	1	-	-	-	-	-	-
	Primary & other non-respiratory	1	-	-	-	-	-	-
	Total	114	-	-	-	-	-	-
Miliary	Miliary only	-	15	-	-	-	-	-
	Miliary & pulmonary	-	7	-	-	-	-	-
	Miliary & pleurisy	-	1	-	-	-	-	-
	Miliary & genitourinary	-	2	-	-	-	-	-
	Miliary & peripheral lymph nodes	-	2	-	-	-	-	-
	Miliary & pulmonary & pleurisy	-	3	-	-	-	-	-
	Miliary & pulmonary & abdominal	-	1	-	-	-	-	-
	Miliary & pulmonary & bones/joints	-	1	-	-	-	-	-
	Miliary & pulmonary & genitourinary	-	1	-	-	-	-	-
	Miliary & pleurisy & abdominal	-	1	-	-	-	-	-
	Miliary & pulmonary & peripheral lymph nodes	-	4	-	-	-	-	-
	Miliary & pulmonary & pleurisy & abdominal	-	1	-	-	-	-	-
	Miliary & pulmonary & pleurisy & genitourinary	-	2	-	-	-	-	-
	Miliary & pulmonary & meninges/CNS & other non-respiratory	-	1	-	-	-	-	-
	Total	-	42	-	-	-	-	-

...cont'd

Table 22 *Cont'd***Reported new active and relapsed tuberculosis cases and number of diagnoses by main diagnostic site – Canada: 2001**

Main diagnostic site (expanded)	Multiple site(s)	Main diagnostic site						
		Primary	Miliary/ disseminated	Respiratory (pulm/ other resp)	Meninges/ CNS	Peripheral lymph nodes	Other sites	Unknown
Pulmonary	Pulmonary only	-	-	980	-	-	-	-
	Pulmonary & meninges/CNS	-	-	3	-	-	-	-
	Pulmonary & other non-respiratory	-	-	3	-	-	-	-
	Pulmonary & peripheral lymph nodes	-	-	14	-	-	-	-
	Pulmonary & pleurisy	-	-	22	-	-	-	-
	Pulmonary & abdominal	-	-	8	-	-	-	-
	Pulmonary & bones/joints	-	-	5	-	-	-	-
	Pulmonary & genitourinary	-	-	5	-	-	-	-
	Pulmonary & pleurisy & abdominal	-	-	1	-	-	-	-
	Pulmonary & abdominal & genitourinary	-	-	1	-	-	-	-
	Pulmonary & bones/joints & other non-respiratory	-	-	2	-	-	-	-
	Pulmonary & meninges/CNS & other non-respiratory	-	-	1	-	-	-	-
	Pulmonary & meninges/CNS & peripheral lymph nodes	-	-	1	-	-	-	-
	Pulmonary & peripheral lymph nodes & abdominal	-	-	1	-	-	-	-
	Pulmonary & peripheral lymph nodes & bones/joints	-	-	1	-	-	-	-
Pulmonary & peripheral lymph nodes & other non-respiratory	-	-	1	-	-	-	-	
Total		-	-	1,049	-	-	-	-
Pleurisy	Pleurisy only	-	-	72	-	-	-	-
	Pleurisy & other non-respiratory	-	-	2	-	-	-	-
	Pleurisy & peripheral lymph nodes	-	-	1	-	-	-	-
	Pleurisy & bones/joints	-	-	1	-	-	-	-
	Total	-	-	76	-	-	-	-

...cont'd

Table 23

Reported new active and relapsed tuberculosis cases reported in 2001 who died in 2001*, by cause of death – Canada and provinces/territories: 2001

Cause of death	CANADA	Province/territory							
		Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
TB was underlying cause of death	28	1	4	6	4	3	2	8	-
TB contributed to death but was not the underlying cause	56	3	5	17	2	5	9	13	2
TB did not contribute to death	32	2	2	13	7	1	2	4	1
Cause not reported	10	-	1	7	-	-	-	2	-
TOTAL	126	6	12	43	13	9	13	27	3

NB: These numbers are based on number of known deaths at time of reporting.

* See Technical Notes.

Table 24

Reported new active and relapsed tuberculosis cases reported in 2001 who died in 2001*, by age group and gender – Canada: 2001

Gender	TOTAL	Age group									
		< 1	1 – 4	5 – 14	15 – 24	25 – 34	35 – 44	45 – 54	55 – 64	65 – 74	75 +
Male	80	-	-	-	-	1	13	11	3	21	31
Female	46	-	-	-	1	2	4	3	3	12	21
TOTAL	126	-	-	-	1	3	17	14	6	33	52

NB: These numbers are based on number of known deaths at time of reporting.

