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TUBERCULOSIS IN CANADA



2007

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Tuberculosis in Canada 2007

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TUBERCULOSIS

IN CANADA

2007

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EXECUTIVE SUMMARY

In total, 1,548 new active and relapsed tuberculosis (TB) cases (a rate of 4.7 per 100,000 population) were reported to the Canadian Tuberculosis Reporting System (CTBRS) in 2007. Compared with 2006, both the number of cases reported and the incidence rate decreased, representing a 6.3% and 7.3% change, respectively. The TB incidence rate in 2007 was the lowest recorded since data collection began in Canada in 1924.

The three most populous provinces (British Columbia, Ontario and Quebec), which collectively made up 75% of Canada's population in 2007, accounted for 75% of the total number of reported cases. The highest incidence rate, 99.2 per 100,000 population was reported in Nunavut. For New Brunswick and Nova Scotia the rate was less than 1 per 100,000 population. For Prince Edward Island, no TB cases were reported.

Individuals between the ages of 35 and 44 years of age made up the largest number of reported cases, representing 18% of the total. The age-specific rate of 10.1 per 100,000 for those in the 75 years plus age group was the highest rate recorded for all age groups. In the 65-74 year age group, the rate continued to remain higher relative to the younger age groups.

In 2007, foreign-born cases continued to represent the greatest percentage of the overall case count when compared with the Canadian-born non-Aboriginal and Canadian-born Aboriginal populations. A total of 1,042 TB cases were reported among the foreign-born, representing 67% of all cases. A total of 170 cases (11% of the total) were in the Canadian-born non-Aboriginal population and 307 cases (20% of the total) were diagnosed in the Canadian-born Aboriginal population.

Pulmonary TB, including TB of the lungs and conducting airways was the most frequently reported diagnostic site, accounting for 65% of reported cases in 2007 followed by TB of the peripheral lymph nodes, which accounted for 13% of the reported cases.

Data on HIV status continues to be underreported at the national level. Of the 1,548 cases reported, 447 cases (29%) had an HIV test result reported (Figure 15). Across the provinces and territories, the percentage of cases for which HIV status was reported ranged from 0% to 96% of reported cases.

Of the 1,548 cases reported in 2007, 1,231 cases were culture positive. Of these, resistance information was available for 1,188 cases. Ninety-one percent of these showed no resistance to first-line anti-TB drugs (isoniazid, rifampin, ethambutol or pyrazinamide)¹, 8% percent were resistant to one drug and the remaining 1% showed patterns of resistance to two or more drugs prescribed.

For the 111 cases that were resistant to at least one drug, 85% were mono-resistant with resistance to isoniazid accounting for 87% of all such cases. Nine percent were multidrug-resistant (MDR), defined as resistance to at least isoniazid and rifampin. One case was identified as being extensively drug-resistant (XDR).

¹ As of 2005, streptomycin was considered a second-line TB antibiotic in Canada, even though it may be used for initial treatment.

Of the 143 deaths, TB was reported as the underlying cause of death for 23 cases (16%). TB contributed to death, but was not the underlying cause for 68 cases (48%). Cause of death was not reported for 7 cases.

As of June 30, 2008, 124 (8%) of the 1,548 cases diagnosed in 2007 were reported to have died before or during treatment. Of these, TB was reported as the underlying cause of death for 28 cases (23%). TB contributed to death, but was not the underlying cause for 56 cases (45%). Cause of death was not reported for 3 cases.

The majority of individuals placed on TB drug therapy in Canada received treatment as per the *Canadian Tuberculosis Standards*². Of the cases where the treatment final regime was reported over 80% of these cases received three or more anti-tuberculosis drugs.

For the 1,652 cases reported in 2006, 1,541 (93%) had outcome data (partial and complete) available. Of these cases, 1,270 (82%) were reported as cured or had completed treatment, 143 (9%) died before or during treatment, 29 (2%) transferred out of Canada, 35 (2%) absconded before completion of 80% of treatment and treatment was ongoing for 46 (3%) cases. For 129 (8%) cases, treatment outcome was not recorded or was recorded as other.

Although the total number of reported cases of TB in Canada has shown a general decrease over the past decade, this decrease is mostly a reflection of a decreasing number of cases in the Canadian-born non-Aboriginal population. Between 1997 and 2007 there was an average annual decrease of 8% in the number of cases reported in the Canadian-born non-Aboriginal population. The number of cases in the foreign-born population also decreased annually but only by an average of 2%. In the Canadian-born Aboriginal population, however, the number of cases increased by an average of 2% per year over the past decade.

² Long R, Ellis E, editors, *Canadian Tuberculosis Standards*, 6th ed. Ottawa ON: Her Majesty, the Queen in Right of Canada, represented by the Minister of Health; 2007.

INTRODUCTION

The *2007 Tuberculosis in Canada* annual report is a publication of Tuberculosis Prevention and Control (TBPC), Public Health Agency of Canada (PHAC). Collection of statistics on tuberculosis in Canada started in 1924 and TBPC stores and maintains copies of all these historical reports. In 1994, responsibility for the Canadian Tuberculosis Reporting System (CTBRS) was transferred from Statistics Canada to Health Canada. In September 2004, TBPC became part of the PHAC and assumed responsibility for the annual reporting. Records of all new active and relapsed tuberculosis cases come to TBPC from the ten provinces and three territories on an annual basis.

This report contains the overall TB case counts and incidence rates as well as data on selected demographic and clinical characteristics. This report describes information on the following for TB cases:

- province/territory
- sex
- age
- origin
- new and relapsed cases³
- main diagnostic site
- bacterial status
- method of detection
- immigration status
- HIV status
- risk factors/markers for disease
- patterns of drug resistance
- treatment outcomes
- drug regimens

Appendices to the report include data tables (*Appendix I*), technical notes (*Appendix II*), population estimates for 2007 (*Appendix III*) and the World Health Organization (WHO) estimated incidence of TB in the 22 high burden countries, 2007 (*Appendix IV*). Further appendices include the WHO TB epidemiological regions and the member countries (*Appendix V*), the WHO reporting form for 2007 cases (*Appendix VI*), Canadian case and treatment outcome reporting forms (*Appendix VII*) and the members of the Canadian Tuberculosis Committee (*Appendix VIII*).

These annual reports have undergone and will continue to undergo revisions in format and content from year to year. The goal is to continue to adapt and improve this publication in response to changes in the epidemiology and clinical management of TB. Comments on the content and/or format of this document are always welcome.

³ As of 2008, the CTBRS classifies all cases as new or re-treatment cases; see *Canadian Tuberculosis Standards*, 6th ed., Appendix C for complete definitions.

RESULTS

SECTION I – 2007 CASE REPORTING

NATIONAL TRENDS

Following a peak in the epidemic in the early 1940s, the reported incidence of tuberculosis (TB) has declined (Figure 1). Over the past two decades the number of reported cases and the corresponding incidence rate has generally continued to decrease (Figure 2; Table A), however the rate did stabilize at approximately 5.0 per 100,000 population between 2000 and 2006.

In 2007, a total of 1,548 incident cases of TB were reported to the CTBRS. The rate declined by 7% from 2006 to 4.7 per 100,000 population, the lowest rate recorded in Canada since reporting began in 1924. New active cases made up the majority of reported cases with a rate of 4.2 per 100,000 population; the rate for relapsed cases was 0.3 per 100,000 population.

Table A

Incidence rate of tuberculosis in Canada: 1997-2007

Year	Number of reported cases	Crude rate per 100,000	Three-year moving average
1997	1,994	6.7	
1998	1,810	6.0	6.2
1999	1,820	6.0	5.9
2000	1,724	5.6	5.8
2001	1,773	5.7	5.5
2002	1,666	5.3	5.4
2003	1,631	5.2	5.2
2004	1,613	5.0	5.1
2005	1,641	5.1	5.1
2006	1,652	5.1	5.0
2007	1,548	4.7	

GEOGRAPHIC DISTRIBUTION

Across Canada, TB incidence rates ranged from 0.0 (Prince Edward Island) to 99.2 (Nunavut) cases per 100 000 population (Table B, Figure 3). Two territories (Nunavut and Yukon) and six provinces (Alberta, British Columbia, Manitoba, Newfoundland and Labrador, Nova Scotia and Ontario) had lower rates in 2007 compared with their rates in 2006. Three regions (New Brunswick, Northwest Territories and Saskatchewan) had higher rates in 2007. For Quebec the rate in 2007 remained stable at 3.0 per 100 000 population and for the second consecutive year no cases were reported from Prince Edward Island.

Figure 1

Tuberculosis incidence and mortality rates – Canada: 1924-2007

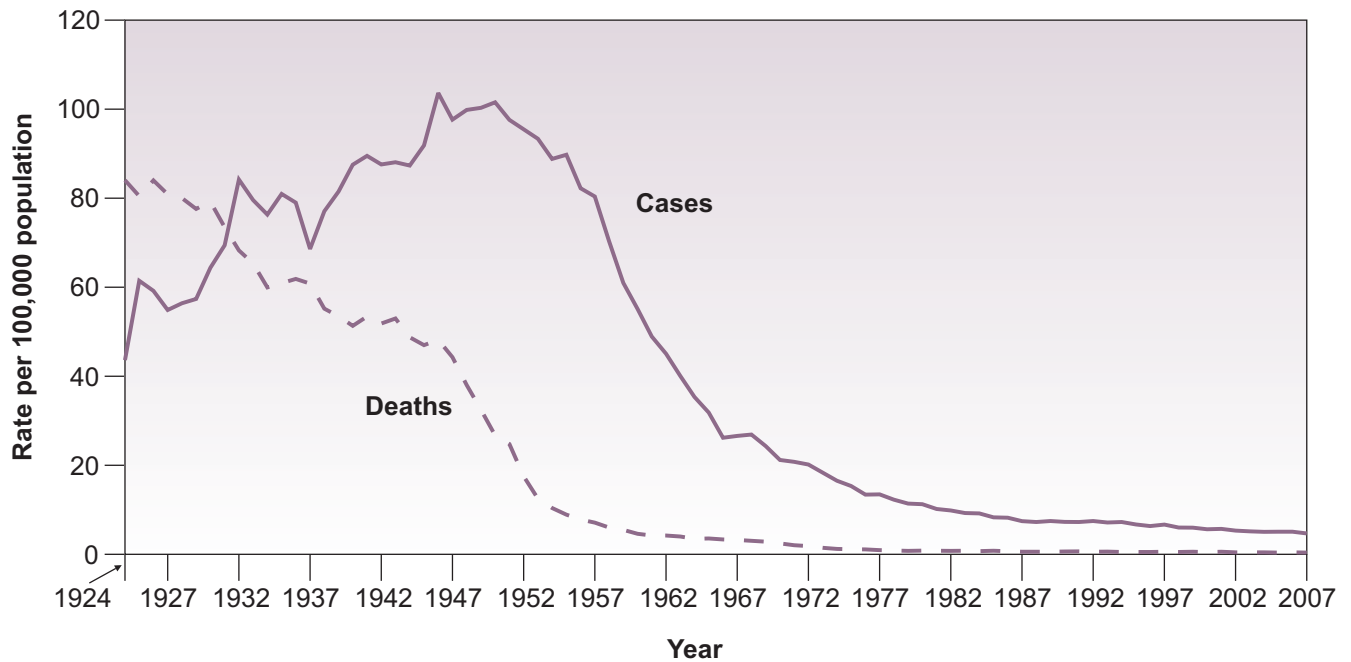


Figure 2

Tuberculosis cases and incidence rates – Canada: 1987-2007

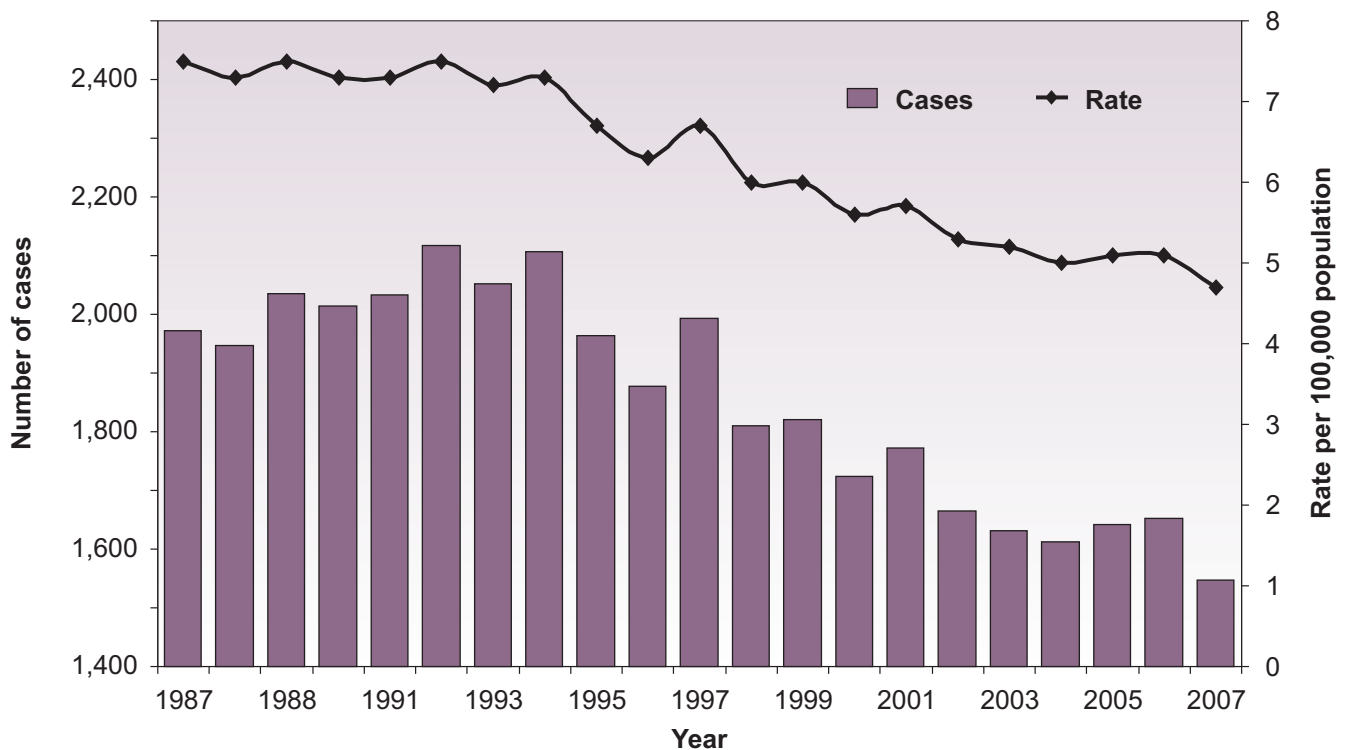


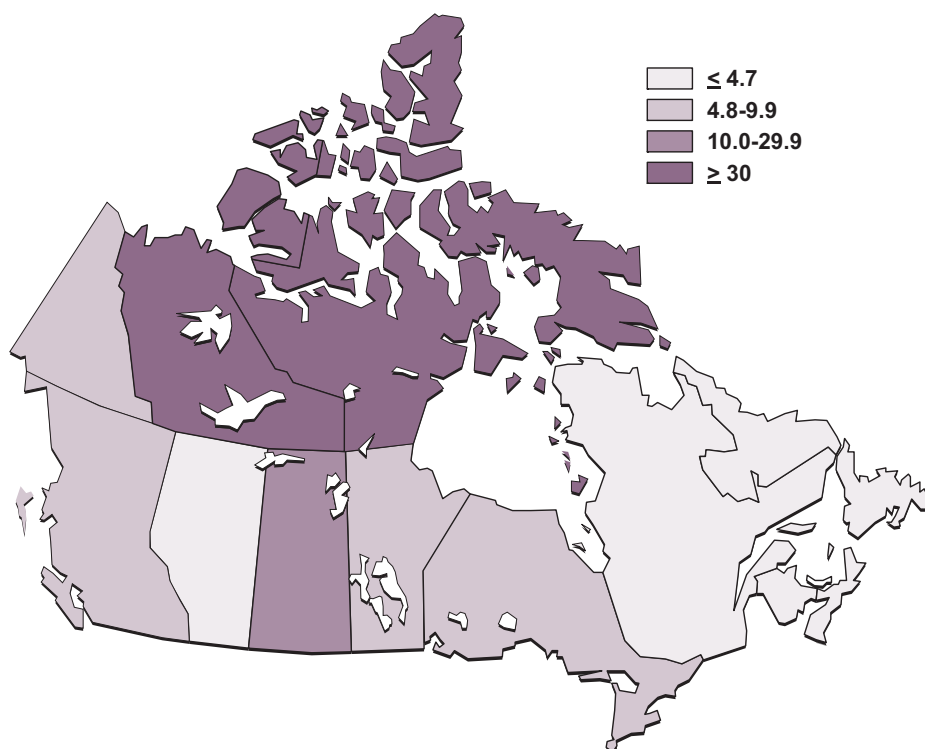
Table B

Ranked tuberculosis incidence in Canada – provinces/territories: 2007

Reporting province or territory	Abbreviation	Incidence rate per 100,000
Nunavut	Nvt.	99.2
Northwest Territories	N.W.T.	34.5
Saskatchewan	Sask.	10.6
Yukon	Y.T.	9.2
Manitoba	Man.	8.6
British Columbia	B.C.	6.4
Ontario	Ont.	5.1
Alberta	Alta.	3.2
Quebec	Que.	3.0
Newfoundland and Labrador	N.L.	1.4
Nova Scotia	N.S.	0.7
New Brunswick	N.B.	0.7
Prince Edward Island	P.E.I.	0.0
CANADA		4.7

Figure 3

Tuberculosis incidence rate by province/territory as compared with national rate (4.7 per 100,000): 2007

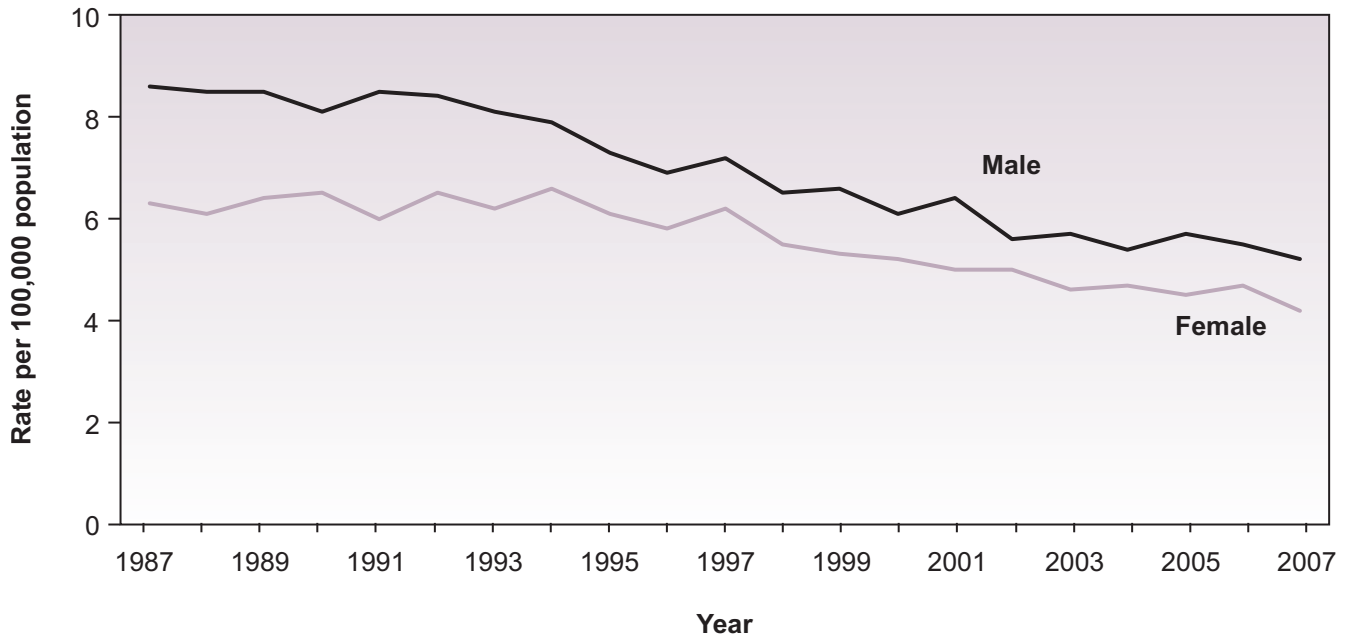


SEX AND AGE GROUP DISTRIBUTION

Like the overall rate for Canada, over the past two decades, the incidence rates of TB in males and females have followed similar patterns of decline. While case reporting and incidence rates have always been higher in males, there has been a gradual decrease in the differential between males and females. However, in 2007 males continued to account for the larger number of reported cases (846 cases, 5.2 per 100,000 population), when compared with females (702 cases, 4.2 per 100,000 population) (Figure 4; *Appendix I*, Tables 2B and 2C).

Figure 4

Tuberculosis incidence rate by sex – Canada: 1987-2007



Individuals between the ages of 35 and 44 years of age made up the largest number of reported cases representing 18% of the total. The age-specific incidence rate of 10.1 per 100,000 for those in the 75 years and older remains the highest rate for all age groups. In the 65-74 year age group, the rate continues to remain higher relative to the younger age groups. However, the incidence per 100 000 population for this age group has been slowly declining over the past 5 years (Figure 5; *Appendix I*, Table 2A).

By age group and sex, the incidence rate of TB was similar in males and females for all age groups with the exception of the very young (< 1 year of age) and those aged 75 and older. The incidence rate for males in the youngest age cohort was 10 times higher than for the similar age cohort for females. This may be a reflection of the small number of cases reported. The incidence rate for the males 75 years and older was almost 2 times the rate for similarly aged females (Figure 6; *Appendix I*, Tables 5B and 5C).

ORIGIN DISTRIBUTION

In 2007, foreign-born cases continued to represent the greatest percentage of the overall case count when compared with the Canadian-born non-Aboriginal and Canadian-born Aboriginal populations. A total of 1,042 TB cases were reported among the foreign-born, representing 67% of all cases. A total of 170 cases (11% of the total) were in the Canadian-born non-Aboriginal population and 307 cases (20% of the total) were diagnosed in the Canadian-born Aboriginal population. Origin was unknown for 2% of the cases (Figure 7; *Appendix I*, Table 3).

Figure 5

Tuberculosis incidence rate by age group – Canada: 2007

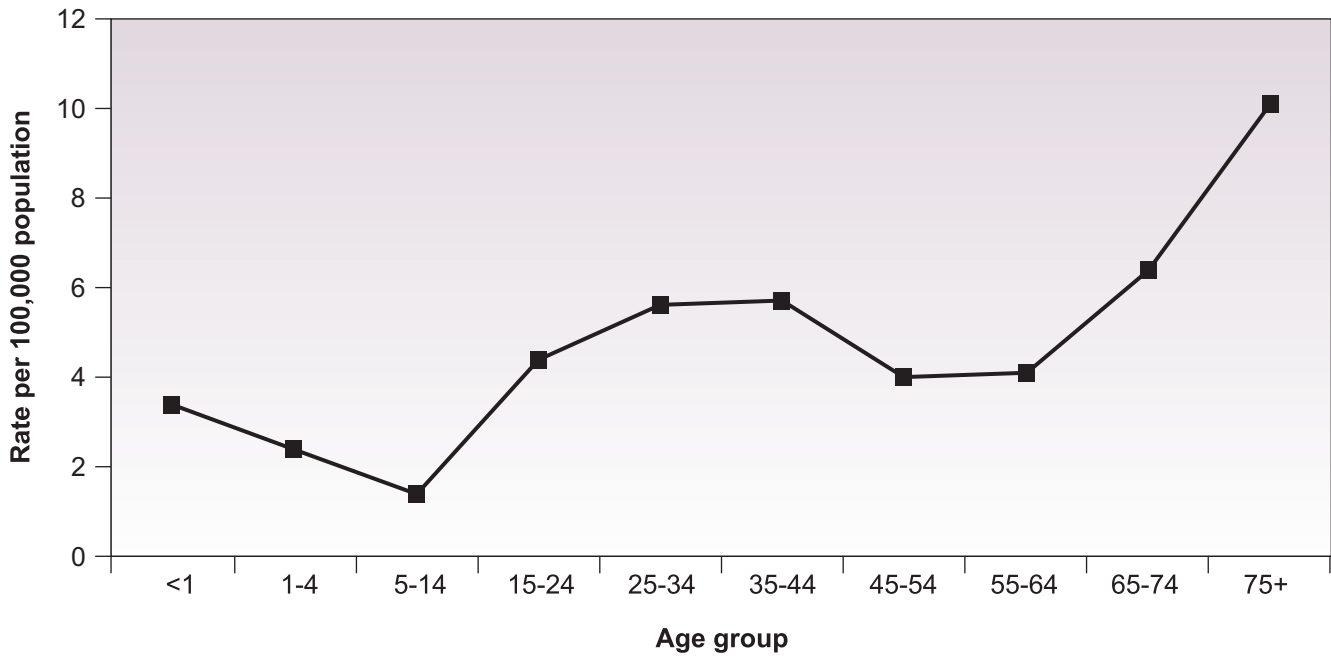


Figure 6

Tuberculosis incidence rate by age group and sex – Canada: 2007

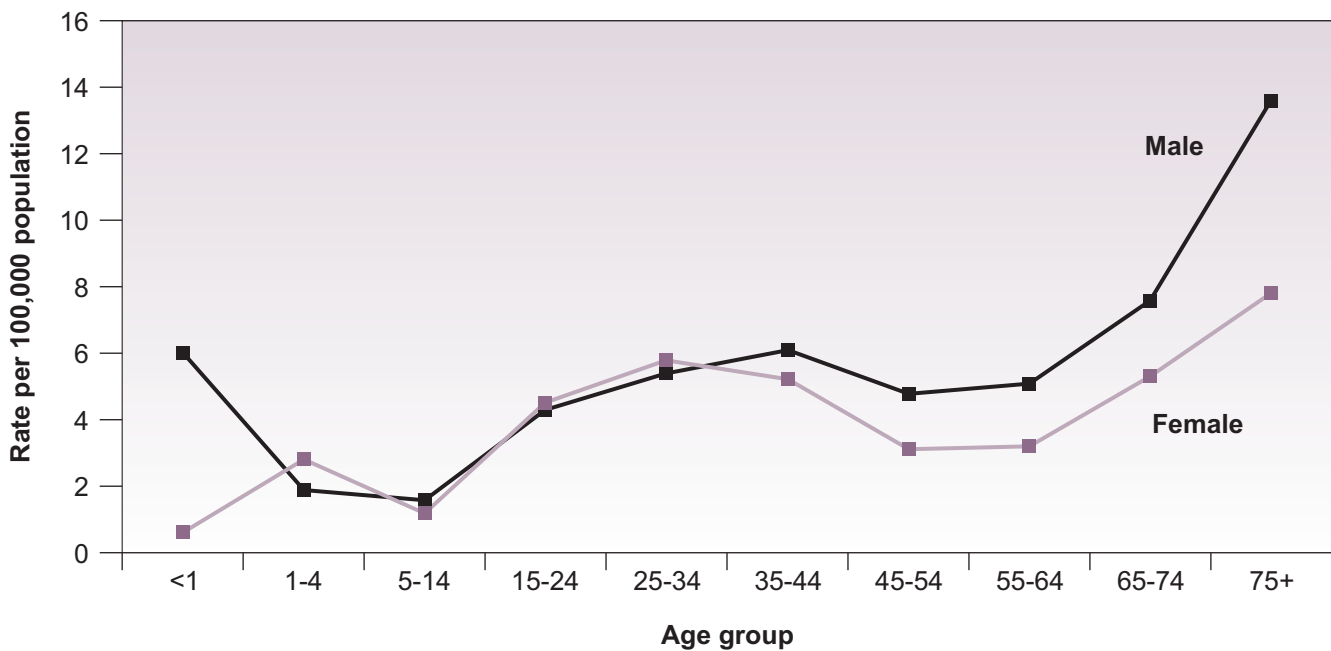
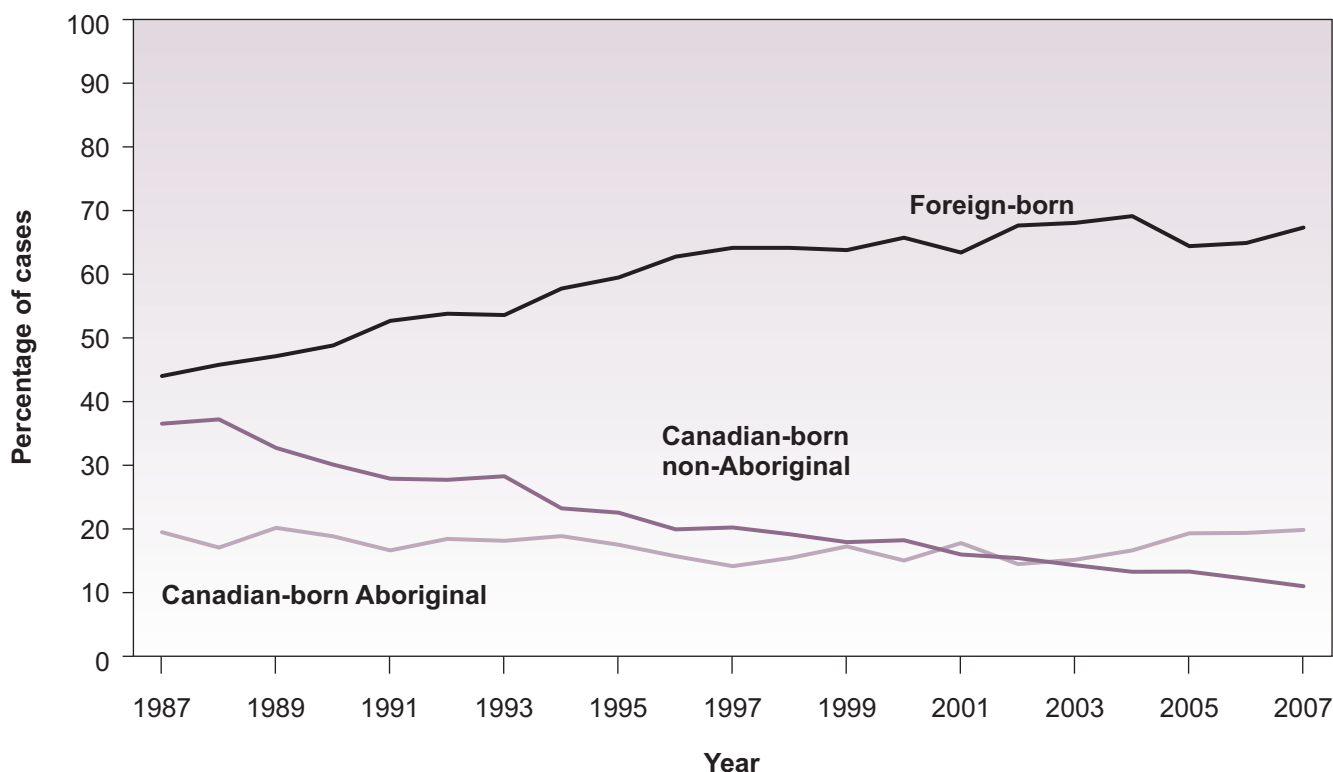


Figure 7

Percentage of tuberculosis cases by origin – Canada: 1987-2007



Although the total number of reported cases of TB in Canada has shown a general decrease over the past decade, this decrease is mostly a reflection of a decreasing number of cases in the Canadian-born non-Aboriginal population. Between 1997 and 2007 there was an average annual decrease of 8% in the number of cases reported in the Canadian-born non-Aboriginal population. The number of cases in the foreign-born population also decreased annually but only by an average of 2%. In the Canadian-born Aboriginal population, however, the number of cases increased by an average of 2% per year over the past decade (Figure 8; *Appendix I*, Table 3).

