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# TUBERCULOSIS IN CANADA



# 2006

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**TUBERCULOSIS**

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**IN CANADA**

**2006**



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## EXECUTIVE SUMMARY

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In 2006, 1,619 cases (5.0 per 100,000) of new active and relapsed tuberculosis (TB) were reported to the Canadian Tuberculosis Reporting System (CTBRS). The highest rate, 157.9 per 100,000 population, was reported from Nunavut. There were no TB cases reported in Prince Edward Island. British Columbia, Ontario and Quebec made up 76% of Canada's population and accounted for 73% of the total reported cases.

Individuals between the ages of 35 and 44 years made up the largest number of reported cases, accounting for 17% of the total. However, the corresponding case rate of 5.6 per 100 000 for this age group was surpassed by the age-specific rates of 7.2 and 10.6 per 100,000 for those in the older age groups of 65 to 74 years, and greater than 74 years, respectively.

In 2006, TB among foreign-born individuals accounted for 64% of all reported cases. Canadian-born non-Aboriginal and Canadian-born Aboriginal cases made up 12% and 20%, respectively. Birthplace was unknown for 3% of cases.

Pulmonary TB, defined as TB of the lungs and conducting airways, was the most frequently reported main diagnostic site, representing 62% of all reported cases in 2006. TB of the peripheral lymph nodes accounted for 15% of all cases and was the second most commonly reported diagnostic site.

Of the 1,619 cases reported in 2006, 1,315 cases were culture positive of which 1,248 had TB drug resistance information reported. Of these, 1,135 (91%) had no resistance to first-line anti-TB drugs, 8% percent were monoresistant and the remaining 1% showed patterns of resistance to two or more drugs. The most common type of monoresistance was to isoniazid (INH) accounting for 67% of all reported resistance. Multidrug-resistant TB (defined as resistance to at least isoniazid and rifampin) accounted for 11% of all resistant cases. No cases diagnosed in 2006 were reported to be extensively drug-resistant TB (XDR -TB).

For 1,642 TB cases initially reported in 2005, 1,468 cases had treatment outcomes reported to the CTBRS in 2006. A total of 1,217 (83%) cases with known outcomes were reported as being cured (culture-negative) or treatment completed.

For the 2005 cases as reported from both their case report form and on their 2006 outcome form, 123 (7%) died before or during their treatment. TB was the cause of or contributed to 61% of those deaths.

For the cases diagnosed in 2006, 111 of the 1,619 cases were reported to have died before or during their treatment. TB contributed to or was the cause of death in 62% of the cases. It should be noted that the number of reported TB related deaths for 2006 is an underestimate as it includes only known deaths occurring in the same year as the diagnosis at the time of reporting.

The majority of individuals placed on TB drug therapy in Canada received treatment as per the *Canadian Tuberculosis Standards*<sup>1</sup>. Of the cases where the treatment final regime was reported over eighty percent of these cases received three or more anti-tuberculosis drugs.

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<sup>1</sup> Long R, Ellis E, editors, *Canadian Tuberculosis Standards*, 6<sup>th</sup> ed. Ottawa: Public Health Agency of Canada and the Canadian Lung Association/Canadian Thoracic Society; 2007.

The total number of reported cases of TB in Canada has shown a general decrease over the past decade. However, this decrease is mostly a reflection of a decreasing number of cases in the Canadian-born non-Aboriginal population. The number of cases in the Canadian-born Aboriginal and foreign-born populations has shown a minimal decrease. 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. While the overall incidence rate has shown a slow but steady decline over most of the decade, it has stabilized at 5.0-5.1 per 100,000 population between 2003 and 2006.



# INTRODUCTION

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The *2006 Tuberculosis in Canada* annual report is a publication of Tuberculosis Prevention and Control (TBPC), Public Health Agency of Canada (PHAC). Reports of new active and relapsed tuberculosis cases come to TBPC through the Canadian Tuberculosis Reporting System (CTBRS) from the ten provinces and three territories.

TBPC stores and maintains surveillance reports on tuberculosis (TB) in Canada from the early 1920s. In 1994, responsibility for the 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.

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

- province/territory
- sex
- age
- birthplace
- new and relapsed<sup>2</sup> cases
- main diagnostic site
- bacterial status
- method of detection
- immigration status
- HIV status
- patterns of drug resistance
- treatment outcomes
- drug regimens

Appendices to the report include data tables (*Appendix I*), technical notes on the methods (*Appendix II*), population estimates for 2006 (*Appendix III*) and the World Health Organization (WHO) estimated incidence of TB in the 22 high burden countries, 2006 (*Appendix IV*). Further appendices include the WHO TB epidemiological regions and the member countries (*Appendix V*), the WHO reporting form for 2006 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.

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<sup>2</sup> As of 2008, the CTBRS classifies all cases as new or re-treatment cases; see *Canadian Tuberculosis Standards*, 6<sup>th</sup> ed., Appendix C for complete definitions.

# RESULTS

## SECTION I – 2006 CASE REPORTING

### NATIONAL TRENDS

Following a peak in the epidemic in the early 1940s, the reported incidence of 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 incidence rate has stabilized at approximately 5.0 per 100,000 population. In 2006, 1,619 cases of TB were reported to the CTBRS representing an incidence rate of 5.0 per 100,000 population. New active cases made up the majority of reported cases with a rate of 4.4 per 100,000 population; the rate of relapse was 0.4 per 100,000 population.

**Table A**

**Incidence rate of tuberculosis in Canada: 1996-2006**

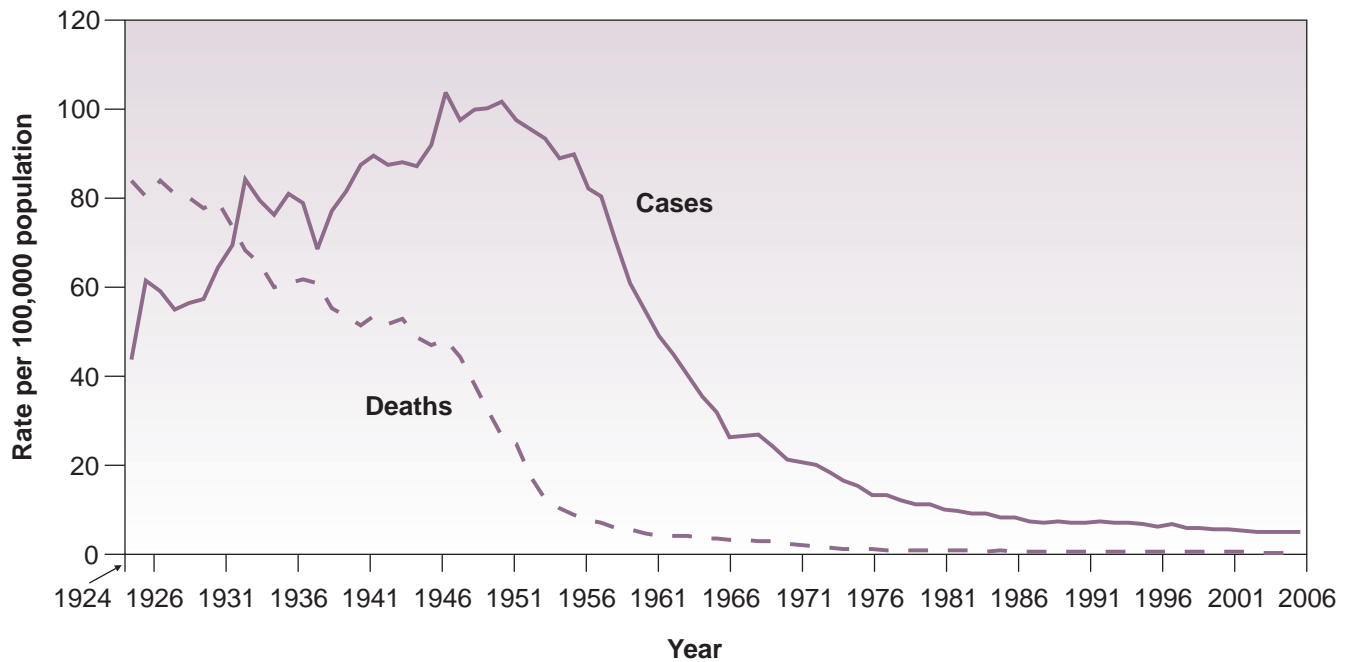
Year	Number of reported cases	Crude rate per 100,000
1996	1,877	6.3
1997	1,994	6.7
1998	1,810	6.0
1999	1,820	6.0
2000	1,724	5.6
2001	1,773	5.7
2002	1,666	5.3
2003	1,631	5.1
2004	1,613	5.0
2005	1,642	5.1
2006	1,619	5.0

### GEOGRAPHIC DISTRIBUTION

Several jurisdictions reported incidence rates below the national rate. TB incidence remained lowest in the Atlantic provinces (New Brunswick, Newfoundland and Labrador, Nova Scotia and Prince Edward Island) and was highest in Nunavut (Table B, Figure 3).

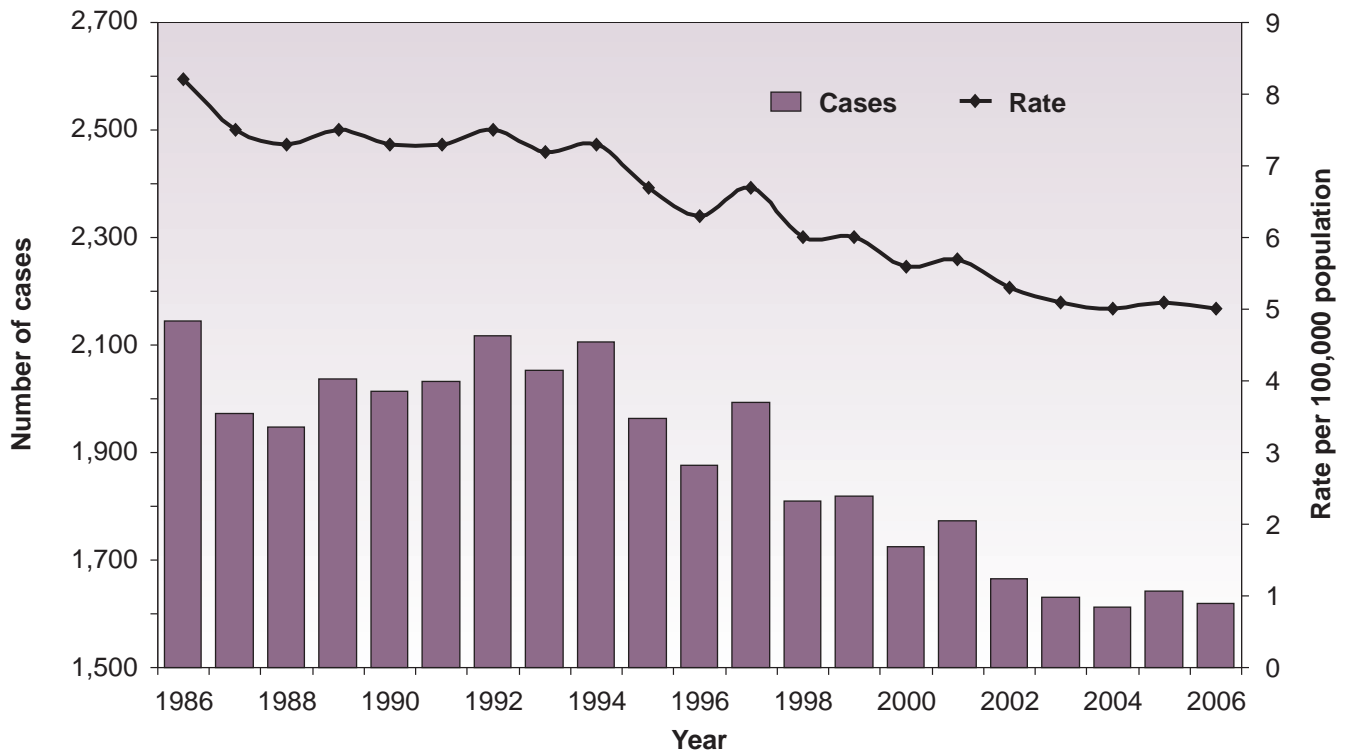
**Figure 1**

**Tuberculosis incidence and mortality rates – Canada: 1924-2006**



**Figure 2**

**Tuberculosis cases and incidence rates – Canada: 1986-2006**



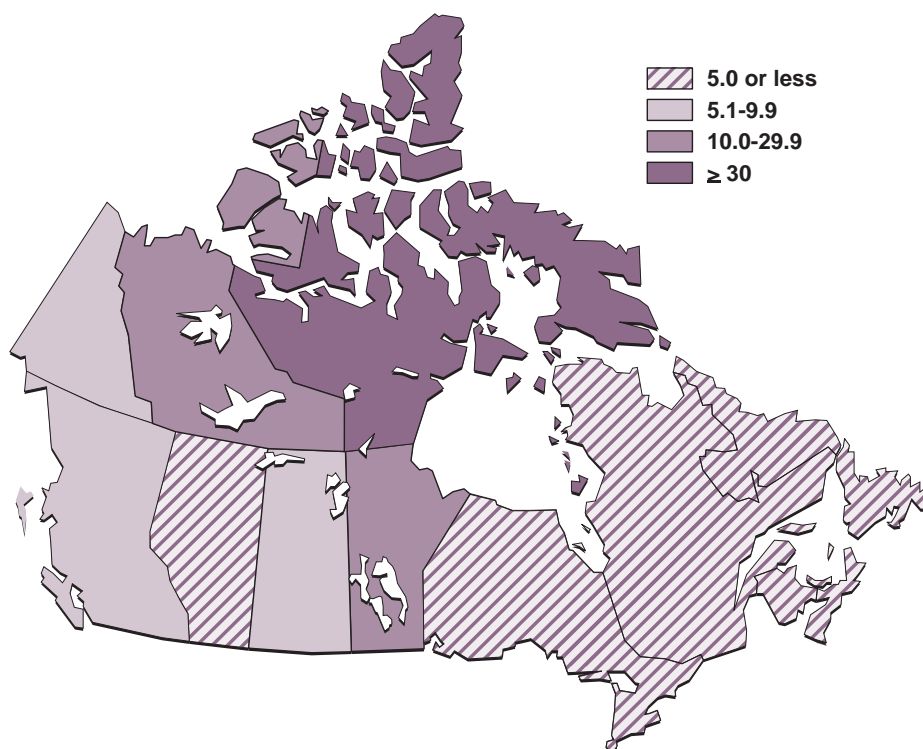
**Table B**

**Ranked tuberculosis incidence in Canada – provinces/territories: 2006**

Reporting province or territory	Abbreviation	Incidence rate per 100,000
Nunavut	Nvt.	157.9
Northwest Territories	N.W.T.	14.2
Manitoba	Man.	11.4
Yukon	Y.T.	9.6
Saskatchewan	Sask.	8.8
British Columbia	B.C.	7.4
Ontario	Ont.	5.0
Alberta	Alta.	3.9
Quebec	Que.	3.0
Newfoundland and Labrador	N.L.	2.4
Nova Scotia	N.S.	1.1
New Brunswick	N.B.	0.3
Prince Edward Island	P.E.I.	0.0
<b>CANADA</b>		<b>5.0</b>

**Figure 3**

**Tuberculosis incidence rate by province/territory as compared with national rate (5.0 per 100,000): 2006**

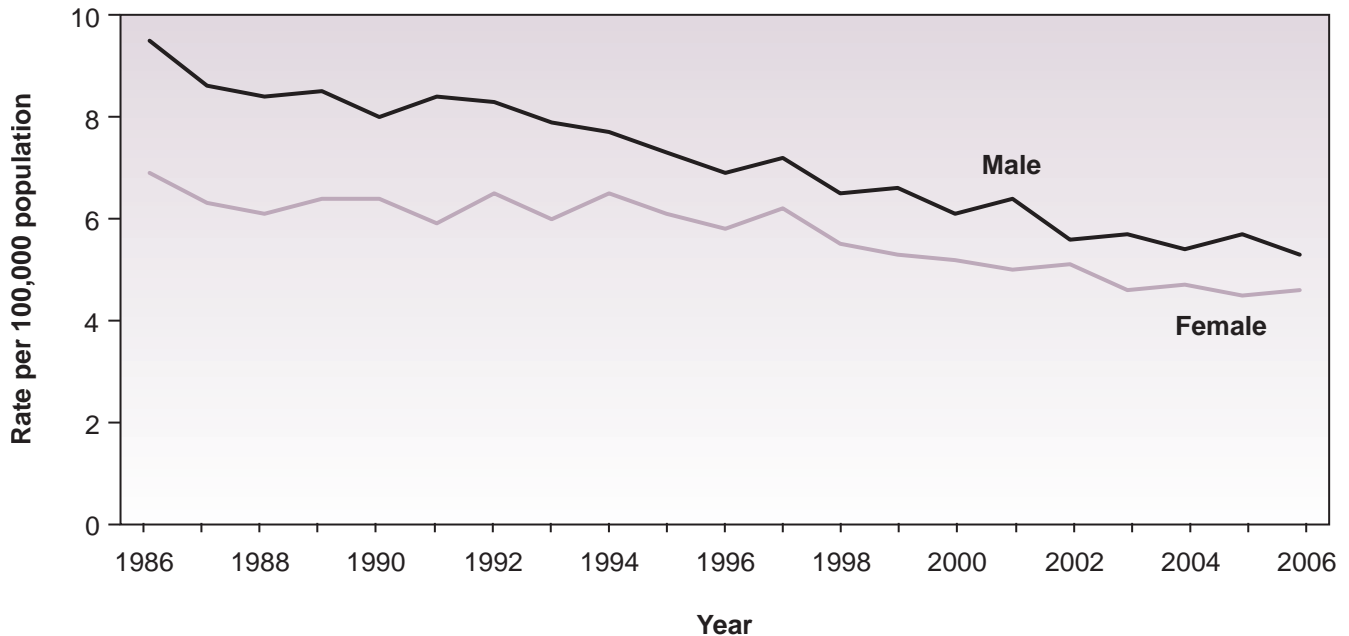


## **SEX AND AGE GROUP DISTRIBUTION**

Over the past two decades, 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 2006, males continue to account for the larger number of reported cases (864 cases, 5.3 per 100,000 population) when compared with females (755 cases, 4.6 per 100,000 population) (Figure 4; *Appendix I*, Tables 2B and 2C).

**Figure 4**

### **Tuberculosis incidence rate by sex – Canada: 1986-2006**



Individuals between the ages of 35 and 44 years of age made up the largest number of reported cases representing 17% of the total. However, the age-specific rates of 7.2 and 10.6 per 100,000 for those in the older age groups of 65 to 74 years, and 75 years and older, respectively, remain the highest rates for all age groups (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 those aged 75 and older. The incidence rate for males 75 years and older was a little over 2 times the rate for similarly aged females (Figure 6; *Appendix I*, Tables 5B and 5C).

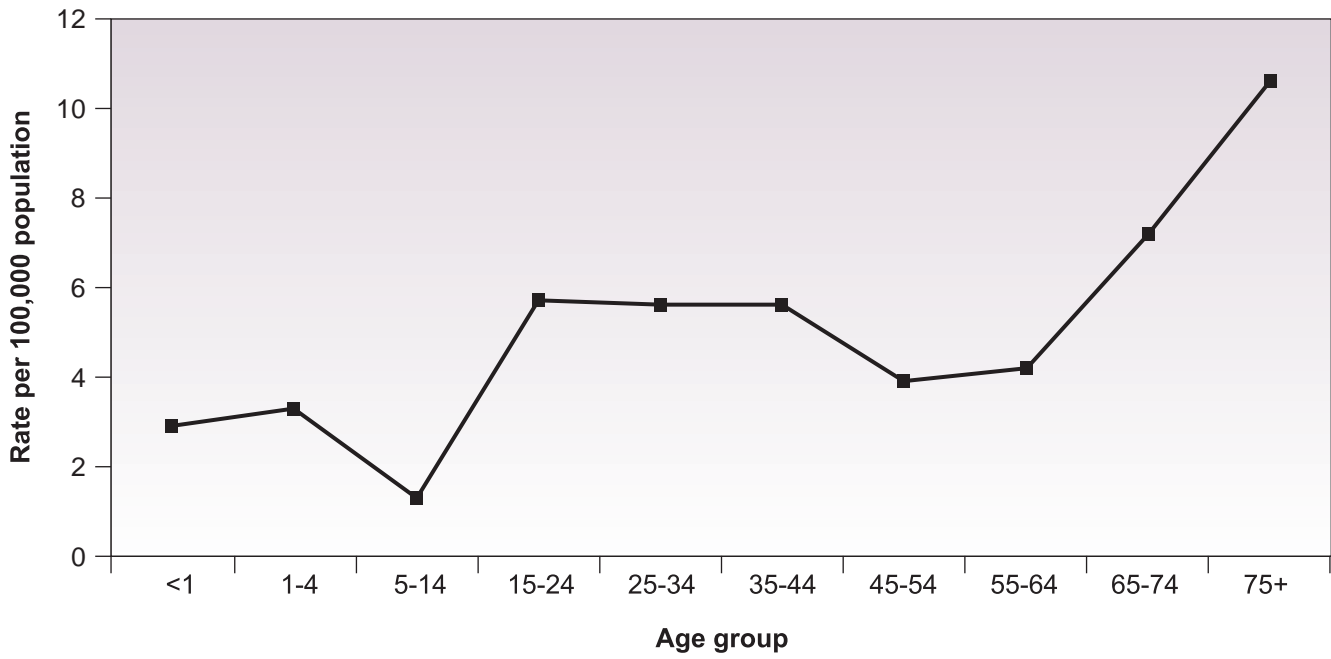
## **BIRTHPLACE DISTRIBUTION**

Foreign-born cases continue to represent the greatest percentage of the overall case count when compared with Canadian-born non-Aboriginal and Canadian-born Aboriginal. In 2006, the percentages of foreign-born cases, Canadian-born Aboriginal cases and Canadian-born non-Aboriginal cases were 64%, 20% and 12%, respectively. Origin was unknown for 3% of the cases (Figure 7; *Appendix I*, Table 3).