* See Technical Notes.

Table 25**Reported new active and relapsed tuberculosis cases by HIV status – Canada and provinces/territories: 2001**

HIV status	CANADA	Province/territory							
		Atlantic	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
Positive	46	2	-	12	1	2	1	28	-
Negative	249	4	-	-	51	-	42	127	25
Unknown	1,409	34	259	622	63	112	73	224	22
TOTAL	1,704	40	259	634	115	114	116	379	47

Table 26**Treatment outcome status – Canada and provinces/territories: 2000**

	TOTAL	Treatment outcome								
		Cure	Treatment completed without cure	Death during treatment	Failure – culture positive	Transferred	Absconded	Treatment ongoing	Other	Unknown
CANADA	705	270	297	69	2	24	16	11	7	9
Province/territory										
Atlantic	23	5	12	5	-	1	-	-	-	-
Quebec	0	-	-	-	-	-	-	-	-	-
Ontario	0	-	-	-	-	-	-	-	-	-
Manitoba	98	5	69	10	-	2	7	2	3	-
Saskatchewan	104	88	-	13	-	-	-	-	-	3
Alberta	133	30	72	17	-	5	1	6	2	-
British Columbia	286	115	122	21	-	16	7	3	2	-
North	61	27	22	3	2	-	1	-	-	6

Table 27**Treatment outcome status by treatment regimen – Canada: 2000**

Treatment regimen	TOTAL	Treatment outcome								
		Cure	Treatment completed without cure	Death during treatment	Failure – culture positive	Transferred	Absconded	Other	Treatment ongoing	Unknown
INH only	2	-	2	-	-	-	-	-	-	-
INH & RMP	13	4	9	-	-	-	-	-	-	-
INH & PZA	2	2	-	-	-	-	-	-	-	-
SM & EMB	1	-	-	1	-	-	-	-	-	-
EMB & RMP	1	-	1	-	-	-	-	-	-	-
EMB & PZA	1	-	-	-	-	-	-	-	1	-
INH & SM & RMP	2	1	-	1	-	-	-	-	-	-
INH & SM & PZA	1	-	1	-	-	-	-	-	-	-
INH & EMB & RMP	12	2	9	1	-	-	-	-	-	-
INH & EMB & PZA	5	2	2	1	-	-	-	-	-	-
INH & RMP & PZA	188	98	68	13	-	3	1	1	-	4
EMB & RMP & PZA	5	1	4	-	-	-	-	-	-	-
SM & RMP & PZA	1	1	-	-	-	-	-	-	-	-
INH & PZA & other drug(s)	2	-	2	-	-	-	-	-	-	-
SM & PZA & other drug(s)	1	-	1	-	-	-	-	-	-	-
INH & SM & EMB & RMP	3	-	1	1	-	-	-	1	-	-
INH & SM & EMB & PZA	2	2	-	-	-	-	-	-	-	-
INH & SM & RMP & PZA	17	3	11	-	-	1	1	-	-	1
INH & EMB & RMP & PZA	357	135	165	20	1	12	12	2	6	4
INH & EMB & RMP & other drug(s)	2	-	1	1	-	-	-	-	-	-
INH & EMB & PZA & other drug(s)	1	-	-	1	-	-	-	-	-	-
INH & RMP & PZA & other drug(s)	3	-	3	-	-	-	-	-	-	-

...cont'd

Table 27 *Cont'd***Treatment outcome status by treatment regimen – Canada: 2000**

Treatment regimen	TOTAL	Treatment outcome								
		Cure	Treatment completed without cure	Death during treatment	Failure – culture positive	Transferred	Absconded	Other	Treatment ongoing	Unknown
EMB & RMP & PZA & other drug(s)	1	1	-	-	-	-	-	-	-	-
INH & SM & EMB & RMP & PZA	25	10	9	2	1	-	1	1	1	-
INH & SM & EMB & PZA & other drug(s)	1	-	1	-	-	-	-	-	-	-
INH & SM & EMB & RMP & other drug(s)	2	1	1	-	-	-	-	-	-	-
INH & EMB & RMP & PZA & other drug(s)	14	7	5	-	-	-	-	-	2	-
INH & SM & RMP & PZA & other drug(s)	1	-	-	-	-	-	-	-	1	-
None prescribed	19	-	-	13	-	5	1	-	-	-
Unknown	1,010	-	1	14	-	3	-	2	-	990
TOTAL	1,695	270	297	69	2	24	16	7	11	999