The TB incidence rate has slowly declined among Canadian-born non-Aboriginal and foreign-born populations. However, no significant TB incidence rate change occurred in the Canadian-born Aboriginal population over the decade (Figure 9; *Appendix I*, Table 6).

The highest percentage of foreign-born cases (20%) was in the 35 to 44 age-group, slightly higher than the percentage of foreign-born cases between the ages of 25 and 34 (18%). For the Canadian-born non-Aboriginals, 20% of the cases were 75 years of age or older. For Canadian-born Aboriginal cases, 19% were between the ages of 15 and 24 and 19% were between the age of 35 and 44. A larger percentage of the Canadian-born Aboriginal cases were in the younger cohorts, 0 to 14 years of age, whereas a greater percentage of Canadian-born non-Aboriginals were in the older cohort 65 and over (Figure 10; *Appendix I*, Table 8). The median ages for Canadian-born non-Aboriginals, the foreign-born, and Canadian-born Aboriginals were 53 years, 45 years and 33 years, respectively.

In 2007 there were 19 Canadian born non-Aboriginal cases under the age of 15 years. Eight (42%) of these cases were born to parents who were foreign-born.

Figure 8

Number of tuberculosis cases by origin – Canada: 1987-2007

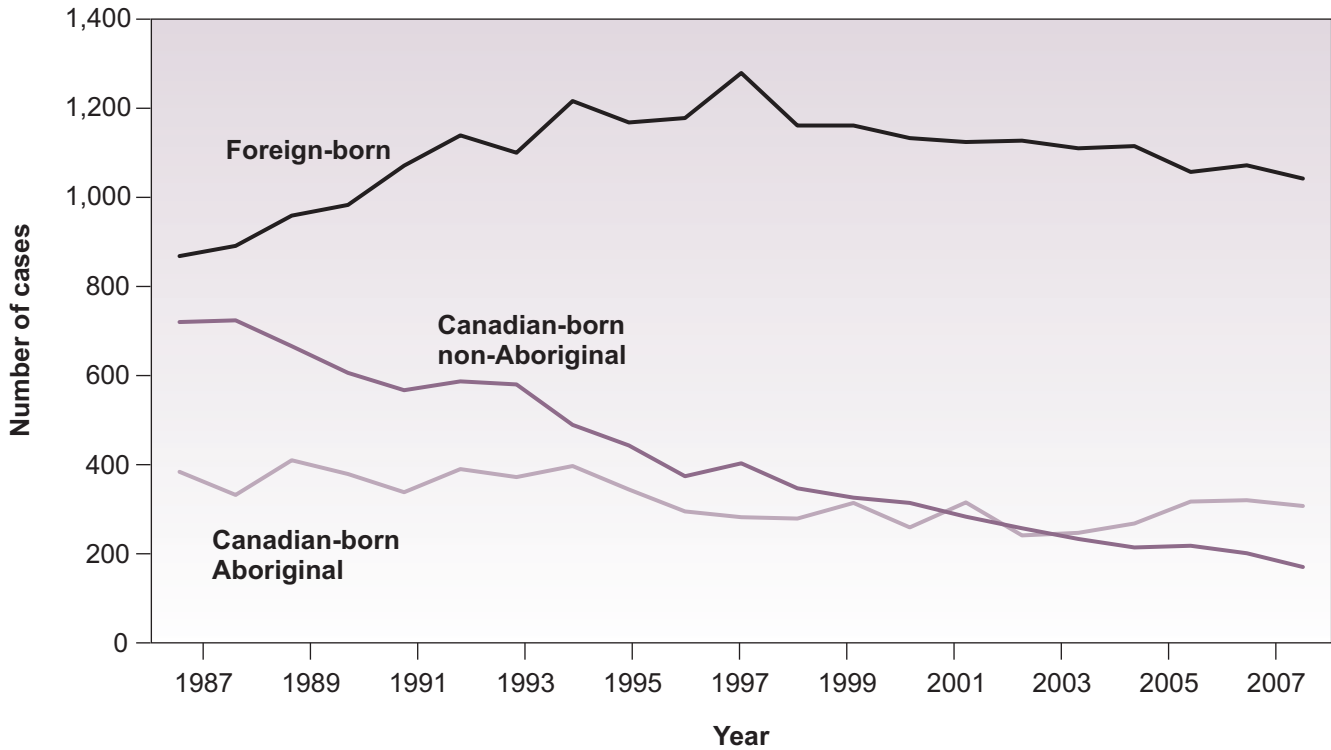


Figure 9

Tuberculosis incidence rate by origin – Canada: 1997-2007

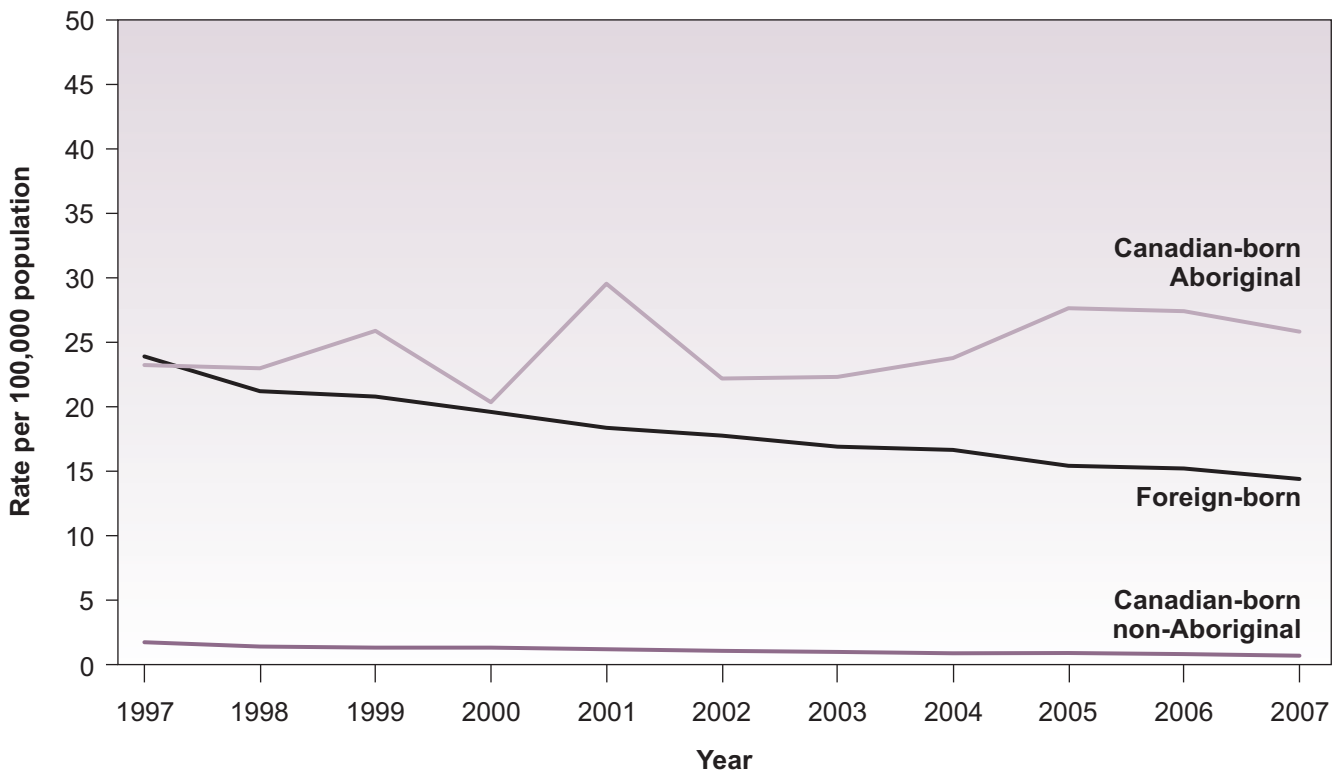
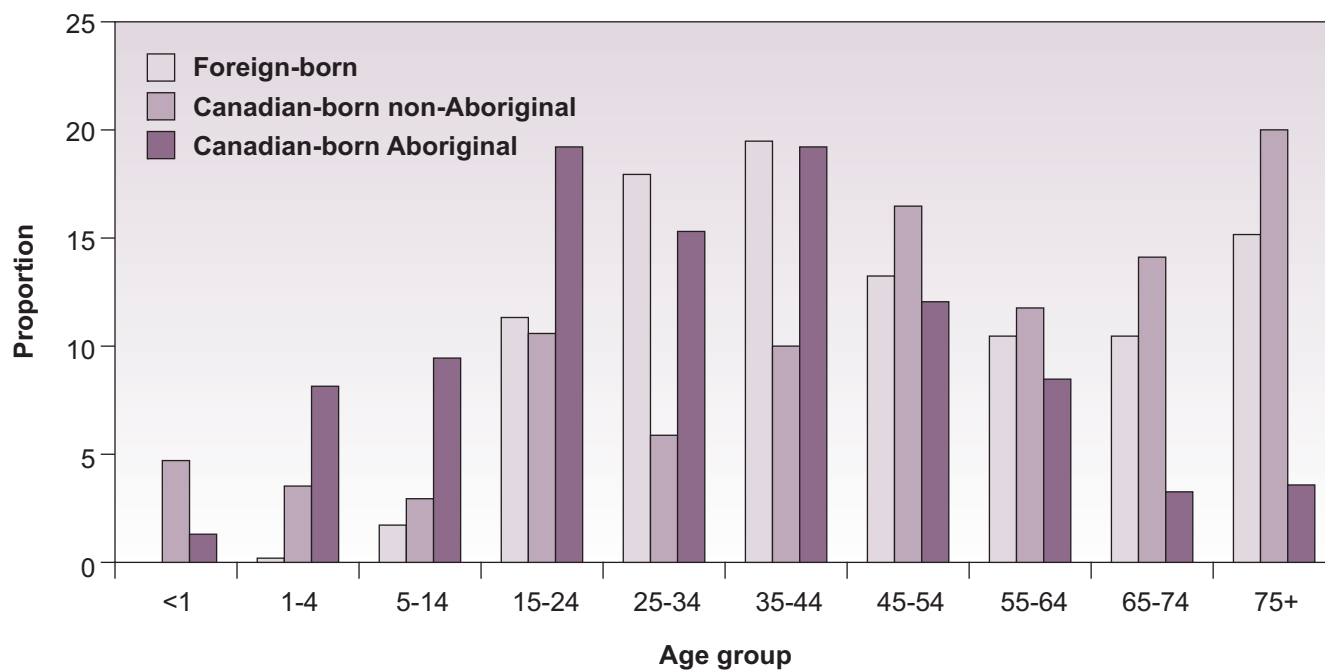


Figure 10

Proportion of tuberculosis cases by age group and origin – Canada: 2007



Among the foreign-born cases, when analyzed according to the STOP-TB Partnership/WHO TB epidemiological regions, 39% were in individuals originating from the Western Pacific Region with cases primarily from China, the Philippines and Viet Nam. The highest incidence rate (43.9 per 100,000 population) was found in individuals from the Africa, High HIV Prevalence region, (AFR-High). Table C shows the foreign-born TB incidence rate in Canada by WHO region of birth compared with the WHO estimated TB incidence rate for that region. Figure 11 shows the percentage of foreign-born TB by region, reported in Canada between 1997 and 2007.

Table C

Comparison of the reported foreign-born tuberculosis incidence rate in Canada by STOP-TB Partnership/WHO TB epidemiological regions of birth (per 100,000 population) with WHO estimated tuberculosis incidence rate in the respective region

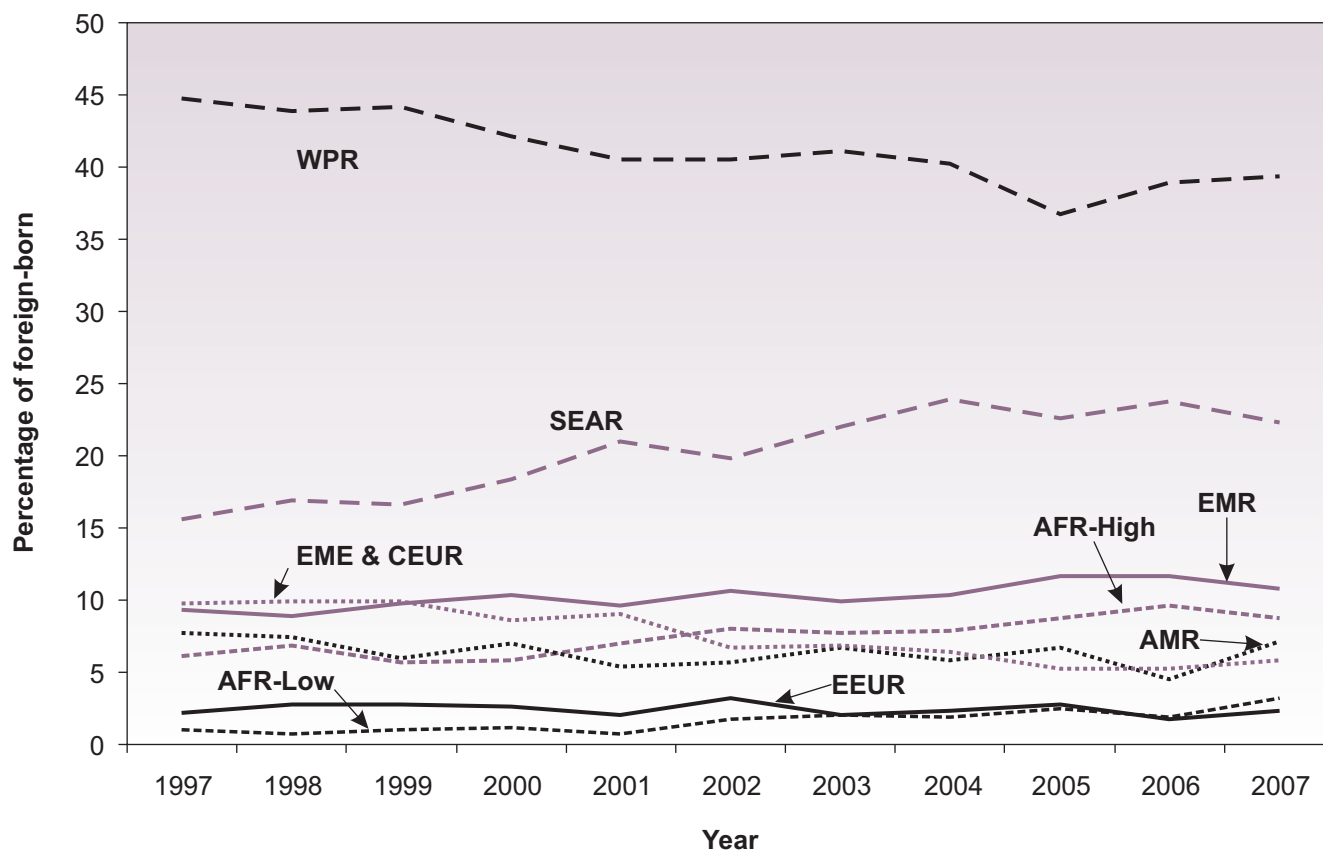
WHO regions*	Reported rate in Canada, 2007	WHO estimated TB incidence rate in regions, 2007**
Africa, High HIV Prevalence, (AFR High)	43.9	414
Africa, Low HIV Prevalence, (AFR Low)	29.7	217
American Region (AMR) - Latin American Countries (LAC)	9.4	56
Eastern Europe (EEUR)	7.2	91
Eastern Mediterranean (EMR)	15.7	104
Established Market Economies (EME) and Central Europe (CEUR)	2.3	12
South-East Asia (SEAR)	31.7	180
Western Pacific (WPR)	24.1	117
Overall	14.4	139

* Source: The Stop TB Partnership and World Health Organization. *Global Plan to Stop TB 2006-2015*. Geneva, World Health Organization, 2006 (WHO/HTM/STB/2006.35).

** Source: *Global tuberculosis control: surveillance, planning, financing, WHO report 2009*. Geneva, World Health Organization (WHO/HTM/TB/2009.411).

Figure 11

Percentage of foreign-born tuberculosis cases by STOP-TB Partnership/WHO TB epidemiological regions – Canada: 1997-2007



Analyzing the duration of time between the arrival of foreign-born individuals into Canada to the time they were diagnosed with active TB disease, based on the year of arrival, 19% of the foreign-born cases were diagnosed in individuals arriving in Canada after January 1, 2006, (i.e. < 2 years after arrival). An additional 14% of the cases arrive between January 1, 2003 and December 31, 2005 (i.e. between 2 and 5 years after arrival) (*Appendix I, Table 18*).

Alberta, British Columbia and Ontario reported the highest percentage of foreign-born cases (75%, 71% and 89%, respectively). In Quebec foreign-born cases accounted for 62% of the reported cases. In New Brunswick 60% of the cases were foreign-born and in Nova Scotia, 43% of the cases were foreign-born. (Table 6). For the remaining provinces/territories foreign-born cases accounted for fewer than 30% of the total case count.

Canadian-born Aboriginal cases accounted for 20% of all cases reported in Canada. In Saskatchewan and the North (which includes Northwest Territories, Nunavut and Yukon), Canadian-born Aboriginal peoples accounted for over 88% of reported cases. In Manitoba, Canadian-born Aboriginals made up 66% of the cases (Figure 12; Table D; *Appendix I, Table 6*).

Figure 12

Origin of tuberculosis cases and overall incidence rate – provinces/territories: 2007

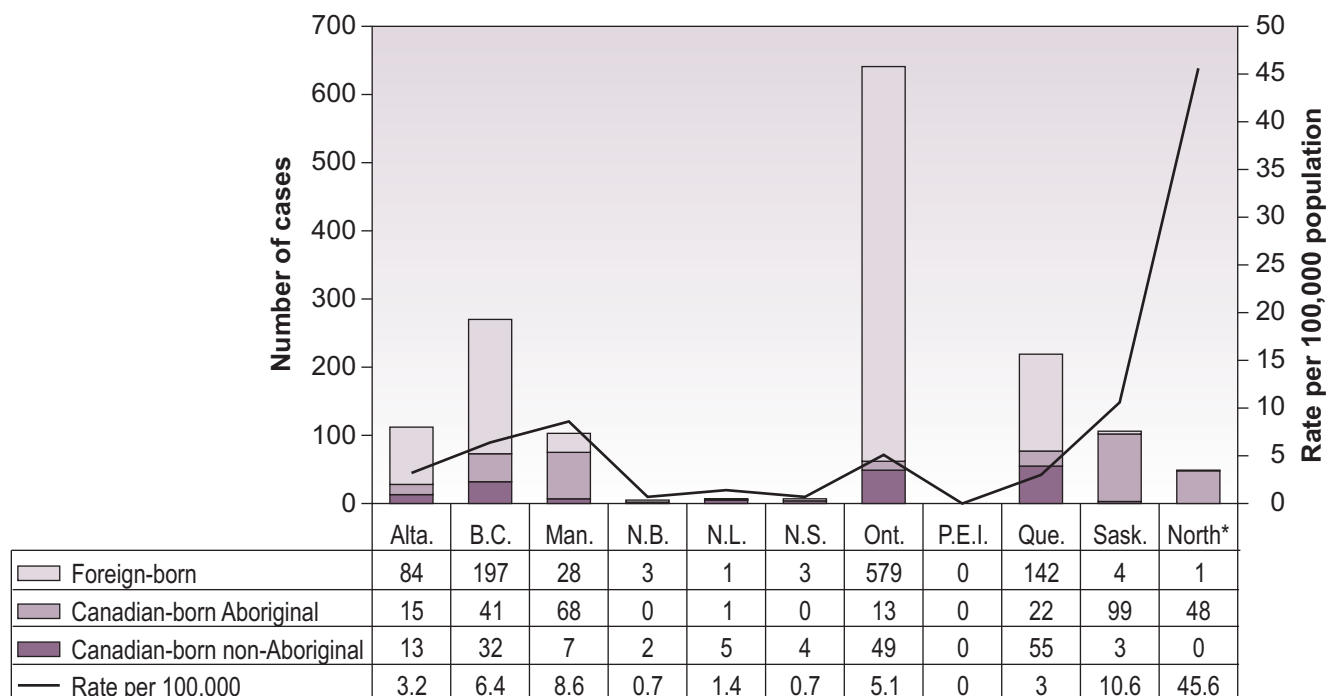


Table D**Percentage of tuberculosis cases in Canada by origin – provinces/territories: 2007**

Reporting province or territory	Canadian-born non-Aboriginal	Canadian-born Aboriginal	Foreign-born	Unknown origin
Alberta	11.6	13.4	75.0	0.0
British Columbia	11.6	14.9	71.4	2.2
Manitoba	6.8	66.0	27.2	0.0
New Brunswick	40.0	0.0	60.0	0.0
Newfoundland and Labrador	71.4	14.3	14.3	0.0
Nova Scotia	57.1	0.0	42.9	0.0
North*	0.0	98.0	2.0	0.0
Ontario	7.5	2.0	88.5	2.0
Prince Edward Island	-	-	-	-
Quebec	24.0	9.6	62.0	4.4
Saskatchewan	2.8	93.4	3.8	0.0
Canada	11.0	19.8	67.3	1.9

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

*Includes Northwest Territories, Nunavut and Yukon Territory.

DIAGNOSTIC DISTRIBUTION

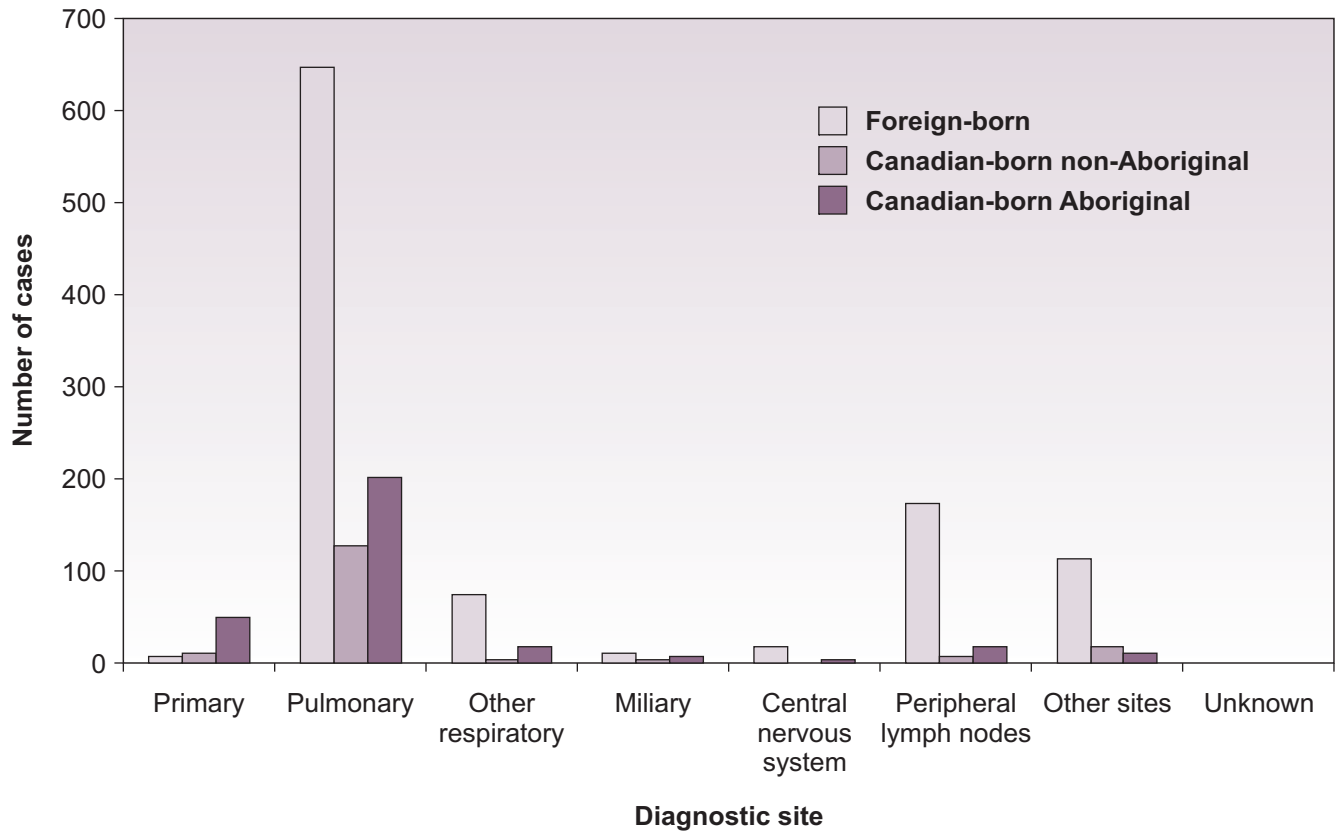
Pulmonary TB, including TB of the lungs and conducting airways (see Technical Annex for complete definition), was the most frequently reported diagnostic site, accounting for 65% of reported cases in 2007, followed by TB of the peripheral lymph nodes, which accounted for 13% of the reported cases. Nine percent of the cases were classified as “other”, which included: TB of the intestines, peritoneum and mesenteric glands, bones and joints, genitourinary system, skin, eye, ear, thyroid, adrenal, and spleen (*Appendix I, Table 4*).