The total number of reported cases of TB in Canada has shown a general decrease over the past decade. However, this decrease is mostly a reflection of a decreasing number of cases in the Canadian-born non-Aboriginal population. The number of cases in the Canadian-born Aboriginal and foreign-born populations has shown a minimal decrease (Figure 8; *Appendix I*, Table 3).

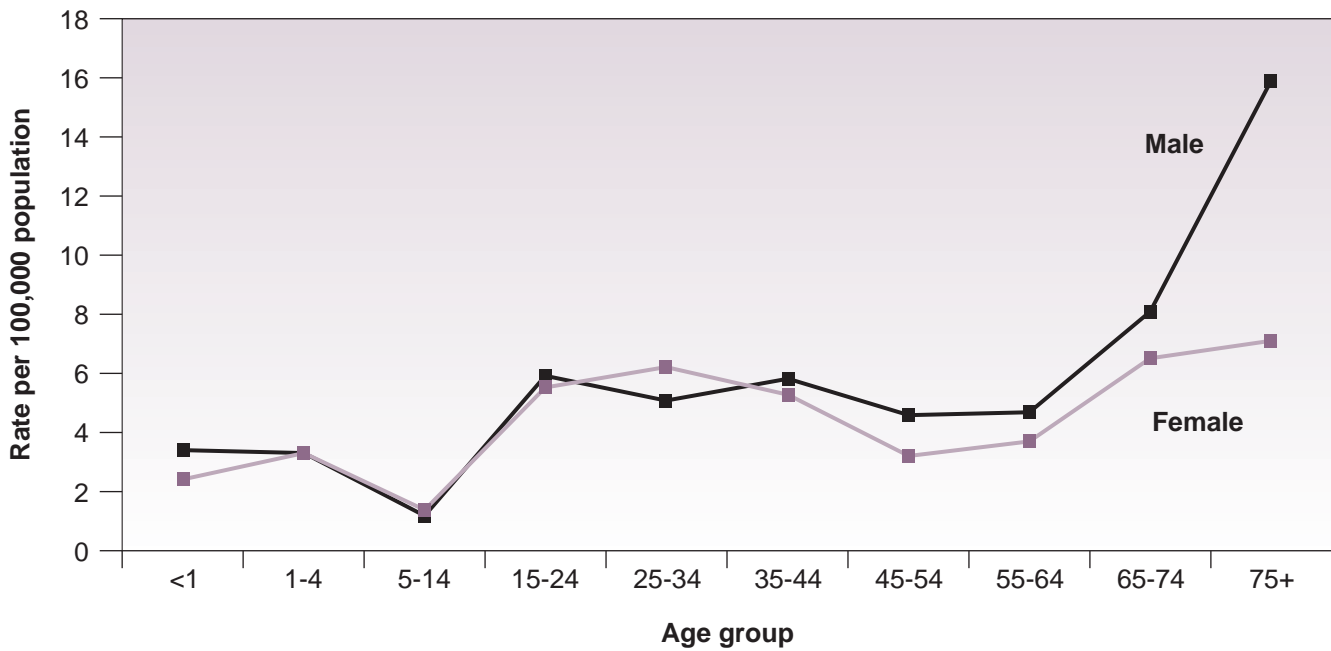
**Figure 5**

**Tuberculosis incidence rate by age group – Canada: 2006**



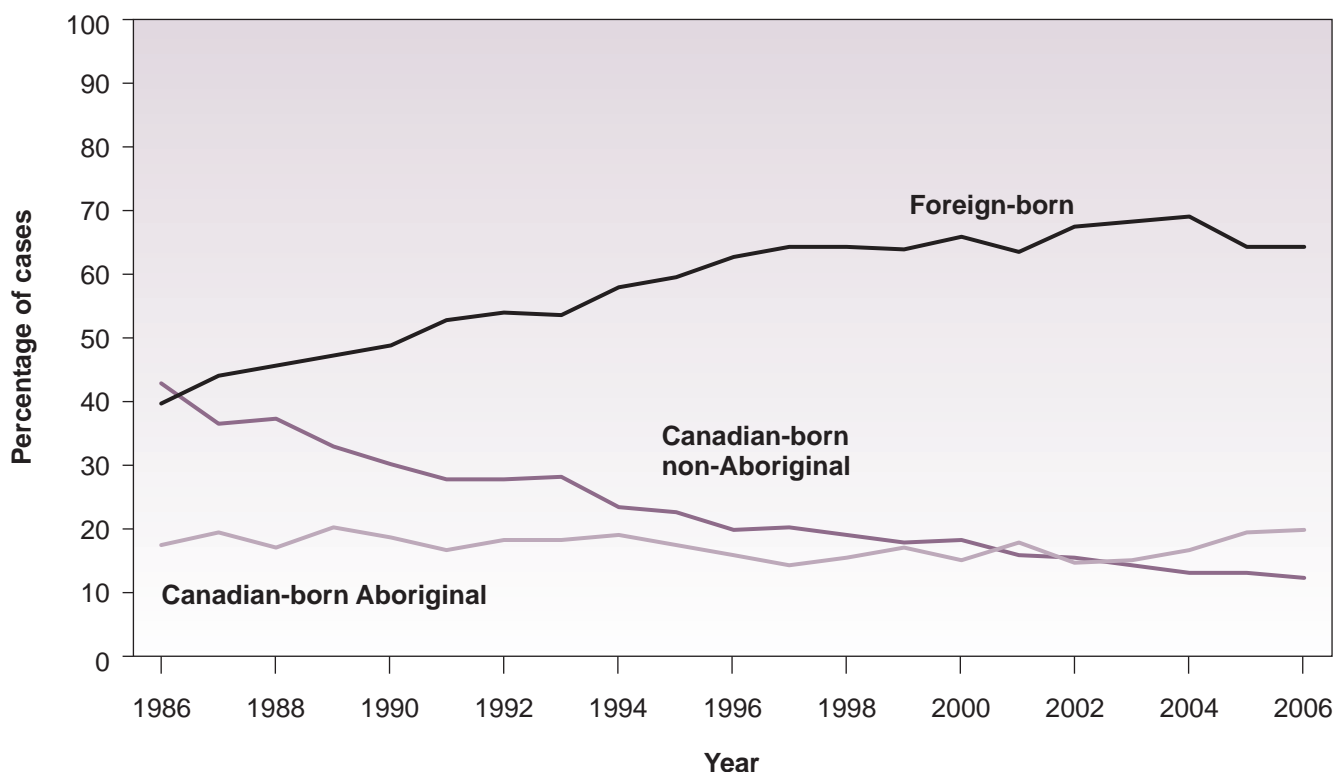
**Figure 6**

**Tuberculosis incidence rate by age group and sex – Canada: 2006**



**Figure 7**

**Percentage of tuberculosis cases by origin – Canada: 1986-2006**



Generally, the TB incidence rate has been slowly declining among Canadian-born non-Aboriginal and foreign-born populations. The foreign-born rate of 14.8 per 100,000 population in 2006 was the lowest such rate ever reported for this group in Canada. However, no significant TB incidence rate change occurred in the Canadian-born Aboriginal population over the decade (Figure 9; Appendix I, Table 6).

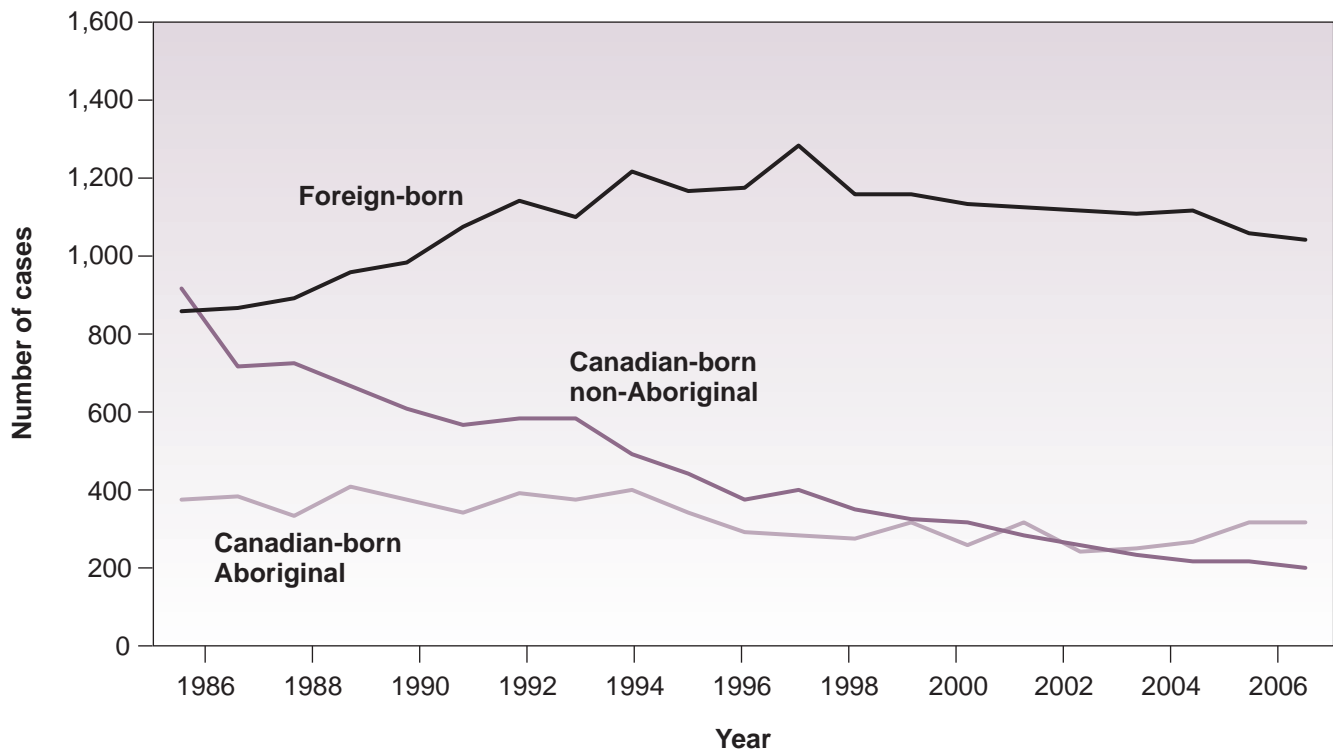
The highest percentage of foreign-born cases (36%) were between the ages of 25 and 44. Of the Canadian-born non-Aboriginal 21% of the cases were 75 years of age or older. Twenty-two percent of the Canadian-born Aboriginal cases were between the ages of 15 to 24 (Figure 10; Appendix I, Table 8). For Canadian-born non-Aboriginal cases, the median age was 55 years whereas for the foreign-born, the median age was 43 years. For the Canadian-born Aboriginal cases the median age was 32 years.

Foreign-born cases accounted for 64% of the total number of cases reported in Canada in 2006. Alberta, British Columbia and Ontario reported the highest percentage of foreign-born cases (70%, 72% and 84%, respectively). In New Brunswick 50% of the cases were foreign born and in Nova Scotia, 40% of the cases were foreign-born. In Quebec foreign-born cases accounted for 63% of the reported cases (Table 6). For the remaining provinces/territories foreign-born cases accounted for fewer than 20% 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 72% of the cases (Figure 11; Table C; Appendix I, Table 6).

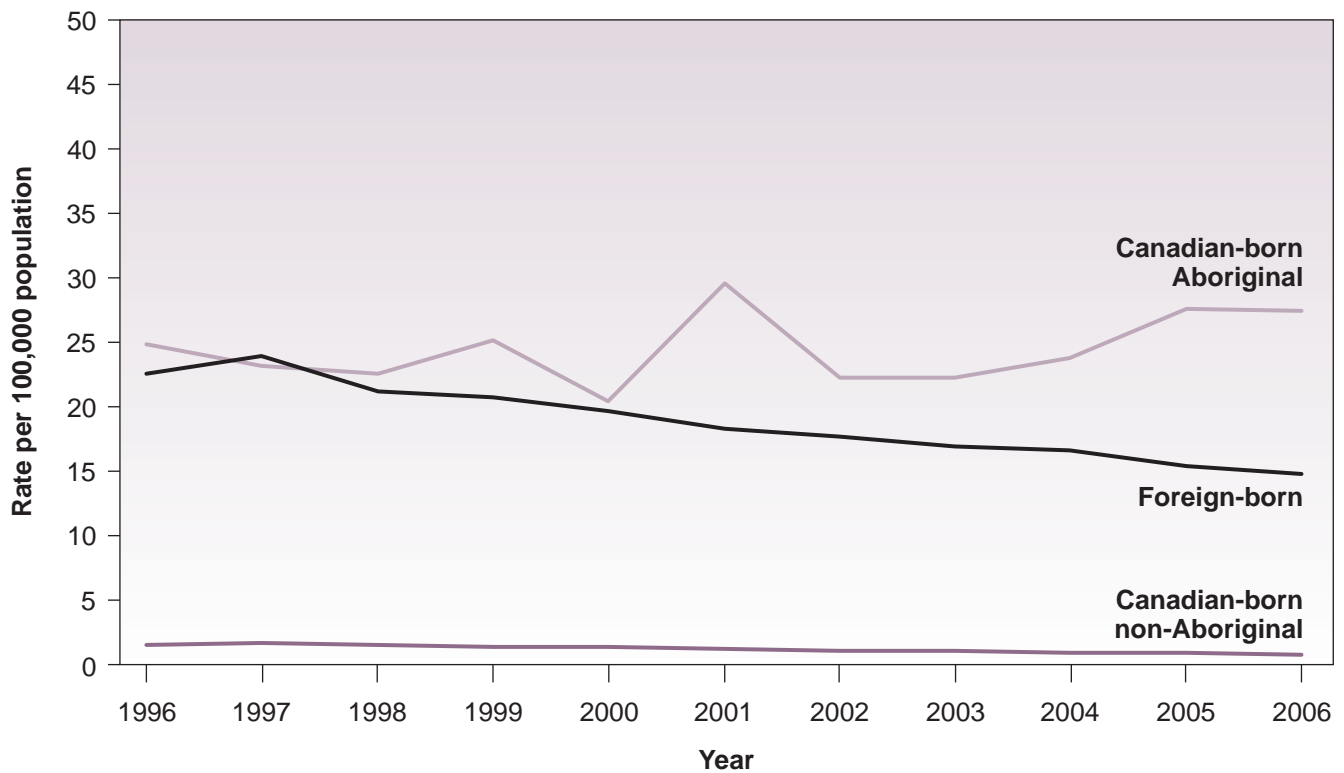
**Figure 8**

**Number of tuberculosis cases by origin – Canada: 1986-2006**



**Figure 9**

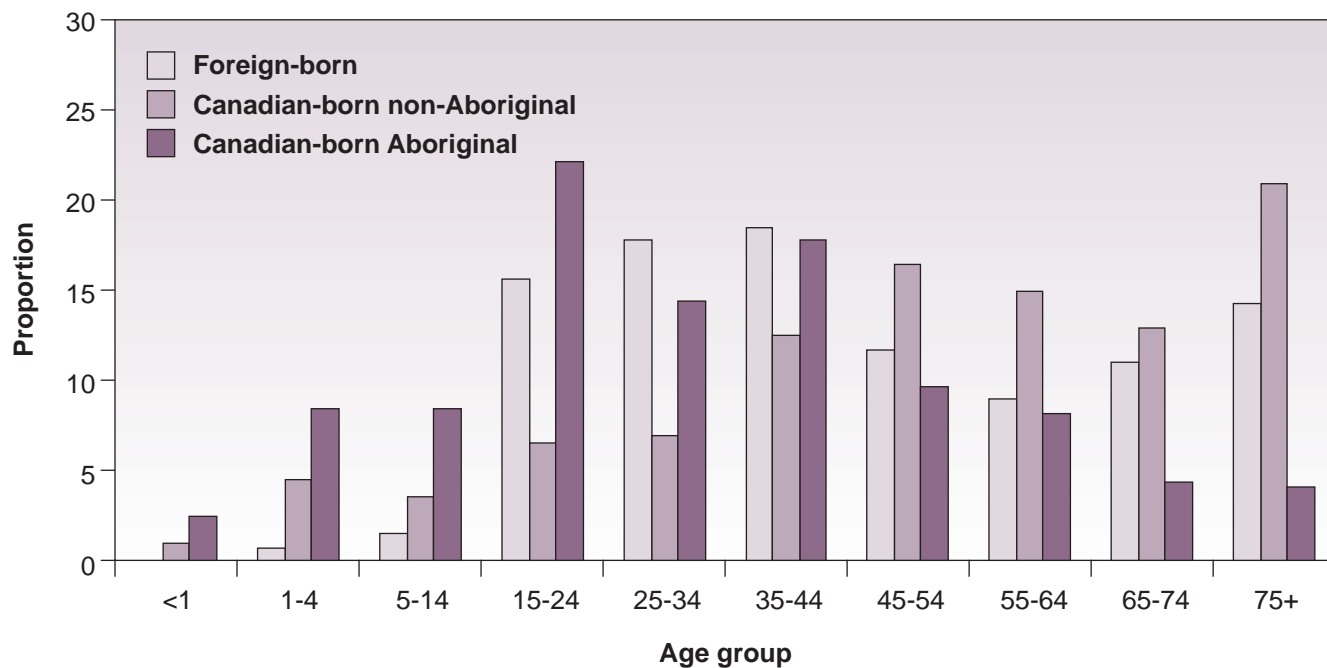
**Tuberculosis incidence rate by origin – Canada: 1996-2006**





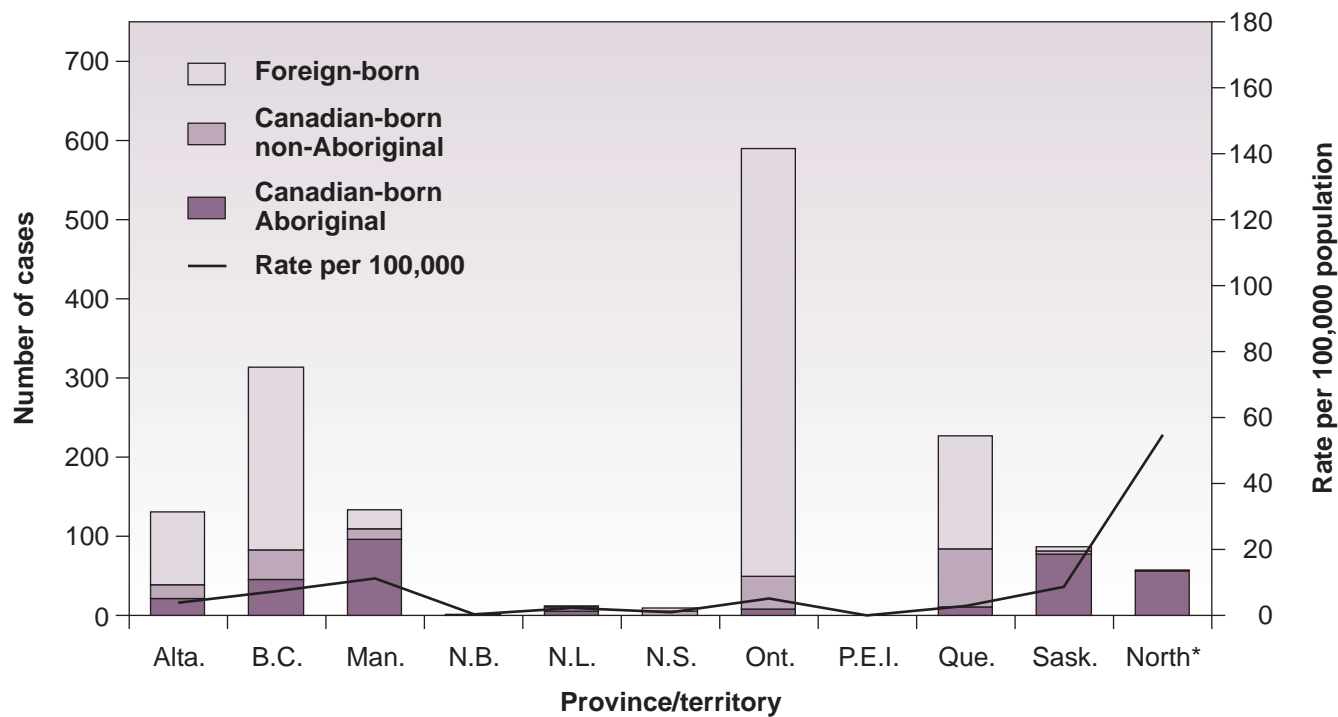
**Figure 10**

**Proportion of tuberculosis cases by age group and origin – Canada: 2006**



**Figure 11**

**Origin of TB cases and overall incidence rate – provinces/territories: 2006**



\* Includes Northwest Territories, Nunavut and Yukon Territory.

**Table C****Percentage of tuberculosis cases in Canada by origin – provinces/territories: 2006**

Reporting province or territory	Canadian-born non-Aboriginal	Canadian-born Aboriginal	Foreign-born	Unknown birthplace
Alberta	13.7	16.0	70.2	0.0
British Columbia	11.6	14.4	72.4	1.6
Manitoba	10.4	71.6	17.9	0.0
New Brunswick	50.0	0.0	50.0	0.0
Newfoundland and Labrador	50.0	41.7	8.3	0.0
Nova Scotia	50.0	0.0	40.0	10.0
North*	1.8	98.2	0.0	0.0
Ontario	6.6	1.3	84.4	7.8
Prince Edward Island	-	-	-	-
Quebec	32.2	4.8	63.0	0.0
Saskatchewan	4.6	88.5	6.9	0.0
<b>Canada</b>	<b>12.4</b>	<b>19.8</b>	<b>64.4</b>	<b>3.5</b>

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

\*Includes Northwest Territories, Nunavut and Yukon Territory.