Table 28**Treatment outcome status by major mode of treatment – Canada: 2000**

Major mode of treatment	TOTAL	Treatment outcome								
		Cure	Treatment completed without cure	Death during treatment	Failure – culture positive	Transferred	Absconded	Treatment ongoing	Other	Unknown
Daily – self administered	270	91	146	8	-	13	7	2	2	1
DOT (daily/intermittent)	389	175	147	35	2	2	8	9	3	8
Other	9	4	4	1	-	-	-	-	-	-
Unknown	1,027	-	-	25	-	9	1	-	2	990
TOTAL	1,695	270	297	69	2	24	16	11	7	999

Table 29**Treatment outcome status by compliance estimate – Canada: 2000**

Compliance estimate	TOTAL	Treatment outcome								
		Cure	Treatment completed without cure	Death during treatment	Failure – culture positive	Transferred	Absconded	Treatment ongoing	Other	Unknown
≥ 80%	606	261	286	25	1	13	3	8	3	6
50–79%	18	2	2	1	1	1	10	-	1	-
< 50%	3	-	-	1	-	-	2	-	-	-
Unknown	1,068	7	9	42	-	10	1	3	3	993
TOTAL	1,695	270	297	69	2	24	16	11	7	999

APPENDIX III POPULATION ESTIMATES: 2001

Population by age group and sex, Canada, provinces and territories: 2001

Male														
	CANADA	Nfld./Lab.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nun.
< 1	168,311	2,473	726	4,750	3,993	36,353	66,755	7,264	6,255	18,541	20,342	180	331	348
1 – 4	718,487	10,545	3,080	19,944	16,663	158,779	281,895	29,704	25,726	80,294	88,502	735	1,285	1,335
5 – 14	2,105,387	33,201	9,745	61,402	48,165	471,584	822,199	85,393	77,628	223,414	262,919	2,245	3,793	3,699
15 – 24	2,148,643	39,003	10,154	64,406	52,688	501,471	798,404	81,609	78,233	235,197	279,379	2,183	3,387	2,529
25 – 34	2,220,739	37,504	8,860	63,330	53,836	509,691	865,114	80,541	64,406	240,478	288,962	2,113	3,486	2,418
35 – 44	2,672,557	44,000	10,928	78,699	63,537	648,657	1,029,423	91,451	77,657	269,190	350,330	2,931	3,858	1,896
45 – 54	2,241,880	42,586	10,051	70,245	58,035	559,133	822,025	78,184	67,365	218,411	309,160	2,547	2,739	1,399
55 – 64	1,434,479	26,978	6,549	46,115	36,490	374,500	533,058	50,235	42,300	122,403	192,395	1,512	1,366	578
65 – 74	1,010,449	16,972	4,566	31,239	23,867	248,115	388,045	36,638	34,656	85,131	139,793	594	552	281
75 +	667,562	10,931	3,258	21,530	17,505	147,954	253,050	29,050	29,687	53,128	100,756	283	281	149
TOTAL	15,388,494	264,193	67,917	461,660	374,779	3,656,237	5,859,968	570,069	503,913	1,546,187	2,032,538	15,323	21,078	14,632
Female														
< 1	160,675	2,315	756	4,507	3,692	34,835	63,674	6,852	6,211	17,602	19,425	157	321	328
1 – 4	686,532	10,242	2,960	19,107	15,304	151,948	269,885	28,179	25,393	75,888	84,514	636	1,255	1,221
5 – 14	2,003,003	31,505	9,395	58,375	46,264	453,267	779,117	80,901	74,415	210,968	249,301	2,138	3,938	3,419
15 – 24	2,047,605	38,031	9,923	62,378	49,740	476,351	761,623	78,237	73,064	222,813	267,876	2,059	2,957	2,553
25 – 34	2,173,686	37,326	9,042	64,809	52,407	485,376	862,180	76,593	64,115	225,870	287,918	2,217	3,490	2,343
35 – 44	2,644,895	45,508	11,143	79,915	62,785	631,856	1,027,883	89,149	76,590	262,490	349,395	2,929	3,597	1,655
45 – 54	2,255,367	42,728	10,349	71,060	58,006	563,794	842,202	78,859	65,266	207,442	309,855	2,370	2,218	1,218
55 – 64	1,481,766	26,636	6,445	47,692	36,897	392,042	557,308	51,414	43,322	122,204	195,002	1,216	1,109	479
65 – 74	1,136,445	18,341	5,119	35,059	27,884	295,805	436,696	41,170	38,239	89,662	147,155	517	566	232
75 +	1,103,419	16,936	5,465	38,129	29,319	268,993	413,900	48,611	45,255	83,123	152,955	323	331	79
TOTAL	15,693,393	269,568	70,597	481,031	382,298	3,754,267	6,014,468	579,965	511,870	1,518,062	2,063,396	14,562	19,782	13,527
TOTAL														
< 1	328,986	4,788	1,482	9,257	7,685	71,188	130,429	14,116	12,466	36,143	39,767	337	652	676
1 – 4	1,405,019	20,787	6,040	39,051	31,967	310,727	551,780	57,883	51,119	156,182	173,016	1,371	2,540	2,556
5 – 14	4,108,390	64,706	19,140	119,777	94,429	924,851	1,601,316	166,294	152,043	434,382	512,220	4,383	7,731	7,118
15 – 24	4,196,248	77,034	20,077	126,784	102,428	977,822	1,560,027	159,846	151,297	458,010	547,255	4,242	6,344	5,082
25 – 34	4,394,425	74,830	17,902	128,139	106,243	995,067	1,727,294	157,134	128,521	466,348	576,880	4,330	6,976	4,761
35 – 44	5,317,452	89,508	22,071	158,614	126,322	1,280,513	2,057,306	180,600	154,247	531,680	699,725	5,860	7,455	3,551
45 – 54	4,497,247	85,314	20,400	141,305	116,041	1,122,927	1,664,227	157,043	132,631	425,853	619,015	4,917	4,957	2,617
55 – 64	2,916,245	53,614	12,994	93,807	73,387	766,542	1,090,366	101,649	85,622	244,607	387,397	2,728	2,475	1,057
65 – 74	2,146,894	35,313	9,685	66,298	51,751	543,920	824,741	77,808	72,895	174,793	286,948	1,111	1,118	513
75 +	1,770,981	27,867	8,723	59,659	46,824	416,947	666,950	77,661	74,942	136,251	253,711	606	612	228
TOTAL	31,081,887	533,761	138,514	942,691	757,077	7,410,504	11,874,436	1,150,034	1,015,783	3,064,249	4,095,934	29,885	40,860	28,159