Pulmonary TB was diagnosed in 75% of Canadian-born non-Aboriginals, 66% of the Canadian-born Aboriginal cases and 62% of foreign-born cases. A greater percentage (17%) of the foreign-born cases was diagnosed with TB of the peripheral lymph nodes compared with 4% of the Canadian-born Aboriginal cases and 6% of the Canadian-born non-Aboriginal cases (*Appendix I, Table 10*).

There were of 63 cases of primary TB. Seventy-six percent of these cases were reported in the Canadian-born Aboriginal population and represented 16% of the total number of Aboriginal cases. TB of the central nervous system (CNS) was rare, accounting for only 20 (1.3%) of all reported cases (*Figure 13; Appendix I, Table 10*).

Figure 13

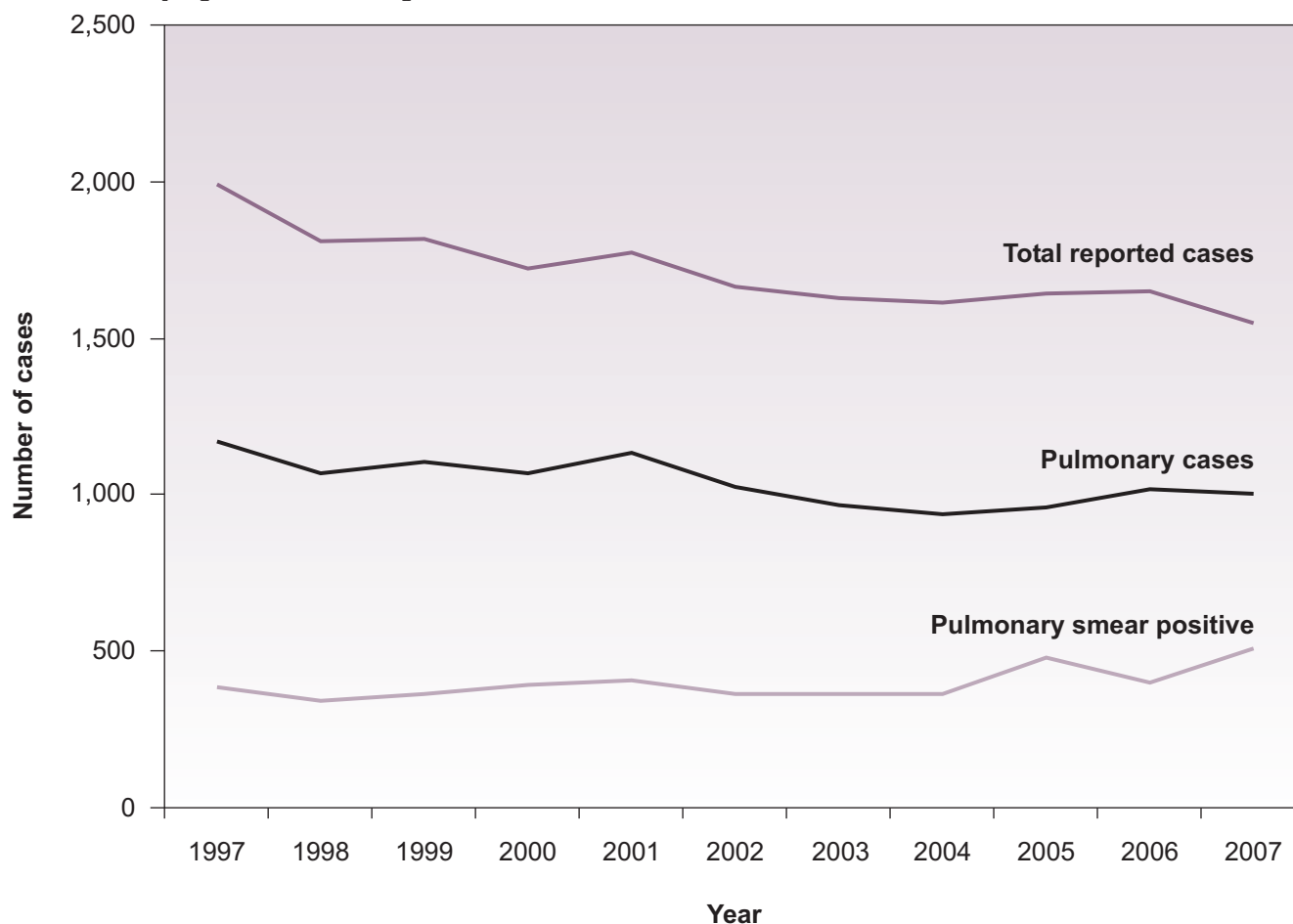
Tuberculosis cases by main diagnostic site and origin – Canada: 2007



Of the 1,002 cases of pulmonary TB reported, smear status was available for 909 cases. Of these, 56% (509 cases) were smear-positive (sputum was obtained from direct collection, through bronchoscopy or gastric aspirate). The percentage of pulmonary cases that were smear positive increased from 51% in 2006. A smear positive diagnosis denotes the most infectious form of pulmonary TB. Figure 14 shows the relationship between the total number of cases reported, the number of cases that were pulmonary and of those, the number that were pulmonary and smear-positive for the years 1997 to 2007.

Figure 14

Pulmonary sputum smear positive tuberculosis cases – Canada: 1997-2007



CASE DETECTION

Seventy-four percent of the cases were diagnosed when the patient presented with symptoms to a medical professional. Of the 139 cases identified through contact tracing, 67% were in the Aboriginal population. Overall, 30% of all Aboriginal cases were detected through contact tracing compared with 12% for the non-Aboriginal cases and 2% of the foreign-born cases. For the foreign-born population, 7% were identified through immigration screening (*Appendix I, Table 17*).

DEATHS

For the 1,652 cases diagnosed in 2006 for which outcomes were reported as of June 30, 2008, 143 (9%) were reported to have died before or during treatment. Of these, TB was reported as the underlying cause of death for 23 cases (16%). TB contributed to death, but was not the underlying cause for 68 cases (48%). Cause of death was not reported for seven cases (*Appendix I, Tables 21 and 22*).

As of June 30, 2008, 124 (8%) of the 1,548 cases diagnosed in 2007 were reported to have died before or during treatment. Of these, TB was reported as the underlying cause of death for 28 cases (23%). TB contributed to death, but was not the underlying cause for 56 cases (45%). Cause of death was not reported for three cases (*Appendix I, Tables 21 and 22*). The number of deaths as reported for the 2007 cases will be updated in the 2008 report when all outcome data has been submitted for these cases.

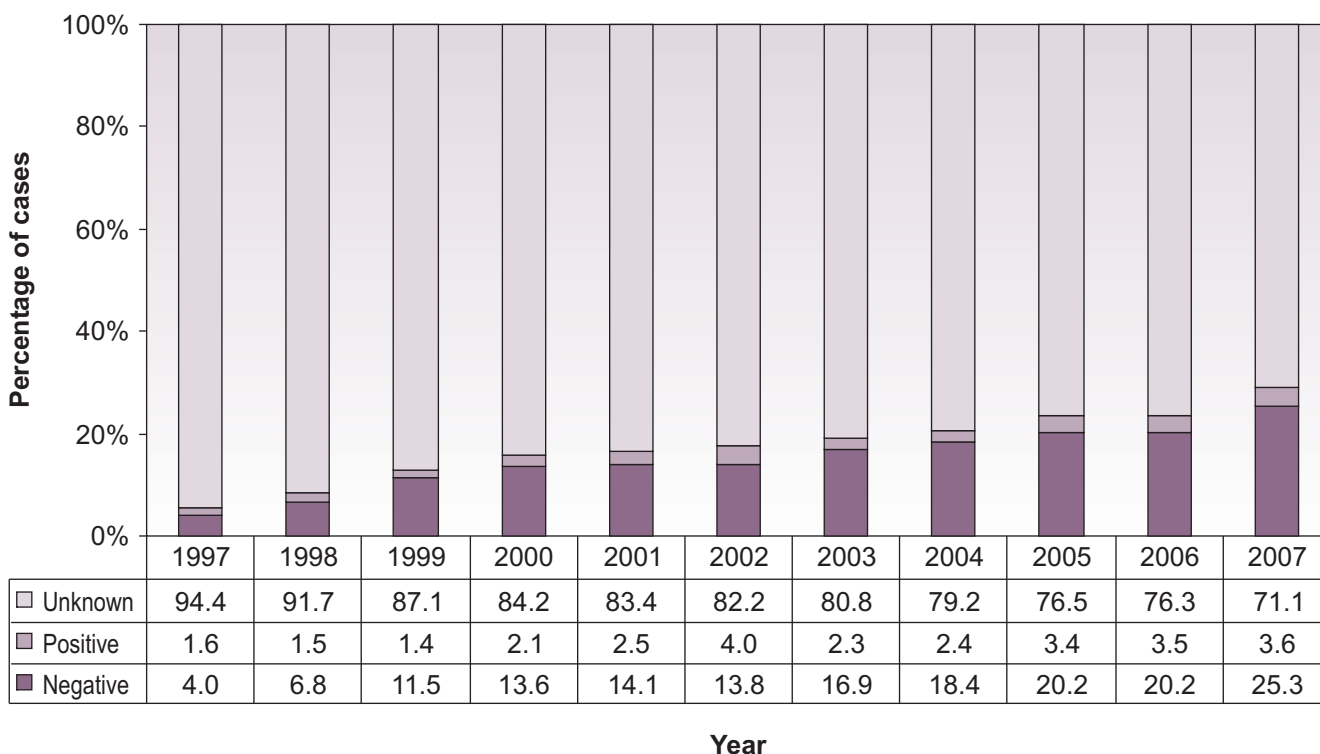
HIV STATUS

Data on HIV status continues to be underreported at the national level. Of the 1,548 cases reported, 447 cases (29%) had an HIV test result reported (Figure 15). Across the provinces and territories, the percentage of cases for which HIV status was reported ranged from 0% to 96% of reported cases. (Appendix 1, Table 24).

Of the cases for which HIV status was known, 59% were male and the majority of cases were between 15 and 55 years of age. Forty-percent of the Canadian-born Aboriginal population had a result reported, whereas 31% of the Canadian-born non-Aboriginal population and 26% of the foreign-population were tested. Of the 447 cases with known HIV status, 55 (12%) were HIV positive. By origin group, of those with HIV status reported, 29% of the Canadian-born non-Aboriginal tested were HIV positive, compared with 11% of the Canadian-born Aboriginal and 11% of the foreign-born.

Figure 15

Percentage of tuberculosis cases by HIV status – Canada: 1997–2007



PATTERNS OF DRUG RESISTANCE

Initial drug resistance

Of the 1,548 cases reported in 2007, 1,231 cases were culture positive. Of these, resistance information was available for 1,188 cases. Ninety-one percent of cases with reported drug sensitivity information showed no resistance to first-line anti-TB drugs (isoniazid, rifampin, ethambutol or pyrazinamide)^{4,5}, 8% percent were resistant to one drug and the remaining 1% showed patterns of resistance to two or more drugs prescribed.

For the 111 cases that were resistant to at least one drug, 85% were monoresistant with resistance to isoniazid accounting for 87% of all monoresistant cases. Nine percent of resistant cases were multidrug-resistant (MDR) defined as resistance to at least isoniazid and rifampin. One case was identified as being extensively drug-resistant (XDR-TB), which is resistance to any fluoroquinolone and at least one of three injectable second-line drugs: amikacin, capreomycin and kanamycin⁶. The remaining 5% of the resistant cases were poly-resistant, not including MDR-TB.

Foreign-born cases accounted for 81% of the 111 resistance cases and 90% of the MDR-TB cases. The one XDR-TB case was in a foreign-born patient who acquired resistance outside Canada.

The majority of cases, 84%, for which resistance was reported, were diagnosed with TB for the first time, 8% were relapsed cases and for the remaining 8% of cases, disease status was unknown (*Appendix I, Table 15*).

⁴ As of 2005, streptomycin was considered a second-line TB antibiotic in Canada, even though it may be used for initial treatment.

⁵ British Columbia and Manitoba do not routinely test resistance against PZA.

⁶ This case was reported in Tuberculosis Drug Resistance in Canada, 2008 as a 2008 case since drug susceptibility testing was performed in 2008.

SECTION II – 2006 TREATMENT OUTCOMES

Treatment outcome data for new active and relapsed cases reported in the previous year are submitted to TBPC using a separate reporting form (*Appendix VII – Reporting forms*). For the 1,652 cases reported in 2006, 1,541 (93%) had outcome data (partial and complete) available. Of these cases, 1,270 (82%) were reported as cured or had completed treatment, 143 (9%) died before or during treatment, 29 (2%) transferred out of Canada, 35 (2%) absconded before completion of 80% of treatment, and treatment was ongoing for 46 (3%) cases. For 129 (8%) cases, treatment outcome was not reported or was reported as “other”.

The majority of individuals were reported to have received treatment as per the *Canadian Tuberculosis Standards, 6th edition*⁷. Drug regimen reporting was complete for 1,042 cases. Almost eighty percent of these cases received three or more anti-tuberculosis drugs (*Appendix I, Table 25*).

Of the 1,652 patients diagnosed in 2006 822 (49%) were on directly observed therapy (DOT). An additional 36% self-administered their medications and 4% were treated using another treatment regimen. Treatment regimen was not indicated for 11% of the cases. Eighty-six percent of those patients on DOT and 89% who self-administered were reported to have been cured or to have completed treatment (Figure 16).

PHAC provides treatment outcome data to the WHO on an annual basis. This reporting focuses only on pulmonary smear positive cases and the treatment outcomes of these cases by major mode of treatment (e.g., DOTS or non-DOTS). The WHO global targets for TB include 70% detection of all pulmonary smear positive cases and of these cases an 85% cure or treatment completion rate. Table E provides the reported treatment outcome data for laboratory confirmed pulmonary cases in Canada between 1998 and 2006, inclusive. Laboratory-confirmed cases include smear-positive cases plus any cases confirmed by additional laboratory methods.

ACQUIRED DRUG RESISTANCE

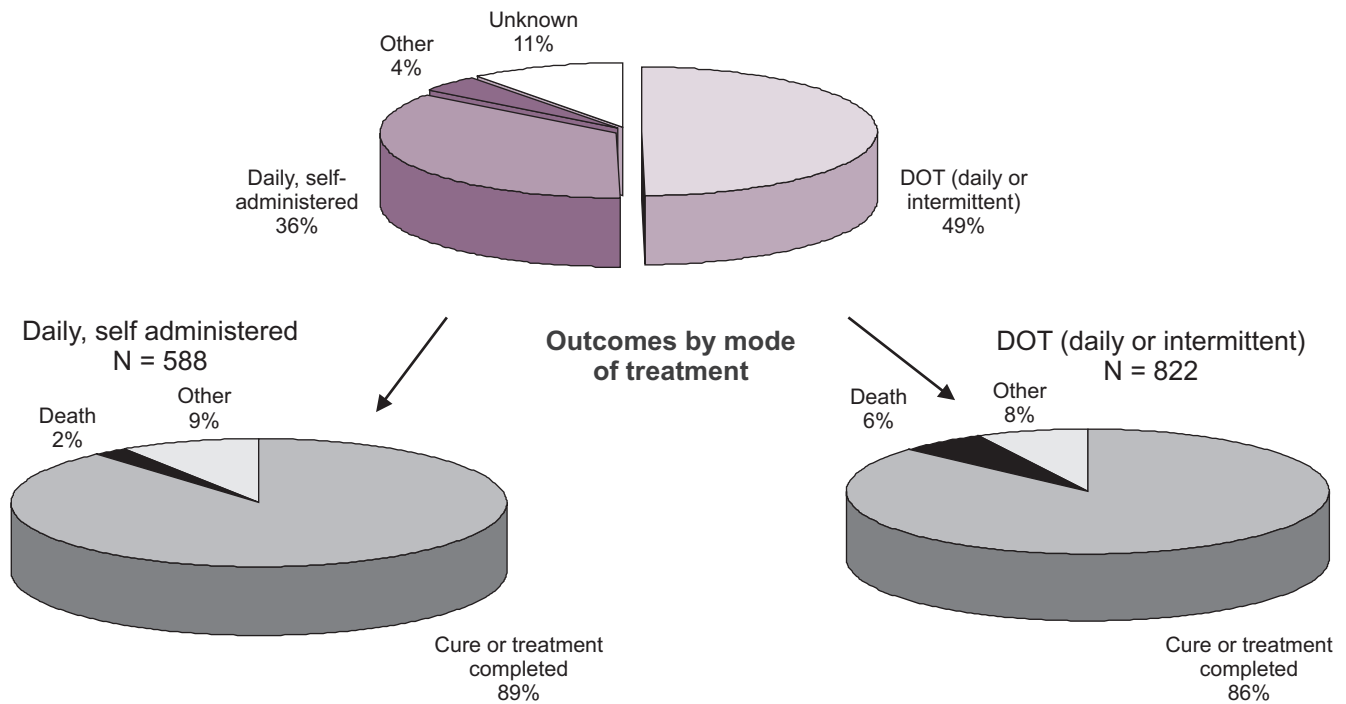
Acquired drug resistance occurs when patients who initially had drug-susceptible TB bacteria later become drug-resistant as a result of inadequate, inappropriate or irregular treatment or, more importantly, because of non-adherence in drug taking. In 2006 there was 1 case of acquired resistance reported (*Appendix I, Table 28*).

⁷ Long R, Ellis E, editors, *Canadian Tuberculosis Standards, 6th ed.* Ottawa: Public Health Agency of Canada and the Canadian Lung Association/Canadian Thoracic Society; 2007.

Figure 16

Treatment outcome status of tuberculosis cases by major mode of treatment – 2006

Percentage of case by major mode of treatment



* Other: absconded, transferred, treatment ongoing, unknown

Table E**Treatment outcome of laboratory confirmed pulmonary cases, Canada: 1998–2006⁸**

Treatment outcome	1998		1999		2000		2001		2002		2003		2004		2005*		2006*	
	DOTS	Non-DOTS	DOTS	Non-DOTS	DOTS	Non-DOTS	DOTS	Non-DOTS	DOTS	Non-DOTS	DOTS	Non-DOTS	DOTS	Non-DOTS	DOTS	Non-DOTS	DOTS	Non-DOTS
Total cohort registered for treatment	184	247	221	161	231	150	258	188	205	139	165	200	153	437	225	416	277	
Cured	68	71	76	68	107	72	79	57	83	9	12	55	46	62	14	63	11	
Completed	88	96	126	53	84	53	134	92	99	105	121	126	129	307	168	293	223	
Cured or completed (% of total)	156 (85%)	167 (68%)	202 (91%)	121 (75%)	191 (83%)	125 (83%)	213 (83%)	149 (79%)	182 (89%)	114 (82%)	138 (84%)	176 (88%)	175 (81%)	369 (84%)	182 (81%)	356 (86%)	234 (84%)	
Died	8	28	6	25	22	10	26	23	11	13	17	17	27	8	29	23	23	
Failed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Defaulted	1	3	5	3	6	3	9	5	4	6	3	3	3	2	5	3	9	7
Transferred	2	20	2	5	1	8	3	10	2	4	2	5	5	3	9	7	6	
Treatment ongoing	3	2	4	3	8	2	3	1	1	0	0	0	3	1	17	3	15	6
Unknown	14	27	2	4	3	2	4	0	5	2	2	2	3	4	8	5	6	1

* The sharp increase in the number of cases registered between 2004 and 2005 is attributed to the submissions of outcome data from Ontario.

⁸ Numbers may differ from *Global Tuberculosis Control, WHO Report 2009* (which reports 2007 case data and 2006 treatment outcome data) due to late reporting of cases to the Public Health Agency of Canada.

SECTION III – MEASURING PROGRESS TOWARDS NATIONAL TARGETS

In 1997, the National Consensus Conference on Tuberculosis recommended that the Canadian goal of TB prevention and control should be to reduce the annual number of TB cases (new and relapsed) by five percent annually. The overall average rate of change for such cases between 1997 and 2007 was 3.3% (see Table F).

Table F

Average rate of change in the number of cases and in incidence rate for new and relapsed TB cases in Canada: 1997–2007

Reporting year	Number of reported cases	Rate	Rate of change (%)	
			Cases	Rate
1997	1,994	6.7		
1998	1,810	6.0	↓ 9.2	↓ 10.4
1999	1,820	6.0	↑ 0.6	no change
2000	1,724	5.6	↓ 5.3	↓ 6.7
2001	1,773	5.7	↑ 2.8	↑ 1.8
2002	1,666	5.3	↓ 6.0	↓ 7.0
2003	1,631	5.2	↓ 2.1	↓ 3.8
2004	1,613	5.0	↓ 1.1	↓ 2.0
2005	1,641	5.1	↑ 1.7	↑ 2.0
2006	1,652	5.1	↑ 0.7	no change
2007	1,548	4.7	↓ 6.3	↓ 7.3
Average rate of change			↓ 2.4	↓ 3.3

In 2006, the Canadian Tuberculosis Committee⁹ (CTC) reviewed this national goal in view of the targets set in the *Global Plan to Stop TB 2006–2015*¹⁰ to reduce the global burden of TB disease in 2015 by 50% relative to 1990 levels. The CTC recommended a target to reduce the Canadian TB (new and relapsed) incidence rate to 3.6 per 100,000 population (or less) by 2015. This represents one half of the disease burden in Canada as compared to the 1990 incidence rate. Achieving this goal will require a 3.3% annual reduction in the incidence rate between 2007 and 2015.

⁹ For information on the membership and terms of reference for the Canadian Tuberculosis Committee please see <http://www.phac-aspc.gc.ca/tbpc-latb/ctc-ccla/index.html>.

¹⁰ Stop TB Partnership and World Health Organization. *Global Plan to Stop TB 2006–2015*. Geneva, World Health Organization, 2006 (WHO/HTM/STB/2006.35).

The *Canadian Tuberculosis Standards*, 6th edition has set program performance standards for the ideal anti-tuberculous drug regimen and its delivery. These standards require that, at a minimum, treatment:

- convert sputum cultures to negative after 4 months of treatment;
- achieve relapse (re-treatment) rates of less than 3% within 2 years following cessation of treatment;
- achieve acquired drug resistance rates of 0%;
- be cost-effective (since DOT is the optimal mode of drug delivery, intermittent regimens of 120 doses [9 months] or 95 doses [6 months] are recommended);
- be tolerated by the patient (< 5% of patients will discontinue or modify therapy because of adverse effects); and
- achieve at least a 90% cure (negative sputum culture at the end of treatment) or treatment completion (treatment completed but no sputum culture at the end of treatment) rate within 12 months of starting treatment for patients who did not die or transfer out during treatment.

The CTBRS contains data that can approximate measuring progress towards achieving some of these standards for the entire cohort of TB cases reported in Canada.

In 2006, after removing the patients who died or who transferred out of the region there were 1,270 patients who were deemed cured or completed treatment representing 86% of cases. There were 111 cases for which an outcome result was not reported.

Between 2001 and 2006 of the 9,976 TB cases reported in Canada, 750 (7% of all cases) were relapses. Of these relapsed cases, 327 (44%) were known to have been previously diagnosed in Canada and of these, 277 (85%) had a year of previous diagnosis recorded. Forty-two (16%) of the relapsed cases with a previous diagnosis in Canada were diagnosed with their current episode of TB within 2 years of the previous episode. The rate of relapse within two years of cessation of treatment, for cases previously diagnosed in Canada was therefore extremely low, averaging less than one percent of all reported cases for the last six years of reporting (2001 – 2006).

CONCLUSION

The total number of reported cases of TB in Canada has shown a general decrease over the past two decades. However, this decrease is mostly a reflection of a decreasing number of cases in the Canadian-born non-Aboriginal population. The number of cases in the Canadian-born Aboriginal population increased by an annual average of 2% over the past 10 years whereas there has been a minimal decrease in the foreign-born populations over the same time period.

Generally, the TB incidence rate has been slowly declining among Canadian-born non-Aboriginal and foreign-born populations, (the latter due to a significant increase in the total foreign-born population in Canada). However, no significant TB incidence rate change has occurred in the Canadian born Aboriginal population. The relatively high rate in the Aboriginal population continues to be a major concern.

Pulmonary tuberculosis makes up the majority of the cases reported in Canada. Of the pulmonary TB reported, 56% were smear-positive. The number of sputum smear positive cases, has decreased very little over the past ten years.

Determining the Canadian incidence rate of TB-HIV co-infection from this surveillance system is not yet possible. HIV status was reported for only 29% of cases, of which 12% were HIV sero-positive. This percentage is likely biased towards HIV testing in those with known risk factors for HIV infection. In the unlikely event that these were the only co-infected cases, the overall co-infection rate was 4%. The most recent report by the WHO has estimated HIV prevalence in incident TB cases in Canada in 2007 to be 5.7%.¹¹ There are a number of important personal and public health reasons for screening for HIV in patients with TB and their contacts, as well as screening and prevention of TB in patients with HIV.¹² Screening for HIV in TB cases and reporting of the results are essential activities for prevention and control of future TB cases in Canada.

Drug resistance has not yet emerged as a significant problem in Canada. Cases of MDR-TB represent less than 1% of the reported cases of drug resistance in this reporting system.

For the treatment outcome data received, the majority of TB cases were reported as cured or completed treatment. Analysis on the treatment outcome status of laboratory confirmed pulmonary cases indicates that 86% of DOTS and 84% of non-DOTS, (total 85%).

In keeping with the targets set in the *Global Plan to Stop TB 2006-2015*¹³ to reduce the global burden of TB disease by 50%, the Canadian tuberculosis incidence rate would have to be reduced to 3.6 per 100,000 by 2015. Achieving this incidence rate will require an average per annum decrease in the number of reported cases of 3.3% between 2006 and 2015. This will require a concerted effort on behalf of all working on TB prevention and control in Canada.

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

¹¹ Global tuberculosis control: surveillance, planning, financing, WHO report 2009. Geneva, World Health Organization (WHO/HTM/TB/2008.393).

¹² Long R, Ellis E, editors, *Canadian Tuberculosis Standards*, 6th ed., Appendix G: Recommendations for the screening and prevention of tuberculosis in patients with human immunodeficiency virus (HIV) and the screening for HIV in tuberculosis patients and their contacts. Ottawa: Public Health Agency of Canada and the Canadian Lung Association/Canadian Thoracic Society; 2007.

¹³ Stop TB Partnership and World Health Organization. *Global Plan to Stop TB 2006-2015*. Geneva, World Health Organization, 2006 (WHO/HTM/STB/2006.35).