When analyzed according to the STOP-TB Partnership/WHO TB epidemiological regions, the highest number of foreign-born cases originated in the Western Pacific Region (404 cases; 24.5 per 100,000). However, the highest incidence rate (52.4 per 100,000 population) was among individuals from the Africa-High HIV-Prevalence Region, (AFR-High). Table D 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 12 shows the percentage of foreign-born TB by Region, reported in Canada between 1996 and 2006.

**Table D**

**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**

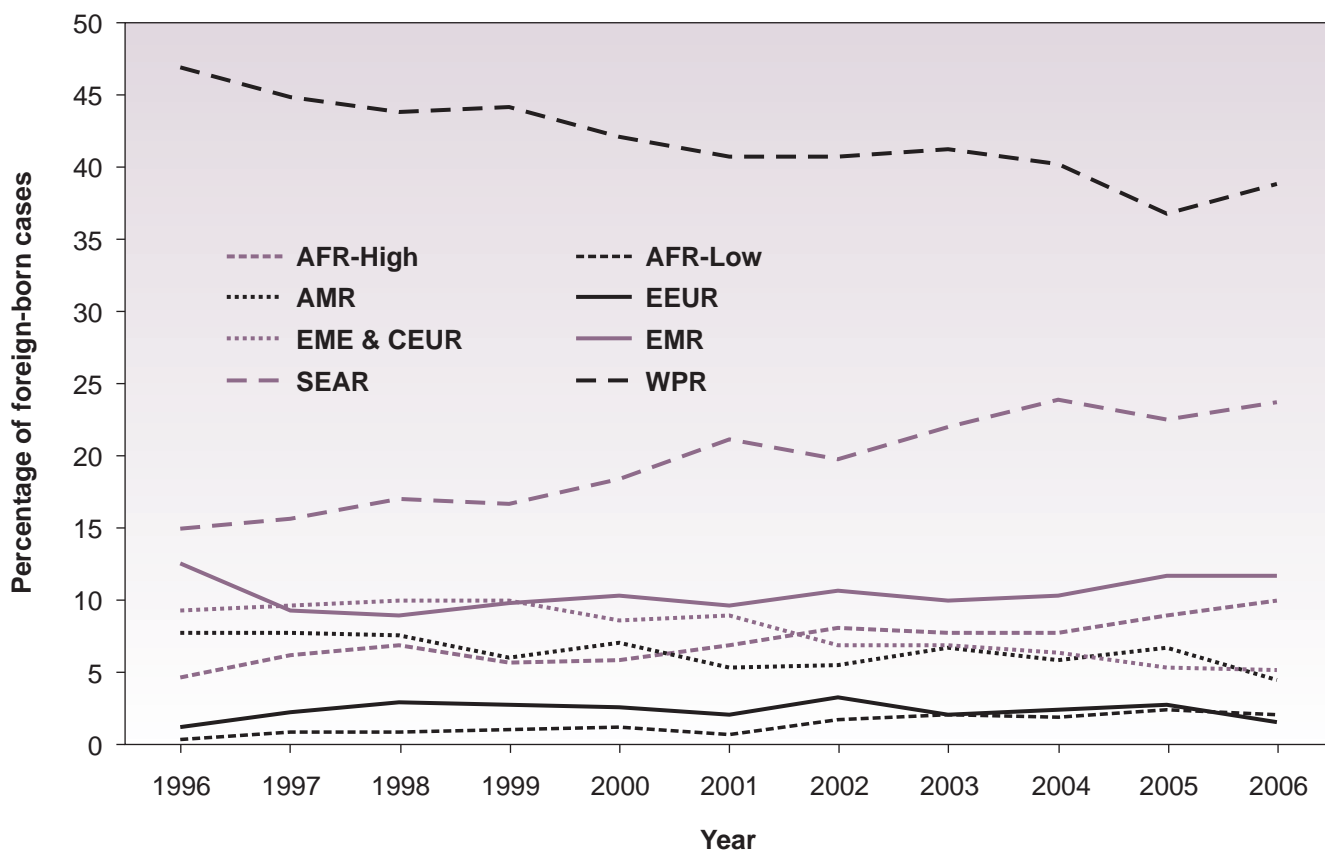
WHO regions*	Reported rate in Canada, 2006	WHO estimate TB incidence rate in regions, 2006**
Africa, High HIV Prevalence, (AFR High)	52.4	414
Africa, Low HIV Prevalence, (AFR Low)	20.5	217
American Region (AMR) - Latin American Countries (LAC)	6.0	56
Eastern Europe (EEUR)	5.1	91
Eastern Mediterranean (EMR)	17.8	104
Established Market Economies (EME) and Central Europe (CEUR)	2.0	12
South-East Asia (SEAR)	35.6	180
Western Pacific (WPR)	24.5	117
<b>Overall</b>	<b>14.8</b>	<b>139</b>

\* 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 2007*. Geneva, World Health Organization (WHO/HTM/TB/2006.362).

**Figure 12**

**Percentage of foreign-born tuberculosis cases by STOP-TB Partnership/WHO TB epidemiological regions – Canada: 1996–2006**



## DIAGNOSTIC DETAILS

Pulmonary tuberculosis, which includes tuberculosis of the lungs and conducting airways (see Technical Annex for complete definition), was the most frequently reported diagnostic site, accounting for 62% of reported cases in 2006 followed by tuberculosis of the peripheral lymph nodes which accounted for 15% of the reported cases. Nine percent of the cases were classified as “other”, which includes: tuberculosis of the intestines, peritoneum and mesenteric glands, bones and joints, genitourinary system, skin, eye, ear, thyroid, adrenal, and spleen (*Appendix I, Table 4*).

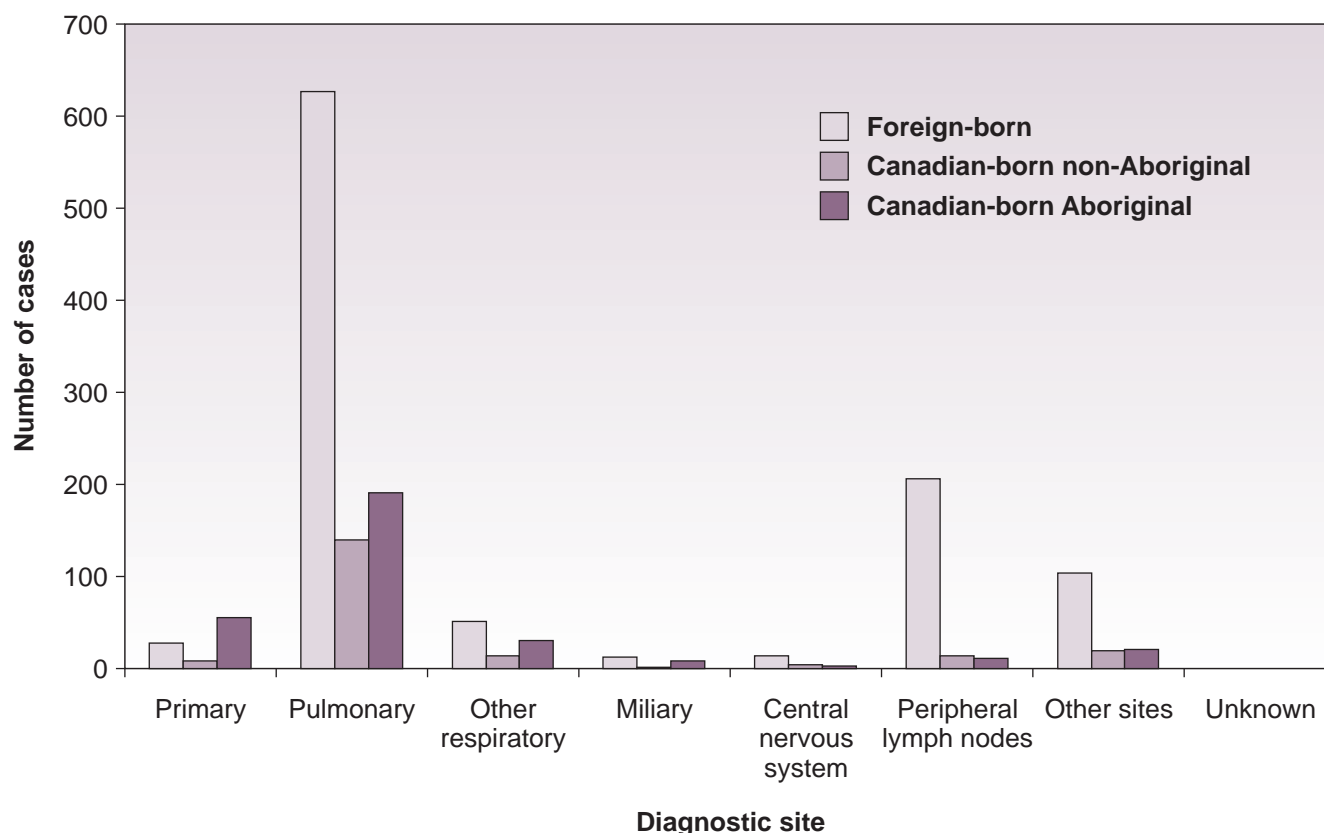
Of the 201 Canadian-born non-Aboriginal cases, 70% were diagnosed with pulmonary TB whereas this percentage was lower for both Canadian-born Aboriginal cases (60%) and foreign-born cases (60%). Twenty-percent of the foreign-born cases were diagnosed with TB of the peripheral lymph nodes compared with 3% of the Canadian-born Aboriginal cases and 7% of the Canadian-born non-Aboriginal cases (*Appendix I, Table 10*).

There were a total of 91 cases of primary TB. Sixty-two percent of these cases were reported in the Canadian-born Aboriginal population and represented 18% of the total number of Aboriginal cases.

TB of the central nervous system (CNS) was rare, accounting for only 21 (1%) of all reported cases. Similarly, miliary/disseminated TB was infrequently diagnosed, representing 22 (1%) of the reported cases (*Figure 13; Appendix I, Table 10*).

**Figure 13**

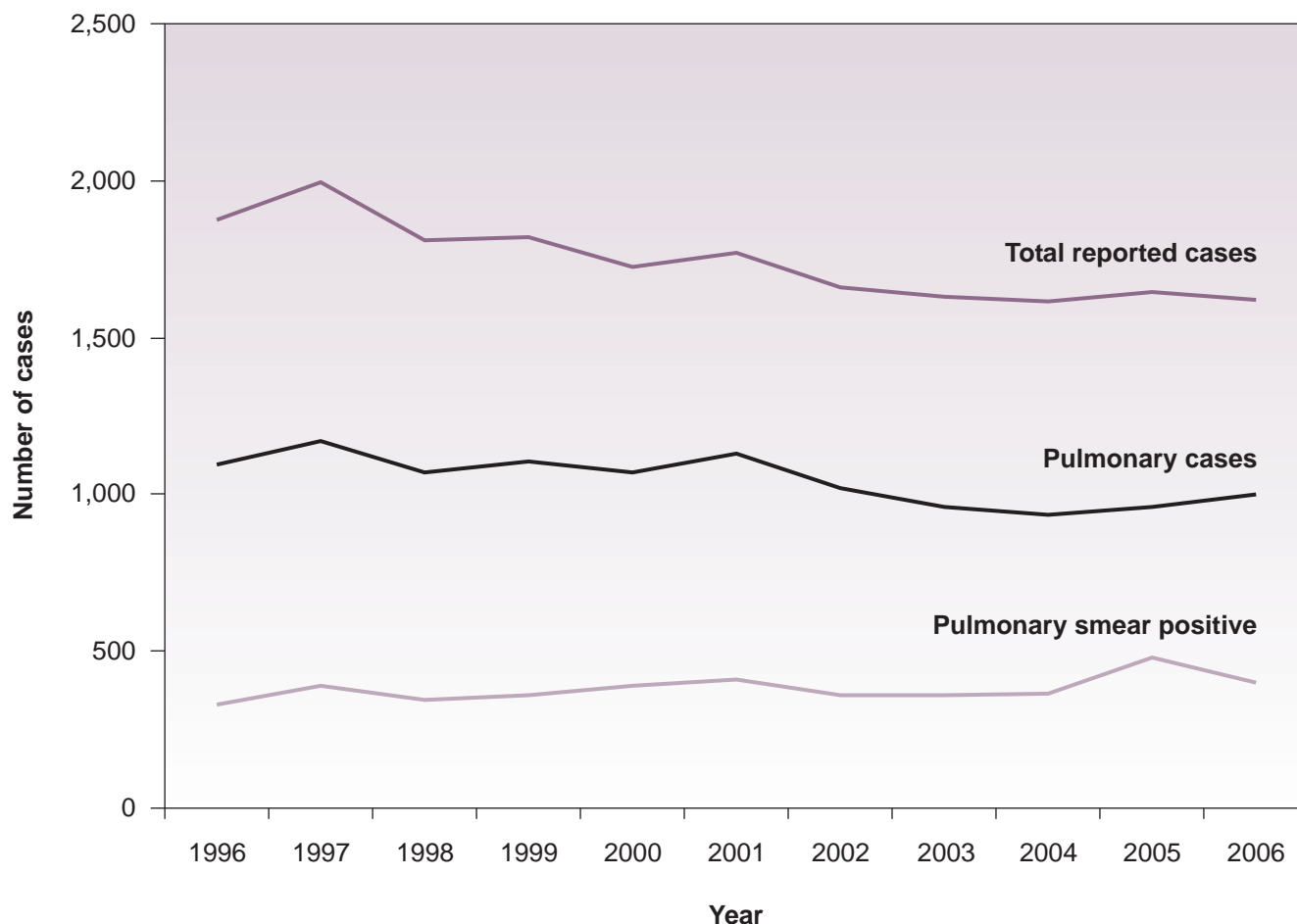
**Tuberculosis cases by main diagnostic site and origin – Canada: 2006**



Of the 999 cases of pulmonary TB reported, smear status was available for 787 cases. Of these, 51% (402 cases) were smear-positive (sputum was obtained from direct collection, through bronchoscopy or gastric aspirate). 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 1996 to 2006.

**Figure 14**

**Pulmonary sputum smear positive tuberculosis cases – Canada: 1996-2006**



### **CASE DETECTION**

The majority of cases (75%) were diagnosed when the patient presented with symptoms to a medical professional (*Appendix I, Table 17*). Overall, the percentage of all cases identified through contact tracing was < 10.0%; however 36% of cases in the Aboriginal population were identified by this method.

### **DEATHS**

Including the data available with the outcome reports, of the 1,642 cases diagnosed in 2005, 123 (7%) were reported to have died before or during treatment. Of the 123 deaths TB was reported as the underlying cause of death for 21 cases (17%). TB contributed to death, but was not the underlying cause for 54 cases (44%). Cause of death was not reported for 4 cases (*Appendix I, Tables 21 and 22*).

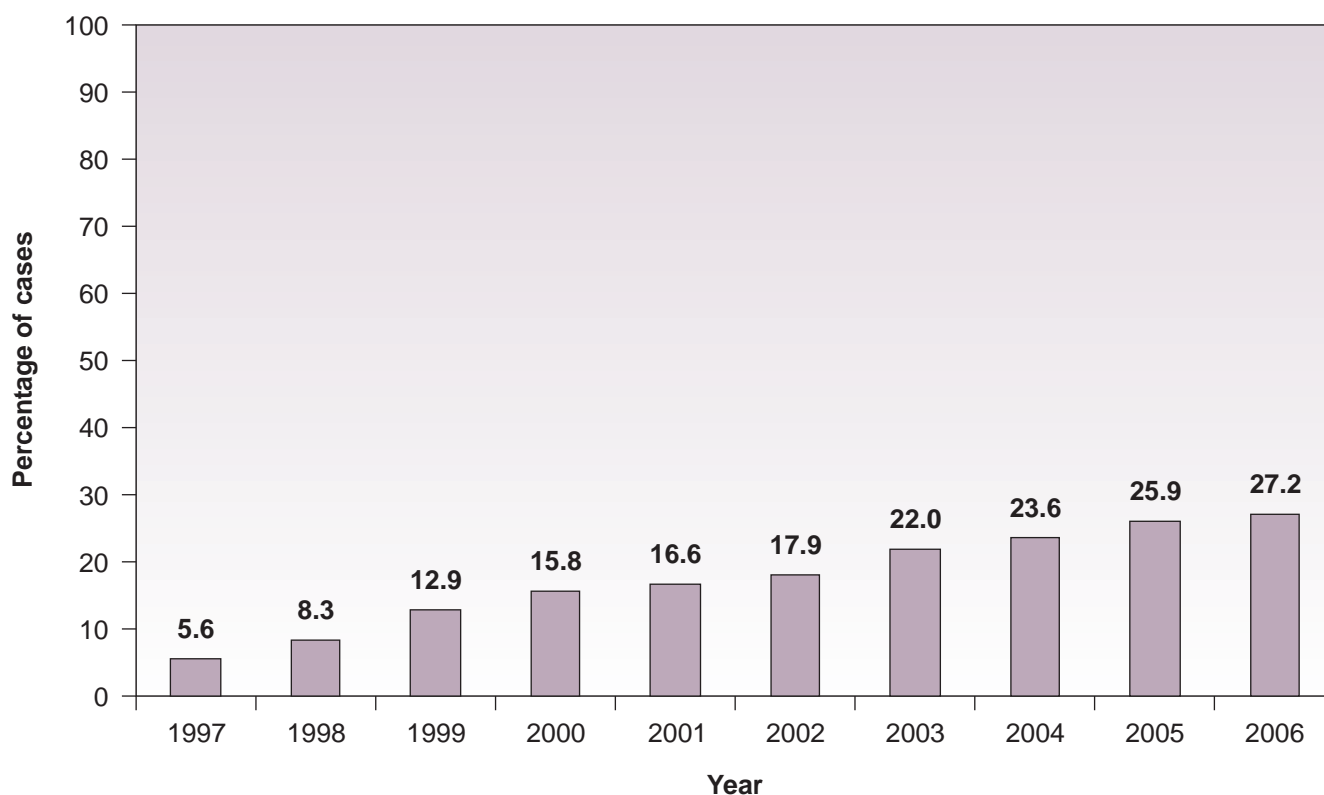
Of the 1,619 new and relapsed cases diagnosed in 2006, 111 were reported to have died in 2006. Of these, TB was reported as the underlying cause of death for 20 cases (18%). TB contributed to death, but was not the underlying cause for 49 cases (44%). Cause of death was not reported for 9 cases (*Appendix I, Tables 21 and 22*). The total number of cases that died and were diagnosed in 2006 will be updated in the 2007 report to account for deaths reported on the outcome forms.

## **HIV STATUS**

HIV status was reported for 441 cases (27%) (*Figure 15; Appendix I, Table 23*). Of these, 62 (14%) were HIV-positive.

**Figure 15**

**Percentage of tuberculosis cases for which HIV status was reported – Canada: 1997-2006**



## **PATTERNS OF DRUG RESISTANCE**

Of the 1,619 cases reported in 2006, 1,315 cases were culture positive. Of these, resistance information was available for 1,248 cases. Ninety-one percent of the cases showed no resistance to first-line anti-TB drugs (isoniazid, rifampin, ethambutol or pyrazinamide)<sup>3</sup>, 8% percent were resistant to one drug and the remaining 1% showed patterns of resistance to two or more drugs prescribed.

<sup>3</sup> As of 2005, streptomycin was considered a second-line TB antibiotic in Canada, even though it may be used for initial treatment.

For the 113 cases that were resistant to at least one drug, 84% were mono-resistant. Eleven percent of resistant cases were multidrug-resistant (MDR) which is defined as resistance to at least isoniazid and rifampin. The remaining 5% of the resistant cases were poly-resistant. Cases mono-resistant to isoniazid accounted for 67% of all reported resistance. For those diagnosed in 2006, no cases were reported to be extensively-drug resistant (XDR-TB).<sup>4</sup>

Foreign-born cases accounted for 80% of the 113 resistance cases and 100% of the MDR-TB cases. Thirteen percent of the resistant cases were in the Canadian-born non-Aboriginal cases and five percent were in the Canadian-born Aboriginal cases (*Appendix I, Table 15*).

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<sup>4</sup> Extensively drug-resistant (XDR) TB is resistant to at least isoniazid and rifampin from among the first-line anti-TB drugs, plus resistance to any fluoroquinolone and to at least one of three injectable second-line drugs (capreomycin, kanamycin and amikacin). For additional information on drug resistance, please refer to Tuberculosis: Drug resistance in Canada, 2006 ([www.phacaspc.gc.ca/publicat/tbdr06/index.html](http://www.phacaspc.gc.ca/publicat/tbdr06/index.html)) which reported drug susceptibility results for *Mycobacterium* isolates tested in 2006.

## SECTION II – 2005 TREATMENT OUTCOMES

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### NATIONAL TRENDS

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 1642 cases reported in 2005, 1,468 cases had treatment outcomes reported to the CTBRS. For the outcomes that were reported, the majority of cases (83%) were reported as cured or as treatment completed without culture at the end of treatment (1,217 cases). Of the remaining cases for which treatment outcome was known, 123 (7%) died prior to completing treatment.

The majority of individuals were reported to have received treatment as per the *Canadian Tuberculosis Standards, 6th edition*<sup>5</sup>. Drug regimen reporting was complete for 952 cases. Almost eighty percent of these cases received three or more anti-tuberculosis drugs (*Appendix I, Table 25*).

For 1,421 patients for whom mode of treatment was reported, 56% were on Directly Observed Therapy (DOT). An additional 38% self-administered their medications. Eighty-six percent of those patients on DOT and 88% who self-administered were reported to have been cured or to have completed treatment (Figure 16).