TOTAL	CANADA	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nun.	
	31,081,887	533,761	757,077	942,691	138,514	7,410,504	11,874,436	1,150,034	1,015,783	3,064,249	4,095,934	29,885	40,860	28,159	
	2,372,043											69,019			
Canadian-born															
Aboriginal		Atlantic region													
Status Indian	578,200	21,600				60,100	118,200	88,100	81,800	82,900	105,400	6,300	13,800		
NSI/Métis	653,400	33,500				108,200	192,900	59,000	44,500	108,900	100,300	1,400	4,700		
Inuit	63,300	9,400				10,900	6,600	900	600	3,600	2,500	200	28,600		
Total Aboriginal	1,294,900	64,500				179,200	317,700	148,000	126,900	195,400	208,200	7,900	47,100		
Non-Aboriginal	24,139,922	2,226,038				6,484,144	8,436,081	863,794	837,978	2,413,234	2,840,749	18,915	18,989		
Total Canadian-born	25,434,822	2,290,538				6,663,344	8,753,781	1,011,794	964,878	2,608,634	3,048,949	26,815	66,089		
Foreign-born															
Africa	205,615	340	795	1,080	25	47,900	99,960	4,230	2,370	20,525	28,155	85	120	30	
Americas	883,040	2,090	9,575	10,625	1,610	158,015	504,725	25,615	9,220	63,090	97,330	695	365	85	
East Mediterranean	430,740	425	840	4,485	155	106,600	250,340	3,195	2,120	25,150	37,270	45	105	10	
South East Asia	460,660	565	590	1,485	40	34,020	280,650	6,525	1,840	29,970	104,785	120	70	0	
Europe	2,379,975	4,540	10,495	21,940	2,300	309,360	1,385,395	64,785	25,440	191,665	361,065	1,660	1,110	220	
Western Pacific	1,282,390	910	1,690	4,125	260	90,435	597,785	33,760	9,850	124,855	417,460	465	740	55	
Other/unknown	4,645	110	185	205	20	830	1,800	130	65	360	920	0	10	10	
Total foreign-born	5,647,065	8,980	24,170	43,945	4,410	747,160	3,120,655	138,240	50,905	455,615	1,046,985	3,070	2,520	410	