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Table 1A

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 – Canada and provinces/territories: 1997-2007

Year of diagnosis	Province/territory											CANADA		
	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.		N.W.T.	Nvt.
1997	Cases	15	5	7	7	359	780	96	121	166	405	2	31	-
	Rate	2.7	3.7	0.8	0.9	4.9	6.9	8.4	11.9	5.9	10.3	6.3	45.9	-
1998	Cases	8	2	18	9	290	742	116	98	158	329	2	38	-
	Rate	1.5	1.5	1.9	1.2	4.0	6.5	10.2	9.6	5.5	8.3	6.4	56.6	-
1999	Cases	12	2	15	15	314	698	132	116	149	328	1	23	15
	Rate	2.3	1.5	1.6	2.0	4.3	6.1	11.6	11.4	5.0	8.2	3.2	56.6	55.9
2000	Cases	10	2	3	10	318	700	98	104	133	286	3	10	47
	Rate	1.9	1.5	0.3	1.3	4.3	6.0	8.5	10.3	4.4	7.1	9.9	24.7	170.9
2001	Cases	19	3	8	10	261	699	115	114	116	380	0	8	40
	Rate	3.6	2.2	0.9	1.3	3.5	5.9	10.0	11.4	3.8	9.3	-	19.6	142.2
2002	Cases	9	1	9	11	288	716	98	89	128	286	0	4	27
	Rate	1.7	0.7	1.0	1.5	3.9	5.9	8.5	8.9	4.1	7.0	-	9.6	93.7
2003	Cases	7	3	6	12	257	693	127	91	110	305	1	12	7
	Rate	1.3	2.2	0.6	1.6	3.4	5.7	10.9	9.1	3.5	7.4	3.2	28.2	23.9
2004	Cases	7	1	8	10	219	700	144	70	109	299	4	10	32
	Rate	1.4	0.7	0.9	1.3	2.9	5.6	12.3	7.0	3.4	7.2	12.7	23.1	107.2
2005	Cases	9	1	7	6	255	643	114	139	146	265	3	8	45
	Rate	1.7	0.7	0.7	0.8	3.4	5.1	9.7	14.0	4.4	6.3	9.4	18.4	148.4
2006	Cases	12	0	10	2	228	671	134	87	131	320	3	6	48
	Rate	2.4	-	1.1	0.3	3.0	5.3	11.3	8.8	3.8	7.5	9.3	13.9	155.8
2007	Cases	7	0	7	5	229	654	103	106	112	276	3	15	31
	Rate	1.4	-	0.7	0.7	3.0	5.1	8.6	10.6	3.2	6.4	9.2	34.5	99.2

Table 1B

Reported new active tuberculosis cases and incidence rate per 100,000 – Canada and provinces/territories: 1997-2007

Year of diagnosis	Province/territory													
	CANADA	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
1997	Cases	1,764	4	5	6	322	682	86	110	150	360	2	24	-
	Rate	5.9	2.9	0.5	0.8	4.4	6.1	7.6	10.8	5.3	9.1	6.3	35.5	-
1998	Cases	1,607	7	16	7	263	631	104	91	146	306	2	32	-
	Rate	5.4	1.3	1.7	0.9	3.6	5.7	9.1	8.9	5.0	7.7	6.4	47.6	-
1999	Cases	1,623	11	12	13	278	596	123	110	141	304	1	17	15
	Rate	5.3	2.1	1.3	1.7	3.8	5.2	10.8	10.8	4.8	7.6	3.2	41.8	55.9
2000	Cases	1,540	10	2	3	297	599	88	100	120	264	2	7	40
	Rate	5.0	1.9	1.5	0.3	4.0	5.1	7.7	9.9	4.0	6.5	6.6	17.3	145.5
2001	Cases	1,576	17	2	5	235	610	108	104	106	337		8	34
	Rate	5.1	3.3	1.5	0.5	3.1	5.1	9.4	10.4	3.4	8.2	0.0	19.6	120.9
2002	Cases	1,487	6	1	7	258	631	92	83	121	252		4	22
	Rate	4.7	1.2	0.7	0.7	3.4	5.2	8.0	8.3	3.9	6.2	0.0	9.6	76.6
2003	Cases	1,472	4	1	5	242	613	118	82	104	275	1	9	7
	Rate	4.7	0.6	0.7	0.5	3.2	5.0	10.2	8.2	3.3	6.6	3.3	21.3	24.0
2004	Cases	1,469	4	1	8	204	634	132	63	100	277	4	9	24
	Rate	4.6	0.8	0.7	0.9	2.7	5.1	11.2	6.3	3.1	6.7	12.7	20.8	80.4
2005	Cases	1,491	8	1	7	223	586	105	127	131	247	3	8	39
	Rate	4.6	1.6	0.7	0.7	2.9	4.7	8.9	12.8	3.9	5.9	9.4	18.4	128.6
2006	Cases	1,459	9	0	9	207	566	125	79	123	287	3	5	44
	Rate	4.5	1.8	0.0	1.0	2.7	4.5	10.6	8.0	3.6	6.8	9.3	11.6	142.9
2007	Cases	1,398	7	0	6	210	583	96	96	106	250	2	14	23
	Rate	4.2	1.4	0.0	0.6	2.7	4.6	8.0	9.6	3.0	5.8	6.1	32.2	73.6

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: 1997–2007

Year of diagnosis	Province/territory										CANADA			
	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.		Y.T.	N.W.T.	Nvt.
1997	Cases	2	1	2	1	34	70	10	11	16	43	0	7	-
	Rate	0.4	0.7	0.2	0.1	0.5	0.6	0.9	1.1	0.6	1.1	0.0	10.4	-
1998	Cases	1	0	2	2	22	66	12	7	12	23	0	6	-
	Rate	0.2	0.0	0.2	0.3	0.3	0.6	1.1	0.7	0.4	0.6	0.0	8.9	-
1999	Cases	1	0	2	1	33	69	9	6	8	23	0	6	0
	Rate	0.2	0.0	0.2	0.1	0.5	0.6	0.8	0.6	0.3	0.6	0.0	14.8	0.0
2000	Cases	0	0	0	1	18	70	10	4	13	21	1	3	6
	Rate	0.0	0.0	0.0	0.1	0.2	0.6	0.9	0.4	0.4	0.5	3.3	7.4	21.8
2001	Cases	2	1	3	0	17	59	5	10	10	39	0	0	6
	Rate	0.4	0.7	0.3	0.0	0.2	0.5	0.4	1.0	0.3	1.0	0.0	0.0	21.3
2002	Cases	3	0	2	1	19	56	6	6	7	32	0	0	5
	Rate	0.6	0.0	0.2	0.1	0.3	0.5	0.5	0.6	0.2	0.8	0.0	0.0	17.4
2003	Cases	3	1	1	1	15	35	9	9	6	22	0	3	0
	Rate	0.6	0.7	0.1	0.1	0.2	0.3	0.8	0.9	0.2	0.5	0.0	7.1	0.0
2004	Cases	3	0	0	1	15	42	12	7	9	22	0	1	8
	Rate	0.6	0.0	0.0	0.1	0.2	0.3	1.0	0.7	0.3	0.5	0.0	2.3	27.0
2005	Cases	1	0	0	0	12	33	9	12	15	18	0	0	6
	Rate	0.2	0.0	0.0	0.0	0.2	0.3	0.8	1.2	0.5	0.4	0.0	0.0	20.0
2006	Cases	3	0	1	0	20	44	9	8	8	32	0	1	4
	Rate	0.6	0.0	0.1	0.0	0.3	0.3	0.8	0.8	0.2	0.7	0.0	2.4	13.2
2007	Cases	0	0	1	0	10	39	7	10	6	26	1	1	8
	Rate	0.0	0.0	0.1	0.0	0.1	0.3	0.6	1.0	0.2	0.6	3.1	2.3	25.6

Note: Cases of 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: 1997-2007

Year of diagnosis	TOTAL	Age group										Age unknown
		< 1	1 - 4	5 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 +	
1997	Cases	8	50	57	222	391	291	216	232	250	277	0
	Rate	2.2	3.2	1.4	5.5	8.4	5.7	5.5	9.0	11.9	17.9	-
1998	Cases	20	60	72	187	314	307	184	174	235	256	1
	Rate	5.8	3.9	1.8	4.6	7.0	5.9	4.5	6.6	11.0	16.0	-
1999	Cases	32	55	61	204	339	254	193	173	244	265	0
	Rate	9.5	3.7	1.5	5.0	7.7	4.8	4.6	6.3	11.4	16.1	-
2000	Cases	17	50	44	207	316	278	208	160	204	239	1
	Rate	5.0	3.4	1.1	5.0	7.3	5.3	4.8	5.7	9.5	14.0	-
2001	Cases	11	33	70	180	322	290	208	184	219	255	1
	Rate	3.3	2.3	1.7	4.3	7.5	5.5	4.6	6.3	10.1	14.5	-
2002	Cases	10	42	45	210	312	263	201	161	199	217	6
	Rate	3.0	3.0	1.1	4.9	7.2	5.0	4.4	5.2	9.2	11.9	-
2003	Cases	7	34	41	198	332	277	206	153	178	203	2
	Rate	2.1	2.5	1.0	4.6	7.7	5.3	4.4	4.7	8.1	10.8	-
2004	Cases	6	33	45	198	324	272	198	167	177	193	0
	Rate	1.8	2.4	1.1	4.6	7.5	5.3	4.1	4.9	8.0	10.0	-
2005	Cases	10	38	71	254	279	278	212	143	168	188	0
	Rate	2.9	2.8	1.8	5.8	6.4	5.4	4.3	4.0	7.5	9.5	-
2006	Cases	10	46	51	261	253	286	200	158	168	219	0
	Rate	2.9	3.3	1.3	5.8	5.8	5.7	4.0	4.3	7.4	10.7	-
2007	Cases	12	33	53	197	247	282	205	158	149	212	0
	Rate	3.4	2.4	1.4	4.4	5.6	5.7	4.0	4.1	6.4	10.1	-

Table 2B
Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – males – Canada:
1997-2007

Year of diagnosis	TOTAL	Age group											Age unknown
		< 1	1 - 4	5 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 +		
1997	Cases	6	27	25	94	195	161	118	131	141	164	0	
	Rate	3.3	3.4	1.2	4.5	8.3	6.3	6.0	10.3	14.5	28.5	-	
1998	Cases	16	31	38	78	162	164	100	105	125	147	0	
	Rate	9.1	4.0	1.8	3.7	7.1	6.3	4.9	8.0	12.6	24.7	-	
1999	Cases	20	28	24	99	176	141	117	96	144	154	0	
	Rate	6.6	3.7	1.1	4.7	7.9	5.4	5.6	7.1	14.4	25.0	-	
2000	Cases	10	27	24	97	168	149	117	88	101	143	0	
	Rate	6.1	3.6	1.1	4.5	7.7	5.6	5.4	6.3	10.0	22.3	-	
2001	Cases	6	15	45	92	153	168	124	111	127	143	0	
	Rate	6.4	2.1	2.1	4.2	7.0	6.3	5.5	7.7	12.5	21.5	-	
2002	Cases	5	19	15	96	168	143	105	90	116	110	0	
	Rate	5.6	2.7	0.7	4.4	7.7	5.4	4.6	5.9	11.3	15.9	-	
2003	Cases	3	21	14	102	162	161	128	87	105	113	0	
	Rate	5.7	3.0	0.7	4.6	7.4	6.1	5.5	5.4	10.1	15.8	-	
2004	Cases	5	22	23	85	146	147	104	99	110	107	0	
	Rate	5.4	3.1	1.1	3.8	6.7	5.7	4.3	5.9	10.5	14.4	-	
2005	Cases	6	20	33	128	142	154	124	83	97	122	0	
	Rate	5.7	2.8	1.6	5.7	6.5	6.0	5.0	4.7	9.1	15.8	-	
2006	Cases	6	24	24	137	117	150	118	86	90	130	0	
	Rate	5.5	3.4	1.2	6.0	5.3	5.9	4.7	4.7	8.3	16.2	-	
2007	Cases	11	14	31	99	120	154	124	96	84	113	0	
	Rate	5.2	1.9	1.6	4.3	5.4	6.1	4.8	5.1	7.6	13.6	-	

Table 2C

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – females – Canada: 1997-2007

Year of diagnosis	TOTAL	Age group											Age unknown
		< 1	1 – 4	5 – 14	15 – 24	25 – 34	35 – 44	45 – 54	55 – 64	65 – 74	75 +		
1997	Cases	2	23	32	128	196	129	98	101	109	114	0	
	Rate	1.2	3.0	1.6	6.5	8.6	5.1	5.0	7.7	9.6	11.8	-	
1998	Cases	4	29	34	109	152	144	84	69	110	109	0	
	Rate	2.4	3.9	1.7	5.5	6.8	5.6	4.1	5.1	9.7	10.9	-	
1999	Cases	12	27	37	105	164	112	76	77	100	111	0	
	Rate	7.3	3.7	1.9	5.2	7.5	4.3	3.6	5.6	8.8	10.7	-	
2000	Cases	7	23	20	110	148	130	91	72	103	96	0	
	Rate	4.2	3.2	1.0	5.4	6.9	4.9	4.2	5.1	9.0	9.0	-	
2001	Cases	5	18	25	88	171	121	84	72	92	112	0	
	Rate	3.1	2.6	1.3	4.3	8.0	4.6	3.7	4.9	8.1	10.2	-	
2002	Cases	5	24	30	115	145	121	97	71	83	106	0	
	Rate	3.1	3.5	1.5	5.5	6.8	4.6	4.2	4.5	7.2	9.4	-	
2003	Cases	4	13	27	96	170	116	79	67	73	90	0	
	Rate	2.5	1.9	1.4	4.6	8.0	4.5	3.3	4.1	6.3	7.8	-	
2004	Cases	1	11	22	113	178	125	94	68	67	86	0	
	Rate	0.6	1.6	1.1	5.3	8.3	4.9	3.9	3.9	5.8	7.3	-	
2005	Cases	4	18	38	126	137	124	88	60	71	66	0	
	Rate	2.4	2.7	2.0	5.9	6.4	4.9	3.6	3.3	6.0	5.4	-	
2006	Cases	4	22	27	124	136	136	82	72	78	89	0	
	Rate	2.4	3.3	1.4	5.7	6.3	5.5	3.2	3.9	6.5	7.2	-	
2007	Cases	1	19	22	98	127	128	81	62	65	99	0	
	Rate	0.6	2.8	1.2	4.5	5.8	5.2	3.1	3.2	5.3	7.8	-	

Table 3

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by origin – Canada: 1997–2007

Origin	Year of diagnosis											
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Canadian-born	Aboriginal											
	Cases	232	205	255	174	213	173	206	206	219	230	229
	Rate	-	-	-	-	29.9	23.8	27.8	27.2	28.4	29.3	28.6
	Status (registered) Indian											
	Cases	212	191	247	167	199	165	204	202	213	223	225
	Rate	32.8	29.0	36.6	24.2	28.3	23.0	27.9	26.4	27.4	28.2	27.9
	Non-status Indian											
	Cases	20	14	8	7	14	8	2	4	6	7	4
	Rate	-	-	-	-	-	-	-	-	-	-	-
	Inuit											
Cases	18	35	28	56	53	33	11	41	63	61	46	
Rate	30.9	58.7	47.0	89.9	111.4	67.8	22.1	80.4	120.7	114.3	84.2	
Metis												
Cases	32	39	31	29	49	35	30	21	35	29	32	
Rate	-	-	-	-	16.0	11.3	9.5	6.6	10.8	8.8	9.6	
Total Aboriginal												
Cases	282	279	314	259	315	241	247	268	317	320	307	
Rate	23.2	23.0	25.9	20.4	29.5	22.2	22.3	23.8	27.6	27.4	25.8	
Non-Aboriginal												
Cases	403	347	326	314	283	257	233	214	218	201	170	
Rate	1.7	1.4	1.3	1.3	1.2	1.1	1.0	0.9	0.9	0.8	0.7	
Total Canadian-born												
Cases	685	626	640	573	598	498	480	482	535	521	477	
Rate	2.8	2.5	2.6	2.3	2.4	2.0	1.9	1.9	2.1	2.0	1.9	
Foreign-born												
Africa, High HIV Prevalence (AFR-High)												
Cases	79	79	66	66	78	91	85	87	93	103	91	
Rate	-	-	-	-	49.5	54.1	48.1	48.1	49.3	51.9	43.9	
Africa, Low HIV Prevalence (AFR-Low)												
Cases	13	9	12	14	8	20	22	21	26	21	33	
Rate	-	-	-	-	11.3	25.8	26.0	23.7	27.6	20.5	29.7	
American Region - Latin American and Caribbean Countries (AMR)												
Cases	99	87	70	80	61	64	75	65	71	48	75	
Rate	-	-	-	-	9.0	9.1	10.3	8.7	9.4	6.2	9.4	

...cont'd

Table 3 *Cont'd*

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by origin – Canada: 1997–2007

Origin	Year of diagnosis										
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Foreign-born (<i>cont'd</i>)	Cases	124	115	115	97	101	76	71	56	57	60
	Rate	-	-	-	-	3.8	2.8	2.9	2.1	2.2	2.3
Established Market Economies and Central Europe (EME-CEUR)	Cases	28	33	32	30	23	23	26	29	18	25
	Rate	-	-	-	-	9.0	13.2	7.9	8.6	9.1	7.2
Eastern Europe (EEUR)	Cases	119	104	113	117	108	120	115	123	125	113
	Rate	-	-	-	-	22.9	23.0	19.2	19.1	18.4	15.7
Eastern Mediterranean (EMR)	Cases	200	197	193	208	236	224	267	239	255	233
	Rate	-	-	-	-	47.4	41.4	41.8	36.8	36.7	31.7
South-East Asia (SEAR)	Cases	572	509	513	477	456	457	448	389	417	410
	Rate	-	-	-	-	34.7	32.8	31.1	29.4	25.3	24.1
Western Pacific Region (WPR)	Cases	45	28	47	44	53	39	15	31	28	2
	Rate	-	-	-	-	-	-	-	-	-	-
Unknown	Cases	1,279	1,161	1,161	1,133	1,124	1,127	1,110	1,057	1,072	1,042
	Rate	23.9	21.2	20.8	19.6	18.4	17.8	16.9	15.4	15.2	14.4
Total foreign-born	Cases	30	23	19	18	51	41	16	49	59	29
	Rate	-	-	-	-	-	-	-	-	-	-
Unknown	Cases	1,994	1,810	1,820	1,724	1,773	1,666	1,631	1,641	1,652	1,548
	Rate	6.7	6.0	6.0	5.6	5.7	5.3	5.2	5.1	5.1	4.7
TOTAL											

Table 4

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by main diagnostic site – Canada: 1997-2007

Main diagnostic site		Year of diagnosis										
		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Respiratory	Cases	131	130	154	99	121	88	79	94	106	91	63
	Rate	0.4	0.4	0.5	0.3	0.4	0.3	0.2	0.3	0.3	0.3	0.2
	Cases	1,171	1,071	1,105	1,068	1,134	1,023	963	935	960	1,017	1,002
	Rate	3.9	3.6	3.6	3.5	3.7	3.3	3.0	2.9	3.0	3.2	3.1
	Cases	75	63	62	64	52	57	64	98	117	102	96
	Rate	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.3
Nonrespiratory	Cases	50	30	25	26	14	18	20	30	24	22	22
	Rate	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
	Cases	25	24	15	16	17	20	26	19	20	22	20
	Rate	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Cases	268	276	244	258	235	242	249	251	246	240	202
	Rate	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.6
Unknown	Cases	258	190	189	163	181	193	193	185	168	157	143
	Rate	0.9	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.5	0.5	0.4
	Cases	16	26	26	30	19	25	37	1	0	1	0
	Rate	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
	Cases	1,994	1,810	1,820	1,724	1,773	1,666	1,631	1,613	1,641	1,652	1,548
	Rate	6.7	6.0	6.0	5.6	5.7	5.3	5.2	5.0	5.1	5.1	4.7

* Primary includes primary respiratory tuberculosis and tuberculous pleurisy in primary progressive tuberculosis, (ICD-9 codes 010.0-010.9; ICD-10 A15.7 and A16.7).

** Pulmonary includes tuberculosis of the lungs and conducting airways which includes tuberculous fibrosis of the lung, tuberculous bronchiectasis, tuberculous pneumonia, tuberculous pneumothorax, isolated tracheal or bronchial tuberculosis and tuberculous laryngitis; (ICD-9 codes 011-011.9, 012.2, 012.3; ICD-10 codes A15.0-A15.3, A15.5, A15.9, A16.0-A16.2, A16.4, A16.9).

† Other Respiratory includes tuberculous pleurisy (non-primary); tuberculosis of: intrathoracic lymph nodes, mediastinum, nasopharynx, nose (septum), and sinus (any nasal) (ICD-9 codes: 012.0, 012.1 and 012.8; ICD-10 codes: A15.4, A15.6, A15.8, A16.3, A16.5, A16.8).

‡ Other includes tuberculosis of intestines, peritoneum and mesenteric glands, bones and joints, genitourinary system, skin, eye, ear, thyroid, adrenal and spleen.

Table 5A

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – Canada and provinces/territories: 2007

Age group	CANADA	Province/territory												
		N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
<1	Cases	0	0	0	0	4	3	0	2	1	1	0	0	1
	Rate	0.0	0.0	0.0	0.0	4.8	2.2	0.0	16.1	2.2	2.4	0.0	0.0	134.6
1 – 4	Cases	0	0	1	0	7	4	1	14	1	2	0	0	3
	Rate	0.0	0.0	2.9	0.0	2.3	0.7	1.8	29.1	0.6	1.2	0.0	0.0	106.4
5 – 14	Cases	0	0	0	1	10	8	5	18	4	6	0	0	1
	Rate	0.0	0.0	0.0	1.2	1.2	0.5	3.2	13.9	0.9	1.3	0.0	0.0	15.0
15 – 24	Cases	1	0	1	0	33	74	18	24	16	24	1	0	5
	Rate	1.5	0.0	0.8	0.0	3.4	4.2	10.4	16.0	3.0	4.1	21.7	0.0	82.5
25 – 34	Cases	1	0	0	2	30	119	20	12	20	34	0	3	6
	Rate	1.7	0.0	0.0	2.2	2.9	7.0	13.0	9.6	3.7	6.1	0.0	41.7	119.3
35 – 44	Cases	2	0	2	1	34	123	21	18	16	52	1	5	7
	Rate	2.6	0.0	1.5	0.9	3.0	6.1	12.7	14.0	3.0	8.0	19.0	70.5	158.6
45 – 54	Cases	0	0	1	0	26	85	20	11	13	42	0	3	4
	Rate	0.0	0.0	0.7	0.0	2.1	4.3	11.2	7.4	2.4	6.1	0.0	45.9	134.8
55 – 64	Cases	0	0	1	0	16	70	8	6	14	38	0	3	2
	Rate	0.0	0.0	0.8	0.0	1.7	4.9	6.1	5.6	4.1	7.2	0.0	83.0	116.7
65 – 74	Cases	0	0	1	1	28	70	4	0	9	33	1	0	2
	Rate	0.0	0.0	1.3	1.7	4.7	7.9	5.0	0.0	4.6	10.2	64.8	0.0	332.8
75 +	Cases	3	0	0	0	41	98	6	1	18	44	0	1	0
	Rate	10.1	0.0	0.0	0.0	8.1	12.1	7.1	1.3	10.6	14.9	0.0	129.9	0.0
TOTAL	Cases	7	0	7	5	229	654	103	106	112	276	3	15	31
	Rate	4.7	0.0	0.7	0.7	3.0	5.1	8.6	10.6	3.2	6.4	9.2	34.5	99.2

Table 5B

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – males – Canada and provinces/territories: 2007

Age group	Province/territory										Nvt.				
	CANADA	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.		B.C.	Y.T.	N.W.T.	
<1	Cases	11	0	0	0	0	4	3	0	2	0	1	0	0	1
	Rate	6.0	0.0	0.0	0.0	0.0	9.4	4.3	0.0	31.5	0.0	4.6	0.0	0.0	276.2
1 – 4	Cases	14	0	0	0	0	2	1	0	8	0	2	0	0	1
	Rate	1.9	0.0	0.0	0.0	0.0	1.3	0.3	0.0	32.4	0.0	2.3	0.0	0.0	68.8
5 – 14	Cases	31	0	0	0	1	5	4	3	13	2	3	0	0	0
	Rate	1.6	0.0	0.0	0.0	2.4	1.1	0.5	3.7	19.6	0.9	1.2	0.0	0.0	0.0
15 – 24	Cases	99	1	0	0	0	18	37	7	12	11	10	1	0	2
	Rate	4.3	3.0	0.0	0.0	0.0	3.6	4.1	7.9	15.6	4.0	3.3	41.0	0.0	64.3
25 – 34	Cases	120	0	0	0	2	10	59	12	8	8	15	0	0	3
	Rate	5.4	0.0	0.0	0.0	4.4	1.9	7.0	15.3	12.7	2.8	5.4	0.0	82.5	116.9
35 – 44	Cases	154	1	0	1	1	18	66	15	8	9	27	0	0	3
	Rate	6.1	2.6	0.0	1.5	1.8	3.1	6.6	18.0	12.4	3.2	8.4	0.0	135.4	132.7
45 – 54	Cases	124	0	0	0	0	23	43	16	6	7	26	0	2	1
	Rate	4.8	0.0	0.0	0.0	0.0	3.7	4.4	17.6	8.0	2.5	7.7	0.0	58.6	63.1
55 – 64	Cases	96	0	0	0	0	9	38	5	5	8	27	0	2	2
	Rate	5.1	0.0	0.0	0.0	0.0	1.9	5.4	7.7	9.4	4.6	10.3	0.0	95.8	216.0
65 – 74	Cases	84	0	0	1	0	17	34	2	0	5	22	1	0	2
	Rate	7.6	0.0	0.0	2.8	0.0	6.1	8.1	5.3	0.0	5.3	14.0	118.3	0.0	602.4
75 +	Cases	113	1	0	0	0	25	49	2	0	7	29	0	0	0
	Rate	13.6	8.1	0.0	0.0	0.0	13.0	15.3	6.2	0.0	10.1	23.5	0.0	0.0	0.0
TOTAL	Cases	846	3	0	2	4	131	334	62	62	57	162	2	12	15
	Rate	5.2	1.2	0.0	0.4	1.1	3.4	5.3	10.4	12.5	3.2	7.6	12.0	53.0	93.2

Table 5C

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – females – Canada and provinces/territories: 2007

Age group	CANADA	Province/territory															
		N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.			
<1	Cases	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rate	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 – 4	Cases	19	0	0	0	5	3	1	6	1	0	0	0	0	0	0	2
	Rate	2.8	0.0	0.0	0.0	3.4	1.1	3.6	25.7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	146.3
5 – 14	Cases	22	0	0	0	5	4	2	5	2	3	0	0	0	0	1	1
	Rate	1.2	0.0	0.0	0.0	1.2	0.5	2.6	7.9	0.9	1.3	0.0	0.0	0.0	0.0	0.0	30.4
15 – 24	Cases	98	0	0	1	15	37	11	12	5	14	0	0	0	0	3	3
	Rate	4.5	0.0	0.0	1.6	3.1	4.3	13.1	16.4	2.0	5.0	0.0	0.0	0.0	0.0	101.7	101.7
25 – 34	Cases	127	1	0	0	20	60	8	4	12	19	0	0	0	0	3	3
	Rate	5.8	3.3	0.0	0.0	4.0	7.0	10.6	6.4	4.7	6.7	0.0	0.0	0.0	0.0	121.8	121.8
35 – 44	Cases	128	1	0	1	16	57	6	10	7	25	1	0	0	0	4	4
	Rate	5.2	2.5	0.0	1.4	2.9	5.7	7.4	15.6	2.7	7.7	37.0	0.0	0.0	0.0	185.7	185.7
45 – 54	Cases	81	0	0	1	3	42	4	5	6	16	0	0	0	1	3	3
	Rate	3.1	0.0	0.0	1.3	0.5	4.3	4.5	6.7	2.3	4.6	0.0	0.0	0.0	32.0	216.9	216.9
55 – 64	Cases	62	0	0	1	7	32	3	1	6	11	0	0	0	1	0	0
	Rate	3.2	0.0	0.0	1.6	1.4	4.4	4.5	1.9	3.5	4.1	0.0	0.0	0.0	65.5	0.0	0.0
65 – 74	Cases	65	0	0	0	11	36	2	0	4	11	0	0	0	0	0	0
	Rate	5.3	0.0	0.0	0.0	3.5	7.7	4.8	0.0	4.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0
75 +	Cases	99	2	0	0	16	49	4	1	11	15	0	0	0	1	0	0
	Rate	7.8	10.8	0.0	0.0	5.1	10.0	7.8	2.1	10.9	8.7	0.0	0.0	0.0	243.3	0.0	0.0
TOTAL	Cases	702	4	0	5	98	320	41	44	55	114	1	3	16	16	16	16
	Rate	4.2	1.6	0.0	1.0	2.5	4.9	6.8	8.7	3.2	5.2	6.3	14.4	105.6	105.6	105.6	105.6

Table 6
Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by origin – Canada and provinces/territories: 2007

Origin	CANADA	Province/territory																			
		N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North									
Canadian-born																					
	Aboriginal																				
	North American Indian	Cases	0	0	0	0	0	0	0	10	12	68	70	13	41	15					
		Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.9	6.8	59.2	64.8	11.6	28.2	69.6					
	Status (registered) Indian	Cases	0	0	0	0	0	0	0	10	12	68	70	13	37	15					
		Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.8	6.7	51.6	53.7	12.3	29.0	57.5					
	Non-status Indian	Cases	0	0	0	0	0	0	0	0	0	0	0	0	4	0					
		Rate	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
	Inuit	Cases	1	0	0	0	0	0	0	12	1	0	0	0	0	32					
		Rate	19.3	0.0	0.0	0.0	0.0	0.0	0.0	106.2	54.6	0.0	0.0	0.0	0.0	97.9					
Metis	Cases	32	0	0	0	0	0	0	0	0	0	29	2	0	1						
	Rate	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.6	2.6	0.0	19.9						
Total Aboriginal	Cases	1	0	0	0	0	0	0	22	13	68	99	15	41	48						
	Rate	4.5	0.0	0.0	0.0	0.0	0.0	0.0	20.8	5.6	37.8	62.4	7.9	21.0	81.0						
	Cases	5	0	4	2	2	2	2	55	49	7	3	13	32	0						
	Rate	1.1	0.0	0.5	0.3	0.3	0.3	0.3	0.8	0.6	0.8	0.4	0.5	1.1	0.0						
Total Canadian-born	Cases	6	0	4	2	4	2	77	62	75	102	28	73	48							
	Rate	1.2	0.0	0.5	0.3	0.5	0.3	1.2	0.7	7.4	10.9	1.0	2.4	48.0							
	Cases	91	0	2	1	1	1	16	47	2	0	8	0	0							
	Rate	43.9	0.0	131.4	92.0	51.9	44.4	29.4	0.0	58.2	25.7	0.0	0.0	0.0							
Foreign-born	Africa, High HIV Prevalence (AFR-High)	Cases	33	0	0	1	11	13	5	0	0	0	0	0							
		Rate	29.7	0.0	0.0	149.9	18.2	35.0	245.6	0.0	55.6	0.0	0.0	0.0							
	Africa, Low HIV Prevalence (AFR-Low)	Cases	75	0	0	0	33	31	1	0	2	8	0	0							
		Rate	9.4	0.0	0.0	0.0	18.5	6.4	4.7	0.0	4.4	15.5	0.0	0.0							

...cont'd

Table 6 *Cont'd*

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by origin – Canada and provinces/territories: 2007

Origin	CANADA	Province/territory										
		N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North
Foreign-born (<i>cont'd</i>)	Cases	0	0	0	0	16	33	0	0	1	10	0
	Rate	0.0	0.0	0.0	0.0	4.8	2.4	0.0	0.0	0.4	2.2	0.0
Eastern Europe (EEUR)	Cases	0	0	0	1	5	13	2	0	1	3	0
	Rate	0.0	0.0	0.0	169.2	7.1	6.4	17.0	0.0	4.1	8.9	0.0
Eastern Mediterranean (EMR)	Cases	0	0	0	0	11	80	5	0	9	8	0
	Rate	0.0	0.0	0.0	0.0	6.9	18.7	64.9	0.0	19.3	13.7	0.0
South-East Asia (SEAR)	Cases	1	0	0	0	15	150	1	0	17	49	0
	Rate	78.4	0.0	0.0	0.0	30.0	31.8	9.4	0.0	34.7	33.9	0.0
Western Pacific Region (WPR)	Cases	0	0	1	0	35	211	12	4	36	110	1
	Rate	0.0	0.0	12.3	0.0	28.2	26.0	25.4	29.1	21.9	21.0	63.4
Unknown	Cases	0	0	0	0	0	1	0	0	0	1	0
	Rate	-	-	-	-	-	-	-	-	-	-	-
Total foreign-born	Cases	1,042	1	0	3	142	579	28	4	84	197	1
	Rate	14.4	6.6	4.8	8.6	14.1	14.7	15.9	6.3	14.1	15.1	13.6
Unknown	Cases	29	0	0	0	10	13	0	0	0	6	0
	Rate	-	-	-	-	-	-	-	-	-	-	-
TOTAL	Cases	1,548	7	0	7	229	654	103	106	112	276	49
	Rate	4.7	1.4	0.0	0.7	3.0	5.1	8.6	10.6	3.2	6.4	45.6

Note: Rates with small case numbers may be unstable.