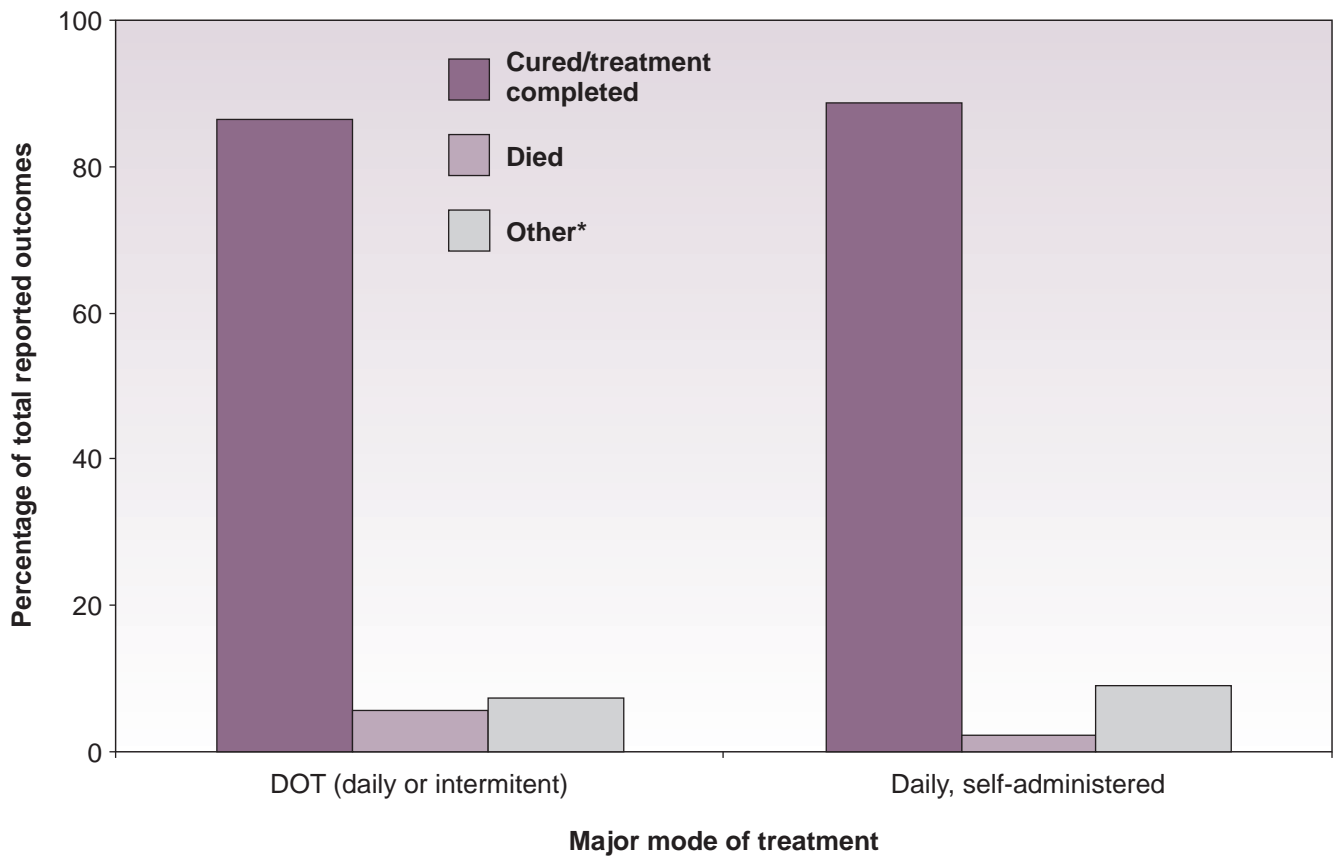
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<sup>5</sup> Long R, Ellis E, editors, *Canadian Tuberculosis Standards*, 6<sup>th</sup> ed. Ottawa: Public Health Agency of Canada and the Canadian Lung Association/Canadian Thoracic Society; 2007.



**Figure 16**

**Treatment outcome status of tuberculosis cases by major mode of treatment – 2005**



\* Other: absconded, transferred, treatment ongoing, unknown

## 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 of such cases between 1996 to 2006 was 2.6% (see Table E).

**Table E**

**Average rate of change in the number of cases and in incidence rate for new and relapsed TB cases in Canada: 1996–2006**

Reporting year	Number of reported cases	Rates	Rate of change (%)	
			Case	Rate
1996	1,877	6.3		
1997	1,994	6.7	↑ 6.2	↑ 6.4
1998	1,810	6.0	↓ 9.2	↓ 10.4
1999	1,820	6.0	↑ 0.6	↓ 0
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	5.1	↓ 2.1	↓ 3.8
2004	1,613	5.0	↓ 1.1	↓ 2.0
2005	1,642	5.1	↑ 1.8	↑ 2.0
2006	1,619	5.0	↓ 1.4	↓ 2.0
<b>Average rate of change</b>			<b>↓ 1.4</b>	<b>↓ 2.3</b>

In 2006, the Canadian Tuberculosis Committee<sup>6</sup> (CTC) reviewed this national goal in view of the targets set in the *Global Plan to Stop TB 2006–2015*<sup>7</sup> to reduce the global burden of TB disease in 2015 by 50% relative to 1990 levels. The CTC recommended a target Canadian TB (new and relapsed) incidence rate of 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 3.5 per cent annual reduction in the incidence rate between 2006 and 2015.

<sup>6</sup> 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>.

<sup>7</sup> 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*, 6<sup>th</sup> 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 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 2005, after removing the patients who died or who transferred out of the region there were 1,217 patients who were deemed cured or completed treatment representing 82% of cases. There were 174 cases for whom an outcome result was not reported.

Between 2000 and 2005 there were 766 relapsed cases representing 8% of all the cases report during that period. Of these relapsed cases, 333 (43%) were known to have been previously diagnosed in Canada. The date of previous diagnosis date was reported for 277 (83%) cases, 44 (16%) of whom were diagnosed 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 five years of reporting (2000 – 2005).

## SECTION IV – INTERNATIONAL REPORTING

PHAC provides data to the WHO on an annual basis. This reporting focuses only on pulmonary smear positive cases and the treatment outcome 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 F provides the reported treatment outcome data for laboratory confirmed pulmonary cases in Canada between 1998 and 2005, inclusive. Laboratory-confirmed cases include smear-positive cases plus any cases confirmed by additional laboratory methods.

**Table F**

**Treatment outcome of laboratory confirmed pulmonary cases, Canada: 1998–2005<sup>8</sup>**

Treatment outcome	1998		1999		2000		2001		2002		2003		2004		2005	
	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	185	245	222	164	234	150	264	194	206	141	202	168	251	168	243	131
Cured	68	72	76	70	107	72	78	57	84	9	55	13	46	15	40	3
Completed	89	99	127	55	85	53	140	98	99	107	123	127	159	134	172	106
Cured or completed (% of total)	157 (85%)	171 (70%)	203 (91%)	125 (76%)	192 (82%)	125 (83%)	218 (83%)	155 (80%)	183 (89%)	116 (82%)	178 (88%)	140 (83%)	205 (82%)	149 (89%)	212 (87%)	109 (83%)
Died	8	28	6	24	22	10	26	23	11	13	17	17	27	8	10	9
Failed	0	0	0	0	2	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
Transferred	2	20	2	5	1	8	3	10	2	4	2	5	5	3	6	6
Treatment ongoing	3	2	4	3	8	2	3	1	1	0	0	1	7	2	6	1
Unknown	14	21	2	4	3	2	5	0	5	2	2	2	4	4	4	3

<sup>8</sup> Numbers may differ from *Global Tuberculosis Control, WHO Report 2007* (which reports 2005 case data and 2004 treatment outcome data) due to late reporting of cases to the Public Health Agency of Canada.

## CONCLUSION

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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 and foreign-born populations has shown a minimal decrease. 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, especially with the upward shift in the past two years.

Pulmonary tuberculosis makes up the majority of the cases reported in Canada. The number of sputum smear positive cases, currently 51%, 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 27% of cases, of which 14% were HIV sero-positive. Moreover, 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 2006 to be 6.2%.<sup>9</sup> 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.<sup>10</sup> 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 83% of DOTS and 87% of non-DOTS, (total 84%), were cured or had completed treatment which was very close to the WHO international target of 85%.

In keeping with the targets set in the *Global Plan to Stop TB 2006–2015*<sup>11</sup> 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 3.5% 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.

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<sup>9</sup> Global tuberculosis control: surveillance, planning, financing, WHO report 2008. Geneva, World Health Organization (WHO/HTM/TB/2008.393).

<sup>10</sup> Long R, Ellis E, editors, *Canadian Tuberculosis Standards*, 6<sup>th</sup> 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.

<sup>11</sup> Stop TB Partnership and World Health Organization. *Global Plan to Stop TB 2006–2015*. Geneva, World Health Organization, 2006 (WHO/HTM/STB/2006.35).

# APPENDICES

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Appendix IV – WHO estimated incidence of TB, 22 high burden countries: 2006

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Appendix VIII – The Canadian Tuberculosis Committee

# APPENDIX I

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**Table 1A**

**Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 – Canada and provinces/territories: 1996-2006**

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.	
1996	Cases	24	3	15	15	332	780	97	113	140	316	6	36	-
	Rate	4.3	2.2	1.6	2.0	4.6	7.0	8.6	11.1	5.0	8.2	19.1	53.4	-
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	5.4	8.3	6.4	56.6	-
1999	Cases	12	2	15	15	314	698	132	116	149	328	1	23	15
	Rate	2.2	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	6.9	-	9.6	93.9
2003	Cases	7	3	6	12	257	693	127	91	110	305	1	12	7
	Rate	1.4	2.2	0.6	1.6	3.4	5.7	10.9	9.1	3.5	7.3	3.3	28.4	24.0
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	7.1	13.0	23.4	108.0
2005	Cases	9	1	7	6	255	643	114	139	146	266	3	8	45
	Rate	1.8	0.7	0.7	0.8	3.4	5.1	9.7	14.0	4.5	6.2	9.7	18.7	149.9
2006	Cases	12	0	10	2	227	640	134	87	131	319	3	6	48
	Rate	2.4	-	1.1	0.3	3.0	5.0	11.4	8.8	3.9	7.4	9.6	14.2	157.9

Table 1B

## Reported new active tuberculosis cases and incidence rate per 100,000 – Canada and provinces/territories: 1996–2006

Year of diagnosis	CANADA	Province/territory										Nvt.		
		N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.		Y.T.	N.W.T.
1996	Cases	21	3	11	9	294	681	84	109	129	287	4	31	-
	Rate	3.8	2.2	1.2	1.2	4.1	6.2	7.4	10.7	4.6	7.4	12.7	46.0	-
1997	Cases	13	4	5	6	323	682	86	110	150	360	2	24	-
	Rate	2.4	2.9	0.5	0.8	4.4	6.1	7.6	10.8	5.3	9.1	6.3	35.5	-
1998	Cases	7	2	16	7	262	631	104	91	146	306	2	32	-
	Rate	1.3	1.5	1.7	0.9	3.6	5.7	9.1	8.9	5.0	7.7	6.4	47.6	-
1999	Cases	11	2	12	13	278	596	123	110	141	304	1	17	15
	Rate	2.1	1.5	1.3	1.7	3.8	5.2	10.8	10.8	4.8	7.6	3.2	41.8	55.9
2000	Cases	10	2	3	8	297	599	88	100	120	264	2	7	40
	Rate	1.9	1.5	0.3	1.1	4.0	5.1	7.7	9.9	4.0	6.5	6.6	17.3	145.5
2001	Cases	17	2	5	10	233	610	108	104	106	337	0	8	34
	Rate	3.3	1.5	0.5	1.3	3.1	5.1	9.4	10.4	3.4	8.2	0.0	19.6	120.9
2002	Cases	6	1	7	10	252	631	92	83	121	252	0	4	22
	Rate	1.2	0.7	0.7	1.3	3.4	5.2	8.0	8.3	3.9	6.2	0.0	9.6	76.6
2003	Cases	4	1	5	11	240	613	118	82	104	275	1	9	7
	Rate	0.6	0.7	0.5	1.5	3.2	5.0	10.2	8.2	3.3	6.6	3.3	21.3	24.0
2004	Cases	4	1	8	9	204	633	132	63	100	277	4	9	24
	Rate	0.8	0.7	0.9	1.2	2.7	5.1	11.3	6.3	3.1	6.6	13.0	21.0	81.0
2005	Cases	8	1	7	6	223	586	105	127	131	248	3	8	39
	Rate	1.6	0.7	0.7	0.8	2.9	4.7	8.9	12.8	4.0	5.8	9.7	18.7	129.9
2006	Cases	9	0	9	2	207	541	125	79	123	286	3	5	44
	Rate	1.8	0.0	1.0	0.3	2.7	4.3	10.6	8.0	3.6	6.6	9.6	11.8	144.7

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: 1996-2006**

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.	
1996	Cases	177	3	0	3	5	36	71	9	4	11	29	1	5	-
	Rate	0.6	0.5	0.0	0.3	0.7	0.5	0.6	0.8	0.4	0.4	0.7	3.2	7.4	-
1997	Cases	197	2	1	2	1	34	70	10	11	16	43	0	7	-
	Rate	0.7	0.4	0.7	0.2	0.1	0.5	0.7	0.9	1.1	0.6	1.1	0.0	10.4	-
1998	Cases	153	1	0	2	2	22	66	12	7	12	23	0	6	-
	Rate	0.5	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	158	1	0	2	1	33	69	9	6	8	23	0	6	0
	Rate	0.5	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	147	0	0	0	1	18	70	10	4	13	21	1	3	6
	Rate	0.5	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	151	2	1	3	0	16	59	5	10	10	39	0	0	6
	Rate	0.5	0.4	0.7	0.3	0.0	0.2	0.5	0.4	1.0	0.4	1.0	0.0	0.0	21.3
2002	Cases	137	3	0	2	1	19	56	6	6	7	32	0	0	5
	Rate	0.4	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	105	3	1	1	1	15	35	9	9	6	22	0	3	0
	Rate	0.3	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	120	3	0	0	1	15	42	12	7	9	22	0	1	8
	Rate	0.4	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	106	1	0	0	0	12	33	9	12	15	18	0	0	6
	Rate	0.3	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	125	3	0	1	0	20	39	9	8	8	32	0	1	4
	Rate	0.4	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

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: 1996–2006

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 +	
1996	Cases	14	66	63	216	361	305	191	195	251	215	0
	Rate	3.7	4.2	1.6	5.4	7.6	6.1	5.0	7.7	12.0	14.4	-
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	9.4	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	3.1	3.0	1.1	4.9	7.2	5.0	4.4	5.2	9.1	11.9	-
2003	Cases	7	34	41	198	332	277	206	153	178	203	2
	Rate	5.1	2.5	1.0	4.6	7.6	5.3	4.4	4.7	8.1	10.8	-
2004	Cases	6	33	45	198	324	272	198	167	177	193	0
	Rate	5.0	2.4	1.1	4.5	7.4	5.3	4.1	4.9	8.0	10.0	-
2005	Cases	10	38	71	254	279	278	212	144	168	188	0
	Rate	5.1	2.8	1.8	5.8	6.3	5.4	4.3	4.1	7.5	9.5	-
2006	Cases	10	45	50	252	250	281	196	154	165	216	0
	Rate	5.0	3.3	1.3	5.7	5.6	5.6	3.9	4.2	7.2	10.6	-

**Table 2B**  
**Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – males – Canada:**  
**1996-2006**

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 +		
1996	Cases	9	30	35	107	186	162	104	106	143	131	0	
	Rate	4.6	3.7	1.7	5.2	7.8	6.5	5.5	8.5	14.9	23.6	-	
1997	Cases	6	27	25	94	195	161	118	131	141	164	0	
	Rate	3.3	3.4	1.2	4.6	8.3	6.3	6.0	10.3	14.5	28.4	-	
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	24.6	-	
1999	Cases	20	28	24	99	176	141	117	96	144	154	0	
	Rate	11.5	3.7	1.1	4.7	7.9	5.4	5.6	7.1	14.4	24.9	-	
2000	Cases	10	27	24	97	168	149	117	88	101	143	0	
	Rate	5.8	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	3.5	2.1	2.1	4.2	7.0	6.3	5.6	7.7	12.5	21.5	-	
2002	Cases	5	18	15	95	167	142	105	90	116	110	0	
	Rate	3.0	2.5	0.7	4.3	7.6	5.4	4.6	5.9	11.3	15.9	-	
2003	Cases	3	21	14	102	162	161	127	86	105	113	0	
	Rate	1.8	3.0	0.7	4.6	7.3	6.1	5.4	5.4	10.1	15.7	-	
2004	Cases	5	22	23	85	146	147	104	99	110	107	0	
	Rate	5.4	3.1	1.1	3.8	6.6	5.7	4.4	5.9	10.4	14.4	-	
2005	Cases	6	20	33	128	142	154	124	83	97	122	0	
	Rate	5.7	2.9	1.6	5.7	6.3	6.0	5.1	4.8	9.1	15.8	-	
2006	Cases	6	23	24	133	114	147	116	85	88	128	0	
	Rate	5.3	3.3	1.2	5.9	5.1	5.8	4.6	4.7	8.1	15.9	-	

Table 2C

Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – females – Canada: 1996-2006

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 +		
1996	Cases	5	36	28	109	175	143	87	89	108	84	0	
	Rate	2.7	4.7	1.4	5.6	7.5	5.7	4.6	6.9	9.6	9.0	-	
1997	Cases	2	23	32	128	196	130	98	101	109	114	0	
	Rate	1.2	3.0	1.6	6.5	8.5	5.1	5.0	7.7	9.6	11.8	-	
1998	Cases	4	29	34	109	152	143	84	69	110	109	0	
	Rate	2.4	3.9	1.7	5.5	6.8	5.5	4.1	5.1	9.7	10.9	-	
1999	Cases	12	27	37	105	163	113	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	9.1	9.0	-	
2001	Cases	5	18	25	88	169	121	84	73	91	112	0	
	Rate	3.1	2.6	1.3	4.3	7.9	4.6	3.7	4.9	8.0	10.2	-	
2002	Cases	5	24	30	115	145	121	96	71	83	107	0	
	Rate	3.1	3.5	1.5	5.5	6.8	4.6	4.2	4.5	7.2	9.5	-	
2003	Cases	4	13	27	96	170	116	79	67	73	90	0	
	Rate	2.5	1.9	1.4	4.6	7.9	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	8.2	4.9	3.9	4.0	5.8	7.3	-	
2005	Cases	4	18	38	126	137	124	88	61	71	66	0	
	Rate	2.4	2.7	2.0	5.9	6.3	4.9	3.6	3.4	6.0	5.4	-	
2006	Cases	4	22	26	119	136	134	80	69	77	88	0	
	Rate	2.4	3.3	1.4	5.5	6.2	5.3	3.2	3.7	6.5	7.1	-	

**Table 3**

**Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by birthplace – Canada: 1996-2006**

Birthplace	Year of diagnosis												
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006		
Canadian-born	Aboriginal												
	North American Indian	Cases	218	232	205	255	174	213	173	206	206	219	230
		Rate	-	-	-	-	-	29.9	23.8	27.8	27.2	28.4	29.3
	Status (registered) Indian	Cases	218	212	191	247	167	199	165	204	202	213	223
		Rate	34.6	32.8	29.0	36.6	24.2	28.3	23.0	27.9	26.4	27.4	28.2
	Non-status Indian	Cases		20	14	8	7	14	8	2	4	6	7
		Rate	-	-	-	-	-	-	-	-	-	-	-
	Inuit	Cases	26	18	35	28	56	53	33	11	41	63	61
		Rate	45.5	30.9	58.7	45.9	91.5	111.4	67.8	22.1	80.4	120.7	114.3
	Metis	Cases	51	32	39	31	29	49	35	30	21	35	29
		Rate	-	-	-	-	-	16.0	11.3	9.5	6.6	10.8	8.8
	<b>Total Aboriginal</b>	<b>Cases</b>	<b>295</b>	<b>282</b>	<b>279</b>	<b>314</b>	<b>259</b>	<b>315</b>	<b>241</b>	<b>247</b>	<b>268</b>	<b>317</b>	<b>320</b>
	<b>Rate</b>	<b>24.8</b>	<b>23.2</b>	<b>22.5</b>	<b>25.1</b>	<b>20.5</b>	<b>29.5</b>	<b>22.2</b>	<b>22.3</b>	<b>23.8</b>	<b>27.6</b>	<b>27.4</b>	
Non-Aboriginal	Cases	374	403	347	326	314	282	259	231	214	218	201	
	Rate	1.6	1.7	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.9	0.8	
<b>Total Canadian-born</b>	<b>Cases</b>	<b>669</b>	<b>685</b>	<b>626</b>	<b>640</b>	<b>573</b>	<b>597</b>	<b>500</b>	<b>478</b>	<b>482</b>	<b>535</b>	<b>521</b>	
	<b>Rate</b>	<b>2.7</b>	<b>2.8</b>	<b>2.5</b>	<b>2.6</b>	<b>2.2</b>	<b>2.4</b>	<b>2.0</b>	<b>1.9</b>	<b>1.9</b>	<b>2.1</b>	<b>2.0</b>	
Foreign-born	Africa, High HIV Prevalence (AFR-High)	Cases	54	79	79	66	66	77	90	85	87	93	104
		Rate	-	-	-	-	-	48.8	53.5	48.1	48.1	49.3	52.4
	Africa, Low HIV Prevalence (AFR-Low)	Cases	5	12	9	12	14	8	19	22	21	26	21
		Rate	-	-	-	-	-	11.3	24.5	26.0	23.7	27.6	20.5
	American Region - Latin American and Caribbean Countries (AMR)	Cases	92	99	87	70	80	60	62	75	65	71	47
		Rate	-	-	-	-	-	8.8	8.8	10.3	8.7	9.4	6.0