Source(s): Canada: Statistics Canada – Census 2001 data
 Aboriginal: Projected – Indian and Northern Affairs Canada
 Non-Aboriginal: Calculated
 Foreign-born: Statistics Canada – Census 2001 data

APPENDIX IV

ESTIMATED INCIDENCE OF TB, 22 HIGH-BURDEN COUNTRIES: 2001

Rank	Country	Population (thousands)	Number estimated				Cumulative incidence (%)
			All cases		Smear positive cases		
			Number (thousands)	Rate per 100,000	Number (thousands)	Rate per 100,000	
1	India	1,025,096	1,820	178	815	79	22
2	China	1,284,972	1,448	113	651	51	39
3	Indonesia	214,840	582	271	261	122	45
4	Bangladesh	140,369	328	233	147	105	49
5	Nigeria	116,929	275	235	119	102	53
6	Pakistan	144,971	247	171	111	77	56
7	South Africa	43,792	243	556	99	226	58
8	Philippines	77,131	229	297	103	133	61
9	Russian Federation	144,664	193	134	87	60	63
10	Ethiopia	64,459	188	292	79	123	66
11	Kenya	31,293	161	515	67	213	68
12	DR Congo	52,522	159	302	69	131	69
13	Viet Nam	79,175	141	179	64	80	71
14	UR Tanzania	35,965	124	344	53	146	73
15	Brazil	172,559	111	64	49	28	74
16	Thailand	63,584	86	135	38	59	75
17	Zimbabwe	12,852	81	628	32	252	76
18	Cambodia	13,441	79	585	35	261	77
19	Myanmar	48,364	78	162	35	73	78
20	Uganda	24,023	78	324	33	138	79
21	Afghanistan	22,474	71	314	32	141	79
22	Mozambique	18,644	49	265	20	110	80
Total, high-burden countries		3,832,119	6,771	177	2,999	78	80
Global total		6,130,903	8,464	138	3,745	61	100

Source: World Health Organization. Global Tuberculosis Control. WHO Report, 2003. Geneva, Switzerland, WHO/CDS/TB/2003.316

APPENDIX V

WHO REGIONS AND MEMBER COUNTRIES

WHO region	Country	WHO region	Country
AFRICA	Benin	AFRICA (cont'd)	Swaziland
	Burkina Faso		Tanzania, United Republic of
	Central African Republic		Togo
	Chad		Uganda
	Comoros		Zaire (dem. Republic of Congo)
	Congo		Zambia
	Côte d'Ivoire		Zimbabwe
	Eritrea		AMERICAS, THE
	Ethiopia	Antigua and Barbuda	
	Gabon	Argentina	
	Gambia	Aruba	
	Ghana	Bahamas	
	Guinea	Barbados	
	Guinea-Bissau	Belize	
	Kenya	Bermuda	
	Lesotho	Bolivia	
	Liberia	Brazil	
	Madagascar	Canada	
	Malawi	Cayman Islands	
	Mali	Chile	
	Mauritania	Colombia	
	Mauritius	Costa Rica	
	Mayotte	Cuba	
	Mozambique	Dominica	
	Namibia	Dominican Republic	
	Niger	Ecuador	
	Nigeria	El Salvador	
	Réunion	Falkland Islands (Malvinas)	
	Rwanda	French Guiana	
	Saint Helena	Grenada	
	Sao Tome and Principe	Guadeloupe	
	Senegal	Guatemala	
	Seychelles	Guyana	
Sierra Leone	Haiti		
South Africa	Honduras		