North includes Northwest Territories, Nunavut and Yukon Territory.

Table 7

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by main diagnostic site – Canada and provinces/territories: 2007

Main diagnostic site	CANADA	Province/territory													
		N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.	
Respiratory	Cases	63	0	0	0	3	1	8	5	34	5	1	0	2	4
	Rate	0.2	0.0	0.0	0.0	0.4	0.0	0.1	0.4	3.4	0.1	0.0	0.0	4.6	12.8
Pulmonary**	Cases	1002	3	0	4	2	163	414	64	52	65	196	2	11	26
	Rate	3.0	0.6	0.0	0.4	0.3	2.1	3.2	5.4	5.2	1.9	4.5	6.1	25.3	83.2
Other respiratory†	Cases	96	1	0	1	0	7	41	12	4	5	23	0	1	1
	Rate	0.3	0.2	0.0	0.1	0.0	0.1	0.3	1.0	0.4	0.1	0.5	0.0	2.3	3.2
Non-respiratory	Cases	22	1	0	0	0	2	8	7	1	3	0	0	0	0
	Rate	0.1	0.2	0.0	0.0	0.0	0.0	0.1	0.6	0.1	0.1	0.0	0.0	0.0	0.0
Meninges and CNS	Cases	20	0	0	0	0	2	11	0	1	1	5	0	0	0
	Rate	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Peripheral lymph node	Cases	202	1	0	0	0	30	103	8	8	18	32	1	1	0
	Rate	0.6	0.2	0.0	0.0	0.0	0.4	0.8	0.7	0.8	0.5	0.7	3.1	2.3	0.0
Other‡	Cases	143	1	0	2	0	24	69	7	6	15	19	0	0	0
	Rate	0.4	0.2	0.0	0.2	0.0	0.3	0.5	0.6	0.6	0.4	0.4	0.0	0.0	0.0
Unknown	Cases	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	Cases	1,548	7	0	7	5	229	654	103	106	112	276	3	15	31
	Rate	4.7	1.4	0.0	0.7	0.7	3.0	5.1	8.6	10.6	3.2	6.4	9.2	34.5	99.2

* Primary includes primary respiratory tuberculosis and tuberculous pleurisy in primary progressive tuberculosis, (ICD-9 codes 010.0-010.9; ICD-10 A15.7 and A16.7).

** Pulmonary includes tuberculosis of the lungs and conducting airways which includes tuberculous fibrosis of the lung, tuberculous bronchiectasis, tuberculous pneumonia, tuberculous pneumothorax, isolated tracheal or bronchial tuberculosis and tuberculous laryngitis; (ICD-9 codes 011-011.9, 012.2, 012.3; ICD-10 codes A15.0-A15.3, A15.5, A15.9, A16.0-A16.2, A16.4, A16.9).

† Other Respiratory includes tuberculous pleurisy (non-primary); tuberculosis of: intrathoracic lymph nodes, mediastinum, nasopharynx, nose (septum), and sinus (any nasal) (ICD-9 codes: 012.0, 012.1 and 012.8; ICD-10 codes: A15.4, A15.6, A15.8, A16.3, A16.5, A16.8).

‡ Other includes tuberculosis of intestines, peritoneum and mesenteric glands, bones and joints, genitourinary system, skin, eye, ear, thyroid, adrenal and spleen.

Table 8

Reported new active and relapsed tuberculosis cases by origin, sex and age group – Canada: 2007

Origin	TOTAL	Age group										Unknown		
		< 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 +			
Canadian-born														
	Male	3	7	12	22	19	27	18	14	6	6	0		
	Female	0	10	6	22	12	20	12	7	2	4	0		
	Total	3	17	18	44	31	47	30	21	8	10	0		
Status (registered) Indian	Male	3	7	12	21	18	26	17	14	6	6	0		
	Female	0	10	6	22	12	20	12	7	2	4	0		
	Total	3	17	18	43	30	46	29	21	8	10	0		
Non-status Indian	Male	4	0	0	1	1	1	1	0	0	0	0		
	Female	0	0	0	0	0	0	0	0	0	0	0		
	Total	4	0	0	1	1	1	1	0	0	0	0		
Metis	Male	0	2	4	3	5	3	1	2	0	0	0		
	Female	0	2	2	3	2	0	2	0	0	1	0		
	Total	0	4	6	6	7	3	3	2	0	1	0		
Inuit	Male	1	2	3	6	4	5	1	2	2	0	0		
	Female	0	2	2	3	5	4	3	1	0	0	0		
	Total	1	4	5	9	9	9	4	3	2	0	0		
Total Aboriginal	Male	4	11	19	31	28	35	20	18	8	6	0		
	Female	0	14	10	28	19	24	17	8	2	5	0		
	Total	4	25	29	59	47	59	37	26	10	11	0		
Non-Aboriginal	Male	7	2	2	10	6	12	25	12	17	18	0		
	Female	1	4	3	8	4	5	3	8	7	16	0		
	Total	8	6	5	18	10	17	28	20	24	34	0		
Total Canadian-born	Male	11	13	21	41	34	47	45	30	25	24	0		
	Female	1	18	13	36	23	29	20	16	9	21	0		
	Total	12	31	34	77	57	76	65	46	34	45	0		

...cont'd

Table 8 *Cont'd*

Reported new active and relapsed tuberculosis cases by origin, sex and age group – Canada: 2007

Origin	TOTAL	Age group										Unknown
		< 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 +	
Foreign-born	Male	0	1	2	7	13	12	9	1	2	1	0
	Female	0	0	0	4	22	8	4	4	1	0	0
	Total	0	1	2	11	35	20	13	5	3	1	0
Africa, Low HIV Prevalence (AFR-Low)	Male	0	0	2	6	5	10	3	0	0	1	0
	Female	0	0	0	2	0	1	2	1	0	0	0
	Total	0	0	2	8	5	11	5	1	0	1	0
American Region - Latin American and Caribbean Countries (AMR)	Male	0	0	1	5	6	7	8	9	2	0	0
	Female	0	0	0	5	10	9	3	3	5	2	0
	Total	0	0	1	10	16	16	11	12	7	2	0
Established Market Economies and Central Europe (EME-CEUR)	Male	0	0	0	1	2	3	6	6	3	16	0
	Female	0	0	0	1	1	2	1	1	4	13	0
	Total	0	0	0	2	3	5	7	7	7	29	0
Eastern Europe (EEUR)	Male	0	0	0	2	3	5	0	0	0	4	0
	Female	0	0	0	1	0	3	1	1	1	4	0
	Total	0	0	0	3	3	8	1	1	1	8	0
Eastern Mediterranean (EMR)	Male	0	0	0	7	19	6	8	6	8	4	0
	Female	0	0	2	17	14	3	7	3	5	4	0
	Total	0	0	2	24	33	9	15	9	13	8	0
South-East Asia (SEAR)	Male	0	0	2	8	21	28	13	14	11	11	0
	Female	0	1	4	10	27	20	11	13	17	22	0
	Total	0	1	6	18	48	48	24	27	28	33	0
Western Pacific Region (WPR)	Male	0	0	3	22	15	34	30	29	29	49	0
	Female	0	0	2	20	29	52	31	18	21	26	0
	Total	0	0	5	42	44	86	61	47	50	75	0

...cont'd

Table 8 *Cont'd*

Reported new active and relapsed tuberculosis cases by origin, sex and age group – Canada: 2007

Origin	TOTAL	Age group													
		< 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 +	Unknown			
Foreign-born (<i>cont'd</i>)	Male	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Female	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Total foreign-born	Male	0	1	10	58	84	105	77	65	55	87	0			
	Female	0	1	8	60	103	98	61	44	54	71	0			
	Total	0	2	18	118	187	203	138	109	109	158	0			
Unknown	Male	0	0	0	0	2	2	2	1	4	2	0			
	Female	0	0	1	2	1	1	0	2	2	7	0			
	Total	0	0	1	2	3	3	2	3	6	9	0			
TOTAL	Male	11	14	31	99	120	154	124	96	84	113	0			
	Female	1	19	22	98	127	128	81	62	65	99	0			
	Total	12	33	53	197	247	282	205	158	149	212	0			

Table 9

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group and main diagnostic site – Canada: 2007

Age group	TOTAL	Main diagnostic site											
		Respiratory					Nonrespiratory					Unknown	
		Primary	Pulmonary	Other respiratory	Miliary	CNS	Lymph	Other					
< 1	Cases	5	7	0	0	0	0	0	0	0	0	0	0
	Rate	1.4	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 – 4	Cases	20	11	0	0	0	0	1	1	0	1	0	0
	Rate	1.4	0.8	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0
5 – 14	Cases	23	20	2	0	0	0	6	2	0	2	0	0
	Rate	0.6	0.5	0.1	0.0	0.0	0.0	0.2	0.1	0.0	0.1	0.0	0.0
15 – 24	Cases	4	139	14	0	1	0	25	14	1	14	0	0
	Rate	0.1	3.1	0.3	0.0	0.0	0.0	0.6	0.3	0.0	0.3	0.0	0.0
25 – 34	Cases	2	149	18	6	6	6	44	22	6	22	0	0
	Rate	0.0	3.4	0.4	0.1	0.1	0.1	1.0	0.5	0.1	0.5	0.0	0.0
35 – 44	Cases	3	172	20	4	1	4	56	26	1	26	0	0
	Rate	0.1	3.5	0.4	0.1	0.0	0.1	1.1	0.5	0.0	0.5	0.0	0.0
45 – 54	Cases	0	133	9	4	4	4	34	21	4	21	0	0
	Rate	0.0	2.6	0.2	0.1	0.1	0.1	0.7	0.4	0.1	0.4	0.0	0.0
55 – 64	Cases	0	96	15	1	2	1	17	27	2	27	0	0
	Rate	0.0	2.5	0.4	0.0	0.1	0.0	0.4	0.7	0.1	0.7	0.0	0.0
65 – 74	Cases	4	108	6	1	2	1	11	17	2	17	0	0
	Rate	0.2	4.6	0.3	0.0	0.1	0.0	0.5	0.7	0.1	0.7	0.0	0.0
75 +	Cases	2	167	12	6	4	6	8	13	4	13	0	0
	Rate	0.1	7.9	0.6	0.3	0.2	0.3	0.4	0.6	0.2	0.6	0.0	0.0
Unknown	Cases	0	0	0	0	0	0	0	0	0	0	0	0
	Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	Cases	63	1,002	96	22	20	22	202	143	20	202	143	0
	Rate	0.2	3.0	0.3	0.1	0.1	0.1	0.6	0.4	0.1	0.6	0.4	0.0

Table 10

Reported new active and relapsed tuberculosis cases by origin and main diagnostic site – Canada: 2007

Origin	TOTAL	Main diagnostic site											
		Respiratory					Nonrespiratory						
		Primary*	Pulmonary**	Other respiratory†	Miliary	CNS	Lymph	Other‡	Unknown				
Canadian-born													
Aboriginal													
North American Indian	229	32	148	17	7	3	14	8	0				
Status (registered) Indian	225	32	145	17	7	2	14	8	0				
Non-status Indian	4	0	3	0	0	1	0	0	0				
Metis	32	10	17	0	1	0	3	1	0				
Inuit	46	6	38	2	0	0	0	0	0				
Total Aboriginal	307	48	203	19	8	3	17	9	-				
Non-Aboriginal	170	9	127	4	3	1	7	19	0				
Total Canadian-born	477	57	330	23	11	4	24	28	-				
Foreign-born													
Africa, High HIV Prevalence (AFR-High)	91	0	58	5	2	2	18	6	0				
Africa, Low HIV Prevalence (AFR-Low)	33	0	19	0	1	0	8	5	0				
American Region - Latin American and Caribbean Countries (AMR)	75	1	47	3	2	1	12	9	0				
Established Market Economies and Central Europe (EME-CEUR)	60	0	39	3	2	1	5	10	0				
Eastern Europe (EEUR)	25	1	23	0	0	0	1	0	0				
Eastern Mediterranean (EMR)	113	0	61	9	0	1	25	17	0				

...cont'd

Reported new active and relapsed tuberculosis cases by origin and main diagnostic site – Canada: 2007

Origin	TOTAL	Main diagnostic site										
		Respiratory			Nonrespiratory				Unknown			
		Primary*	Pulmonary**	Other respiratory†	Miliary	CNS	Lymph	Other‡	Unknown			
Foreign-born (<i>cont'd</i>)												
South-East Asia (SEAR)	233	1	125	30	1	4	46	26	0			
Western Pacific Region (WPR)	410	3	273	23	3	7	60	41	0			
Unknown	2	0	2	0	0	0	0	0	0			
Total foreign-born	1,042	6	647	73	11	16	175	114	-			
Unknown	29	0	25	0	0	0	3	1	0			
TOTAL	1,548	63	1,002	96	22	20	202	143	0			

* Primary includes primary respiratory tuberculosis and tuberculous pleurisy in primary progressive tuberculosis, (ICD-9 codes 010.0-010.9; ICD-10 A15.7 and A16.7).

** Pulmonary includes tuberculosis of the lungs and conducting airways which includes tuberculous fibrosis of the lung, tuberculous bronchiectasis, tuberculous pneumonia, tuberculous pneumothorax, isolated tracheal or bronchial tuberculosis and tuberculous laryngitis; (ICD-9 codes 011-011.9, 012.2, 012.3; ICD-10 codes A15.0-A15.3, A15.5, A15.9, A16.0-A16.2, A16.4, A16.9).

† Other Respiratory includes tuberculous pleurisy (non-primary); tuberculosis of: intrathoracic lymph nodes, mediastinum, nasopharynx, nose (septum), and sinus (any nasal) (ICD-9 codes: 012.0, 012.1 and 012.8; ICD-10 codes: A15.4, A15.6, A15.8, A16.3, A16.5, A16.8).

‡ Other includes tuberculosis of intestines, peritoneum and mesenteric glands, bones and joints, genitourinary system, skin, eye, ear, thyroid, adrenal and spleen.

Table 11

Reported new active and relapsed tuberculosis cases by origin and activity status – Canada: 2007

	Origin	TOTAL	Activity status		
			New active cases	Relapsed cases	Unknown status
Canadian-born	Aboriginal				
	North American Indian	229	206	22	1
	Status (registered) Indian	225	203	21	1
	Non-status Indian	4	3	1	0
	Metis	32	29	3	0
	Inuit	46	37	9	0
	Total Aboriginal	307	272	34	1
	Non-Aboriginal	170	151	10	9
	Total Canadian-born	477	423	44	10
	Foreign-born	Africa, High HIV Prevalence (AFR-High)	91	78	9
Africa, Low HIV Prevalence (AFR-Low)		33	33	0	0
American Region – Latin American and Caribbean Countries (AMR)		75	73	2	0
Established Market Economies and Central Europe (EME-CEUR)		60	56	2	2
Eastern Europe (EEUR)		25	23	2	0
Eastern Mediterranean (EMR)		113	106	2	5
South-East Asia (SEAR)		233	222	7	4
Western Pacific Region (WPR)		410	363	38	9
Unknown		2	2	0	0
Total foreign-born		1,042	956	62	24
Unknown	29	19	3	7	
TOTAL	1,548	1,398	109	41	

Table 12
Reported new active and relapsed tuberculosis cases by bacterial status – Canada and provinces/territories: 2007

Bacterial status	Province/territory													
	CANADA	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
1. Culture positive														
a. Microscopy positive	618	1	0	3	3	97	264	41	45	34	110	1	5	14
b. Microscopy negative	559	4	0	1	1	83	207	46	12	66	118	1	9	11
c. Microscopy unknown	54	0	0	1	0	18	29	0	4	0	2	0	0	0
Total	1,231	5	0	5	4	198	500	87	61	100	230	2	14	25
2. Culture negative														
a. Microscopy positive	22	1	0	0	0	1	12	1	0	0	5	0	1	1
b. Microscopy negative	135	0	0	1	1	16	62	9	14	0	30	1	0	1
c. Microscopy unknown	12	0	0	0	0	1	5	0	5	0	1	0	0	0
Total	169	1	0	1	1	18	79	10	19	0	36	1	1	2
3. Culture unknown														
a. Microscopy positive	19	1	0	0	0	1	16	1	0	0	0	0	0	0
b. Microscopy negative	12	0	0	0	0	6	6	0	0	0	0	0	0	0
c. Microscopy unknown	117	0	0	1	0	6	53	5	26	12	10	0	0	4
Total	148	1	0	1	0	13	75	6	26	12	10	0	0	4
TOTAL	1,548	7	0	7	5	229	654	103	106	112	276	3	15	31

Table 13

Reported new active and relapsed tuberculosis cases by bacterial status and origin – Canada: 2007

Bacterial status	TOTAL	Origin			
		Canadian-born Aboriginal	Canadian-born non-Aboriginal	Foreign-born	Unknown origin
1. Culture positive					
a. Microscopy positive	618	122	88	395	13
b. Microscopy negative	559	101	41	409	8
c. Microscopy unknown	54	4	3	45	2
Total	1,231	227	132	849	23
2. Culture negative					
a. Microscopy positive	22	3	5	14	0
b. Microscopy negative	135	34	15	86	0
c. Microscopy unknown	12	5	1	5	1
Total	169	42	21	105	1
3. Culture unknown					
a. Microscopy positive	19	0	3	15	1
b. Microscopy negative	12	2	1	9	0
c. Microscopy unknown	117	36	13	64	4
Total	148	38	17	88	5
TOTAL	1,548	307	170	1,042	29

Table 14

Reported new active and relapsed tuberculosis cases by bacterial status and main diagnostic site – Canada: 2007

Bacterial status	TOTAL	Main diagnostic site									
		Respiratory			Nonrespiratory				Unknown		
		Primary	Pulmonary	Other respiratory	Miliary	CNS	Lymph	Other			
1. Culture positive											
a. Microscopy positive	618	5	523	11	9	0	34	36	0		
b. Microscopy negative	559	9	345	44	9	9	100	43	0		
c. Microscopy unknown	54	3	14	2	1	2	13	19	0		
Total	1,231	17	882	57	19	11	147	98	0		
2. Culture negative											
a. Microscopy positive	22	0	14	0	0	0	7	1	0		
b. Microscopy negative	135	7	58	26	2	4	22	16	0		
c. Microscopy unknown	12	5	4	0	0	0	0	3	0		
Total	169	12	76	26	2	4	29	20	0		
3. Culture unknown											
a. Microscopy positive	19	2	10	2	0	1	4	0	0		
b. Microscopy negative	12	0	9	1	0	0	1	1	0		
c. Microscopy unknown	117	32	25	10	1	4	21	24	0		
Total	148	34	44	13	1	5	26	25	0		
TOTAL	1,548	63	1,002	96	22	20	202	143	0		

Table 15

Drug resistance at time of initial case reporting by origin and activity status – Canada: 2007

Drug pattern	Total	Activity status													
		New						Relapse							
		Canadian-born			Un-known	Foreign-born			Canadian-born			Un-known	Unknown		
		Aboriginal	Non-Aboriginal	Foreign-born		Aboriginal	Non-Aboriginal	Foreign-born	Aboriginal	Non-Aboriginal	Foreign-born		Un-known		
Total positive culture	1,231	195	121	783	17	32	7	47	2	0	4	19	4		
Resistance pattern unknown	43	3	3	29	0	2	0	3	1	0	0	2	0		
No resistance	1,077	185	109	678	16	29	7	36	1	0	3	11	2		
Resistance to one or more drugs	111	7	9	76	1	1	0	8	0	0	1	6	2		
Monoresistance															
INH	82	7	5	61	0	1	0	4	0	0	0	2	2		
EMB	6	0	1	4	0	0	0	0	0	0	0	1	0		
RMP	1	0	0	0	0	0	0	1	0	0	0	0	0		
PZA	5	0	2	2	1	0	0	0	0	0	0	0	0		
Total monoresistance	94	7	8	67	1	1	0	5	0	0	0	3	2		
Multidrug-resistance (MDR-TB)*															
INH & RMP	2	0	0	1	0	0	0	0	0	0	1	0	0		
INH & RMP & EMB	6	0	0	3	0	0	0	1	0	0	0	2	0		
INH & RMP & PZA	1	0	0	1	0	0	0	0	0	0	0	0	0		
INH & EMB & RMP & PZA	1	0	0	0	0	0	0	1	0	0	0	0	0		
Total MDR-TB	10	0	0	5	0	0	0	2	0	0	1	2	0		
Extensively drug-resistant (XDR-TB)†															
INH & RMP & EMB & CAP & OFLOX	1	0	0	1	0	0	0	0	0	0	0	0	0		
Total XDR-TB	1	0	0	1	0	0	0	0	0	0	0	0	0		
Other patterns															
INH & EMB	6	0	1	4	0	0	0	0	0	0	0	1	0		
Total other patterns	6	0	1	4	0	0	0	0	0	0	0	1	0		

* Multidrug-resistant TB (MDR-TB) is resistance to at least isoniazid and rifampin.

† Extensively drug-resistant TB (XDR-TB) is MDR-TB plus resistance to any fluoroquinolone and at least one of three injectable second-line drugs: amikacin, capreomycin and kanamycin.

Table 16**Reported new active and relapsed tuberculosis cases by method of detection – Canada and provinces/territories: 2007**

Case finding	Province/territory													
	CANADA	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
Immigration	80	0	0	1	1	10	44	0	0	8	16	0	0	0
Symptoms/incidental findings	1,142	6	0	5	3	154	490	77	68	93	220	2	4	20
Contact investigation	139	0	0	1	1	23	20	20	29	7	19	1	11	7
Post-mortem	14	0	0	0	0	2	1	1	0	1	9	0	0	0
Screening	58	1	0	0	0	3	33	0	9	3	7	0	0	2
Other	56	0	0	0	0	21	27	5	0	0	3	0	0	0
Unknown	59	0	0	0	0	16	39	0	0	0	2	0	0	2
TOTAL	1,548	7	0	7	5	229	654	103	106	112	276	3	15	31

Table 17**Reported new active and relapsed tuberculosis cases by method of detection and origin – Canada: 2007**

Case finding	TOTAL	Origin							
		Canadian-born				Foreign-born			
		Status (registered) Indian	Non-status Indian	Metis	Inuit	Non-Aboriginal	Unknown origin		
Immigration	80	0	0	0	0	2	78	0	
Symptoms/incidental findings	1,142	145	2	21	24	131	804	15	
Post-mortem	14	2	0	0	0	2	6	4	
Contact-investigation	139	66	2	8	17	20	26	0	
Screening	58	10	0	3	3	5	35	2	
Other	56	2	0	0	0	8	44	2	
Unknown	59	0	0	0	2	2	49	6	
TOTAL	1,548	225	4	32	46	170	1,042	29	

Table 18

Reported new active and relapsed foreign-born tuberculosis cases by origin and year of arrival in Canada: 2007

Origin (WHO region)	TOTAL	Year of arrival											Unk.	
		≤ 1969	1970-1979	1980-1989	1990-1999	2000	2001	2002	2003	2004	2005	2006		2007
Africa, High HIV Prevalence (AFR-High)	91	2	3	8	13	4	11	4	6	3	5	9	19	4
Africa, Low HIV Prevalence (AFR-Low)	33	0	0	1	6	3	3	5	2	0	2	3	7	1
American Region - Latin American and Caribbean Countries (AMR)	75	0	15	10	13	2	3	1	2	3	3	8	9	6
Established Market Economies and Central Europe (EME-CEUR)	60	27	10	4	5	1	3	1	0	0	0	0	1	8
Eastern Europe (EEUR)	25	4	0	3	2	1	2	1	0	1	4	2	4	1
Eastern Mediterranean (EMR)	113	1	3	9	26	5	6	6	5	6	11	19	10	6
South-East Asia (SEAR)	233	2	10	31	63	7	6	13	16	15	11	30	19	10
Western Pacific Region (WPR)	410	14	38	69	128	7	11	17	21	15	14	30	15	31
Unknown	2	0	0	0	1	0	0	0	0	0	0	0	0	1
TOTAL	1,042	50	79	135	257	30	45	48	52	43	50	101	84	68

Table 19

Reported new active and relapsed foreign-born tuberculosis cases by immigration status – Canada and provinces/territories: 2007

Immigration status	Province/territory													
	CANADA	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
Canadian citizen/permanent resident	444	0	0	2	1	0	161	28	2	80	169	1	0	0
Refugee claimant	46	0	0	0	0	0	43	0	2	0	1	0	0	0
Other temporary resident (visitor, student, foreign nationals without status in Canada)	23	1	0	1	2	0	0	0	0	4	15	0	0	0
Other	29	0	0	0	0	0	29	0	0	0	0	0	0	0
Unknown	500	0	0	0	0	142	346	0	0	0	12	0	0	0
TOTAL	1,042	1	0	3	3	142	579	28	4	84	197	1	0	0

Table 20

Reported relapsed tuberculosis cases by length of inactive interval – Canada and provinces/territories: 2007

Interval	Province/territory													
	CANADA	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
0-2 years	9	0	0	0	0	4	0	1	0	1	2	0	0	1
3-5 years	10	0	0	0	0	0	0	3	1	0	6	0	0	0
6-9 years	5	0	0	0	0	0	0	1	0	3	0	0	0	1
10-19 years	12	0	0	0	0	1	0	1	4	0	5	0	0	1
20+ years	32	0	0	1	0	3	0	1	5	2	13	1	1	5
Unknown	41	0	0	0	0	2	39	0	0	0	0	0	0	0
TOTAL	109	0	0	1	0	10	39	7	10	6	26	1	1	8

Table 21

Reported new active and relapsed tuberculosis cases who died, by cause of death – Canada and provinces/territories: 2007

Cause of death	CANADA		Province/territory												
	No.	Percent of total cases reported for year	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
Update on 2006 cases who died before or during treatment*															
TB was the cause of death	23	1.4	2	0	1	0	3	7	0	2	3	4	0	1	0
TB contributed to death but was not the underlying cause	68	4.1	0	0	0	0	7	27	0	5	11	18	0	0	0
TB did not contribute to death but was an incidental finding	45	2.7	0	0	1	0	8	17	7	2	3	5	0	1	1
Unknown	7	0.4	0	0	0	0	0	7	0	0	0	0	0	0	0
TOTAL	143	8.7	2	0	2	0	18	58	7	9	17	27	0	2	1
Cases reported in 2007 who died before or during treatment**															
TB was the cause of death	28	1.8	0	0	0	0	6	9	3	0	3	7	0	0	0
TB contributed to death but was not the underlying cause	56	3.6	2	0	0	0	7	24	5	1	5	11	0	1	0
TB did not contribute to death but was an incidental finding	37	2.4	0	0	1	0	4	13	2	1	3	13	0	0	0
Unknown	3	0.2	0	0	0	0	0	3	0	0	0	0	0	0	0
TOTAL	124	8.0	2	0	1	0	17	49	10	2	11	31	0	1	0

* Updates include results from both case and outcome reports.