...cont'd

**Table 3** *Cont'd*

**Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by birthplace – Canada: 1996–2006**

Birthplace	Year of diagnosis										
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Foreign-born ( <i>cont'd</i> )	Cases	109	124	115	115	97	101	76	71	56	53
	Rate	-	-	-	-	-	3.8	2.8	2.7	2.1	2.0
Established Market Economies and Central Europe (EME-CEUR)	Cases	15	28	33	32	30	23	36	26	29	17
	Rate	-	-	-	-	-	9.0	13.2	8.6	9.1	5.1
Eastern Europe (EEUR)	Cases	147	119	104	113	117	107	119	115	123	121
	Rate	-	-	-	-	-	22.7	22.8	19.0	19.1	17.8
Eastern Mediterranean (EMR)	Cases	177	200	197	193	208	237	222	267	239	247
	Rate	-	-	-	-	-	47.6	41.0	43.3	36.8	35.6
South-East Asia (SEAR)	Cases	553	573	508	513	477	456	456	448	389	404
	Rate	-	-	-	-	-	34.7	32.8	29.4	24.6	24.5
Western Pacific Region (WPR)	Cases	26	46	28	47	44	53	39	15	31	28
	Rate	-	-	-	-	-	-	-	-	-	-
Unknown	Cases	1,178	1,280	1,160	1,161	1,133	1,122	1,119	1,115	1,057	1,042
	Rate	22.5	23.9	21.2	20.8	19.6	18.3	17.6	16.6	15.4	14.8
Total foreign-born	Cases	30	29	24	19	18	54	47	16	50	56
	Rate	-	-	-	-	-	-	-	-	-	-
Unknown	Cases	1,877	1,994	1,810	1,820	1,724	1,773	1,666	1,613	1,642	1,619
	Rate	6.3	6.7	6.0	6.0	5.6	5.7	5.3	5.0	5.1	5.0
TOTAL	Cases	1,877	1,994	1,810	1,820	1,724	1,773	1,666	1,613	1,642	1,619
	Rate	6.3	6.7	6.0	6.0	5.6	5.7	5.3	5.0	5.1	5.0



**Table 4**

**Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by main diagnostic site – Canada: 1996-2006**

Main diagnostic site		Year of diagnosis											
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	
Respiratory	Primary*	Cases	120	131	130	154	99	120	88	79	94	106	91
		Rate	0.4	0.4	0.4	0.5	0.3	0.4	0.3	0.2	0.3	0.3	0.3
	Pulmonary**	Cases	1,097	1,171	1,071	1,105	1,069	1,132	1,019	962	935	960	999
		Rate	3.7	3.9	3.6	3.6	3.5	3.6	3.2	3.0	2.9	3.0	3.1
Other respiratory†	Cases	69	75	63	62	64	52	57	64	98	117	99	
	Rate	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	
Nonrespiratory	Miliary	Cases	40	50	30	25	27	15	17	20	30	24	22
		Rate	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
	Meninges and CNS	Cases	18	25	24	15	16	17	18	25	19	21	21
		Rate	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Peripheral lymph node	Cases	241	268	276	244	258	235	242	249	251	246	238	
	Rate	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	
Other‡	Cases	270	259	189	189	162	180	194	193	185	168	149	
	Rate	0.9	0.9	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.5	0.5	
Unknown	Cases	22	15	27	26	29	22	31	39	1	0	0	
	Rate	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	
Total cases	Cases	<b>1,877</b>	<b>1,994</b>	<b>1,810</b>	<b>1,820</b>	<b>1,724</b>	<b>1,773</b>	<b>1,666</b>	<b>1,631</b>	<b>1,613</b>	<b>1,642</b>	<b>1,619</b>	
	Rate	<b>6.3</b>	<b>6.7</b>	<b>6.0</b>	<b>6.0</b>	<b>5.6</b>	<b>5.7</b>	<b>5.3</b>	<b>5.1</b>	<b>5.0</b>	<b>5.1</b>	<b>5.0</b>	

\* Primary includes primary respiratory tuberculosis and tuberculous plerisy 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: 2006**

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	1	0	5	1	0	0	0	0	2
	Rate	0.0	0.0	0.0	0.0	1.3	0.0	42.1	2.3	0.0	0.0	0.0	0.0	284.5
1 – 4	Cases	0	0	0	0	6	7	14	5	2	0	0	0	
	Rate	0.0	0.0	0.0	0.0	2.0	12.5	29.4	3.0	1.2	0.0	0.0	0.0	68.7
5 – 14	Cases	1	0	0	0	1	10	9	7	7	1	0	3	
	Rate	1.8	0.0	0.0	0.0	0.1	6.3	6.9	1.6	1.4	25.2	0.0	45.1	
15 – 24	Cases	3	0	1	0	45	19	21	10	38	1	1	19	
	Rate	4.4	0.0	0.8	0.0	4.7	11.2	14.0	2.0	6.4	21.0	14.4	326.1	
25 – 34	Cases	1	0	2	1	27	25	12	23	38	1	0	6	
	Rate	1.6	0.0	1.7	1.0	2.6	16.1	9.8	4.4	6.6	26.4	0.0	116.5	
35 – 44	Cases	2	0	1	0	40	26	6	17	60	0	0	9	
	Rate	2.5	0.0	0.7	0.0	3.5	15.5	4.6	3.3	8.9	0.0	0.0	231.2	
45 – 54	Cases	1	0	1	1	26	17	9	13	47	0	1	2	
	Rate	1.2	0.0	0.7	0.8	2.1	4.1	6.2	2.5	6.9	0.0	17.6	71.8	
55 – 64	Cases	0	0	1	0	17	16	6	16	36	0	0	2	
	Rate	0.0	0.0	0.8	0.0	1.8	12.8	5.9	4.9	7.1	0.0	0.0	125.2	
65 – 74	Cases	1	0	1	0	24	7	1	16	33	0	3	3	
	Rate	2.6	0.0	1.4	0.0	4.1	9.0	1.4	8.5	10.6	0.0	222.2	443.8	
75 +	Cases	3	0	3	0	40	7	4	23	58	0	1	0	
	Rate	10.6	0.0	4.7	0.0	8.1	8.5	5.1	14.0	20.0	0.0	138.9	0.0	
<b>TOTAL</b>	<b>Cases</b>	<b>12</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>227</b>	<b>134</b>	<b>87</b>	<b>131</b>	<b>319</b>	<b>3</b>	<b>6</b>	<b>48</b>	
	<b>Rate</b>	<b>5.0</b>	<b>0.0</b>	<b>1.1</b>	<b>0.3</b>	<b>3.0</b>	<b>11.4</b>	<b>8.8</b>	<b>3.9</b>	<b>7.4</b>	<b>9.6</b>	<b>14.2</b>	<b>157.9</b>	

**Table 5B**

**Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – males – Canada and provinces/territories: 2006**

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	0	1	0	3	1	0	0	0	0	1
	Rate	0.0	0.0	0.0	0.0	0.0	1.5	0.0	50.5	4.6	0.0	0.0	0.0	0.0	300.3
1 – 4	Cases	0	0	0	0	4	6	3	7	2	0	0	0	0	1
	Rate	0.0	0.0	0.0	0.0	2.6	2.2	10.5	28.6	2.4	0.0	0.0	0.0	0.0	66.7
5 – 14	Cases	0	0	0	0	0	6	5	4	3	3	1	0	0	2
	Rate	0.0	0.0	0.0	0.0	0.0	0.7	6.1	6.0	1.4	1.2	51.9	0.0	0.0	58.2
15 – 24	Cases	1	0	0	0	25	48	9	14	5	19	1	1	10	
	Rate	2.9	0.0	0.0	0.0	5.1	5.4	10.4	18.0	1.9	6.3	39.7	28.3	340.7	
25 – 34	Cases	0	0	2	0	11	51	16	6	12	12	1	0	3	
	Rate	0.0	0.0	3.5	0.0	2.1	5.9	20.2	9.7	4.4	4.2	56.1	0.0	117.3	
35 – 44	Cases	0	0	1	0	22	68	15	4	7	24	0	0	6	
	Rate	0.0	0.0	1.4	0.0	3.8	6.6	17.7	6.1	2.6	7.2	0.0	0.0	291.3	
45 – 54	Cases	1	0	1	0	14	45	12	6	6	30	0	0	1	
	Rate	2.4	0.0	1.4	0.0	2.3	4.8	13.8	8.1	2.3	8.9	0.0	0.0	63.2	
55 – 64	Cases	0	0	0	0	10	29	12	4	4	24	0	0	2	
	Rate	0.0	0.0	0.0	0.0	2.2	4.3	19.3	7.9	2.4	9.6	0.0	0.0	269.9	
65 – 74	Cases	0	0	1	0	11	40	3	1	11	16	0	3	2	
	Rate	0.0	0.0	2.9	0.0	4.1	9.7	8.1	3.0	12.0	10.5	0.0	412.1	547.9	
75 +	Cases	1	0	2	0	25	49	4	1	12	34	0	0	0	
	Rate	8.3	0.0	8.1	0.0	13.6	15.8	12.6	3.2	18.0	28.3	0.0	0.0	0.0	
<b>TOTAL</b>	<b>Cases</b>	<b>3</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>122</b>	<b>343</b>	<b>79</b>	<b>50</b>	<b>63</b>	<b>162</b>	<b>3</b>	<b>4</b>	<b>28</b>	
	<b>Rate</b>	<b>1.2</b>	<b>0.0</b>	<b>1.5</b>	<b>0.0</b>	<b>3.2</b>	<b>5.5</b>	<b>13.5</b>	<b>10.2</b>	<b>3.7</b>	<b>7.6</b>	<b>19.1</b>	<b>18.3</b>	<b>179.0</b>	

**Table 5C**

**Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group – females – Canada and provinces/territories: 2006**

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	4	0	0	0	0	1	0	0	2	0	0	0	0	1
	Rate	2.4	0.0	0.0	0.0	0.0	2.6	0.0	0.0	33.8	0.0	0.0	0.0	0.0	270.3
1 – 4	Cases	22	0	0	0	0	2	3	4	7	3	2	0	0	1
	Rate	3.3	0.0	0.0	0.0	0.0	1.4	1.1	14.6	30.3	3.7	2.5	0.0	0.0	70.9
5 – 14	Cases	26	1	0	0	0	1	5	5	5	4	4	0	0	1
	Rate	1.4	3.8	0.0	0.0	0.0	0.2	0.6	6.5	7.8	1.9	1.7	0.0	0.0	31.1
15 – 24	Cases	119	2	0	1	0	20	46	10	7	5	19	0	0	9
	Rate	5.5	6.0	0.0	1.6	0.0	4.2	5.4	12.1	9.7	2.0	6.6	0.0	0.0	311.3
25 – 34	Cases	136	1	0	0	1	16	63	9	6	11	26	0	0	3
	Rate	6.2	3.2	0.0	0.0	2.1	3.1	7.2	11.8	9.9	4.4	9.1	0.0	0.0	115.7
35 – 44	Cases	134	2	0	0	0	18	52	11	2	10	36	0	0	3
	Rate	5.3	4.9	0.0	0.0	0.0	3.2	5.1	13.4	3.1	3.9	10.6	0.0	0.0	163.8
45 – 54	Cases	80	0	0	0	1	12	33	5	3	7	17	0	1	1
	Rate	3.2	0.0	0.0	0.0	1.6	1.9	3.4	5.8	4.2	2.8	4.9	0.0	35.7	83.1
55 – 64	Cases	69	0	0	1	0	7	31	4	2	12	12	0	0	0
	Rate	3.7	0.0	0.0	1.7	0.0	1.5	4.5	6.3	3.9	7.5	4.7	0.0	0.0	0.0
65 – 74	Cases	77	1	0	0	0	13	36	4	0	5	17	0	0	1
	Rate	6.5	5.1	0.0	0.0	0.0	4.2	7.9	9.8	0.0	5.1	10.7	0.0	0.0	321.5
75 +	Cases	88	2	0	1	0	15	28	3	3	11	24	0	1	0
	Rate	7.1	10.9	0.0	2.5	0.0	4.8	5.9	5.9	6.4	11.3	14.1	0.0	274.7	0.0
<b>TOTAL</b>	<b>Cases</b>	<b>755</b>	<b>9</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>105</b>	<b>297</b>	<b>55</b>	<b>37</b>	<b>68</b>	<b>157</b>	<b>0</b>	<b>2</b>	<b>20</b>
	<b>Rate</b>	<b>4.6</b>	<b>3.5</b>	<b>0.0</b>	<b>0.6</b>	<b>0.5</b>	<b>2.7</b>	<b>4.6</b>	<b>9.3</b>	<b>7.4</b>	<b>4.1</b>	<b>7.2</b>	<b>0.0</b>	<b>9.7</b>	<b>135.5</b>

**Table 6**

**Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by birthplace – Canada and provinces/territories: 2006**

Birthplace	CANADA	Province/territory																		
		N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	North								
Canadian-born																				
	Cases	230	0	0	0	0	4	8	96	54	15	46	7							
	Rate	29.3	0.0	0.0	0.0	0.0	5.3	4.6	85.5	51.3	13.7	32.1	33.2							
	Cases	223	0	0	0	0	0	8	95	54	14	45	7							
	Rate	28.2	0.0	0.0	0.0	0.0	0.0	4.5	73.6	42.3	13.6	35.8	27.1							
	Cases	7	0	0	0	0	4	0	1	0	1	1	0							
	Rate	-	-	-	-	-	-	-	-	-	-	-	-							
	Cases	61	5	0	0	0	7	0	0	0	0	0	49							
	Rate	114.3	97.6	0.0	0.0	0.0	63.5	0.0	0.0	0.0	0.0	0.0	153.7							
	Cases	29	0	0	0	0	0	0	0	0	23	6	0							
Rate	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.5	7.9	0.0								
Foreign-born	Cases	320	5	0	0	0	11	8	96	77	21	46	56							
	Rate	27.4	22.8	0.0	0.0	0.0	10.5	3.5	54.4	49.7	11.2	23.8	96.7							
	Cases	201	6	0	5	1	73	42	14	4	18	37	1							
	Rate	0.8	1.3	0.0	0.6	0.1	1.1	0.5	1.7	0.5	0.7	1.3	2.6							
	Cases	521	11	0	5	1	84	50	110	81	39	83	57							
	Rate	2.0	2.2	0.0	0.6	0.1	1.3	0.6	10.9	8.7	1.4	2.7	59.0							
	Cases	104	0	0	1	1	33	44	7	1	11	6	0							
	Rate	52.4	0.0	0.0	70.4	96.0	115.1	43.1	113.2	32.8	44.9	19.6	0.0							
	Cases	21	0	0	0	0	6	9	2	0	2	2	0							
	Rate	20.5	0.0	0.0	0.0	0.0	11.0	25.5	106.4	0.0	40.8	55.0	0.0							
Cases	47	0	0	0	0	19	16	1	0	3	8	0								
Rate	6.0	0.0	0.0	0.0	0.0	11.1	3.3	4.7	0.0	6.9	16.0	0.0								

...cont'd

Table 6 *Cont'd*

**Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by birthplace – Canada and provinces/territories: 2006**

Birthplace	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	53	0	0	1	0	14	24	2	0	3	9	0
	Rate	2.0	0.0	0.0	2.9	0.0	4.2	1.7	2.9	0.0	1.3	1.9	0.0
Established Market Economies and Central Europe (EME-CEUR)	Cases	17	0	0	0	1	13	6.6	0.0	0.0	0.0	9.3	0.0
	Rate	5.1	0.0	0.0	0.0	1.5	6.6	7.2	2	0	12	19	0
Eastern Mediterranean (EMR)	Cases	121	0	0	1	0	15	17.7	28.5	0.0	27.6	34.3	0.0
	Rate	17.8	0.0	0.0	12.3	0.0	9.8	17.7	28.5	0.0	27.6	34.3	0.0
South-East Asia (SEAR)	Cases	247	1	0	0	0	18	157	1	3	18	49	0
	Rate	35.6	88.7	0.0	0.0	0.0	37.9	35.3	10.3	104.1	39.7	35.2	0.0
Western Pacific Region (WPR)	Cases	404	0	0	1	0	30	184	9	2	43	135	0
	Rate	24.5	0.0	0.0	13.7	0.0	25.2	23.3	20.1	15.5	27.5	26.5	0.0
Unknown	Cases	28	0	0	0	0	7	21	0	0	0	0	0
	Rate	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total foreign-born</b>	Cases	1,042	1	0	4	1	143	540	24	6	92	231	0
	Rate	14.8	7.3	0.0	6.7	3.0	14.7	14.0	14.1	9.8	15.9	18.0	0.0
Unknown	Cases	56	0	0	1	0	0	50	0	0	0	5	0
	Rate	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL</b>	Cases	1,619	12	0	10	2	227	640	134	87	131	319	57
	Rate	5.0	2.4	0.0	1.1	0.3	3.0	5.0	11.4	8.8	3.9	7.4	54.8

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: 2006**

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	91	3	0	0	1	2	16	17	28	14	5	1	0	4
	Rate	0.3	0.6	0.0	0.0	0.1	0.0	0.1	1.4	2.8	0.4	0.1	3.2	0.0	13.2
Pulmonary**	Cases	999	4	0	7	1	156	391	79	40	67	209	2	2	41
	Rate	3.1	0.8	0.0	0.7	0.1	2.0	3.1	6.7	4.1	2.0	4.8	6.4	4.7	134.9
Other respiratory†	Cases	99	2	0	1	0	10	30	14	9	6	25	0	0	2
	Rate	0.3	0.4	0.0	0.1	0.0	0.1	0.2	1.2	0.9	0.2	0.6	0.0	0.0	6.6
Non-respiratory	Miliary	22	1	0	0	0	4	7	3	1	6	0	0	0	0
	Rate	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.2	0.0	0.0	0.0	0.0
Meninges and CNS	Cases	21	0	0	1	0	1	12	2	0	1	3	0	0	1
	Rate	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.1	0.0	0.0	3.3
Peripheral lymph node	Cases	238	0	0	0	0	37	113	12	3	21	52	0	0	0
	Rate	0.7	0.0	0.0	0.0	0.0	0.5	0.9	1.0	0.3	0.6	1.2	0.0	0.0	0.0
Other‡	Cases	149	2	0	1	0	17	71	7	6	16	25	0	4	0
	Rate	0.5	0.4	0.0	0.1	0.0	0.2	0.6	0.6	0.6	0.5	0.6	0.0	9.4	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
<b>TOTAL</b>	<b>Cases</b>	<b>1,619</b>	<b>12</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>227</b>	<b>640</b>	<b>134</b>	<b>87</b>	<b>131</b>	<b>319</b>	<b>3</b>	<b>6</b>	<b>48</b>
	<b>Rate</b>	<b>5.0</b>	<b>2.4</b>	<b>0.0</b>	<b>1.1</b>	<b>0.3</b>	<b>3.0</b>	<b>5.0</b>	<b>11.4</b>	<b>8.8</b>	<b>3.9</b>	<b>7.4</b>	<b>9.6</b>	<b>14.2</b>	<b>157.9</b>

\* 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 birthplace, sex and age group – Canada: 2006**

Canadian-born	Birthplace	TOTAL	Age group										Unknown
			< 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 +	
Aboriginal	Male	122	2	11	9	24	17	25	11	13	6	4	0
	Female	108	2	10	9	16	20	20	11	8	3	9	0
	<b>Total</b>	<b>230</b>	<b>4</b>	<b>21</b>	<b>18</b>	<b>40</b>	<b>37</b>	<b>45</b>	<b>22</b>	<b>21</b>	<b>9</b>	<b>13</b>	<b>0</b>
Status (registered) Indian	Male	119	2	10	9	24	17	24	11	12	6	4	0
	Female	104	2	10	9	15	19	20	10	7	3	9	0
	<b>Total</b>	<b>223</b>	<b>4</b>	<b>20</b>	<b>18</b>	<b>39</b>	<b>36</b>	<b>44</b>	<b>21</b>	<b>19</b>	<b>9</b>	<b>13</b>	<b>0</b>
Non-status Indian	Male	3	0	1	0	0	0	1	0	1	0	0	0
	Female	4	0	0	0	1	1	0	1	1	0	0	0
	<b>Total</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>
Metis	Male	17	1	1	2	5	2	0	4	1	1	0	0
	Female	12	0	2	2	2	1	2	2	1	0	0	0
	<b>Total</b>	<b>29</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>
Inuit	Male	32	1	2	2	11	3	6	2	2	3	0	0
	Female	29	2	1	3	13	3	4	1	1	1	0	0
	<b>Total</b>	<b>61</b>	<b>3</b>	<b>3</b>	<b>5</b>	<b>24</b>	<b>6</b>	<b>10</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>
Total Aboriginal	Male	171	4	14	13	40	22	31	17	16	10	4	0
	Female	149	4	13	14	31	24	26	14	10	4	9	0
	<b>Total</b>	<b>320</b>	<b>8</b>	<b>27</b>	<b>27</b>	<b>71</b>	<b>46</b>	<b>57</b>	<b>31</b>	<b>26</b>	<b>14</b>	<b>13</b>	<b>0</b>
Non-Aboriginal	Male	128	2	5	5	6	7	17	26	21	15	24	0
	Female	73	0	4	2	7	7	8	7	9	11	18	0
	<b>Total</b>	<b>201</b>	<b>2</b>	<b>9</b>	<b>7</b>	<b>13</b>	<b>14</b>	<b>25</b>	<b>33</b>	<b>30</b>	<b>26</b>	<b>42</b>	<b>0</b>
Total Canadian-born	Male	299	6	19	18	46	29	48	43	37	25	28	0
	Female	222	4	17	16	38	31	34	21	19	15	27	0
	<b>Total</b>	<b>521</b>	<b>10</b>	<b>36</b>	<b>34</b>	<b>84</b>	<b>60</b>	<b>82</b>	<b>64</b>	<b>56</b>	<b>40</b>	<b>55</b>	<b>0</b>