WHO region	Country
AMERICAS, THE (cont'd)	Jamaica
	Martinique
	Mexico
	Montserrat
	Netherlands Antilles
	Nicaragua
	Panama
	Paraguay
	Peru
	Puerto Rico
	Saint Kitts and Nevis
	Saint Lucia
	Saint Vincent and the Grenadines
	South Georgia & South Sandwich Islands
	Suriname
	Trinidad and Tobago
	Turks and Caicos Islands
	United States
	United States Minor Outlying Islands
	Uruguay
Venezuela	
Virgin Islands, British	
Virgin Islands, U.S.	
EAST MEDITER- RANEAN	Afghanistan
	Bahrain
	Cyprus
	Djibouti
	Egypt
	Equatorial Guinea
	Iran, Islamic Republic of
	Iraq
	Jordan
	Kuwait
	Lebanon
	Libyan Arab Jamahiriya
	Morocco
	Oman
	Pakistan
	Qatar
	Saudi Arabia
	Somalia
	Sudan
	Syrian Arab Republic

WHO region	Country
EAST MEDITER- RANEAN (cont'd)	Tunisia
	United Arab Emirates
	Western Sahara
	Yemen
EUROPE	Albania
	Andorra
	Armenia
	Austria
	Azerbaijan
	Belarus
	Belgium
	Bosnia and Herzegovina
	Bulgaria
	Croatia
	Czech Republic
	Denmark
	Estonia
	Finland
	France
	Georgia
	Germany
	Gibraltar
	Greece
	Hungary
	Iceland
	Ireland
	Israel
	Italy
	Kazakhstan
	Kyrgyzstan
	Latvia
	Liechtenstein
	Lithuania
	Luxembourg
	Macedonia
	Malta
	Moldova, Republic of
	Monaco
	Netherlands
	Norway
Poland	
Portugal	
Romania	
Russian federation	

WHO region	Country
EUROPE (cont'd)	San Marino Slovakia Slovenia Spain Sweden Switzerland Tajikistan Turkey Turkmenistan Ukraine United Kingdom Uzbekistan Yugoslavia
SOUTH EAST ASIA	Bangladesh Bhutan British Indian Ocean Territory India Indonesia Korea, Democratic People's Republic of Maldives Myanmar Nepal Sri Lanka Thailand
WESTERN PACIFIC	American Samoa Australia Brunei Darussalam Cambodia China Christmas Island Cocos (Keeling) Islands Cook Islands Fiji French Polynesia Guam Heard Island and McDonald Islands Hong Kong Japan Kiribati Korea, Republic of Lao People's Democratic Republic Macau Malaysia Marshall Islands
WESTERN PACIFIC (cont'd)	

WHO region	Country
	Micronesia, Federated States of Mongolia Nauru New Caledonia New Zealand Niue Norfolk Island Northern Mariana Islands Palau Papua New Guinea Philippines Samoa Singapore Solomon Islands Taiwan, Province of China Tokelau Tonga Tuvalu Vanuatu Viet Nam Wallis and Futuna Islands
UNKNOWN	Antarctica East Timor Faroe Islands French Southern Territories Greenland Pitcairn Saint Pierre and Miquelon Svalbard and Jan Mayen Vatican City State (Holy See)