** Includes results from case reports only.

Table 24

Treatment outcome status – Canada and provinces/territories: 2006

	TOTAL	Treatment outcome							
		Cure	Treatment completed without culture	Death during treatment	Transferred	Absconded	Treatment ongoing	Other	Unknown
CANADA	1,652	104	1,166	143	29	35	46	18	111
Province/territory									
Newfoundland and Labrador	12	3	6	2	0	0	0	1	0
Prince Edward Island	0	0	0	0	0	0	0	0	0
Nova Scotia	10	0	6	2	2	0	0	0	0
New Brunswick	2	0	0	0	1	0	0	0	1
Quebec	228	17	89	18	2	6	0	5	91
Ontario	671	0	527	58	12	6	45	4	19
Manitoba	134	5	119	7	2	0	0	1	0
Saskatchewan	87	4	70	9	0	4	0	0	0
Alberta	131	27	85	17	0	1	0	1	0
British Columbia	320	11	250	27	10	15	1	6	0
Yukon	3	0	3	0	0	0	0	0	0
Northwest Territories	6	3	1	2	0	0	0	0	0
Nunavut	48	34	10	1	0	3	0	0	0

Table 25
Treatment outcome status by treatment regimen – Canada: 2006

Treatment regimen	TOTAL	Treatment outcome							
		Cure	Treatment completed without culture	Death during treatment	Transferred	Absconded	Treatment ongoing	Other	Unknown
Total	1,652	104	1,166	143	29	35	46	18	111
EMB	2	0	0	0	0	0	1	0	1
EMB & other drug(s)	5	0	3	0	1	0	1	0	0
EMB & PZA & other drug(s)	1	0	1	0	0	0	0	0	0
EMB & RMP	3	0	3	0	0	0	0	0	0
EMB & RMP & other drug(s)	13	0	9	4	0	0	0	0	0
EMB & RMP & PZA	18	2	13	1	0	0	1	1	0
EMB & RMP & PZA & other drug(s)	13	1	10	1	0	0	0	1	0
INH & EMB	4	0	2	2	0	0	0	0	0
INH & EMB & other drug(s)	12	0	9	0	0	0	3	0	0
INH & EMB & PZA	9	0	7	0	1	0	1	0	0
INH & EMB & PZA & other drug(s)	20	0	16	1	1	1	0	0	1
INH & EMB & RMP	50	6	38	5	1	0	0	0	0
INH & EMB & RMP & other drug(s)	6	3	2	1	0	0	0	0	0
INH & EMB & RMP & PZA	391	38	293	31	8	10	4	3	4
INH & EMB & RMP & PZA & other drug(s)	29	1	22	4	0	0	1	1	0
INH & other drug(s)	9	0	6	1	0	0	2	0	0
INH & PZA	2	0	2	0	0	0	0	0	0
INH & PZA & other drug(s)	4	0	3	0	0	0	0	0	1
INH & RMP	128	6	107	3	0	5	4	1	2
INH & RMP & other drug(s)	2	1	0	0	0	0	1	0	0
INH & RMP & PZA	240	28	190	6	2	9	2	2	1
INH & RMP & PZA & other drug(s)	6	1	4	0	0	1	0	0	0
RMP & other drug(s)	9	0	6	0	0	0	3	0	0

...cont'd

Table 25 *Cont'd*

Treatment outcome status by treatment regimen – Canada: 2006

Treatment regimen	TOTAL	Treatment outcome									
		Cure	Treatment completed without culture	Death during treatment	Transferred	Absconded	Treatment ongoing	Other	Unknown		
RMP & PZA	2	0	2	0	0	0	0	0	0	0	0
RMP & PZA & other drug(s)	2	0	1	0	0	0	0	0	0	0	1
Other	3	0	1	0	0	0	0	0	2	0	0
No drugs prescribed	59	0	0	59	0	0	0	0	0	0	0
Unknown	610	17	416	24	15	9	20	9	20	9	100

Table 26

Treatment outcome status by major mode of treatment – Canada: 2006

Major mode of treatment	TOTAL	Treatment outcome									
		Cure	Treatment completed without culture	Death during treatment	Transferred	Absconded	Treatment ongoing	Other	Unknown		
DOT (daily/intermittent)	822	76	636	48	10	13	28	7	4	4	
Daily – self administered	588	22	499	13	11	17	17	5	4	4	
Other	66	4	21	35	2	2	1	0	1	1	
Unknown	176	2	10	47	6	3	0	6	102	102	
TOTAL	1,652	104	1,166	143	29	35	46	18	111	111	

Table 27

Treatment outcome status by compliance estimate – Canada: 2006

Compliance estimate	TOTAL	Treatment outcome									
		Cure	Treatment completed without culture	Death during treatment	Transferred	Absconded	Treatment ongoing	Other	Unknown		
< 50%	23	0	2	5	3	10	0	3	0	0	
50–79%	63	4	31	8	0	14	3	3	3	0	
≥ 80%	1,269	99	1074	58	13	4	15	5	1	1	
Unknown	297	1	59	72	13	7	28	7	110	110	
TOTAL	1,652	104	1,166	143	29	35	46	18	111	111	

Table 28

Initial and acquired drug resistance by origin and activity status – Canada: 2006

Drug pattern	Activity status													
	Total	New				Relapse				Unknown				
		Canadian-born		Un-known	Foreign-born	Canadian-born		Foreign-born	Un-known	Canadian-born		Non-Aboriginal	Foreign-born	Un-known
		Aboriginal	Non-Aboriginal			Aboriginal	Non-Aboriginal			Aboriginal	Non-Aboriginal			
Initial drug resistance 2006														
Total Positive Culture	1,317	226	133	758	36	26	21	61	4	0	4	45	3	
Resistance Pattern Unknown	54	1	2	36	2	0	0	2	1	0	1	9	0	
No Resistance	1,151	220	119	649	34	25	19	47	2	0	3	31	2	
Initial Resistance to one or more drugs	112	5	12	73	0	1	2	12	1	0	0	5	1	
Monoresistance														
INH	75	2	8	48	0	1	2	9	1	0	0	3	1	
EMB	3	1	0	2	0	0	0	0	0	0	0	0	0	
RMP	4	1	0	3	0	0	0	0	0	0	0	0	0	
PZA	12	1	4	6	0	0	0	0	0	0	0	0	1	
Total monoresistance	94	5	12	59	0	1	2	9	1	0	0	3	2	
Multi-drug resistance (MDR-TB)*														
INH & RMP	7	0	0	6	0	0	0	1	0	0	0	0	0	
INH & RMP & EMB	3	0	0	2	0	0	0	1	0	0	0	0	0	
INH & RMP & PZA	1	0	0	0	0	0	0	0	0	0	0	1	0	
INH & EMB & RMP & PZA	1	0	0	1	0	0	0	0	0	0	0	0	0	
Total MDR-TB	12	0	0	9	0	0	0	2	0	0	0	1	0	
Other patterns														
INH & EMB	6	0	0	5	0	0	0	1	0	0	0	0	0	
Total other patterns	6	0	0	5	0	0	0	1	0	0	0	0	0	

...cont'd

Table 28 *Cont'd*

Initial and acquired drug resistance by origin and activity status – Canada: 2006

Drug pattern	Total	Activity status															
		New						Relapse						Unknown			
		Canadian-born			Foreign-born			Canadian-born			Foreign-born			Canadian-born		Foreign-born	Unknown
		Aboriginal	Non-Aboriginal	Unknown	Aboriginal	Non-Aboriginal	Unknown	Aboriginal	Non-Aboriginal	Unknown	Aboriginal	Non-Aboriginal	Unknown	Aboriginal	Non-Aboriginal	Unknown	
Acquired drug resistance 2006																	
Monoresistance																	
INH	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total acquired resistance	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

* Multidrug-resistant TB (MDR-TB) is resistance to at least isoniazid and rifampin.

APPENDIX II

TECHNICAL NOTES

CONCEPTS, METHODS AND DATA QUALITY

The following information describes the strengths and limitations of the data in this report and how these data can be effectively used and interpreted. This information may be of particular importance when making comparisons with data from previous *TB in Canada* reports or other sources of TB information.

Data sources

The Canadian Tuberculosis Reporting System (CTBRS) is maintained by Tuberculosis Prevention and Control (TBPC), Public Health Agency of Canada. This surveillance system is derived from records of provincial/territorial tuberculosis registries that capture information on every new active and relapsed case of tuberculosis and on the treatment outcome for these cases.

All provinces/territories voluntarily submit their case and outcome data to TBPC. Case data for four of the thirteen provinces/territories (Alberta, Ontario, Quebec and Saskatchewan) are submitted electronically. The remaining provinces/territories submit paper reporting forms (See Appendix VII). Outcome data are submitted electronically from Alberta, Saskatchewan and Ontario. Quebec submits aggregated outcome data. The remaining provinces submit outcome results on paper forms.

Reference period

The information contained in this report reflects the number of new and relapsed cases diagnosed between January 1, 2007 to December 31, 2007. Outcomes are reported on patients diagnosed between January 1, 2006 to December 31, 2006. Tables 1 through 4 present historical counts and rates for the years 1997 to 2007 inclusive. The data in this report reflects the data submitted to the Public Health Agency of Canada as of March 31, 2009. Updates, because of late reporting, will be reflected in the 2008 report.

Data quality and validation

Before the analysis and publication, all data are reviewed for errors, inconsistencies and incomplete reporting. Follow-up is done with the reporting jurisdictions identifying any concerns or problems with the reported data. Previously reported data are also subject to revision in the event of late reporting or when revised information from the provinces/territories is received. Revisions are disseminated in subsequent reports.

Prior to the publication of *TB in Canada*, a pre-release containing selected tables is produced. The pre-release is sent to the provinces/territories for verification and is subsequently posted to the Public Health Agency of Canada website, <http://www.phac-aspc.gc.ca/tbpc-latb/index.html>.

Data accuracy

The methods used to collect and analyze the data in this report have been designed to minimize error. However, surveillance data are subject to certain types of error (e.g., coverage, measurement and processing error).

The accuracy of the data (including completeness and coverage of the population of interest) is partially a function of timely reporting/updates to TBPC from the provinces/territories. Some degree of lag does occur (i.e., reporting delay), almost exclusively affecting preliminary data and rarely the final data.

In general, the majority of data elements for case and outcome reports submitted to TBPC are complete. Reporting is less complete for some of the data elements introduced in 1997 such as HIV status. Historically, Ontario and Quebec have not had the capacity to report individual treatment outcomes. Prior to 2005 both Ontario and Quebec submitted outcome data in aggregated form only. In 2005 Ontario began submitting individual outcome data but Quebec continues to submit only aggregated outcome data.

Provinces/territories do not always report outcomes for all cases. However reporting is improving and the percentage of outcomes reported in 2007 for 2006 cases was 93% of all cases. Ongoing work with the provinces/territories will ensure that the data reported in the *TB in Canada* reports correspond with those reported at the provincial/territorial level.

The data reported may be subject to coding, reporting and processing errors that cannot be detected and are not corrected at the source. Not all provinces/territories use ICD 9 or ICD 10 coding systems for disease, which are used to classify patients according to the main diagnostic site (see Table 4). Efforts are made to work with those provinces/territories using alternate coding systems to ensure that diagnostic reporting is as accurate as possible.

Rates

Rates are expressed as the number of cases reported each calendar year per 100,000 population. The denominators used to calculate rates for total Canadian, provincial/territorial, total Canadian-born Aboriginal, Inuit and Métis were derived from official and custom census products from Statistics Canada, Demography Division.¹⁴

The rates presented for the total Aboriginal population including Métis, Inuit and North American Indian (combining Status (registered) Indian and non-Status Indian counts) were derived from the 2001 Census data published in the *Projections of the Aboriginal populations, Canada, provinces and territories, 2001 to 2017*.¹⁵

Current and historical incidence rates for the Status (registered) Indian population are based on population estimates from Indian and Northern Affairs Canada. These estimates are considered a more accurate reflection of the true counts of the Status Indian population.¹⁶ However, using different sources does introduce possibility of conflicting numbers. As a result, caution should be observed when drawing comparative conclusions between the Status (registered) Indian and other origin groups.

¹⁴ Statistics Canada, Demography Division, Demographic, Estimates Section, Population estimates 0-90+, July, Canada – Provinces/Territories 1971-2005, updated February, 2008.

¹⁵ Projections of the Aboriginal populations, Canada, provinces and territories 2001 to 2017 Demography Division, Statistics Canada Catalogue No. 91-547-XIE.

¹⁶ INAC, *Registered Indian Population by Sex and Residence 2005*. Available at: http://www.ainc-inac.gc.ca/pr/sts/rip/rip05_e.pdf.

Prior to 2003, in the annual *Tuberculosis In Canada* reports, the case counts for the Métis and non-Status Indians were combined into one aggregated number and because populations counts were not available, incidence rates were not calculated. In 2003 population estimates for the Métis were produced by Statistics Canada, Demography Division, enabling the reporting of rates for this population. Starting in 2003, case counts for the Métis were separated from those for non-Status counts and rates for the Métis were reported – accurate population counts for the non-Status Indian are not available and so incidence rates are not able to be calculated. Some jurisdictions have not been able to distinguish non-Status from the Métis cases due to constraints with their TB program’s reporting system. National rates for the Métis may be over inflated and need to be interpreted cautiously. It is hoped that in working with the jurisdictions these data will become more accurate in future reports.

Incidence rates in the foreign-born population from 2001 forward are based on population estimates from the Canadian census, a Statistics Canada, Demography Division customized product.

Incidence rates in the foreign-born population are presented according to the eight Stop-TB /WHO TB Epidemiological Regions described in the *Actions for Life: Towards a World Free of Tuberculosis: The Global Plan to Stop TB, 2006 – 2015*. The eight TB epidemiological regions include: the Established Market Economies (EME) and the Central European countries (CEUR); African countries with high HIV prevalence (AFR High HIV); African countries with low HIV prevalence (AFR Low HIV); the American Region (AMR) – Latin America Countries (LAC); Eastern Europe Region (EEUR); Eastern Mediterranean Region (EMR); South-East Asia Region (SEAR); and the Western Pacific Region (WP). Because EME and CEUR have similarly high per capita income level and low tuberculosis incidence rates the results for these two regions are combined.

Population denominators for the Canadian-born non-Aboriginal population are derived using the following formula:

<p>Canadian-born non-Aboriginal =</p> <p>Total Canadian Population (Statistics Canada) – Foreign Born (Statistics Canada) – Total Aboriginal persons (Statistics Canada)</p>
--

Finally, the historical rates, presented in this and subsequent reports are updated periodically as new estimates become available, which may explain inconsistencies between rates in this report and in previous *TB in Canada* reports.

Deaths

Starting in 2005, the tabulation of the total number of deaths included cases that were diagnosed in the previous calendar year but who died at any time during their treatment. Prior to 2005 only deaths that occurred within the calendar year of the current report were counted and thus may not have included cases that died while still on treatment into the following calendar year. This enhanced method for determining the number of deaths will more accurately reflect the actual deaths.

Privacy and confidentiality

Tables reporting on provincial/territorial case counts and rates have been expanded to report on each province and territory as opposed to aggregate data for the four Atlantic provinces and three territories. However, to avoid any potential issues with confidentiality and privacy, tables where population counts become too small may be collapsed in regions (e.g. for the three territories into “North”). In general, data will be suppressed in all instances where population denominators fall below 40.

VARIABLES MEASURED

The statistical data presented in this report refer to cases and rates of new active or relapsed tuberculosis and treatment outcomes.

Case definitions in effect in 2005

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

- a. a. Cases with *Mycobacterium tuberculosis* complex (i.e. *M. tuberculosis* [including subspecies *M. canettii*], *M. bovis* [excluding BCG strain], *M. africanum*, *M. caprae*, *M. microti* or *M. pinnipedii*) 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 traveling with or without a visa, stopping in Canada en route.

III New and relapsed (reactivated) cases of tuberculosis¹⁷

- a. **New case:** no documented evidence or history of previously active tuberculosis.
- b. **Relapsed (reactivated) case:** documented evidence or history of previously active tuberculosis which became inactive.
- c. **Inactive tuberculosis:**
- i Cultures for *M. tuberculosis* negative for at least 6 months

OR

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

¹⁷ As of 2008, the CTBRS classifies all cases as new or re-treatment cases; see *Canadian Tuberculosis Standards*, 6th ed., Appendix C for complete definitions

IV Treatment outcomes

Cure – Negative culture at completion of treatment.

Treatment completed – Patient who has completed treatment without culture at the end of treatment.

Died – Death during treatment

- a. TB was the cause of death;
- b. TB contributed to death but was not the underlying cause; or
- c. TB did not contribute to death.

Transfer – Patient transferred to new jurisdiction and the outcome of treatment is unknown.

Failure – Culture positive at five months or more

Absconded – Patient was lost to follow-up before completion of 80% of doses, eight months after treatment started

Treatment ongoing – Treatment is ongoing at the time of the treatment outcome report

Other

Unknown

Diagnostic classification

The diagnostic classification of tuberculosis (TB) in Canada is based upon the International Classification of Diseases, 9th and 10th Editions. For each case of TB, up to five individual diagnoses are captured for reporting purposes. The main diagnostic sites were divided into two broad categories: respiratory and non-respiratory. Respiratory is further subdivided into primary, pulmonary and other respiratory.

Primary includes primary respiratory tuberculosis and tuberculous pleurisy in primary progressive tuberculosis (ICD-9 codes 010.0-010.9; ICD-10 A15.7 and A16.7).

Pulmonary includes tuberculosis of the lungs and conducting airways: tuberculous fibrosis of the lung, tuberculous bronchiectasis, tuberculous pneumonia, tuberculous pneumothorax, isolated tracheal or bronchial tuberculosis and tuberculous laryngitis (ICD-9 codes 011-011.9, 012.2, 012.3; ICD-10 codes A15.0-A15.3, A15.5, A15.9, A16.0-A16.2, A16.4, A16.9).

Other Respiratory includes tuberculous pleurisy (non-primary); tuberculosis of: intrathoracic lymph nodes, mediastinum, nasopharynx, nose (septum), and sinus (any nasal) (ICD-9 codes: 012.0, 012.1 and 012.8; ICD-10 codes: A15.4, A15.6, A15.8, A16.3, A16.5, A16.8).

Nonrespiratory tuberculosis includes miliary, central nervous system, lymph and other sites.

The table below summarizes the codes used by ICD system for each of the diagnostic categories.

Table G

ICD9 and ICD10 codes by diagnostic classification

ICD System	Primary	Pulmonary	Other Respiratory	Miliary	CNS	Peripheral Lymph Nodes	Other
ICD 9	010, 010.0, 010.1, 010.8, 010.9	011, 011.0, 011.1, 011.2, 011.3, 011.4, 011.5, 011.6, 011.7, 011.8, 011.9, 012.2, 012.3	012, 012.0, 012.1, 012.8	018, 018.0, 018.8, 018.9	013, 013.0, 013.1, 013.8, 013.9	017.2	all other ICD9 codes
ICD 10	A15.7, A16.7	A15, A15.0, A15.1, A15.2, A15.3, A15.5, A15.9, A16.0, A16.1, A16.2, A16.4, A16.9	A15.4, A15.6, A15.8, A16.3, A16.5, A16.8	A19, A19.0, A19.1, A19.2, A19.8, A19.9	A17, A17.0, A17.1, A17.8, A17.9	A18.2	all other ICD10 codes including

Cases are reported based on the following hierarchy:

1. primary respiratory TB;
2. pulmonary;
3. other respiratory TB;
4. miliary/disseminated;
5. meninges/central nervous system;
6. peripheral lymph node; and
7. other sites (includes tuberculosis of intestines, peritoneum and mesenteric glands, bones and joints, genitourinary system, skin, eye, ear, thyroid, adrenal and spleen).

For cases with multiple diagnostic sites, the placement of the case into a disease group is determined using the hierarchy above. As an example, a case may have been diagnosed with TB of the *peripheral lymph nodes (scrofula, scrofulous abscess, tuberculous adenitis)* (ICD-9 17.2) and *tuberculosis of lung, infiltrative* (ICD-9 11.0). Because pulmonary TB is above peripheral lymph TB in the hierarchy, this case would be classified as pulmonary TB.

CODE TABLE LISTING BY ICD-9 CODE FOR DIAGNOSIS

- 010 Primary Tuberculosis**
- 010.0 Primary tuberculous complex
 - 010.1 Tuberculous pleurisy in primary progressive tuberculosis
This disease state is characterized by pleuritis and pleural effusion, usually in an adolescent or young adult, but possibly in any age group, due to recent (within the preceding 24 months) infection with *Mycobacterium tuberculosis* complex. If another site of tuberculosis disease, such as CNS or disseminated/miliary disease, is believed to have occurred as a consequence of recent infection (within the preceding 24 months), it ought to be referred to as primary CNS (etc.) disease.
 - 010.8 Other primary progressive tuberculosis (excl. tuberculous erythema nodosum {017.1})
This is usually, but not always, in a child, and is due to infection within the preceding 24 months with *Mycobacterium tuberculosis* complex. It includes pulmonary (lung parenchyma) tuberculosis, as well as tuberculosis of the intrathoracic lymph nodes, larynx, trachea, bronchus, or nasopharyngeal sinuses
 - 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 NOS, tuberculosis of lung NOS)
- 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 NOS)

014 Tuberculosis of intestines, peritoneum and mesenteric glands

014.0 Tuberculous peritonitis Tuberculous ascites

014.8 Other Tuberculosis (of):

anus
intestine (large) (small)
mesenteric glands
rectum
retroperitoneal (lymph nodes)
Tuberculous enteritis

015 Tuberculosis of Bones and Joints

Incl. tuberculous: arthritis (711.4), necrosis of bone (730.8), osteitis (730.8), osteomyelitis (730.8), synovitis (727.01), tenosynovitis (727.01).

015.0 Vertebral column
Pott's: curvature (737.4), disease (730.4)
Kyphosis (737.4), spondylitis (720.8)

015.1 Hip

015.2 Knee

015.5 Limb bones

015.6 Mastoid

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: NOS, 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 NOS (695.2)

017.2 Peripheral lymph nodes (scrofula, scrofulous abscess, tuberculous adenitis)

017.3 Eye
Tuberculosis: 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)

- A15 Respiratory tuberculosis, bacteriologically and histologically confirmed**
Includes: infections due to *Mycobacterium tuberculosis* and *Mycobacterium bovis*
Excludes: congenital tuberculosis (P37.0)
 pneumoconiosis associated with tuberculosis (J65)
 sequelae of tuberculosis (B90-)
 silicotuberculosis (J65)
- A15.0 Tuberculosis of lung, confirmed by sputum microscopy with or without culture
Includes:
 Tuberculous:
 bronchiectasis
 fibrosis of lung
 pneumonia
 pneumothorax
- A15.1 Tuberculosis of lung, confirmed by culture only
Includes: Conditions listed in A15.0, confirmed by culture only
- A15.2 Tuberculosis of lung, confirmed histologically
Includes: Conditions listed in A15.0, confirmed histologically
- A15.3 Tuberculosis of lung, confirmed by unspecified means
Includes: Conditions listed in A15.0, confirmed but unspecified whether bacteriologically or histologically
- A15.4 Tuberculosis of intrathoracic lymph nodes, confirmed bacteriologically and histologically
Includes:
 Tuberculosis of lymph nodes:
 hilar
 mediastinal
 tracheobronchial
Excludes: specified as primary (A15.7)
- A15.5 Tuberculosis of larynx, trachea and bronchus confirmed bacteriologically and histologically
Includes:
 Tuberculosis of:
 bronchus
 glottis
 larynx
 trachea

A15.6 Tuberculosis pleurisy, confirmed bacteriologically and histologically

Includes:

This disease state is characterized by pleuritis and pleural effusion, usually in an adolescent or young adult, but possibly in any age group, due to recent (within the preceding 24 months) infection with *Mycobacterium tuberculosis* complex. If another site of tuberculosis disease, such as CNS or disseminated/miliary disease, is believed to have occurred as a consequence of recent infection (within the preceding 24 months), it ought to be referred to as primary CNS (etc.) disease.

A15.7 Primary respiratory tuberculosis, confirmed bacteriologically and histologically

This is usually, but not always, in a child, and is due to infection within the preceding 24 months with *Mycobacterium tuberculosis* complex. It includes pulmonary (lung parenchyma) tuberculosis, as well as tuberculosis of the intrathoracic lymph nodes, larynx, trachea, bronchus, or nasopharyngeal sinuses.