...cont'd



**Table 8** *Cont'd*

**Reported new active and relapsed tuberculosis cases by birthplace, sex and age group – Canada: 2006**

Birthplace	TOTAL	Age group												
		< 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 +	Unknown		
Foreign-born	Male	0	0	1	12	16	16	4	1	0	1	0	1	0
	Female	0	1	5	16	15	7	4	3	2	0	0	0	0
	<b>Total</b>	0	1	6	28	31	23	8	4	2	1	0	1	0
Africa, High HIV Prevalence (AFR-High)	Male	0	1	0	4	4	2	1	1	0	0	0	0	0
	Female	0	1	0	2	3	1	0	0	0	1	0	0	0
	<b>Total</b>	0	2	0	6	7	3	1	1	0	1	0	1	0
Africa, Low HIV Prevalence (AFR-Low)	Male	0	0	0	2	2	4	6	3	1	2	0	0	0
	Female	0	1	0	4	5	4	7	2	3	0	0	0	0
	<b>Total</b>	0	1	0	6	7	8	13	5	4	2	0	0	0
American Region - Latin American and Caribbean Countries (AMR)	Male	0	0	0	2	2	4	6	3	1	2	0	0	0
	Female	0	1	1	4	5	4	7	2	3	0	0	0	0
	<b>Total</b>	0	1	1	6	7	8	13	5	4	2	0	0	0
Established Market Economies and Central Europe (EME-CEUR)	Male	0	0	0	2	1	3	5	0	9	10	0	0	0
	Female	0	0	0	0	0	4	0	4	7	8	0	0	0
	<b>Total</b>	0	0	0	2	1	7	5	4	16	18	0	0	0
Eastern Europe (EEUR)	Male	0	0	0	3	1	0	0	1	0	3	0	0	0
	Female	0	0	0	2	4	0	1	1	1	0	0	0	0
	<b>Total</b>	0	0	0	5	5	0	1	2	1	3	0	0	0
Eastern Mediterranean (EMR)	Male	0	2	2	8	15	11	7	5	5	7	0	0	0
	Female	0	0	0	15	10	11	5	5	6	7	0	0	0
	<b>Total</b>	0	2	2	23	25	22	12	10	11	14	0	0	0
South-East Asia (SEAR)	Male	0	0	0	31	27	25	12	15	12	13	0	0	0
	Female	0	1	3	15	27	15	9	14	15	13	0	0	0
	<b>Total</b>	0	1	3	46	54	40	21	29	27	26	0	0	0
Western Pacific Region (WPR)	Male	0	0	3	22	17	30	32	21	29	52	0	0	0
	Female	0	0	1	24	34	50	25	17	22	25	0	0	0
	<b>Total</b>	0	0	4	46	51	80	57	38	51	77	0	0	0

...cont'd

**Table 8** *Cont'd*

**Reported new active and relapsed tuberculosis cases by birthplace, sex and age group – Canada: 2006**

Birthplace	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	2	4	2	0	0	3	4	0
	Female	0	0	0	1	2	5	2	0	0	0	3	0
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>9</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>0</b>
Total foreign-born	Male	0	3	6	84	85	95	69	47	59	92	0	
	Female	0	4	10	79	100	97	53	46	56	57	0	
	<b>Total</b>	<b>0</b>	<b>7</b>	<b>16</b>	<b>163</b>	<b>185</b>	<b>192</b>	<b>122</b>	<b>93</b>	<b>115</b>	<b>149</b>	<b>0</b>	
Unknown	Male	0	1	0	3	0	4	4	1	4	8	0	
	Female	0	1	0	2	5	3	6	4	6	4	0	
	<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>10</b>	<b>5</b>	<b>10</b>	<b>12</b>	<b>0</b>	
<b>TOTAL</b>	Male	6	23	24	133	114	147	116	85	88	128	0	
	Female	4	22	26	119	136	134	80	69	77	88	0	
	<b>Total</b>	<b>10</b>	<b>45</b>	<b>50</b>	<b>252</b>	<b>250</b>	<b>281</b>	<b>196</b>	<b>154</b>	<b>165</b>	<b>216</b>	<b>0</b>	

**Table 9**

**Reported new active and relapsed tuberculosis cases and incidence rate per 100,000 by age group and main diagnostic site – Canada: 2006**

Age group	TOTAL	Main diagnostic site										
		Respiratory			Nonrespiratory				Unknown			
		Primary	Pulmonary	Other respiratory	Miliary	CNS	Lymph	Other				
< 1	Cases	7	3	0	0	0	0	0	0	0	0	0
	Rate	2.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1 – 4	Cases	30	10	1	0	1	0	1	1	2	0	0
	Rate	2.2	0.7	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0
5 – 14	Cases	26	11	3	1	0	7	2	0	0	0	0
	Rate	0.7	0.3	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0
15 – 24	Cases	10	175	12	3	3	34	15	0	0	0	0
	Rate	0.2	3.9	0.3	0.1	0.1	0.8	0.3	0.0	0.0	0.0	0.0
25 – 34	Cases	5	133	21	3	4	58	26	0	0	0	0
	Rate	0.1	3.0	0.5	0.1	0.1	1.3	0.6	0.0	0.0	0.0	0.0
35 – 44	Cases	4	167	22	1	5	32	0	0	0	0	0
	Rate	0.1	3.3	0.4	0.0	0.1	1.0	0.6	0.0	0.0	0.0	0.0
45 – 54	Cases	4	127	10	6	4	24	21	0	0	0	0
	Rate	0.1	2.5	0.2	0.1	0.1	0.5	0.4	0.0	0.0	0.0	0.0
55 – 64	Cases	1	103	9	3	2	16	0	0	0	0	0
	Rate	0.0	2.8	0.2	0.1	0.1	0.5	0.4	0.0	0.0	0.0	0.0
65 – 74	Cases	2	112	5	0	1	27	18	0	0	0	0
	Rate	0.1	4.9	0.2	0.0	0.0	1.2	0.8	0.0	0.0	0.0	0.0
75 +	Cases	2	158	16	5	1	17	17	0	0	0	0
	Rate	0.1	7.7	0.8	0.2	0.0	0.8	0.8	0.0	0.0	0.0	0.0
Unknown	Cases	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
<b>TOTAL</b>	<b>Cases</b>	<b>91</b>	<b>999</b>	<b>99</b>	<b>22</b>	<b>21</b>	<b>238</b>	<b>149</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
	<b>Rate</b>	<b>0.3</b>	<b>3.1</b>	<b>0.3</b>	<b>0.1</b>	<b>0.1</b>	<b>0.7</b>	<b>0.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

**Table 10**  
**Reported new active and relapsed tuberculosis cases by birthplace and main diagnostic site – Canada: 2006**

Birthplace	TOTAL	Main diagnostic site										
		Respiratory			Nonrespiratory				Unknown			
		Primary*	Pulmonary**	Other respiratory†	Miliary	CNS	Lymph	Other‡				
Canadian-born												
Aboriginal												
North American Indian	230	40	131	25	5	2	10	17	0			
Status (registered) Indian	223	40	129	23	5	2	9	15	0			
Non-status Indian	7	0	2	2	0	0	1	2	0			
Metis	29	9	11	3	2	0	1	3	0			
Inuit	61	7	49	2	1	1	0	1	0			
<b>Total Aboriginal</b>	<b>320</b>	<b>56</b>	<b>191</b>	<b>30</b>	<b>8</b>	<b>3</b>	<b>11</b>	<b>21</b>	<b>-</b>			
Non-Aboriginal	201	8	140	14	1	4	14	20	0			
<b>Total Canadian-born</b>	<b>521</b>	<b>64</b>	<b>331</b>	<b>44</b>	<b>9</b>	<b>7</b>	<b>25</b>	<b>41</b>	<b>-</b>			
Foreign-born												
Africa, High HIV Prevalence (AFR-High)	104	7	55	7	1	3	19	12	0			
Africa, Low HIV Prevalence (AFR-Low)	21	2	14	0	0	0	4	1	0			
American Region - Latin American and Caribbean Countries (AMR)	47	1	24	1	1	0	18	2	0			
Established Market Economies and Central Europe (EME-CEUR)	53	1	37	2	2	1	5	5	0			
Eastern Europe (EEUR)	17	0	10	1	2	0	3	1	0			
Eastern Mediterranean (EMR)	121	3	85	5	0	3	14	11	0			

...cont'd

**Table 10** *Cont'd*

**Reported new active and relapsed tuberculosis cases by birthplace and main diagnostic site – Canada: 2006**

Birthplace	TOTAL	Main diagnostic site								
		Respiratory			Nonrespiratory				Unknown	
		Primary*	Pulmonary**	Other respiratory†	Miliary	CNS	Lymph	Other‡		
Foreign-born ( <i>cont'd</i> )										
South-East Asia (SEAR)	247	5	147	14	3	3	42	33	0	
Western Pacific Region (WPR)	404	7	242	20	4	4	90	37	0	
Unknown	28	1	13	1	0	0	11	2	0	
<b>Total foreign-born</b>	<b>1,042</b>	<b>27</b>	<b>627</b>	<b>51</b>	<b>13</b>	<b>14</b>	<b>206</b>	<b>104</b>	<b>-</b>	
Unknown	56	0	41	4	0	0	7	4	0	
<b>TOTAL</b>	<b>1,619</b>	<b>91</b>	<b>999</b>	<b>99</b>	<b>22</b>	<b>21</b>	<b>238</b>	<b>149</b>	<b>0</b>	

\* Primary includes primary respiratory tuberculosis and tuberculous plerisy 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 birthplace and activity status – Canada: 2006**

Birthplace	TOTAL	Activity status		
		New active cases	Relapsed cases	Unknown status
Canadian-born				
Aboriginal				
North American Indian	230	211	19	0
Status (registered) Indian	223	204	19	0
Non-status Indian	7	7	0	0
Metis	29	26	3	0
Inuit	61	56	5	0
<b>Total Aboriginal</b>	<b>320</b>	<b>293</b>	<b>27</b>	<b>0</b>
Non-Aboriginal	201	173	21	7
<b>Total Canadian-born</b>	<b>521</b>	<b>466</b>	<b>48</b>	<b>7</b>
Foreign-born				
Africa, High HIV Prevalence (AFR-High)	104	92	6	6
Africa, Low HIV Prevalence (AFR-Low)	21	19	2	0
American Region - Latin American and Caribbean Countries (AMR)	47	45	0	2
Established Market Economies and Central Europe (EME-CEUR)	53	48	4	1
Eastern Europe (EEUR)	17	14	1	2
Eastern Mediterranean (EMR)	121	108	7	6
South-East Asia (SEAR)	247	214	13	20
Western Pacific Region (WPR)	404	353	37	14
Unknown	28	26	2	0
<b>Total foreign-born</b>	<b>1,042</b>	<b>919</b>	<b>72</b>	<b>51</b>
Unknown	56	48	5	3
<b>TOTAL</b>	<b>1,619</b>	<b>1,433</b>	<b>125</b>	<b>61</b>

**Table 12**

**Reported new active and relapsed tuberculosis cases by bacterial status – Canada and provinces/territories: 2006**

Bacterial status	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.
<b>1. Culture positive</b>														
a. Microscopy positive	589	5	0	5	2	74	246	53	24	34	131	1	2	12
b. Microscopy negative	638	6	0	3	0	88	224	62	29	63	134	1	2	26
c. Microscopy unknown	88	1	0	0	0	43	32	0	0	4	8	0	0	0
<b>Total</b>	<b>1,315</b>	<b>12</b>	<b>0</b>	<b>8</b>	<b>2</b>	<b>205</b>	<b>502</b>	<b>115</b>	<b>53</b>	<b>101</b>	<b>273</b>	<b>2</b>	<b>4</b>	<b>38</b>
<b>2. Culture negative</b>														
a. Microscopy positive	13	0	0	0	0	1	5	0	1	1	4	0	1	0
b. Microscopy negative	87	0	0	1	0	10	23	14	5	0	27	0	0	7
c. Microscopy unknown	5	0	0	0	0	1	3	0	0	0	1	0	0	0
<b>Total</b>	<b>105</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>31</b>	<b>14</b>	<b>6</b>	<b>1</b>	<b>32</b>	<b>0</b>	<b>1</b>	<b>7</b>
<b>3. Culture unknown</b>														
a. Microscopy positive	20	0	0	0	0	4	12	3	1	0	0	0	0	0
b. Microscopy negative	17	0	0	0	0	2	12	2	0	0	1	0	0	0
c. Microscopy unknown	162	0	0	1	0	4	83	0	27	29	13	1	1	3
<b>Total</b>	<b>199</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>107</b>	<b>5</b>	<b>28</b>	<b>29</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>3</b>
<b>TOTAL</b>	<b>1,619</b>	<b>12</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>227</b>	<b>640</b>	<b>134</b>	<b>87</b>	<b>131</b>	<b>319</b>	<b>3</b>	<b>6</b>	<b>48</b>

Table 13

## Reported new active and relapsed tuberculosis cases by bacterial status and birthplace – Canada: 2006

Bacterial status	TOTAL	Birthplace			
		Canadian-born Aboriginal	Canadian-born non-Aboriginal	Foreign-born	Unknown birthplace
<b>1. Culture positive</b>					
a. Microscopy positive	589	108	82	382	17
b. Microscopy negative	638	138	63	416	21
c. Microscopy unknown	88	6	15	62	5
<b>Total</b>	<b>1,315</b>	<b>252</b>	<b>160</b>	<b>860</b>	<b>43</b>
<b>2. Culture negative</b>					
a. Microscopy positive	13	2	1	10	
b. Microscopy negative	87	28	10	48	1
c. Microscopy unknown	5	0		5	
<b>Total</b>	<b>105</b>	<b>30</b>	<b>11</b>	<b>63</b>	<b>1</b>
<b>3. Culture unknown</b>					
a. Microscopy positive	20	1	4	13	2
b. Microscopy negative	17	2	1	13	1
c. Microscopy unknown	162	35	25	93	9
<b>Total</b>	<b>199</b>	<b>38</b>	<b>30</b>	<b>119</b>	<b>12</b>
<b>TOTAL</b>	<b>1,619</b>	<b>320</b>	<b>201</b>	<b>1,042</b>	<b>56</b>



**Table 14**

**Reported new active and relapsed tuberculosis cases by bacterial status and main diagnostic site – Canada: 2006**

Bacterial status	TOTAL	Main diagnostic site							
		Respiratory			Nonrespiratory				Unknown
		Primary	Pulmonary	Other respiratory	Miliary	CNS	Lymph	Other	
<b>1. Culture positive</b>									
a. Microscopy positive	589	11	447	20	8	3	64	36	0
b. Microscopy negative	638	25	393	45	11	9	95	60	0
c. Microscopy unknown	88	0	39	8	2	2	25	12	0
<b>Total</b>	<b>1,315</b>	<b>36</b>	<b>879</b>	<b>73</b>	<b>21</b>	<b>14</b>	<b>184</b>	<b>108</b>	<b>0</b>
<b>2. Culture negative</b>									
a. Microscopy positive	13	2	5	0	0	0	5	1	0
b. Microscopy negative	87	16	38	16	1	2	10	4	0
c. Microscopy unknown	5	0	3	0	0	0	2	0	0
<b>Total</b>	<b>105</b>	<b>18</b>	<b>46</b>	<b>16</b>	<b>1</b>	<b>2</b>	<b>17</b>	<b>5</b>	<b>0</b>
<b>3. Culture unknown</b>									
a. Microscopy positive	20	1	12	0	0	1	4	2	0
b. Microscopy negative	17	2	7	0	0	0	5	3	0
c. Microscopy unknown	162	34	55	10	0	4	28	31	0
<b>Total</b>	<b>199</b>	<b>37</b>	<b>74</b>	<b>10</b>	<b>0</b>	<b>5</b>	<b>37</b>	<b>36</b>	<b>0</b>
<b>TOTAL</b>	<b>1,619</b>	<b>91</b>	<b>999</b>	<b>99</b>	<b>22</b>	<b>21</b>	<b>238</b>	<b>149</b>	<b>0</b>

Table 15

Pattern of reported drug resistance to first-line anti-tuberculosis drugs at time of reporting by birthplace – Canada: 2006

Drug pattern	TOTAL	Origin			
		Canadian-born		Foreign-born	Unknown
		Aboriginal	Non-Aboriginal		
<b>Total positive culture</b>	<b>1,315</b>	<b>252</b>	<b>160</b>	<b>860</b>	<b>43</b>
<b>Resistance pattern unknown</b>	<b>67</b>	<b>9</b>	<b>6</b>	<b>48</b>	<b>4</b>
<b>No resistance</b>	<b>1,135</b>	<b>237</b>	<b>139</b>	<b>722</b>	<b>37</b>
<b>Resistance to one or more drugs</b>	<b>113</b>	<b>6</b>	<b>15</b>	<b>90</b>	<b>2</b>
<b>Monoresistance</b>					
INH	76	3	11	60	2
EMB	3	1	0	2	0
RMP	4	1	0	3	0
PZA	12	1	4	7	0
<b>Total monoresistance</b>	<b>95</b>	<b>6</b>	<b>15</b>	<b>72</b>	<b>2</b>
<b>Multi-drug resistance (MDR-TB)</b>					
INH & RMP	7	0	0	7	0
INH & RMP & EMB	3	0	0	3	0
INH & RMP & PZA	1	0	0	1	0
INH & EMB & RMP & PZA	1	0	0	1	0
<b>Total MDR-TB</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>
<b>Other patterns</b>					
INH & EMB	6	0	0	6	0
<b>Total other patterns</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>

NOTE: As of 2005, streptomycin was considered a second-line TB antibiotic in Canada, even though it may be used for initial treatment. For additional information on drug resistance, please refer to Tuberculosis: Drug resistance in Canada, 2006 ([www.phac-aspc.gc.ca/publicat/tbdr06/index.html](http://www.phac-aspc.gc.ca/publicat/tbdr06/index.html)) which reported drug susceptibility results for Mycobacterium isolates tested in 2005.

**Table 16**

**Reported new active and relapsed tuberculosis cases by method of detection – Canada and provinces/territories: 2006**

Case finding	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.
Immigration	69	0	0	0	0	0	42	1	0	6	20	0	0	0
Symptoms/incidental findings	1,218	8	0	9	2	165	497	88	53	104	264	1	6	21
Contact investigation	150	4	0	0	0	7	15	40	30	15	14	2	0	23
Post-mortem	15	0	0	0	0	4	1	2	1	1	6	0	0	0
Screening	60	0	0	1	0	10	29	1	3	2	11	0	0	3
Other	48	0	0	0	0	28	13	0	0	3	3	0	0	1
Unknown	59	0	0	0	0	13	43	2	0	0	1	0	0	0
<b>TOTAL</b>	<b>1,619</b>	<b>12</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>227</b>	<b>640</b>	<b>134</b>	<b>87</b>	<b>131</b>	<b>319</b>	<b>3</b>	<b>6</b>	<b>48</b>

**Table 17**

**Reported new active and relapsed tuberculosis cases by method of detection and birthplace – Canada: 2006**

Case finding	TOTAL	Birthplace							
		Canadian-born				Foreign-born			
		Status (registered) Indian	Non-status Indian	Metis	Inuit	Non-Aboriginal	Unknown birthplace		
Immigration	69	0	0	0	0	0	0	69	0
Symptoms/incidental findings	1,218	137	6	21	27	153	842	32	32
Post-mortem	15	2	0	1	0	5	4	3	3
Contact-investigation	150	79	0	6	30	12	21	2	2
Screening	60	3	1	1	3	7	41	4	4
Other	48	0	0	0	1	22	22	3	3
Unknown	59	2	0	0	0	2	43	12	12
<b>TOTAL</b>	<b>1,619</b>	<b>223</b>	<b>7</b>	<b>29</b>	<b>61</b>	<b>201</b>	<b>1,042</b>	<b>56</b>	<b>56</b>

**Table 18**  
**Reported new active and relapsed foreign-born tuberculosis cases by birthplace and year of arrival in Canada: 2006**

Birthplace (WHO region)	TOTAL	Year of arrival														Unk.		
		≤ 1964	1965- 1974	1975- 1984	1985- 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004		2005	2006
Africa, High HIV Prevalence (AFR-High)	104	1	2	1	10	1	2	3	0	0	7	10	3	5	16	16	21	6
Africa, Low HIV Prevalence (AFR-Low)	21	0	0	0	3	0	1	1	0	1	1	0	0	4	2	4	3	1
American Region - Latin American and Caribbean Countries (AMR)	47	1	3	8	20	0	0	2	0	1	0	0	3	0	0	2	4	3
Established Market Economies and Central Europe (EME-CEUR)	53	24	11	2	5	0	0	1	0	3	0	0	0	0	0	0	1	6
Eastern Europe (EEUR)	17	2	0	1	3	0	1	0	0	0	0	2	1	1	1	2	2	1
Eastern Mediterranean (EMR)	121	0	1	4	24	2	3	6	4	3	4	7	12	7	9	17	16	2
South-East Asia (SEAR)	247	0	9	15	44	8	5	2	5	6	15	14	15	22	18	23	34	12
Western Pacific Region (WPR)	404	5	17	38	123	10	13	9	9	12	10	23	17	20	18	23	31	26
Unknown	28	0	1	1	0	0	1	0	0	0	1	0	1	1	0	1	0	21
<b>TOTAL</b>	<b>1,042</b>	<b>5</b>	<b>17</b>	<b>38</b>	<b>123</b>	<b>10</b>	<b>13</b>	<b>9</b>	<b>9</b>	<b>12</b>	<b>10</b>	<b>23</b>	<b>17</b>	<b>20</b>	<b>18</b>	<b>23</b>	<b>31</b>	<b>26</b>

**Table 19**  
**Reported new active and relapsed foreign-born tuberculosis cases by immigration status – Canada and provinces/territories: 2006**

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	622	0	0	1	0	0	312	21	4	85	199	0	0	0
Refugee claimant	36	0	0	0	0	0	32	0	1	1	2	0	0	0
Other temporary resident (visitor, student, foreign nationals without status in Canada)	24	0	0	0	0	0	0	0	1	4	19	0	0	0
Other	38	0	0	2	1	0	30	2	0	1	2	0	0	0
Unknown	322	1	0	1	0	143	166	1	0	1	9	0	0	0
<b>TOTAL</b>	<b>1,042</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>143</b>	<b>540</b>	<b>24</b>	<b>6</b>	<b>92</b>	<b>231</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Table 20**  
**Reported relapsed tuberculosis cases by length of inactive interval – Canada and provinces/territories: 2006**

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.
< 2 years	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-5 years	22	0	0	0	0	4	0	6	2	1	8	0	0	1
6-9 years	5	0	0	0	0	0	0	0	1	1	3	0	0	0
10-19 years	10	0	0	0	0	3	0	0	2	1	3	0	1	0
20+ years	41	2	0	1	0	10	0	2	3	4	16	0	0	3
Unknown	47	1	0	0	0	3	39	1	0	1	2	0	0	0
<b>TOTAL</b>	<b>125</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>20</b>	<b>39</b>	<b>9</b>	<b>8</b>	<b>8</b>	<b>32</b>	<b>0</b>	<b>1</b>	<b>4</b>

**Table 21****Reported new active and relapsed tuberculosis cases who died, by cause of death – Canada and provinces/territories: 2006**

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.
<b>Update on 2005 cases who died before or during treatment*</b>															
TB was the cause of death	21	1.3	0	0	0	0	2	9	2	2	3	3	0	0	0
TB contributed to death but was not the underlying cause	54	3.3	1	0	0	0	9	23	1	0	8	12	0	0	0
TB did not contribute to death but was an incidental finding	44	2.7	0	0	1	0	4	16	4	2	1	14	0	1	1
Unknown	4	0.2	0	0	0	0	2	2	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>123</b>	<b>7.5</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>17</b>	<b>50</b>	<b>7</b>	<b>4</b>	<b>12</b>	<b>29</b>	<b>0</b>	<b>1</b>	<b>1</b>
<b>Cases reported in 2006 who died in 2006**</b>															
TB was the cause of death	20	1.2	2	0	1	0	3	6	0	2	3	3	0	0	0
TB contributed to death but was not the underlying cause	49	3.0	0	0	0	0	2	17	0	5	11	14	0	0	0
TB did not contribute to death but was an incidental finding	33	2.0	0	0	1	0	6	15	4	1	3	3	0	0	0
Unknown	9	0.6	0	0	0	0	2	7	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>111</b>	<b>6.9</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>13</b>	<b>45</b>	<b>4</b>	<b>8</b>	<b>17</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>

\* Updates include results from both case and outcome reports.