APPENDIX VI

REPORTING FORMS

Active Tuberculosis Report Form – New and Relapsed Cases Serial No. _____

For Internal Use Only		CONFIDENTIAL WHEN COMPLETED		Date Form Completed Year Month Day	
Date received at TBPC Year Month Day		TBPC Number			
Province/Territory/Patient ID					
1. Reporting provincial territory		2. Register case number		3. Unique Identifier (if name not provided)	
4. Date of birth Year Month Day		5. Sex 1 <input type="checkbox"/> M 2 <input type="checkbox"/> F			
Patient Initials and Usual Residence					
6. First Middle Last		7. City/Town/Village		County and Health Unit	
				Postal Code	
				Geo Codes PR CD PR HUSC	
Origin					
1 <input type="checkbox"/> Status Indian (registered) Lives on reserve most of the time 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Not Applicable 4 <input type="checkbox"/> Unknown		2 <input type="checkbox"/> Métis 3 <input type="checkbox"/> Inuit 4 <input type="checkbox"/> Other aboriginal (specify) _____ 5 <input type="checkbox"/> Canadian Born non-Aboriginal If under age 20 country of birth of mother _____ country of birth of father _____		6 <input type="checkbox"/> Foreign-Born (a) Country of Birth _____ (b) Year of Arrival in Canada _____ (c) Immigration status: (current status) 1 <input type="checkbox"/> Landed immigrant or Canadian citizen 2 <input type="checkbox"/> Refugee claimant 3 <input type="checkbox"/> Non-resident (migrant worker, visitor, student, illegal alien) 4 <input type="checkbox"/> Other (specify) _____	
Diagnosis					
9. Date of diagnosis Year Month Day		10. Diagnosis ICD - 9 _____._____._____._____._____._____. ICD - 10 _____._____._____._____._____._____.			
Bacillary Status					
11. Check all that apply:					
Microscopy			Culture		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Case Criteria 1 <input type="checkbox"/> Positive culture 2 <input type="checkbox"/> No positive culture, clinical diagnosis		13. Antibiotic resistance to initial positive culture 1 <input type="checkbox"/> Yes → 1 <input type="checkbox"/> INH 2 <input type="checkbox"/> SM 3 <input type="checkbox"/> EMB 4 <input type="checkbox"/> RMP 5 <input type="checkbox"/> PZA 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Other (specify) _____ 4 <input type="checkbox"/> Unknown		14. Date Treatment Started Year Month Day	
15. Initial Drugs Prescribed (check all boxes that apply) 1 <input type="checkbox"/> INH 7 <input type="checkbox"/> No drugs prescribed 2 <input type="checkbox"/> SM 8 <input type="checkbox"/> Other (specify) _____ 3 <input type="checkbox"/> EMB 4 <input type="checkbox"/> RMP 5 <input type="checkbox"/> PZA 9 <input type="checkbox"/> Unknown			16. Case Finding 1 <input type="checkbox"/> Symptoms compatible with site of disease 2 <input type="checkbox"/> Incidental findings 3 <input type="checkbox"/> Post-mortem 4 <input type="checkbox"/> Contact investigation 5 <input type="checkbox"/> Post-landing surveillance 6 <input type="checkbox"/> Pre-landing immigration evaluation (in Canada) 7 <input type="checkbox"/> Occupational screening program 8 <input type="checkbox"/> Other screening 9 <input type="checkbox"/> Other (specify) _____ 10 <input type="checkbox"/> Unknown		
17. First episode of TB 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No If no: (a) Year of previous diagnosis _____ (b) Previous diagnosis occurred in: 1 <input type="checkbox"/> Canada 2 <input type="checkbox"/> Other Country: _____ (c) Previous treatment with (check all antibiotics used): 1 <input type="checkbox"/> INH 2 <input type="checkbox"/> Other (specify) _____ 3 <input type="checkbox"/> SM 4 <input type="checkbox"/> EMB 5 <input type="checkbox"/> RMP 6 <input type="checkbox"/> PZA			18. Patient died before completion of therapy 1 <input type="checkbox"/> Yes 1 <input type="checkbox"/> TB was the cause of death 2 <input type="checkbox"/> TB contributed to death but was not the underlying cause 3 <input type="checkbox"/> TB did not contribute to death Date of death Year Month Day 4 <input type="checkbox"/> No 5 <input type="checkbox"/> Not applicable 6 <input type="checkbox"/> Unknown		
19. HIV status 1 <input type="checkbox"/> Positive 2 <input type="checkbox"/> Negative 3 <input type="checkbox"/> Unknown					

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APPENDIX VII

THE CANADIAN TUBERCULOSIS COMMITTEE

PROVINCIAL/TERRITORIAL TB CONTROL PROGRAM REPRESENTATIVES

Alberta

Dr. Richard Long

British Columbia

Dr. Kevin Elwood

Manitoba

Dr. Earl Hershfield

Québec

Dr. Terry Nan Tannenbaum

New Brunswick

Dr. Christofer Balram

Newfoundland and Labrador

Dr. Faith Stratton

Nova Scotia

Dr. Maureen Baikie

Northwest Territories

Ms. Cheryl Case

Nunavut

Ms. Priya Gaba

Ontario

Dr. Barbara H. Kawa

Prince Edward Island

Dr. Lamont Sweet

Saskatchewan

Dr. Vernon Hoepfner

Yukon

Ms. Colleen Hemsley

TUBERCULOSIS PREVENTION AND CONTROL

Dr. Edward Ellis

NATIONAL MICROBIOLOGY LABORATORY

Dr. Amin Kabani

FIRST NATIONS AND INUIT HEALTH BRANCH, HEALTH CANADA

Ms. Raymonde Hickey

PROVINCIAL LABORATORIES

vacant

CORRECTIONAL SERVICES OF CANADA

Ms. Sandra Black

CITIZENSHIP AND IMMIGRATION CANADA

Dr. Brian Gushulak

CANADIAN LUNG ASSOCIATION

Dr. Brian Graham