A15.8 Other respiratory tuberculosis, confirmed bacteriologically and histologically

Includes: Mediastinal tuberculosis
Nasopharyngeal tuberculosis

Tuberculosis of:

nose
sinus [any nasal]

A15.9 Respiratory tuberculosis, unspecified, confirmed bacteriologically and histologically

A16 Respiratory tuberculosis, not confirmed bacteriologically or histologically

A16.0 Tuberculosis of lung, bacteriologically and histologically negative

Includes:

Tuberculous:

bronchiectasis
fibrosis of lung
pneumonia
pneumothorax

A16.1 Tuberculosis of lung, bacteriological and histological examination not done

Includes: Conditions listed in A16.0, bacteriological and histological examination not done

A16.2 Tuberculosis of lung, without mention of bacteriological or histological confirmation
Tuberculosis of lung

Tuberculous:

bronchiectasis
fibrosis of lung
pneumonia
pneumothorax



NOS (without mention of bacteriological or histological confirmation)

A16.3 Tuberculosis of intrathoracic lymph nodes, without mention of bacteriological or histological confirmation

Includes:

Tuberculosis of lymph nodes:

hilar	}	NOS (without mention of bacteriological or histological confirmation)
intrathoracic		
mediastinal		
tracheobronchial		

Excludes: when specified as primary (A16.7)

A16.4 Tuberculosis of larynx, trachea and bronchus, without mention of bacteriological or histological confirmation

Includes:

Tuberculosis of:

bronchus	}	NOS (without mention of bacteriological or histological confirmation)
glottis		
larynx		
trachea		

A16.5 Tuberculous pleurisy, without mention of bacteriological or histological confirmation

This disease state is characterized by pleuritis and pleural effusion, usually in an adolescent or young adult, but possibly in any age group, due to recent (within the preceding 24 months) infection with *Mycobacterium tuberculosis* complex. If another site of tuberculosis disease, such as CNS or disseminated/miliary disease, is believed to have occurred as a consequence of recent infection (within the preceding 24 months), it ought to be referred to as primary CNS (etc) disease. *Excludes:* Primary respiratory tuberculosis, without mention of bacteriological or histological confirmation (A16.7)

A16.7 Primary respiratory tuberculosis without mention of bacteriological or histological confirmation

This is usually, but not always, in a child, and is due to infection within the preceding 24 months with *Mycobacterium tuberculosis* complex. It includes pulmonary (lung parenchyma) tuberculosis, as well as tuberculosis of the intrathoracic lymph nodes, larynx, trachea, bronchus, or nasopharyngeal sinuses. *Excludes:* Tuberculous pleurisy, without mention of bacteriological or histological confirmation (A16.5)

A16.8 Other respiratory tuberculosis, without mention of bacteriological or histological confirmation

Mediastinal tuberculosis	}	NOS (without mention of bacteriological or histological confirmation)
Nasopharyngeal tuberculosis		
Tuberculosis of:		
Nose		
sinus [any part]		

A16.9 Respiratory tuberculosis unspecified, without mention of bacteriological or histological confirmation

Includes: Respiratory tuberculosis NOS
Tuberculosis NOS

A17 Tuberculosis of nervous system

A17.0 Tuberculous meningitis (G01)

Includes: Tuberculosis of meninges (cerebral) (spinal)
Tuberculous leptomeningitis

A17.1 Meningeal tuberculoma (G07)

Includes: Tuberculoma of meninges

A17.8 Other tuberculosis of nervous system

Includes:

Tuberculoma of:

brain (G07)
spinal cord (G07)

Tuberculosis of:

brain (G07)
spinal cord (G07)

Tuberculous:

abscess of brain (G07)
meningoencephalitis (G05.0)
myelitis (G05.0*)
polyneuropathy (G63.0*)

A17.9 Tuberculosis of nervous system, unspecified (G99.8)

A18 Tuberculosis of other organs

A18.0 Tuberculosis of bones and joints

Includes:

Tuberculosis of:

hip (M01.1)
knee (M01.1)
vertebral column (M49.0)

Tuberculous:

arthritis (M01.1)
mastoiditis (H75.0)
necrosis of bone (M90.0)
osteitis (M90.0)
osteomyelitis (M90.0)
synovitis (M68.0)
tenosynovitis (M68.0)

A18.1 Tuberculosis of genitourinary system

Includes:

Tuberculosis of:

- bladder (N33.0)
- cervix (N74.0)
- kidney (N29.1)
- male genital organs (N51.-)
- ureter[†] (N29.1)
- Tuberculous female pelvic inflammatory disease (N74.1)

A18.2 Tuberculous peripheral lymphadenopathy

Includes: Tuberculous adenitis

Excludes:

Tuberculosis of lymph nodes:

- intrathoracic (A15.4, A16.3)
- mesenteric and retroperitoneal (A18.3)
- Tuberculous tracheobronchial adenopathy (A15.4, A16.3)

A18.3 Tuberculosis of intestines, peritoneum and mesenteric lymph nodes

Includes:

Tuberculosis (of):

- anus and rectum (K93.0)
- intestine (large) (small) (K93.0)
- retroperitoneal (lymph nodes)

Tuberculous:

- ascites
- enteritis (K93.0)
- peritonitis (K67.3)

A18.4 Tuberculosis of skin and subcutaneous tissue

Includes: Erythema induratum, tuberculous

Lupus:

- exedens
- vulgaris:
 - NOS
 - of eyelid (H03.1)

Scrofuloderma

Excludes: lupus erythematosus (L93.-)

systemic (M32.-)

A18.5 Tuberculosis of eye

Includes:

Tuberculous:

- chorioretinitis (H32.0)
- episcleritis (H19.0)
- interstitial keratitis (H19.2)
- iridocyclitis (H22.0)
- keratoconjunctivitis (interstitial) (phlyctenular) (H19.2)

Excludes: lupus vulgaris of eyelid (A18.4)

A18.6 Tuberculosis of ear

Includes: Tuberculosis otitis media (H67.0)

Excludes: Tuberculous mastoiditis (A18.0)

A18.7 Tuberculosis of adrenal glands (E35.1)

Includes: Addison's disease, tuberculous

A18.8 Tuberculosis of other specified organs

Includes:

Tuberculosis of:

- endocardium (I39.8)
- myocardium (I41.0)
- oesophagus (K23.0)
- pericardium (I32.0)
- thyroid gland (E35.0)
- Tuberculous cerebral arteritis (I68.1)

A19 Miliary Tuberculosis

Includes:

Tuberculosis:

- disseminated
- generalized
- Tuberculous polyserositis

A19.0 Acute miliary tuberculosis of a single specified site

A19.1 Acute miliary tuberculosis of multiple sites

A19.2 Acute miliary tuberculosis, unspecified

A19.8 Other miliary tuberculosis

A19.9 Miliary Tuberculosis, unspecified

APPENDIX III

POPULATION ESTIMATES: 2007

Population estimates by gender and age group, Canada and provinces/territories: 2007

Male														
	CANADA	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
< 1	182,922	2,354	745	4,300	3,587	42,451	69,618	7,507	6,343	23,462	21,624	195	374	362
1 - 4	721,595	9,376	2,719	17,375	14,393	155,525	288,405	29,210	24,726	89,088	87,200	759	1,366	1,453
5 - 14	1,977,074	27,657	8,379	52,058	42,271	436,202	787,346	80,626	66,410	222,246	245,029	1,994	3,279	3,377
15 - 24	2,312,433	33,071	9,733	62,498	49,216	502,261	903,227	88,405	76,878	277,540	300,302	2,439	3,754	3,109
25 - 34	2,221,940	28,990	7,740	53,542	45,560	528,590	845,223	78,401	62,840	284,652	278,138	2,060	3,638	2,566
35 - 44	2,504,540	37,882	9,718	67,904	54,342	572,780	1,005,418	83,382	64,337	277,409	322,865	2,550	3,692	2,261
45 - 54	2,576,566	41,838	10,398	74,999	59,534	622,357	979,400	90,793	74,721	276,437	337,872	3,221	3,411	1,585
55 - 64	1,885,633	35,513	8,925	60,828	48,915	473,328	697,721	65,337	53,393	174,147	262,339	2,174	2,087	926
65 - 74	1,111,634	19,789	5,359	35,840	28,053	279,349	418,166	37,700	33,972	94,026	157,527	845	676	332
75 +	831,804	12,349	3,664	25,192	20,041	192,597	320,351	32,440	31,550	69,452	123,290	396	359	123
TOTAL	16,326,141	248,819	67,580	454,536	365,912	3,805,440	6,314,875	593,801	495,170	1,788,459	2,136,186	16,633	22,636	16,094
Female														
< 1	173,636	2,145	661	4,139	3,395	40,314	65,817	7,039	6,053	22,443	20,784	166	299	381
1 - 4	680,899	8,901	2,633	16,987	13,582	148,301	272,346	27,426	23,313	82,944	81,100	698	1,301	1,367
5 - 14	1,879,760	26,094	8,106	50,182	39,762	414,811	751,167	76,339	63,389	210,890	230,513	1,974	3,245	3,288
15 - 24	2,195,127	31,992	9,536	62,052	46,834	479,166	864,229	84,114	73,107	253,772	281,791	2,167	3,417	2,950
25 - 34	2,196,225	30,310	8,156	58,128	46,466	504,457	863,218	75,399	62,318	257,486	282,061	2,206	3,556	2,464
35 - 44	2,436,496	39,924	9,795	69,717	55,033	548,385	995,464	81,632	64,186	258,624	325,480	2,701	3,401	2,154
45 - 54	2,587,160	43,307	11,075	78,004	62,068	626,236	983,709	87,935	74,655	264,319	348,309	3,031	3,129	1,383
55 - 64	1,938,997	36,000	9,054	62,527	49,774	494,293	725,456	66,293	53,092	170,827	267,499	1,867	1,527	788
65 - 74	1,222,234	20,532	5,692	39,082	30,344	311,151	469,459	42,013	37,079	100,363	164,938	699	613	269
75 +	1,270,697	18,435	5,830	40,685	32,200	313,484	487,832	51,523	47,335	100,765	171,644	440	411	113
TOTAL	16,601,231	257,640	70,538	481,503	379,458	3,880,598	6,478,697	599,713	504,527	1,722,433	2,174,119	15,949	20,899	15,157
TOTAL														
< 1	356,558	4,499	1,406	8,439	6,982	82,765	135,435	14,546	12,396	45,905	42,408	361	673	743
1 - 4	1,402,494	18,277	5,352	34,362	27,975	303,826	560,751	56,636	48,039	172,032	168,300	1,457	2,667	2,820
5 - 14	3,856,834	53,751	16,685	102,240	82,033	851,013	1,538,513	156,965	129,799	433,136	475,542	3,968	6,524	6,665
15 - 24	4,507,560	65,063	19,269	124,550	96,050	981,427	1,767,456	172,519	149,985	531,312	582,093	4,606	7,171	6,059
25 - 34	4,418,165	59,300	15,896	111,670	92,026	1,033,047	1,708,441	153,800	125,158	542,138	560,199	4,266	7,194	5,030
35 - 44	4,961,036	77,806	19,513	137,621	109,375	1,121,165	2,000,882	165,014	128,523	536,033	648,345	5,251	7,093	4,415
45 - 54	5,163,726	85,145	21,473	153,003	121,602	1,248,593	1,963,109	178,738	149,376	540,756	686,181	6,252	6,540	2,968
55 - 64	3,824,630	71,513	17,979	123,355	98,689	967,621	1,423,177	131,630	106,485	344,974	529,838	4,041	3,614	1,714
65 - 74	2,333,868	40,321	11,051	74,922	58,397	590,500	887,625	79,713	71,051	194,389	322,465	1,544	1,289	601
75 +	2,102,501	30,784	9,494	65,877	52,241	506,081	808,183	83,963	78,885	170,217	294,934	836	770	236
TOTAL	32,927,372	506,459	138,118	936,039	745,370	7,686,038	12,793,572	1,193,514	999,697	3,510,892	4,310,305	32,582	43,535	31,251

Population estimates by Canadian-born origin and foreign-born origin – Canada and provinces/territories: 2006

	CANADA	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North#	Y.T.	N.W.T.	Nvt.
Canadian-born															
North American Indian	1,188,348	23,378	1,825	20,852	19,596	105,911	234,078	179,969	158,664	190,526	195,269	59,280	8,176	23,524	27,580
Status Indian*	805,750				33,645	72,565	178,080	131,910	130,335	105,592	127,533	26,090	8,347	17,743	
Non-status**	-														
Inuit	54,615	5,171	31	440	179	11,296	1,831	422	274	1,273	999	32,699	211	5,087	27,401
Metis	333,569	6,229	255	3,451	4,750	17,340	55,267	64,698	50,323	77,415	48,823	5,018	627	4344	47
Total Aboriginal†	1,576,532	33,778	2,111	24,743	24,525	134,547	291,176	245,089	209,261	269,214	245,091	96,997	9,014	32,955	55,028
Non-Aboriginal‡	24,133,700	457,466	129,846	848,701	686,012	6,544,583	8,560,767	772,488	727,100	2,644,533	2,759,204	3,000	19,862	7,447	24,309
Total Canadian-born	25,710,232	491,244	131,957	873,444	710,537	6,679,130	8,851,943	1,017,577	936,361	2,913,747	3,004,295	99,997	28,876	40,402	30,719
Foreign-born															
AFR High	207,222	569	107	1,522	1,087	30,810	105,888	6,796	3,257	25,759	31,178	249	83	141	25
AFR Low	111,172	171	48	534	667	60,341	37,101	2,036	836	5,394	3,965	79	14	56	9
AMR	795,774	849	312	3,772	1,975	178,548	487,766	21,491	4,109	45,163	51,454	335	156	136	43
EUR	348,613	621	107	1,624	591	69,958	202,396	11,767	3,395	24,327	33,562	265	90	165	10
EMR	719,954	1,337	429	8,754	2,218	160,479	428,642	7,700	4,996	46,681	58,527	191	42	131	18
EME + CEUR	2,594,708	7,902	4,227	35,201	22,018	332,515	1,394,956	68,299	29,756	236,617	458,817	4,400	2,583	1,506	311
SEAR	735,762	1,276	153	3,041	1,500	50,068	472,229	10,601	3,219	48,971	144,430	274	149	111	14
WPR	1,703,935	2,490	778	8,147	4,777	124,189	812,651	47,247	13,768	164,233	524,077	1,578	589	887	102
Total foreign-born	7,217,140	15,215	6,161	62,595	34,833	1,006,908	3,941,629	175,937	63,336	597,145	1,306,010	7,371	3,706	3,133	532
Total population^^	32,927,372	506,459	138,118	936,039	745,370	7,686,038	12,793,572	1,193,514	999,697	3,510,892	4,310,305	107,368	32,582	43,535	31,251

* Source: Registered Indian Population, Household and Family Projections 2004-2029, INAC, 2007.

** No accurate population counts for non-Status Indian available.

† Source: Statistics Canada: Projections of the Aboriginal populations, Canada, provinces and territories 2001 to 2017 Demography Division, Statistics Canada Catalogue No. 91-547-XIE.

‡ Calculated: Non-Aboriginal = Total population - Total Aboriginal - Total Foreign-born.

^ Source: Statistics Canada: Demography Division, Custom Product.

^^ Source: Statistics Canada, Demography Division, Demographic, Estimates Section, Population estimates 0-90+ July Canada - Provinces 1971-2006, updated February 2009.

North includes Yukon, Northwest Territories, and Nunavut.

APPENDIX IV

WHO ESTIMATED INCIDENCE OF TB, 22 HIGH-BURDEN COUNTRIES: 2007

COUNTRY	POPULATION (1000s)	NUMBER ESTIMATED				CUMULATIVE INCIDENCE (%) (REGIONAL PROPORTION OF GLOBAL TOTAL)
		ALL CASES		SMEAR-POSITIVE CASES		
		NUMBER (1000s)	RATE PER 100,000	NUMBER (1000s)	RATE PER 100,000	
1 India	1,169,016	1,962	168	873	75	21.2
2 China	1,328,630	1,306	98	585	44	35.2
3 Indonesia	231,627	528	228	236	102	40.9
4 Nigeria	148,093	460	311	195	131	45.9
5 South Africa	48,577	461	948	174	358	50.9
6 Bangladesh	158,662	353	223	159	100	54.7
7 Ethiopia	83,099	314	378	135	163	58.1
8 Pakistan	163,902	297	181	133	81	61.3
9 Philippines	87,960	255	290	115	130	64.0
10 DR Congo	62,636	245	392	109	174	66.7
11 Russian Federation	142,499	157	110	68	48	68.3
12 Viet Nam	87,375	150	171	66	76	70.0
13 Kenya	37,538	132	353	53	142	71.4
14 Brazil	191,791	92	48	49	26	72.4
15 UR Tanzania	40,454	120	297	49	120	73.7
16 Uganda	30,884	102	330	42	136	74.8
17 Zimbabwe	13,349	104	782	40	298	75.9
18 Thailand	63,884	91	142	39	62	76.9
19 Mozambique	21,397	92	431	37	174	77.9
20 Myanmar	48,798	83	171	37	75	78.8
21 Cambodia	14,444	72	495	32	219	79.5
22 Afghanistan	27,145	46	168	21	76	80.0
Total, high-burden countries	4,201,760	7,422	177	3,245	77	80.0
Africa	792,378	2,879	363	1,188	150	31.0
Americas	909,820	295	32	157	17	3.2
East Mediterranean	555,064	583	105	259	47	6.3
Europe	889,278	432	49	190	21	4.7
South East Asia	1,745,394	3,165	181	1,410	81	34.1
Western Pacific	1,776,440	1,919	108	859	48	20.7
Global total	6,668,374	9,273	139	4,062	61	100.0

Source: *Global tuberculosis control: surveillance, planning, financing, WHO report 2009*. Geneva, World Health Organization (WHO/HTM/TB/2009.411).

APPENDIX V

STOP-TB PARTNERSHIP

TB EPIDEMIOLOGICAL REGIONS

AND MEMBER COUNTRIES¹⁸

Africa, High HIV Prevalence (AFR-High)	Africa, Low HIV Prevalence (AFR-Low)
Botswana	Algeria
Burundi	Angola
Cameroon	Benin
Central African Republic	Burkina Faso
Congo	Cape Verde
Côte d'Ivoire	Chad
Democratic Republic of Congo	Comoros
Ethiopia	Equatorial Guinea
Gabon	Eritrea
Kenya	Gambia
Malawi	Ghana
Mozambique	Guinea
Namibia	Guinea-Bissau
Nigeria	Liberia
Lesotho	Madagascar
Rwanda	Mali
South Africa	Mauritania
Swaziland	Mauritius
Uganda	Niger
United Republic of Tanzania	Sao Tome & Principe
Zambia	Senegal
Zimbabwe	Seychelles
	Sierra Leone
	Togo

¹⁸ *Stop TB Partnership and World Health Organization. Global Plan to Stop TB 2006–2015.* Geneva, World Health Organization, 2006 (WHO/HTM/STB/2006.35).

American region (AMR) – Latin American countries (LAC)

Anguilla	Guyana
Antigua & Barbuda	Haiti
Argentina	Honduras
Bahamas	Jamaica
Barbados	Mexico
Belize	Montserrat
Bermuda	Netherlands Antillies
Bolivia	Nicaragua
Brazil	Panama
British Virgin Islands	Paraguay
Cayman Islands	Peru
Chile	Puerto Rico
Colombia	Saint Kitts and Nevis
Costa Rica	Saint Lucia
Cuba	St Vincent and the Grenadines
Dominica	Suriname
Dominican Republic	Trinidad and Tobago
Ecuador	Turks & Caicos Islands
El Salvador	Uruguay
Grenada	US Virgin Islands
Guatemala	Venezuela

Eastern Europe (EEUR)

Armenia
Azerbaijan
Belarus
Bulgaria
Estonia
Georgia
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Republic of Moldova
Romania
Russian Federation
Tajikistan
Turkey
Turkmenistan
Ukraine
Uzbekistan

Eastern Mediterranean (EMR)

Afghanistan
Bahrain
Djibouti
Egypt
Islamic Republic of Iran
Iraq
Jordan
Kuwait
Lebanon
Libyan Arab Jamahiriya
Morocco
Oman
Pakistan
Qatar
Saudi Arabia
Somalia
Sudan
Syrian Arab Republic
Tunisia
United Arab Emirates
West Bank & Gaza Strip
Yemen

Established Market Economies (EME)	
Andorra	Japan
Australia	Luxembourg
Austria	Malta
Belgium	Monaco
Canada	Netherlands
Czech Republic	New Zealand
Denmark	Norway
Finland	Portugal
France	San Marino
Germany	Singapore
Greece	Spain
Iceland	Sweden
Ireland	Switzerland
Israel	United Kingdom
Italy	USA

Central Europe (CEUR)
Albania
Bosnia and Herzegovina
Croatia
Cyprus
Hungary
Poland
Serbia and Montenegro
Slovakia
Slovenia
The Former Yugoslav Republic of Macedonia

South-East Asia (SEAR)
Bangladesh
Bhutan
Democratic People's Republic of Korea
India
Indonesia
Maldives
Myanmar
Nepal
Sri Lanka
Thailand
Timor-Leste

Western Pacific (WPR)

American Samoa	Nauru
Brunei Darussalam	New Caledonia
Cambodia	Niue
China	Northern Mariana Islands
China, Hong Kong SAR	Palau
China, Macao SAR	Papua New Guinea
Cook Islands	Philippines
Fiji	Republic of Korea
French Polynesia	Samoa
Guam	Solomon Islands
Kiribati	Tokelau
Lao People's Democratic Republic	Tonga
Malaysia	Tuvalu
Marshall Islands	Vanuatu
Micronesia	Viet Nam
Mongolia	Wallis & Futuna Islands

APPENDIX VI
WHO REPORTING FORM FOR 2007

To navigate, move between sheets using the tabs at the bottom, or click on a heading in the list below. You can come back to this sheet by clicking on the "Menu" link to the right of the heading of each section.

Throughout the form, "NTP" refers to the national tuberculosis control programme or equivalent.

This form allows WHO to collect data from over 200 diverse countries. It is NOT a recommended data collection format for national programmes. (For recommended data collection forms see: http://www.who.int/tb/06a_and_f_forms/index.html)

Status
C: complete, P: partly complete, N: not started.

1. Identification

2. Strategy

Political commitment	P
Overview of services for diagnosis and treatment of TB	P
Laboratory diagnostic services	P
Human resource development (HRD)	P
Drug management	P
Monitoring and evaluation system, and impact measurement	P
Collaborative TB/HIV activities	P
Management of drug-resistant TB	P
Special populations and other high-risk groups	P
Health systems strengthening	P
Diagnostic Approach to Lung Health (DALH)	P
Public-Private and Public-Private Mix (PPM)	P
Advocacy, communication and social mobilization (ACSM)	P
Community involvement in TB control	N
National Charter for tuberculosis care	N
Operational research and evaluation	N
Optional cases, achievements, major challenges, what's new?	N

Please send your completed form to your local/regional WHO office **NOT LATER than August 1st, 2008.**

If you cannot reply to all of the questions before the deadline, please fill in the form as much as possible and send it to us; you can provide the remaining data later on.

We estimate that it will about two hours to answer the questions that ask for information about the implementation of the Stop TB Strategy in your country (sheet "2. Strategy"). The time required to fill in sheets 3 and 4 will depend on how data are managed at national level.

3. Modifications

TB cases by history site, smear result and strategy	N
TB cases by age-sex	N
MDR-TB	N
RRMT	N
Outcomes of all cases	N
Outcomes of HIV-positive cases	N
Outcomes of MDR-TB cases	N

4. Finance

Budget 2008	N
Budget 2009 (preliminary)	N
Utilization of health services 2008	N
Expenditure 2007	N

Identification (please update as necessary)

1.1 Country: **Canada**

1.2 Date: _____

1.3 Name: National TB control programme manager or equivalent:

1.4 Functional title: _____

1.5 Address: _____

1.6 Telephone: _____

1.7 Fax: _____

1.8 E-mail: _____

1.9 Name: _____

1.10 Functional title: _____

1.11 Address: _____

1.12 Telephone: _____

1.13 Fax: _____

1.14 E-mail: _____

Implementing the Stop TB Strategy

You will find explanations and instructions on the right-hand side of the screen. These will change according to the answers you provide, and will not appear when you print the form.

Political commitment

2.1 Do you have a national strategic plan for TB control? Start year: _____ End year: _____

2.2 Is there a mechanism for national inter-agency coordination? If yes, in which year was it established? _____

2.3 Is there a national Stop TB Partnership? If yes, in which year was it established? _____

Overview of services for diagnosis and treatment of TB

2.4 How many TB basic management units (BMUs) were there in 2007? _____

2.5 How many of these BMUs were considered "DOTS" units at the end of 2007? _____

2.6 What term is used to describe a BMU in your country? _____

2.7 What proportion of the country's population was covered by BMUs defined as DOTS in 2007? % _____

2.8 What is the main type of health-care facility through which the NTP provides TB treatment? Rural _____ Urban _____

2.9 How many of these types of health-care facility were there in the country at the end of 2007? _____

2.10 In how many of these facilities was the NTP providing TB treatment services at the end of 2007? _____

2.11 Are these facilities part of the general primary health-care network? _____

2.12 Within the NTP, to which kind of health-care facility do pulmonary TB suspects typically need to go for smear diagnosis? Rural _____ Urban _____

2.13 Is diagnosis through the NTP free-of-charge? _____

2.14 Was every dose of medication supervised at least during the initial phase (2-3 months) of treatment in 2007? Number of new and re-treatment patients whose treatment was supervised: DOTS units: _____ non-DOTS units: _____

2.15 Did the following groups provide treatment supervision (for patients treated through the NTP) in 2007? Initial phase: Health-care worker _____ Community member _____ Family member _____ Continuation phase: _____

Laboratory diagnostic services

2.16 How many laboratories were providing TB diagnostic services in 2007 and how many laboratories will provide services in 2008? Please include all laboratories contributing to the diagnosis of patients notified by the NTP (including collaborating laboratories within or outside the public health sector).

	2007		2008	
	Number of laboratories at end of 2007	Number of laboratories for which EQA was carried out	Number of labs for which EQA was carried out	Number of laboratories expected to be providing services by end of 2008
Smear microscopy				
Culture				
Drug susceptibility testing				

*Select to show adequate performance: one or more high false positive (HFP) or high false negative (HFN)

2.17 Was second-line drug susceptibility testing available for NTP patients in 2007? _____

2.18 In 2007, how many of the laboratories performing smear microscopy were stand-alone TB laboratories (i.e. working for TB only)? _____

2.19 How many non-NTP laboratories were collaborating with the NTP in 2007? Private sector: _____ NGO sector: _____ University/medical college: _____ Social insurance schemes: _____ Military/police/parliamentary: _____ Prisons/detention centers: _____

2.20 Was sputum smear microscopy routinely used to diagnose suspected pulmonary TB cases in 2007? DOTS units: _____ All suspects in all units _____ non-DOTS units: _____ Not applicable _____

2.21 Were there any stock-outs of laboratory reagents and supplies at any level in 2007? Central level: _____ Peripheral level: _____

2.22 Did you have a national reference laboratory or laboratories (NRL) in 2007? If there is no NRL, do you plan to establish one? _____

Human resource development (HRD)

2.23 At the central level of the NTP, was there a member of staff who was responsible HRD in 2007? If yes, what percentage of this person's time was allocated to HRD-related activities? _____

2.24 Have you completed a human resource development (HRD) needs assessment? If yes, in which year was it carried out? _____ If no, when do you plan to carry out an assessment? _____

2.25 Do you have a comprehensive strategic HRD plan for TB control? If yes, what time period does the plan cover? Start year: _____ End year: _____

If yes, which of the following are included in the HRD plan? DOTS expansion and enhancement: _____ Management of MDR-TB: _____ Collaborative TB/HIV activities: _____ Public-Private and Public-Public Mix strategies: _____ Advocacy, communication and social mobilization (ACSM): _____

2.26 Are job descriptions up-to-date (i.e. do they correspond with the current policies and recommendations for TB control)?

2.27 Is TB control (following NTP guidelines) formally included in the curricula for basic training of the following categories of health-care worker?

2.28 For countries with NTP staff in 2007:

National level	Provincial/regional level or equivalent	BMU level	Health-care facility level
How many posts were there in the NTP to perform TB control tasks?			
How many of those posts were filled?			
Of those posts filled, how many of these staff had been trained in TB control in the past 3 years?			

2.29 Was standardized, short-course chemotherapy (less than 6 months) used routinely to treat all TB patients except chronic and proven or suspected MDR-TB patients in 2007?

2.30 Were TB drugs provided free-of-charge to all TB patients treated with first-line drugs under the NTP in 2007?

2.31 Were there any stock-outs of TB drugs at any level in 2007 (i.e. drugs not present for at least one day)?

2.32 What are the NTP-recommended regimens for TB treatment?

Initial phase	Initial phase (part II - cat II only)	Continuation phase	Generated automatically
Duration/ drugs	Duration/ Frequency (per week)	Duration/ Frequency (per week)	
Example Cat I	2HRZE	4HR	2HRZE / 4HR
Example Cat II	2HRZE	5HR	2HRZE / 5HR
Cat I	Select	Select	Select
Cat II	Select	Select	Select
Cat III (if any)	Select	Select	Select
Child (if any)	Select	Select	Select

2.33 If the recommended category I treatment regimen does not include rifampicin in the continuation phase, do you intend to introduce it?

2.34 Were paediatric formulations of anti-TB drugs procured specifically for children in 2007?

2.35 Was TB drug procurement, distribution and stock management performed together with other essential drugs management in 2007?

Monitoring and evaluation system, and impact measurement

2.36 At the central level of the NTP, were there members of staff who were responsible for the following tasks in 2007?

2.37 Did you keep (or have access to) data for individual TB patients at the NTP central office in 2007?

2.38 Are data at the NTP central office stored in a relational database management system (RDBMS)?

2.39 How many quarterly reports (or equivalent) were received from BMUs?

2.40 How many quarterly reports (or equivalent) from BMUs were missing?

2.41 Do you publish an annual report of the activities of the NTP?

2.42 Which of the following approaches have been used, or will be used, to assess the epidemiological burden of TB and the impact of TB control in your country?

2.43 Was there a national policy to offer HIV counselling and testing to all TB patients in 2007?

2.44 Was there a national surveillance system to measure the prevalence of HIV in TB patients in 2007?

2.45 If yes, what sources of data were used?

2.46 Was there a national body responsible for coordinating TB/HIV activities in 2007?

2.47 Was there a national plan for collaborative TB/HIV activities in 2007?

2.48 Was there a national policy to offer co-trimoxazole preventive therapy (CPT) to HIV-positive TB patients in 2007?

2.49 Was there a national policy to offer antiretroviral therapy (ART) to HIV-positive TB patients in 2007?

2.50 Was there a national policy to screen people living with HIV for TB in 2007?

2.51 Was there a national policy to offer isoniazid prophylaxis (IPT; treatment of latent TB infection) to people with HIV in 2007?