\*\* Includes results from case reports only.



**Table 24**

**Treatment outcome status – Canada and provinces/territories: 2005**

	TOTAL	Treatment outcome							
		Cure	Treatment completed without culture	Death during treatment	Transferred	Absconded	Treatment ongoing	Other	Unknown
<b>CANADA</b>	<b>1,642</b>	<b>98</b>	<b>1,119</b>	<b>123</b>	<b>40</b>	<b>32</b>	<b>36</b>	<b>20</b>	<b>174</b>
<b>Province/territory</b>									
Newfoundland and Labrador	9	2	4	1	0	0	0	2	0
Prince Edward Island	1	0	0	0	0	0	1	0	0
Nova Scotia	7	2	4	1	0	0	0	0	0
New Brunswick	6	1	4	0	0	0	0	0	1
Quebec	255	11	62	17	5	4	0	2	154
Ontario	643	0	514	51	16	9	27	8	18
Manitoba	114	3	94	7	4	1	2	3	0
Saskatchewan	139	0	126	4	0	9	0	0	0
Alberta	146	33	96	11	4	0	1	1	0
British Columbia	266	15	193	29	11	9	4	4	1
Yukon	3	0	3	0	0	0	0	0	0
Northwest Territories	8	4	3	1	0	0	0	0	0
Nunavut	45	27	16	1	0	0	1	0	0



**Table 25**

**Treatment outcome status by treatment regimen – Canada: 2005**

Treatment regimen	TOTAL	Treatment outcome							
		Cure	Treatment completed without culture	Death during treatment	Transferred	Absconded	Treatment ongoing	Other	Unknown
<b>TOTAL</b>	<b>1,642</b>	<b>98</b>	<b>1,119</b>	<b>123</b>	<b>40</b>	<b>32</b>	<b>36</b>	<b>20</b>	<b>174</b>
INH (isoniazid)	6	0	5	0	0	0	0	0	1
RMP other drug(s)	4	1	0	0	0	0	1	0	2
EMB & other drug(s)	6	0	3	0	0	0	2	1	0
Others	2	0	1	1	0	0	0	0	0
INH&RMP	146	2	120	5	2	8	6	1	2
INH & RMP & other drug(s)	3	1	1	1	0	0	0	0	0
INH & RMP & EMB	46	1	39	1	0	1	1	1	2
INH & RMP & EMB & other drug(s)	12	0	12	0	0	0	0	0	0
INH & RMP& PZA	103	13	74	6	1	2	1	5	1
INH & RMP& PZA & other drug(s)	49	11	35	2	0	0	0	1	0
INH & RMP & EMB & PZA	472	48	366	22	14	11	6	0	5
INH & RMP & EMB & PZA & other drug(s)	31	6	20	3	0	1	0	1	0
INH & EMB	2	0	2	0	0	0	0	0	0
INH & EMB & other drug(s)	2	0	2	0	0	0	0	0	0
INH & PZA & other drug(s)	1	0	0	0	0	0	1	0	0
INH & PZA & EMB	10	0	8	0	1	0	0	1	0
INH & PZA & EMB & other drug(s)	5	2	2	1	0	0	0	0	0
PZA & EMB & other drug(s)	2	0	2	0	0	0	0	0	0
RMP & EMB	4	0	4	0	0	0	0	0	0
RMP & EMB & other drug(s)	8	0	7	0	0	0	0	1	0
RMP & PZA	1	0	0	0	0	0	0	0	1
RMP & PZA & other drug(s)	1	0	1	0	0	0	0	0	0

...cont'd

**Table 25** *Cont'd*

**Treatment outcome status by treatment regimen – Canada: 2005**

Treatment regimen	TOTAL	Treatment outcome							
		Cure	Treatment completed without culture	Death during treatment	Transferred	Absconded	Treatment ongoing	Other	Unknown
RMP & PZA & EMB	4	1	3	0	0	0	0	0	0
RMP & PZA & EMB & other drug(s)	4	1	2	0	0	0	0	1	0
None prescribed	28	0	0	20	5	2	1	0	0
Unknown	690	11	410	61	17	7	17	7	160

**Table 26**

**Treatment outcome status by major mode of treatment – Canada: 2005**

Major mode of treatment	TOTAL	Treatment outcome							
		Cure	Treatment completed without culture	Death during treatment	Transferred	Absconded	Treatment ongoing	Other	Unknown
DOT (daily/intermittent)	800	74	616	43	17	10	25	9	6
Daily – self administered	547	23	461	12	16	17	9	6	3
Other	74	1	30	37	1	1	0	4	0
Unknown	221	0	12	31	6	4	2	1	165
<b>TOTAL</b>	<b>1,642</b>	<b>98</b>	<b>1,119</b>	<b>123</b>	<b>40</b>	<b>32</b>	<b>36</b>	<b>20</b>	<b>174</b>

**Table 27**

**Treatment outcome status by compliance estimate – Canada: 2005**

Compliance estimate	TOTAL	Treatment outcome							
		Cure	Treatment completed without culture	Death during treatment	Transferred	Absconded	Treatment ongoing	Other	Unknown
< 50%	17	0	4	7	1	4	0	1	0
50–79%	55	2	21	8	3	16	1	4	0
≥ 80%	1,188	95	1,000	48	20	4	10	9	2
Unknown	382	1	94	60	16	8	25	6	172
<b>TOTAL</b>	<b>1,642</b>	<b>98</b>	<b>1,119</b>	<b>123</b>	<b>40</b>	<b>32</b>	<b>36</b>	<b>20</b>	<b>174</b>

# APPENDIX II

## TECHNICAL NOTES

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### **CONCEPTS, METHODS AND DATA QUALITY**

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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 are submitted electronically (Alberta, Ontario, Quebec and Saskatchewan). 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, 2006 to December 31, 2006. Outcomes are reported on patients diagnosed between January 1, 2005 to December 31, 2005. Tables 1 through 4 present historical counts and rates for the years 1996 to 2006 inclusive. The data in this report reflects the data submitted to the Public Health Agency of Canada as of October 15, 2008. Updates because of late reporting will be reflected in the 2007 report.

#### **Data quality and validation**

Prior to 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 2006 for 2005 cases was 89% 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.<sup>12</sup>

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*.<sup>13</sup>

Current and historical incidence rates for the Status (registered) Indian population are based on population estimates from Indian Affairs and Northern Affairs Canada. These estimates are considered a more accurate reflection of the true counts of the Status Indian population.<sup>14</sup> 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.

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<sup>12</sup> Statistics Canada, Demography Division, Demographic, Estimates Section, Population estimates 0-90+, July, Canada – Provinces/Territories 1971-2005, updated February, 2008.

<sup>13</sup> Projections of the Aboriginal populations, Canada, provinces and territories 2001 to 2017 Demography Division, Statistics Canada Catalogue No. 91-547-XIE.

<sup>14</sup> INAC, *Registered Indian Population by Sex and Residence 2005*. Available at: [http://www.ainc-inac.gc.ca/pr/sts/rip/rip05\\_e.pdf](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 Métis and non-Status Indians were combined into one aggregated number and as populations counts were not available, incidence rates were not calculated. In 2003 population estimates for Métis were produced by Statistics Canada, Demography Division, enabling the reporting of rates for this population. Starting in 2003, case counts for 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 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 number 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:

$$\begin{array}{c} \text{Canadian-born non-Aboriginal} \\ = \\ \text{Total Canadian Population (Statistics Canada)} \\ - \text{Foreign Born (Statistics Canada)} \\ - \text{Total Aboriginal persons (Statistics Canada)} \end{array}$$

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 will include 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. canetti*], *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 tuberculosis<sup>15</sup>**

- 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.

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<sup>15</sup> 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**  
Tuberculosis of: anus, intestine (large, small), rectum, retroperitoneal (lymph nodes)  
Tuberculosis: ascites, enteritis, peritonitis (567.0)
- 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
  - 015.7 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		
<b>Tuberculosis of:</b>		
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<sup>†</sup> (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: 2006

Population estimates by gender and age group, Canada and provinces/territories: 2006

<b>Male</b>														
	CANADA	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
< 1	176,414	2,299	665	4,370	3,446	40,164	68,582	7,140	5,943	21,958	20,985	159	370	333
1 - 4	701,612	9,476	2,642	17,689	14,194	154,271	277,007	28,443	24,449	84,444	85,572	673	1,252	1,500
5 - 14	2,015,893	28,471	8,941	53,176	42,789	442,108	812,518	81,607	67,166	220,355	249,785	1,927	3,615	3,435
15 - 24	2,269,938	34,003	9,926	64,346	51,068	494,753	880,957	86,601	77,574	259,941	301,779	2,519	3,536	2,935
25 - 34	2,253,902	30,310	8,157	56,755	48,519	532,888	870,509	79,386	61,569	270,268	287,455	1,781	3,748	2,557
35 - 44	2,546,009	38,281	9,345	70,262	56,589	586,432	1,025,269	84,845	65,065	268,535	333,343	2,504	3,479	2,060
45 - 54	2,509,765	42,431	10,297	73,525	60,177	612,344	945,073	86,894	73,815	259,367	338,509	2,878	2,873	1,582
55 - 64	1,809,682	33,758	8,603	58,375	46,858	460,306	670,021	62,023	50,430	163,276	251,303	2,072	1,916	741
65 - 74	1,083,607	18,947	5,137	34,300	26,630	270,417	411,752	36,863	33,149	91,405	153,043	871	728	365
75 +	803,901	12,027	3,453	24,589	19,248	183,623	310,201	31,625	31,289	66,735	120,291	331	356	133
<b>TOTAL</b>	<b>16,170,723</b>	<b>250,003</b>	<b>67,166</b>	<b>457,387</b>	<b>369,518</b>	<b>3,777,306</b>	<b>6,271,889</b>	<b>585,427</b>	<b>490,449</b>	<b>1,706,284</b>	<b>2,142,065</b>	<b>15,715</b>	<b>21,873</b>	<b>15,641</b>
<b>Female</b>														
< 1	168,230	2,143	652	4,073	3,343	38,191	64,982	6,918	5,922	21,000	20,156	161	319	370
1 - 4	669,514	9,207	2,860	16,986	13,722	147,166	263,894	27,408	23,094	80,901	80,892	620	1,354	1,410
5 - 14	1,919,847	26,660	8,148	51,546	40,505	420,449	779,657	77,127	63,770	208,201	235,208	2,038	3,324	3,214
15 - 24	2,163,960	33,429	9,960	61,482	47,798	471,733	844,237	82,719	72,481	243,911	287,683	2,250	3,386	2,891
25 - 34	2,209,655	31,685	8,825	59,270	47,875	510,974	870,351	75,954	60,427	249,722	286,748	2,009	3,222	2,593
35 - 44	2,516,210	40,734	9,689	71,277	56,932	564,680	1,024,345	82,395	65,318	254,402	338,198	2,751	3,657	1,832
45 - 54	2,535,117	43,299	10,741	76,090	61,268	618,929	962,808	85,815	72,073	251,726	345,473	2,893	2,798	1,204
55 - 64	1,861,124	34,664	8,805	59,809	47,589	480,544	695,828	63,335	50,804	160,252	255,490	1,665	1,482	857
65 - 74	1,192,459	19,741	5,489	37,750	29,206	309,652	456,284	40,776	36,299	97,209	158,422	698	622	311
75 +	1,242,643	18,375	5,692	39,380	31,469	311,409	471,053	50,618	46,883	96,992	169,920	411	364	77
<b>TOTAL</b>	<b>16,478,759</b>	<b>259,937</b>	<b>70,861</b>	<b>477,663</b>	<b>379,707</b>	<b>3,873,727</b>	<b>6,433,439</b>	<b>593,065</b>	<b>497,071</b>	<b>1,664,316</b>	<b>2,178,190</b>	<b>15,496</b>	<b>20,528</b>	<b>14,759</b>
<b>TOTAL</b>														
< 1	344,644	4,442	1,317	8,443	6,789	78,355	133,564	14,058	11,865	42,958	41,141	320	689	703
1 - 4	1,371,126	18,683	5,502	34,675	27,916	301,437	540,901	55,851	47,543	165,345	166,464	1,293	2,606	2,910
5 - 14	3,935,740	55,131	17,089	104,722	83,294	862,557	1,592,175	158,734	130,936	428,556	484,993	3,965	6,939	6,649
15 - 24	4,433,898	67,432	19,886	125,828	98,866	966,486	1,740,860	169,320	150,055	503,852	589,462	4,769	6,922	5,826
25 - 34	4,463,557	61,995	16,982	116,025	96,394	1,043,862	1,740,860	155,340	121,996	519,990	574,203	3,790	6,970	5,150
35 - 44	5,062,219	79,015	19,034	141,539	113,521	1,151,112	2,049,614	167,240	130,383	522,937	671,541	5,255	7,136	3,892
45 - 54	5,044,882	85,730	21,038	149,615	121,445	1,231,273	1,907,881	172,709	145,888	511,093	683,982	5,771	5,671	2,786
55 - 64	3,670,806	68,422	17,408	118,184	94,447	940,850	1,365,849	125,358	101,234	323,528	506,793	3,737	3,398	1,598
65 - 74	2,276,066	38,688	10,626	72,050	55,836	580,069	868,036	77,639	69,448	188,614	311,465	1,569	1,350	676
75 +	2,046,544	30,402	9,145	63,969	50,717	495,032	781,254	82,243	78,172	163,727	290,211	742	720	210
<b>TOTAL</b>	<b>32,649,482</b>	<b>509,940</b>	<b>138,027</b>	<b>935,050</b>	<b>749,225</b>	<b>7,651,033</b>	<b>12,705,328</b>	<b>1,178,492</b>	<b>987,520</b>	<b>3,370,600</b>	<b>4,320,255</b>	<b>31,211</b>	<b>42,401</b>	<b>30,400</b>

## Population estimates by Canadian-born origin and foreign-born birthplace – 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.
<b>Canadian-born</b>															
North American Indian	785,289	10,614	1,495	16,550	14,464	76,089	174,493	112,254	105,255	109,516	143,467	21,092	7,180	13,791	121
Status Indian*	792,130				33,089	71,621	175,940	129,083	127,567	103,181	125,859	25,791	8,285	17,506	
Non-status**	-														
Inuit	53,389	5,121	31	432	177	11,030	1,796	415	269	1,249	979	31,890	204	4,962	26,724
Métis	328,955	6,148	250	3,405	4,691	17,219	54,620	63,764	49,503	75,906	48,520	4,929	617	4,270	42
<b>Total Aboriginal†</b>	<b>1,167,633</b>	<b>21,883</b>	<b>1,776</b>	<b>20,387</b>	<b>19,332</b>	<b>104,338</b>	<b>230,909</b>	<b>176,433</b>	<b>155,027</b>	<b>186,671</b>	<b>192,966</b>	<b>57,911</b>	<b>8,001</b>	<b>23,023</b>	<b>26,887</b>
<b>Non-Aboriginal‡</b>	<b>24,433,443</b>	<b>474,264</b>	<b>130,428</b>	<b>854,587</b>	<b>696,526</b>	<b>6,575,044</b>	<b>8,610,184</b>	<b>831,518</b>	<b>771,397</b>	<b>2,607,078</b>	<b>2,843,713</b>	<b>38,704</b>	<b>19,563</b>	<b>16,182</b>	<b>2,959</b>
<b>Total Canadian-born</b>	<b>25,601,076</b>	<b>496,147</b>	<b>132,204</b>	<b>874,974</b>	<b>715,858</b>	<b>6,679,382</b>	<b>8,841,093</b>	<b>1,007,951</b>	<b>926,424</b>	<b>2,793,749</b>	<b>3,036,679</b>	<b>96,615</b>	<b>27,564</b>	<b>39,205</b>	<b>29,846</b>
<b>Foreign-born</b>															
AFR High	198,382	522	88	1,420	1,042	28,660	101,994	6,184	3,051	24,526	30,643	252	85	140	27
AFR Low	102,620	155	49	488	627	54,683	35,336	1,880	781	4,906	3,634	81	14	58	9
AMR	778,066	639	276	3,515	1,784	171,641	481,538	21,374	3,798	43,303	49,849	349	158	145	46
EUR	333,522	519	94	1,468	521	65,173	195,850	11,141	3,326	23,014	32,158	258	91	157	10
EMR	680,963	1,135	389	8,129	1,984	152,663	405,923	7,017	4,595	43,481	55,448	199	43	137	19
EME + CEUR	2,612,798	7,613	4,214	35,048	21,957	332,072	1,411,065	68,459	29,782	235,668	462,421	4,499	2,609	1,569	321
SEAR	694,574	1,128	124	2,683	1,345	47,483	444,369	9,741	2,882	45,359	139,191	269	139	115	15
WPR	1,647,481	2,082	589	7,325	4,107	119,276	788,160	44,745	12,881	156,594	510,232	1,490	508	875	107
<b>Total foreign-born</b>	<b>7,048,406</b>	<b>13,793</b>	<b>5,823</b>	<b>60,076</b>	<b>33,367</b>	<b>971,651</b>	<b>3,864,235</b>	<b>170,541</b>	<b>61,096</b>	<b>576,851</b>	<b>1,283,576</b>	<b>7,397</b>	<b>3,647</b>	<b>3,196</b>	<b>554</b>
<b>Total population</b> ^^	<b>32,649,482</b>	<b>509,940</b>	<b>138,027</b>	<b>935,050</b>	<b>749,225</b>	<b>7,651,033</b>	<b>12,705,328</b>	<b>1,178,492</b>	<b>987,520</b>	<b>3,370,600</b>	<b>4,320,255</b>	<b>104,012</b>	<b>31,211</b>	<b>42,401</b>	<b>30,400</b>

\* 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 1971-2005, updated February 2008.

# North includes Yukon, Northwest Territories, and Nunavut.

## APPENDIX IV

# WHO ESTIMATED INCIDENCE OF TB, 22 HIGH-BURDEN COUNTRIES: 2006

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	1,151,751	1,933	168	867	75	21.1
2 China	1,320,864	1,311	99	590	45	35.4
3 Indonesia	228,864	534	234	240	105	41.3
4 South Africa	48,282	454	940	184	382	46.2
5 Nigeria	144,720	450	311	198	137	51.1
6 Bangladesh	155,991	351	225	158	101	55.0
7 Ethiopia	81,021	306	378	136	168	58.3
8 Pakistan	160,943	292	181	131	82	61.5
9 Philippines	86,264	248	287	111	129	64.2
10 DR Congo	60,644	237	392	105	173	66.8
11 Russian Federation	143,221	153	107	68	48	68.5
12 Viet Nam	86,206	149	173	66	77	70.1
13 Kenya	36,553	141	384	56	153	71.6
14 UR Tanzania	39,459	123	312	53	135	73.0
15 Uganda	29,899	106	355	46	154	74.1
16 Brazil	189,323	94	50	59	31	75.1
17 Mozambique	20,971	93	443	39	186	76.2
18 Thailand	63,444	90	142	40	62	77.1
19 Myanmar	48,379	83	171	37	76	78.0
20 Zimbabwe	13,228	74	557	30	227	78.9
21 Cambodia	14,197	71	500	31	220	79.6
22 Afghanistan	26,088	42	161	19	73	80.1
<b>Total, high-burden countries</b>	<b>4,150,313</b>	<b>7,334</b>	<b>177</b>	<b>3,265</b>	<b>79</b>	<b>80.1</b>
Africa	773,792	2,808	363	1,203	155	30.7
Americas	899,388	331	37	165	18	3.6
East Mediterranean	544,173	570	105	256	47	6.2
Europe	887,455	433	49	194	22	4.7
South East Asia	1,721,049	3,100	180	1,391	81	33.9
Western Pacific	1,764,231	1,915	109	860	49	20.9
<b>Global total</b>	<b>6,590,088</b>	<b>9,157</b>	<b>139</b>	<b>4,068</b>	<b>62</b>	<b>100.0</b>

Source: *Global tuberculosis control: surveillance, planning, financing, WHO report 2008*. Geneva, World Health Organization (WHO/HTM/TB/2008.393).

# APPENDIX V

## STOP-TB PARTNERSHIP

### TB EPIDEMIOLOGICAL REGIONS

#### AND MEMBER COUNTRIES<sup>16</sup>

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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

<sup>16</sup> *Stop TB Partnership and World Health Organization. Global Plan to Stop TB 2006–2015.* Geneva, World Health Organization, 2006 (WHO/HTM/STB/2006.35).

<b>American region (AMR) – Latin American countries (LAC)</b>	
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

<b>Eastern Europe (EEUR)</b>	<b>Eastern Mediterranean (EMR)</b>
Armenia	Afghanistan
Azerbaijan	Bahrain
Belarus	Djibouti
Bulgaria	Egypt
Estonia	Islamic Republic of Iran
Georgia	Iraq
Kazakhstan	Jordan
Kyrgyzstan	Kuwait
Latvia	Lebanon
Lithuania	Libyan Arab Jamahiriya
Republic of Moldova	Morocco
Romania	Oman
Russian Federation	Pakistan
Tajikistan	Qatar
Turkey	Saudi Arabia
Turkmenistan	Somalia
Ukraine	Sudan
Uzbekistan	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 2006 CASES AND 2005 OUTCOMES**

---

**1. Identification (please update as necessary)**

A Country

B Date

C Name National TB control programme manager or equivalent.  Person filling out this form (if different from name at left)

D Functional Title

E Address

F Telephone

G Fax

H E-mail

Please send your completed form to your local/regional WHO office.

This form allows WHO to collect data from >200 diverse countries. It is NOT a recommended data collection format for national programmes. (See WHO documents for such recommendations/guidelines: [www.who.int/tb/publications](http://www.who.int/tb/publications)).

**2. Components of TB control in 2004**

*Responses for questions A-C: Circle/enter one (No or Yes; No or Some or All).*

A Did you have a national TB control manual (or guidelines for TB diagnosis and treatment) in 2004?  
(If Yes, please provide a copy to WHO, if you have not already done so.)

No	Yes
----	-----

B Do you have any guidelines on TB management for medical practitioners working outside the public health clinics?

No	Yes
----	-----

C Were the following institutions notifying cases to you, directly or indirectly, in 2004?

Private hospitals/clinics	No	Some	All	Public hospitals	No	Some	All	Military	No	Some	All
Private practitioners	No	Some	All	Prisons	No	Some	All	Insurance	No	Some	All

**Coverage.** Responses for questions D, E: absolute numbers; Question F: percentage.

D How many TB basic management units were there in 2004?

E How many of these units (2.D) were considered as "DOTS" units at the end of 2004?

F What proportion of the country's population was attributed to basic management units defined as DOTS units in your country in 2004?  
(Note: Only this rough administrative apportioning is needed. It may not equate with true "access" to DOTS. If you have additional information on "access" to DOTS, you may share these data under 'Remarks' in addition to answering this question. If a unit became a DOTS unit in October of 2004, then use only 1/4 of its population in your calculation; if in July, then use 1/2 of its population, etc.)


%

**Technical components of DOTS in 2004**

*Responses for questions G-J: Enter/circle one response (SOME means "in some units", ALL means "in all units")*

	DOTS units			Non-DOTS units		
G Was sputum microscopy routinely used to diagnosis suspected pulmonary cases?	No	Some	All	No	Some	All
H Was standardized, short-course chemotherapy (less than 9 months) used routinely to treat sputum smear-positive cases?	No	Some	All	No	Some	All
I Was direct observation of treatment used routinely -- at least during the initial phase (2-3 months) of treatment?	No	Some	All	No	Some	All
J Were TREATMENT outcomes of ALL smear-positive patients monitored, analyzed by cohort, and reported to the next supervisory level?	No	Some	All	No	Some	All

**3(A). Drug resistance in 2004**

Response for question A-E: enter a number.

- A How many laboratory-confirmed cases of MDR\* were identified among TB patients diagnosed in 2004?
- B How many patients registered as NEW in 2004 received DST\* at start of treatment?
- C How many of these patients (3.B) were identified as MDR cases based on DST at start of treatment?
- D How many patients registered as RETREATMENT in 2004 received DST at start of treatment?
- E How many of these patients (3.D) were identified as MDR TB?

Note: MDR = multidrug resistance. DST = drug sensitivity testing.


**3(B). HIV-related activities among TB patients**

Responses for questions G-K: enter a number. For questions F and L, type or circle one response.

- F Did you implement (even if only in part of your country) a national policy of offering HIV testing and counseling to all TB patients in 2004?
- G How many "basic administrative units" (out of those defined in question 2D) had TB diagnostic or treatment facilities that routinely offered HIV testing and counseling to all TB patients in 2004?
- H How many TB patients were tested for HIV in 2003? (If none, skip to question I)
- I How many TB patients tested HIV positive in 2003?
- J How many HIV positive TB patients were given co-trimoxazole preventive therapy in 2003?
- K How many HIV positive TB patients were started on (or continued on) antiretroviral therapy during their TB treatment in 2003? (Only those patients treated during 2003 should be reported here.)
- L Do you have a national system for HIV surveillance among TB patients? If yes, please provide, under "Remarks", the most recent results, including year and methodology used (e.g., sentinel surveillance, 100% sampling of TB patients in selected metropolitan TB clinics)

No	Yes	Partially
No	Yes	

**4. TB Notifications for 2004 (absolute numbers)**

REMINDER: This form allows WHO to collect data from >200 diverse countries. It is NOT a recommended data collection format for national programmes. (See WHO documents for such recommendations/guidelines.)

- A Number of TB cases in 2004

--

Number of these cases, by strategy, that are

- B New pulmonary smear-positive
- C New pulmonary smear-negative
- D New pulmonary smear-unknown
- E New extra-pulmonary
- F Other NEW cases not in lines B-E
- G Relapse pulmonary
- H Treatment after Failure (pulmonary)
- I Treatment after Default (pulmonary)
- J Other RETREATMENT cases not in lines G-I.
- K Other, not in lines B-J (i.e., history unknown)

	DOTS	Non-DOTS

Strategy applies to basic management units, not individual patients. If a unit is a "DOTS" unit, then all cases from that unit are reported as DOTS cases.

Please specify what these cases are, under "Remarks."

- L New pulmonary lab-confirmed cases

--

Lab-confirmed includes smear-positive cases plus any cases confirmed by additional laboratory methods.

5. Notifications for 2004, continued (absolute numbers):

**Age and sex of new pulmonary smear-positive TB cases**

		0-14	15-24	25-34	35-44	45-54	55-64	65+
<b>DOTS</b>								
A	<b>Male</b>							
B	<b>Female</b>							

**Non-DOTS**

C	<b>Male</b>							
D	<b>Female</b>							

If totals do not correspond to page 4, please explain in 'Remarks.'

If data are based on less than a full year's data, please note this in 'Remarks.'

If you have data by age and sex that do not fit this framework (e.g., different age groups or data based on all new cases, not just smear-positive), then you can provide the data that you have on the "Remarks" page.

**6. Treatment outcomes for cases registered in 2003 (absolute numbers)**

	<b>DOTS</b>				<b>non-DOTS</b>
	<b>New</b>	<b>Retreatment (pulmonary)</b>			<b>New</b>
	<b>Pulmonary smear-positive</b>	<b>Relapse</b>	<b>Treat-after-Failure</b>	<b>Treat-after-Default</b>	<b>Pulmonary smear-positive</b>
Z	<b>Cases included in cohort</b>				
If line Z different from the number of cases notified to WHO last year, please explain reasons, or indicate need to update WHO database, under 'Remarks'.					
A	<b>Cured</b>				
B	<b>Completed</b>				
C	<b>Died</b>				
D	<b>Failed</b>				
E	<b>Defaulted</b>				
F	<b>Transferred out*</b>				

If sum of lines A-F does not equal line Z, please explain under 'Remarks'.

**Notes**

If culture is routinely available throughout the country, then you should instead use these columns to report outcomes of the cohort of laboratory-confirmed cases, where the outcome is determined by the best laboratory evidence available for each case. Indicate this in 'Remarks'.

If treatment outcomes for retreatment cases are compiled together and cannot be separated, then please provide these outcome results under 'Remarks'.

If non-DOTS treatment outcomes are available but not for new smear-positive cases specifically, please provide what data are available and make a note about the types of cases included.

\* "Transferred out" means transferred out and not evaluated. It is a sub-set of transfer patients for whom the outcome was not evaluated.

7. Financial information - budget data

FISCAL YEAR 2005

(your fiscal year starting during the calendar year 2005)

1. Beginning of your fiscal year 2005 (day, month, year)


2. Expected number of new smear-positive patients to be treated in 2005

--

3. Expected number of new smear-negative/extra-pulmonary patients to be treated in 2005

--

Please give amounts for budget, funding, and gap in ABSOLUTE US dollars

EXPECTED Funding Your data from last year (if any) appear here. Please update as necessary).

BUDGET REQUIRED<sup>a</sup>

Government<sup>b</sup> Loans<sup>c</sup> GFATM<sup>d</sup> Other Grants<sup>e</sup>

GAP<sup>f</sup>

- 4. TB drugs: first-line
- 5. TB drugs: second-line (for MDR-TB)
- 6. Staff working exclusively for TB control (central unit staff and subnational TB coordinators)
- 7. Initiatives to increase case detection and cure rates
- 8. TB/HIV collaborative activities
- 9. Buildings, vehicles, equipment (lab / office equip. etc.)
- 10. All other budget lines for TB (e.g., training, fuel for supervision, supplies, recording and reporting)
- 11. TOTAL

BUDGET REQUIRED <sup>a</sup>	Government <sup>b</sup>	Loans <sup>c</sup>	GFATM <sup>d</sup>	Other Grants <sup>e</sup>	GAP <sup>f</sup>

FISCAL YEAR 2006

(your fiscal year starting during the calendar year 2006)

1. Beginning of your fiscal year 2006 (day, month, year)


2. Expected number of new smear-positive patients to be treated in 2006

--

3. Expected number of new smear negative/extra-pulmonary patients to be treated in 2006

--

Red color indicates that your numbers do not add up to calculated totals. Please re-check.

Please give amounts for budget, funding, and gap in ABSOLUTE US dollars

EXPECTED Funding (if available)

BUDGET REQUIRED<sup>a</sup>

Government<sup>b</sup> Loans<sup>c</sup> GFATM<sup>d</sup> Other Grants<sup>e</sup>

GAP<sup>f</sup>

- 4. TB drugs: first-line
- 5. TB drugs: second-line (for MDR-TB)
- 6. Staff working exclusively for TB control (central unit staff and subnational TB coordinators)
- 7. Initiatives to increase case detection and cure rates
- 8. TB/HIV collaborative activities
- 9. Buildings, vehicles, equipment (lab / office equip. etc.)
- 10. All other budget lines for TB (e.g., training, fuel for supervision, supplies, recording and reporting)
- 11. TOTAL

BUDGET REQUIRED <sup>a</sup>	Government <sup>b</sup>	Loans <sup>c</sup>	GFATM <sup>d</sup>	Other Grants <sup>e</sup>	GAP <sup>f</sup>

PLEASE SEE EXPLANATORY NOTES ON PAGE 9. Contact the following people for assistance if required:  
 Pilar Ramon-Pardo, ramonpp@paho.org (for AMRO); Katherine Floyd, floydk@who.int (for EURO, SEARO, WPRO); Andrea Pantoja, pantojaa@who.int (for AFR, EMRO).

8. Financial information - utilization of health services and expenditure data

12. Typical number of visits to a health facility required for one new smear-positive patient after diagnosis is made

--

13. Typical number of visits to a health facility required for a new smear negative/extra-pulmonary patient after diagnosis is made

--

14. Estimated percentage of new smear-positive patients that are hospitalized

--

 %

15. Estimated percentage of new smear negative/extra-pulmonary patients that are hospitalized

--

 %

16. Estimated average duration of stay for new smear-positive patients if hospitalized (days)

--

17. Estimated average duration of stay for new smear negative/extra-pulmonary patients if hospitalized (days)

--

18. Number of hospital beds used exclusively for TB (including beds in sanatoria, where these exist)

--

FISCAL YEAR 2004

(your fiscal year starting during the calendar year 2004)

Please give amounts spent and received in ABSOLUTE US dollars

ACTUAL EXPENDITURE<sup>a</sup>

RECEIVED Funding

Government<sup>b</sup> Loans<sup>c</sup> GFATM<sup>d</sup> Other Grants<sup>e</sup>

- 19. TB drugs: first-line
- 20. TB drugs: second-line (for MDR-TB)
- 21. Staff working exclusively for TB control (central unit staff and subnational TB coordinators)
- 22. Initiatives to increase case detection and cure rates
- 23. TB/HIV collaborative activities
- 24. Buildings, vehicles, equipment (lab / office equip. etc.)
- 25. All other budget lines for TB (e.g., training, fuel for supervision, supplies, recording and reporting)
- 26. TOTAL

ACTUAL EXPENDITURE <sup>a</sup>	Government <sup>b</sup>	Loans <sup>c</sup>	GFATM <sup>d</sup>	Other Grants <sup>e</sup>

PLEASE SEE EXPLANATORY NOTES ON PAGE 9. Contact the following people for assistance if required:  
 Pilar Ramon-Pardo, ramonpp@paho.org (for AMRO); Katherine Floyd, floydk@who.int (for EURO, SEARO, WPRO); Andrea Pantoja, pantojaa@who.int (for AFR, EMRO).

**9. Explanations for financial information**

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.

For all questions, please indicate "NA" or "not applicable" if the intervention asked for (e.g., hospitalization) is not used in your country, and indicate "DK" or "Don't know" if you do not have the information required to answer the question. Please do not leave any field blank.

1	The date of the beginning of your fiscal year (between 1 January and 31 December of the year indicated)
2	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 number of cases in your country.
3	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 number of cases in your country.
4	Budget for anti-TB drugs, excluding drugs to treat multi-drug resistant (MDR) TB. If drugs are provided by the Global Drug Facility (GDF), please include an estimate of the value of these drugs.
5	Budget for anti-TB drugs for multi-drug resistant (MDR) TB only, including drugs procured through the Green Light Committee (GLC).
6	Staff cost for staff working ONLY 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. The total per category can be estimated as the average annual salary for each staff category x number of staff in that category. Please report the total for ALL categories.
7	Refers to activities that aim to increase case detection and cure rates in areas where DOTS is already being implemented (i.e., activities to expand DOTS coverage to new geographic areas should NOT be included). Possible examples are social mobilization campaigns, activities to engage the private sector (for example PPM-DOTS projects), incentives/enablers for providers or patients, community TB care, strengthening of diagnostic services and supervision, etc. Include any staff not already covered in number 6.
8	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. Does NOT include staff dedicated to TB and partially managing TB/HIV activities already accounted for under number 6. For clarifications, please see the WHO TB/HIV interim policy or the Monitoring and Evaluation guide.
9	Refers to all equipment, such as vehicles, microscopes, office equipment, etc. It does NOT refer to consumables (such as laboratory supplies), nor to investments related to and already accounted for in numbers 7 and 8.
12	The average number of visits per smear-positive patient to any health facility during TB treatment, for example for observed treatment, collection of drugs, smear monitoring, etc. after the patient has been diagnosed with TB, in view of your treatment guidelines. For example, if directly observed treatment is provided 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+4
13	The average number of visits per smear-negative and extra-pulmonary TB patient to any health facility during TB treatment, for example for DOT, collection of drugs, smear monitoring, etc. after the patient has been diagnosed with TB, in view of your treatment guidelines.
14	The approximate percentage of smear-positive patients hospitalised for TB treatment (for any duration of stay), in view of your treatment guidelines. For example, if your policy is to admit all TB patients for 2 months, the figure will be 100%. If unsure, please give a range.
15	The approximate percentage of smear negative or extra-pulmonary patients hospitalised for TB treatment (for any duration of stay), in view of your treatment guidelines. If unsure, please give a range.
16	If a smear-positive patient is hospitalized for TB treatment, the average number of days he/she spends in hospital.
17	If a smear-negative or extra-pulmonary patient is hospitalized for TB treatment, the average number of days he/she spends in hospital. Include sanatoria beds if these exist.
18	Estimated number of beds in TB hospitals and in TB wards of other hospitals.
19-24	See explanations for items 4-9, above.
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 the amount you expect to receive.
b	Includes 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 (GFATM). The amount for the relevant fiscal year only and NOT the total amount of the grant.
e	All grants, excluding GFATM 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 GFATM, GFATM grants, other).
g	During your last fiscal year, the funds that were actually received and spent. The total in this column should equal h+i+j+k.

**8. Remarks**

Remarks may include: information on completeness of data, explanations for inconsistencies in data, more detailed data, revision of data reported in previous years, and further explanation of financial data.

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

**APPENDIX VII**  
**CANADA – CASE AND**  
**TREATMENT OUTCOME REPORTING FORMS**

---







## Treatment Outcome of a New Active or Relapsed Tuberculosis Case

EFFECTIVE DECEMBER 2006

CONFIDENTIAL  
WHEN COMPLETED

<b>1. Reporting province/territory</b> _____	<b>2. Register case number</b> _____	<b>3. Unique identifier</b> _____	<b>4. Date of birth</b> Year: _____ Month: _____ Day: _____	<b>5. Sex</b> Male: <input type="checkbox"/> Female: <input type="checkbox"/>
<b>6. If transfer from diagnosing province/territory, please state treating province/territory</b> _____		<b>7. Register case number (if different from 2 above)</b> _____		<b>8. Unique identifier (if different from 3 above)</b> _____
<b>9. Date of diagnosis</b> Year: _____ Month: _____ Day: _____		<b>10. Date treatment started</b> Year: _____ Month: _____ Day: _____		<b>11. Last day of treatment</b> Year: _____ Month: _____ Day: _____
<b>12. Initial drugs prescribed (list all that apply)</b>				
<b>1st line</b> 1 <input type="checkbox"/> INH    3 <input type="checkbox"/> EMB    4 <input type="checkbox"/> RMP    5 <input type="checkbox"/> PZA 6 <input type="checkbox"/> No drugs prescribed    8 <input type="checkbox"/> Other (specify) _____		<b>2nd line</b> 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 _____ 9 <input type="checkbox"/> Unknown		
<b>13. Did resistance develop during treatment?</b> 1 <input type="checkbox"/> Yes    2 <input type="checkbox"/> No    3 <input type="checkbox"/> Not tested ↓ <b>If yes, please check drug(s) (check all that apply)</b> <b>1st line</b> 1 <input type="checkbox"/> INH    3 <input type="checkbox"/> EMB    4 <input type="checkbox"/> RMP    5 <input type="checkbox"/> PZA <b>2nd line</b> 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 8 <input type="checkbox"/> Other (specify) _____ 9 <input type="checkbox"/> Unknown		<b>14. What was the treatment outcome? (Check one only)</b> 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 Date of death: Year: _____ Month: _____ Day: _____ 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 jurisdiction – outcome of treatment unknown (specify new jurisdiction) _____ 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		
<b>15. Treatment regimen (for drugs taken &gt; 1 month) (check all that apply)</b> <b>1st line</b> 1 <input type="checkbox"/> INH    3 <input type="checkbox"/> EMB    4 <input type="checkbox"/> RMP    5 <input type="checkbox"/> PZA <b>2nd line</b> 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 6 <input type="checkbox"/> No drugs prescribed    9 <input type="checkbox"/> Unknown 8 <input type="checkbox"/> Other (specify) _____		<b>16. Major mode of treatment:</b> 1 <input type="checkbox"/> DOT (Directly Observed Therapy)    2 <input type="checkbox"/> Standard 2 <input type="checkbox"/> Daily, self-administered    3 <input type="checkbox"/> Enhanced 8 <input type="checkbox"/> Other (specify) _____ 9 <input type="checkbox"/> Unknown		
8 <input type="checkbox"/> Other (specify) _____		<b>17. Adherence estimate (% of medication received)</b> 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

### 2008

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#### 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 (Chair)**

Dr. Paul Rivest

**Manitoba**

Dr. Joel Kettner

**Nova Scotia**

Ms. Dee Mombourquette

**Ontario**

Dr. George Samuel

**Saskatchewan**

Ms. Diane McDougall

**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**

Dr. Lise Scott

**CORRECTIONAL SERVICE CANADA**

Ms. Teresa Garrahan

**FIRST NATIONS AND INUIT HEALTH BRANCH, HEALTH CANADA**

Dr. Lilian Yuan

**NATIONAL REFERENCE CENTRE FOR MYCOBACTERIOLOGY, NATIONAL MICROBIOLOGY  
LABORATORY, PUBLIC HEALTH AGENCY OF CANADA**

Ms. Joyce Wolfe

**TUBERCULOSIS PREVENTION AND CONTROL, PUBLIC HEALTH AGENCY OF CANADA**

Dr. Edward Ellis