2.52 Which of the following components of collaborative TB/HIV activities were paid for from the NTP budget in 2007?

Page 5

2.53 Did you have a policy for infection control in the following congregate settings in 2007?

2.54 What is the status of the management of drug-resistant TB?

2.55 Was there a national surveillance system to measure the prevalence of drug resistance among TB cases in 2007?

2.56 For which groups of patients is first-line drug-susceptibility testing routinely performed?

2.57 Did the NTP implement any specific activities for TB control for the following groups/situations in 2007?

2.58 Do you routinely screen immigrants for TB?

2.59 What is your policy for treatment of TB in immigrants?

2.60 How many contacts of smear-positive TB cases were screened for TB in 2007?

2.61 How many TB cases were identified among contacts in 2007?

2.62 How many contacts began IPT in 2007?

Health systems strengthening and integration of TB control within primary health care

2.63 Apart from the NTP, which of the following have taken part in the planning of TB control?

2.64 Which of the following exist in the country?

2.65 Are you implementing PAL?

2.66 How many primary health-care facilities implemented PAL in 2007?

Public-Private and Public-Public Mix (PPM) including International Standards for TB Care (ISTC)

2.67 Did the following **public-sector** providers in your country collaborate with the NTP in 2007?

2.68 Did the following **public-sector** providers in your country collaborate with the NTP in 2007?

Page 7

- 2.69 Were you using the ISTC to promote the involvement of non-NTP providers in TB control in 2007?
- 2.70 Are the ISTC part of NTP training material?
- 2.71 Are the ISTC included in the curriculum of medical schools?
- 2.72 Have the ISTC been formally endorsed by any professional association(s) in the country?
If yes, please list the association(s), with the year of endorsement. Provide full names of associations, not abbreviations.

Advocacy, communication and social mobilization (ACSM)

- 2.73 Which of the following groups were targeted by ACSM activities implemented by the NTP in 2007?
General public (e.g. through encouraging health-care seeking behaviour, educating on symptoms of TB, combating stigma)
TB suspects and patients (e.g. providing information on where to go for TB testing and treatment)
Health-care providers
Policy-makers and planners (e.g. through calling for increased political and financial support)

- 2.74 Have you conducted or do you plan to conduct a Knowledge, Attitudes and Practices (KAP) or similar survey on TB?
Most recent survey
Next planned survey

- 2.75 How many patient-centred organizations or networks (with cured TB patients as members) were involved in TB advocacy activities and/or DOTS implementation in 2007?

Community involvement in TB control

- 2.76 In how many BMUs were community members involved in referral of TB suspects for diagnosis in 2007?
Number of TB suspects referred by community members
- 2.77 In how many BMUs did community members supervise TB treatment in 2007?
Number of patients supervised by community members

Patients' Charter for Tuberculosis Care

- 2.78 In how many health-care facilities was the Patients' Charter or similar code of conduct displayed or distributed in 2007?
Out of how many health-care facilities in total?

Operational research and retooling

- 2.79 How many operational research projects were implemented in collaboration with the NTP in the country in 2007?

- 2.80 Please list provide the title of each study (or studies) in the box provided.
DOTS implementation and enhancement

Collaborative TB-HIV activities

MORXDR TB

PAL

PPM approaches

Social mobilization and community involvement

Other

- 2.81 Which of the following new technologies/strategies for TB diagnosis are used, or will be used, to diagnose patients notified by the NTP?

- Fluorescence microscopy
- Liquid culture and DST
- Rapid speciation test for Mycobacterium tuberculosis cultures
- Line-probe assay for detecting resistance to rifampicin
- Line-probe assay for detecting resistance to isoniazid
- Using a smear-positive case definition based on a patient having one positive sputum smear (1 AFB per smear) instead of two positive smears (see www.who.int/tb/dts/laboratory/policy)

Optional (major achievements, major challenges, what's new?)

- 2.82 Please describe in no more than one paragraph any new developments, major achievements and/or major challenges in TB control in your country that you would like to highlight.

TB case notifications

Enter numbers in the table below. For "None", enter 0. If a question is not applicable, or you do not know the answer, please indicate this in the "Remarks" sheet, and explain why.

TB cases by history, site, smear result and strategy, 2007 calendar year (number of patients)

Strategy applies to basic management only, not retreatment patients. If a cell is a "DOTS" cell, then all cases from that cell should be reported as DOTS cases.

	DOTS	non-DOTS
3.1 New pulmonary smear-positive		
3.2 New pulmonary smear-negative		
3.3 New pulmonary smear-unknown/not done		
3.4 New extrapulmonary		
3.5 Other NEW cases not in lines 3.1-3.4		
3.6 Relapse (pulmonary smear and/or culture positive)		
3.7 Treatment after failure (pulmonary smear and/or culture positive)		
3.8 Treatment after default (pulmonary smear and/or culture positive)		
3.9 Other re-treatment cases not in lines 3.6-3.8		
3.10 Other, not in lines 3.1-3.9 (i.e., history unknown) Please specify what these cases are, in the "Remarks" sheet		

- 3.11 New pulmonary lab-confirmed cases. Lab-confirmed includes all cases confirmed by smear and/or culture, by any other laboratory method.
- 3.12 What is the total number of new and re-treatment TB cases reported among foreign-born individuals in 2007 (or among non-citizens if that is the criterion used in your country)?
- 3.13 How many people with symptoms and signs suggestive of pulmonary TB (e.g. cough of long duration, more than 2-3 weeks) were screened for TB in 2007?
- 3.14 Number of TB deaths registered by the vital registration system of your country following the ICD-10 (or ICD-9) codes for TB in 2007?

New pulmonary smear-positive TB cases, 2007 calendar year (number of patients)

If you have data by age and sex that do not fit the framework (e.g., different age groups), then you can provide the data that you have in the "Remarks" sheet.

	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65+
3.15 Male								
3.16 Female								
3.17 Male								
3.18 Female								

New pulmonary smear-negative/smear-unknown/smear-not done TB cases, 2007 calendar year (number of patients)

	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65+
3.19 Male								
3.20 Female								
3.21 Male								
3.22 Female								

New extrapulmonary TB cases, 2007 calendar year (number of patients)

	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65+
3.23 Male								
3.24 Female								
3.25 Male								
3.26 Female								

MDR-TB, 2007 calendar year (number of patients)

- 3.27 How many new and re-treatment patients received diagnostic drug susceptibility testing (DST) in 2007?
- 3.28 Among those new and re-treatment patients tested (question 3.27), how many laboratory-confirmed cases of MDR-TB were identified?
- 3.29 How many MDR-TB cases (question 3.28) received 2nd-line DST in 2007? (Provide all MDR-TB cases for which 2nd-line DST was performed, whether done at the same time as 1st-line DST or following diagnosis of MDR-TB.)
- 3.30 Among MDR-TB cases receiving 2nd-line DST (question 3.29), how many cases of XDR-TB were identified?
- 3.31 How many patients registered as [new cases](#) received diagnostic DST in 2007?
- 3.32 Among those new patients tested (question 3.31), how many laboratory-confirmed cases of MDR-TB were identified in 2007?
- 3.33 How many patients registered as [re-treatment cases](#) received diagnostic DST in 2007?
- 3.34 Among those re-treatment patients tested (question 3.33), how many laboratory-confirmed cases of MDR-TB were identified in 2007?

TB/HIV, 2006 and 2007 calendar year (number of patients)

Data on co-trimoxazole preventive therapy and antiretroviral therapy should be reported with the quarterly data on TB treatment outcomes and therefore final numbers for 2007 may not be available yet. However we request that you provide us with provisional numbers for 2007 as well as the final numbers for 2006.

- 3.35 How many TB patients (new and re-treatment) had an HIV test result recorded in the TB register in 2006 and 2007? (You should include those TB cases that were previously known as HIV-positive or their negative HIV result from previous testing was acceptable to the clinician (e.g., done in the last 24 months in a reliable laboratory).)
- 3.36 Of these (i.e., question 3.35), how many were recorded to be HIV positive in 2006 and 2007?
- 3.37 How many HIV-positive TB patients (question 3.36) started or continued on co-trimoxazole preventive therapy in 2006 and 2007?
- 3.38 How many HIV-positive TB patients (question 3.36) started or continued on antiretroviral therapy (ART) in 2006 and 2007?

To answer questions 3.39-3.43, please consult with your colleagues in the national HIV programme (or equivalent) to obtain these data

- 3.39 How many people were registered as HIV-positive in 2007, regardless of year of diagnosis? (Include everyone in the HIV care and/or ART register)
- 3.40 How many of the people registered as HIV-positive (question 3.39) were screened for TB at least once during 2007?
- 3.41 How many of the people registered as HIV-positive (question 3.39) started TB treatment during 2007?
- 3.42 How many of the people registered as HIV-positive and started on TB treatment (question 3.41) were also on ART (i.e., recorded in ART register) in 2007?
- 3.43 How many of the people registered as HIV-positive (question 3.39) were given isoniazid prophylaxis (treatment of latent TB infection) in 2007?

Treatment outcomes for cases registered in 2006 calendar year (number of patients)

If treatment outcomes for re-treatment cases cannot be separated into relapse, after failure and after default, then please provide these outcomes in row "Other re-treatment" and mention in the "Remarks" sheet which types of re-treatment cases contributed to the row.

- 3.44 If you are not able to report the treatment outcomes of pulmonary cases by [smear status only](#), please specify which method of confirmation is used.

DOTS	non-DOTS	Total number of cases registered					
		Cured	Completed	Died	Failed	Defaulted	Transferred out
3.45 New pulmonary smear-positive							
3.46 New pulmonary smear-negative/unknown/not done							
3.47 New extrapulmonary							
3.48 Relapse (pulmonary smear and/or culture positive)							
3.49 Treatment after failure (pulmonary smear and/or culture positive)							
3.50 Treatment after default (pulmonary smear and/or culture positive)							
3.51 Other re-treatment							
3.52 New pulmonary smear-positive							
3.53 New pulmonary smear-negative/unknown/not done							
3.54 New extrapulmonary							
3.55 Relapse (pulmonary smear and/or culture positive)							
3.56 Treatment after failure (pulmonary smear and/or culture positive)							
3.57 Treatment after default (pulmonary smear and/or culture positive)							
3.58 Other re-treatment							

**"Transferred out" means transferred out and not evaluated. It is the subset of transfer patients for which the outcome was not evaluated.

Treatment outcomes for HIV-positive TB cases registered in 2006 calendar year (number of patients)

If treatment outcomes for HIV-positive cases cannot be separated into relapse, after failure and after default, then please provide these outcomes in 3.65 (All TB cases) and mention in the "Remarks" sheet which types of cases contributed to the row.

- 3.59 New pulmonary smear-positive
- 3.60 New pulmonary smear-negative/unknown/not done
- 3.61 New extrapulmonary
- 3.62 Relapse (pulmonary smear and/or culture positive)
- 3.63 Treatment after failure (pulmonary smear and/or culture positive)
- 3.64 Treatment after default (pulmonary smear and/or culture positive)
- 3.65 Other re-treatment
- 3.66 All TB cases

Final treatment outcomes for MDR-TB cases registered in 2004 calendar year (number of patients) [Menu](#)

Click the Green light icon to the right of the question to indicate that you have answered the question. To see explanations for each question, click on the right-hand side of the screen. Users of the WHO planning and budgeting tool (www.who.int/tb/planning_budgeting_tool) can use the summary tables in the tool to complete the budget tables for 2008 and 2009. Click on the right-hand side of the screen.

QLC-approved	Total number of cases registered	2004					Transferred out	Still on treatment
		Cured	Completed	Died	Failed	Defaulted		
3.67 New cases								
3.68 Re-treatment cases								
3.69 Other cases								

Interim treatment outcomes for MDR-TB cases registered in 2005, 2006 and 2007 calendar year (number of patients) [Menu](#)

QLC-approved	Total number of cases registered	2005					Transferred out	Still on treatment
		Cured	Completed	Died	Failed	Defaulted		
3.70 New cases								
3.71 Re-treatment cases								
3.72 Other cases								

Financial information [Menu](#)

Enter numbers in the tables below. For "None" enter 0. If a question is not applicable, or you do not know the answer, please indicate this in the "Remarks" sheet, and explain why. To see explanations for each question, click on the right-hand side of the screen. Users of the WHO planning and budgeting tool (www.who.int/tb/planning_budgeting_tool) can use the summary tables in the tool to complete the budget tables for 2008 and 2009. Click on the right-hand side of the screen.

Budget fiscal year 2008 [Menu](#)

4.1 Beginning of your fiscal year 2008 (year/month/day)

4.2 Expected number of new smear-positive patients to be treated in 2008

4.3 Expected number of new smear-negative/pulmonary patients to be treated in 2008

Please report the financial data in absolute US Dollars

Budget line items:	Budget required ^a	EXPECTED funding				Gap ^b
		Government ^c	Loans ^c	Global Fund ^d	Other grants ^e	
4.6 First-line TB drugs						
4.7 Staff working for TB control (central unit staff and subnational TB staff)						
4.8 Routine programme management and supervision activities						
4.9 Laboratory supplies and equipment for smears, culture and DST						
4.10 PAL (Practical Approach to Lung Health)						
4.11 PPM (Public-Private, Public-Private Mix-DOTS)						
4.12 Collaborative TB/HIV activities						
4.13 Second-line drugs for MDR-TB						
4.14 Management of MDR-TB (budget excluding second-line drugs)						
4.15 Community involvement						
4.16 ACBM (Advocacy, communication and social mobilization)						
4.17 Operational research						
4.18 Surveys to measure TB burden and impact of TB control						
4.19 All other budget lines for TB (e.g., technical assistance)						
4.20 TOTAL (calculated automatically)						

Budget fiscal year 2009 [Menu](#)

4.21 Beginning of your fiscal year 2009 (year/month/day)

4.22 Expected number of new smear-positive patients to be treated in 2009

4.23 Expected number of new smear-negative/pulmonary patients to be treated in 2009

Please report the financial data in absolute US Dollars

Budget line items:	Budget required ^a	EXPECTED funding				Gap ^b
		Government ^c	Loans ^c	Global Fund ^d	Other grants ^e	
4.26 First-line TB drugs						
4.27 Staff working for TB control (central unit staff and subnational TB staff)						
4.28 Routine programme management and supervision activities						
4.29 Laboratory supplies and equipment for smears, culture and DST						
4.30 PAL (Practical Approach to Lung Health)						
4.31 PPM (Public-Private, Public-Private Mix-DOTS)						
4.32 Collaborative TB/HIV activities						
4.33 Second-line drugs for MDR-TB						
4.34 Management of MDR-TB (budget excluding second-line drugs)						
4.35 Community involvement						
4.36 ACBM (Advocacy, communication and social mobilization)						
4.37 Operational research						
4.38 Surveys to measure TB burden and impact of TB control						
4.39 All other budget lines for TB (e.g., technical assistance)						
4.40 TOTAL (calculated automatically)						

Utilization of health services, 2008 [Menu](#)

	Typical number of visits to a health facility after diagnosis	New smear-negative/pulmonary MDR-TB		
		New smear-positive	New smear-negative/pulmonary	MDR-TB
4.41	Estimated percentage of cases that are hospitalized (%)			
4.42	Estimated average duration of stay if hospitalized (days)			
4.44	Number of hospital beds used exclusively for TB (including beds in sanatoria, where these exist)	non-MDR-TB	MDR-TB	Total

Expenditure [Menu](#)

Fiscal year 2007

Please report the financial data in absolute US Dollars

Actual expenditure ^a	RECEIVED funding ^b			
	Government	Loans	Global Fund	Other grants
4.45 First-line TB drugs				
4.46 Staff working for TB control (central unit staff and subnational TB staff)				
4.47 Routine programme management and supervision activities				
4.48 Laboratory supplies and equipment for smears, culture and DST				
4.49 PAL (Practical Approach to Lung Health)				
4.50 PPM (Public-Private, Public-Private Mix-DOTS)				
4.51 Collaborative TB/HIV activities				
4.52 Second-line drugs for MDR-TB				
4.53 Management of MDR-TB (budget excluding second-line drugs)				
4.54 Community involvement				
4.55 ACBM (Advocacy, communication and social mobilization)				
4.56 Operational research				
4.57 Surveys to measure TB burden and impact of TB control				
4.58 All other budget lines for TB (e.g., technical assistance)				
4.59 TOTAL (calculated automatically)				

Please contact the following people for assistance if required: Rafael Lopez Olarte, rlopezart@who.org (for AMR); Katherine Floyd, kfloyd@who.int (for EUR); SEAR, WPR; Andrea Parry, a.parry@who.int (for AFR, EMR).

Remarks [Menu](#)

Please include number of question to which remark applies. Press ALT-RETURN to start a new paragraph.

Thank you for completing the WHO annual data collection form. Please return it to your local/regional WHO office. Page 15

Instructions for sheet "4. Finance"

Please remember that funding for TB control can only be improved if some attempt to describe the financial situation is made, even if data availability is limited. If the central NTP office has no information on the exact amounts that peripheral governments make available for TB control, please try to estimate.

Budget items

- 4.1 & 4.21 The date of the beginning of your fiscal year (between 1 January and 31 December of the year indicated)
- 4.2 & 4.22 The number of patients you expect to detect and treat – new smear-positive cases in all areas (DOTS and non-DOTS). It does NOT mean the total estimated incident number of cases in your country.
- 4.3 & 4.23 The number of patients that you expect to detect and treat – new smear-negative and extra-pulmonary cases in all areas (DOTS and non-DOTS). It does NOT mean the total estimated incident number of cases in your country.
- 4.4 & 4.24 The number of HIV+ TB patients that you expect will start ART treatment in this year, either in the NTP programme or in the national AIDS programme. If patients are provided ART by the National AIDS programme please let us know in the remarks.
- 4.5 & 4.25 The number of MDR-TB patients that you expect to treat. Please report separately: a) patients treated in GLC-approved projects and b) other patients.
- 4.8 & 4.26 Budget for anti-TB drugs, excluding drugs to treat multidrug-resistant (MDR) TB. If drugs are provided by the Global Drug Facility (GDF), please include an estimate of the value of these drugs. Please include the budget for all first-line drugs used to treat category I, II and III cases, i.e. all new (including children) and re-treatment cases, and the budget for buffer stock (if any).
- 4.7 & 4.27 Staff cost for staff working ON TB activities at central and peripheral levels (for example provincial TB coordinators, district TB coordinators, etc). Do NOT include, for example, primary health care nurses working on several diseases, including TB.
- 4.8 & 4.28 Budget for activities to manage and supervise the TB control programme. Examples are training, policy development, meetings, visits for supervision, fuel for supervision, purchase of office equipment/vehicles, construction of buildings for use by staff programme, recording and reporting, and drug management and distribution.
- 4.9 & 4.29 Budget for laboratory supplies and equipment for microscopy, culture and DST, including for external quality assurance.
- 4.10 & 4.30 Budget necessary to manage PAM, e.g. meetings related to PAM, and development of guidelines.
- 4.11 & 4.31 Budget necessary to manage PPM, e.g. meetings related to PPM, development of guidelines and any payment/contractual scheme that might exist.
- 4.12 & 4.32 Activities involving collaboration between TB and HIV programmes aimed at reducing the impact of HIV-related TB. These include TB/HIV coordinating bodies, joint TB/HIV training and planning, HIV testing for TB patients, HIV surveillance among TB patients, TB screening for people living with HIV/AIDS, isoniazid preventive therapy, joint TB/HIV information/education/communication, antiretroviral treatment for TB patients, etc. For clarifications, please see the WHO TB/HIV system policy or the Monitoring and Evaluation guide.
- 4.13 & 4.33 Budget for second line drugs, include drugs procured through the Green Light Committee (GLC) and through other mechanisms.
- 4.14 & 4.34 Budget for the management of MDR-TB (excluding anti-TB drugs for MDR-TB). Include all activities related to programme management not already included in 4.7 & 4.27.
- 4.15 & 4.35 Budget for activities related community involvement, including policy development, incentives and enablers.
- 4.16 & 4.36 Budget for activities related to advocacy, communication & social mobilization, and community-based care, including workshops to create awareness, mass media campaigns or World TB Day.
- 4.17 & 4.37 Budget for operational research. Please remember that OR studies are designed to answer specific questions arising from routine data and management such as "Why do we have a high default rate?".
- 4.18 & 4.38 Budget for periodic surveys to measure burden of TB and impact of TB control, e.g. disease prevalence surveys, ARI surveys, surveys of TB mortality or drug resistance surveys.
- 4.19 & 4.39 Include in the "Other" category all other budget lines not included in previous budget lines. Examples are technical assistance, supplies and equipment for X-rays, budget for high-risk groups, infection control and childhood TB.

Utilization of health services

- 4.41 The average number of visits per smear-positive, smear-negative/extra-pulmonary and MDR-TB patient to any health facility during TB treatment, for example for observed treatment (DOT), collection of drugs, smear monitoring, etc., after the patient has been diagnosed with TB, in view of your treatment guidelines. For example, if a smear-positive patient receives directly observed treatment daily in the intensive phase at clinics and, in the continuation phase 4 visits are required (one per month for collection of drugs), the total would be 60+4=64. If unsure, please give a range.
- 4.42 The approximate percentage of smear-positive, smear-negative/extra-pulmonary and MDR-TB patients hospitalized for TB treatment (for any duration of stay), in view of your treatment guidelines. For example, if your policy or general practice is to admit all TB patients for 2 months, the figure will be 100%. If unsure, please give a range.
- 4.43 If smear-positive, smear-negative/extra-pulmonary and MDR-TB patient are hospitalized for TB treatment, the average number of days they would spend in hospital. If unsure, please give a range.
- 4.44 Estimated number of beds in TB hospitals and in TB wards of other hospitals. Include sanatoria beds if these exist. If unsure, please give a range.

Expenditure items

4.45-4.49 Report actual expenditures and funds received on line items. For explanations see 6.4-19 above.

Sources of funding

- a The total budget required should be in line with your annual plan of activity. Indicate the total amount required to carry out all activities and NOT only the amount you expect to receive.
- b include funding from both the central and peripheral government sources (provinces, districts, etc.)
- c All loans for TB or amount for TB in an overall health sector-wide loan
- d Grants awarded by the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund). The amount for the relevant fiscal year only and NOT the total amount of the grant.
- e All grants, excluding Global Fund grants. The amount should be for the relevant fiscal year and not the total amount of the grant.
- f The amount in this column should equal the "Total budget required" column MINUS the total of all expected funding columns (i.e. government, loans, grants excluding Global Fund, Global Fund grants, other).
- g Report the amounts that were actually spent on each line item during your last fiscal year. The total in this column might be lower than the total funds received, but not higher.
- h Report the funds actually received from each source of funding. The total amount from all sources might be higher than the expenditure reported, but not lower.

APPENDIX VII
CANADA – CASE AND
TREATMENT OUTCOME REPORTING FORMS



Treatment Outcome of a New Active or Relapsed Tuberculosis Case

EFFECTIVE JANUARY 2007

**CONFIDENTIAL
WHEN COMPLETED**

1. Reporting province/territory <input type="text"/>	2. Register case number <input type="text"/>	3. Unique identifier <input type="text"/>	4. Date of birth Year <input type="text"/> <input type="text"/> <input type="text"/> Month <input type="text"/> <input type="text"/> Day <input type="text"/> <input type="text"/>	5. Sex Male <input type="checkbox"/> Female <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/>	
6. If transfer from diagnosing province/territory, please state treating province/territory <input type="text"/>		7. Register case number (if different from 2 above) <input type="text"/>		8. Unique identifier (if different from 3 above) <input type="text"/>	
9. Date of diagnosis Year <input type="text"/> <input type="text"/> <input type="text"/> Month <input type="text"/> <input type="text"/> Day <input type="text"/> <input type="text"/>		10. Date treatment started Year <input type="text"/> <input type="text"/> <input type="text"/> Month <input type="text"/> <input type="text"/> Day <input type="text"/> <input type="text"/>		11. Last day of treatment Year <input type="text"/> <input type="text"/> <input type="text"/> Month <input type="text"/> <input type="text"/> Day <input type="text"/> <input type="text"/>	
12. Initial drugs prescribed (list all that apply)					
1st line 1 <input type="checkbox"/> INH 3 <input type="checkbox"/> EMB 4 <input type="checkbox"/> RMP 5 <input type="checkbox"/> PZA			2nd line 1 <input type="checkbox"/> Streptomycin 3 <input type="checkbox"/> Capreomycin 5 <input type="checkbox"/> Ethionamide 7 <input type="checkbox"/> Rifabutin 2 <input type="checkbox"/> Kanamycin 4 <input type="checkbox"/> Ofloxacin 6 <input type="checkbox"/> PAS 8 <input type="checkbox"/> Other		
6 <input type="checkbox"/> No drugs prescribed 8 <input type="checkbox"/> Other (specify) _____ 9 <input type="checkbox"/> Unknown					
13. Did resistance develop during treatment? 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Not tested ↓ If yes, please check drug(s) (check all that apply)			14. What was the treatment outcome? (Check one only)		
1st line 1 <input type="checkbox"/> INH 3 <input type="checkbox"/> EMB 4 <input type="checkbox"/> RMP 5 <input type="checkbox"/> PZA			1 <input type="checkbox"/> Cure – negative culture at completion of treatment* 2 <input type="checkbox"/> Treatment completed – without culture at end of treatment* 3 <input type="checkbox"/> Death before or during treatment		
2nd line 1 <input type="checkbox"/> Streptomycin 4 <input type="checkbox"/> Ofloxacin 7 <input type="checkbox"/> Rifabutin 2 <input type="checkbox"/> Kanamycin 5 <input type="checkbox"/> Ethionamide 8 <input type="checkbox"/> Other 3 <input type="checkbox"/> Capreomycin 6 <input type="checkbox"/> PAS			Date of death Year <input type="text"/> <input type="text"/> <input type="text"/> Month <input type="text"/> <input type="text"/> Day <input type="text"/> <input type="text"/>		
8 <input type="checkbox"/> Other (specify) _____ 9 <input type="checkbox"/> Unknown			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 4 <input type="checkbox"/> Transferred to new country – outcome of treatment unknown (specify new country) _____ 5 <input type="checkbox"/> Failure – continued or recurrent positive cultures after 4 or more months of treatment 6 <input type="checkbox"/> Absconded (lost to follow-up before completion of 80% of doses) 7 <input type="checkbox"/> Treatment ongoing 8 <input type="checkbox"/> Other (specify) _____ 9 <input type="checkbox"/> Unknown * if MDR-TB please see guidelines for definitions		
15. Treatment regimen (for drugs taken > 1 month) (check all that apply)			16. Major mode of treatment:		
1st line 1 <input type="checkbox"/> INH 3 <input type="checkbox"/> EMB 4 <input type="checkbox"/> RMP 5 <input type="checkbox"/> PZA			1 <input type="checkbox"/> Modified 2 <input type="checkbox"/> Standard 3 <input type="checkbox"/> Enhanced		
2nd line 1 <input type="checkbox"/> Streptomycin 4 <input type="checkbox"/> Ofloxacin 7 <input type="checkbox"/> Rifabutin 2 <input type="checkbox"/> Kanamycin 5 <input type="checkbox"/> Ethionamide 8 <input type="checkbox"/> Other 3 <input type="checkbox"/> Capreomycin 6 <input type="checkbox"/> PAS			4 <input type="checkbox"/> DOT (Directly Observed Therapy) 5 <input type="checkbox"/> Daily, self-administered 6 <input type="checkbox"/> Other (specify) _____ 7 <input type="checkbox"/> Unknown		
6 <input type="checkbox"/> No drugs prescribed 9 <input type="checkbox"/> Unknown 8 <input type="checkbox"/> Other (specify) _____			17. Adherence estimate (% of medication received) 1 <input type="checkbox"/> 80%+ 2 <input type="checkbox"/> 50-79% 3 <input type="checkbox"/> < 50% 9 <input type="checkbox"/> Unknown		

APPENDIX VIII

THE CANADIAN TUBERCULOSIS COMMITTEE

2009

PROVINCIAL/TERRITORIAL TB CONTROL PROGRAM REPRESENTATIVES

Alberta

Dr. Geetika Verma

New Brunswick

Ms. Eileen McQuade

Northwest Territories

Ms. Cheryl Case

Prince Edward Island

Dr. Heather Morrison

Yukon

Ms. Cathy Stannard

British Columbia

Dr. Kevin Elwood

Newfoundland and Labrador

Ms. Marion Yetman

Nunavut

Ms. Elaine Randell

Québec

Dr. Paul Rivest (Chair)

Manitoba

Dr. Joel Kettner

Nova Scotia

Ms. Dee Monbourquette

Ontario

Dr. George Samuel

Saskatchewan

Ms. Ruth Anne Appl

ABORIGINAL SCIENTIFIC SUBCOMMITTEE

Dr. Pamela Orr

**ASSOCIATION OF MEDICAL MICROBIOLOGY
AND INFECTIOUS DISEASE CANADA**

Dr. Wendy Wobeser

**CANADIAN LUNG ASSOCIATION/
STOP TB CANADA**

Ms. Debbie Smith

CANADIAN THORACIC SOCIETY

Dr. Heather Ward

**CANADIAN PUBLIC HEALTH LABORATORY
NETWORK**

Dr. Fran Jamieson

CITIZENSHIP AND IMMIGRATION CANADA

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