

*DIVISION OF  
TUBERCULOSIS CONTROL*

*1998  
ANNUAL REPORT*

*BRITISH COLUMBIA CENTRE FOR DISEASE CONTROL*

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## FOREWORD

This report presents selected statistical and epidemiological information about tuberculosis in the province of British Columbia derived from the activities of the Division of Tuberculosis Control, BC Centre for Disease Control for the calendar year, 1998.

The information contained in this report is wholly derived from statistics kept by the TB Control Registry. The information regarding North American Aboriginals refers only to those that are registered (status). The care of those on reserve is administered by the Federal Government through Medical Services, Pacific Region, Health Canada who contract with the Division for this service. All aboriginals living off reserve are the responsibility of the provincial Ministry of Health. TB Control activities in the province of British Columbia are a centralized activity and a nominal registry of all active cases of TB is maintained in the Division. Although TB is a notifiable disease, the Division is informed of cases from several sources including directly from the Provincial Laboratory in the BCCDC and through the Pharmacy division of BCCDC which is responsible for dispensing all anti-tuberculous medication throughout the province. These additional safeguards ensure that no case of active or suspect tuberculosis can be treated in the province of British Columbia without the Division being informed. This ensures a very high degree of accuracy in our report.

We include in this report details of in-patient treatment of tuberculosis patients which is not directly administered by the Division of TB Control. The care of these patients is carried out in a specialized unit in the Vancouver Hospital and Health Sciences Centre and is run by the Division of Respiratory Medicine.

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Provincial Director  
Division of Tuberculosis Control

## Executive Summary

- In 1998 there were 337 cases of active tuberculosis which represents a 20% reduction in the number of cases compared to 1997 which was an exceptional year. The provincial rates similarly fell from 10.5/100,000 in 1997 to 8.4/100,000 in 1998. The 1998 figures are comparable to the average figures for BC over the last several years. The rate experienced in 1997 (10.5/100,000) exceeded the 1988 rate and is likely attributable to the large number of immigrants that arrived in the preceding couple of years. The B.C. rate exceeds the national rate which, in 1996 was 6.2/100,000 the last year for which national data is available. The B.C. rate was exceeded only by Manitoba, Saskatchewan, Yukon and the Northwest Territories in 1996.
- There is considerable variation in TB rates across health regions. The rate of tuberculosis exceeds 20/100,000 in both Richmond and Vancouver, rates over 2 1/2 times the Provincial rate. Numerically the largest number of cases at 134 occurred in the Vancouver Health District which includes the Downtown Eastside area.
- The rates of tuberculosis among registered Aboriginals is still a cause for concern. The rates of those living off reserve exceed that of the other populations and is some 25 times and rate of the Canadian-born population. Registered Aboriginals living on reserve had rates similar to the foreign-born. Since 1992 there has been a dramatic reduction in on-reserve rates although a leveling off of the rates since 1995. The highest rates in 1992 were attributable to an outbreak of disease on one reserve.
- The report contains age-specific rates over a nine year period. The shape of the curve is similar to other developed countries and typifies an epidemic in decline with the highest rates occurring in older cohorts and the lowest rates occurring in those under 14 years.
- Pulmonary tuberculosis is the most common form of tuberculosis. Twenty-seven percent of the active cases were extra-pulmonary with the commonest site being lymph glands which was considerably more common among the foreign-born. The Aboriginal population was twice as likely to present with cavitary disease suggesting that they present later in the course of their illness and are likely to be more infectious.
- A considerable proportion of the work performed by the Division is concerned with the prevention of tuberculosis in those infected but who have not yet developed active disease. 808 patients were treated for latent tuberculous infection in 1998. The commonest indications were an incidental tuberculin skin test reported as positive or because of a history of contact with an infectious case. Radiological evidence of inactive tuberculosis in patients never treated for the disease is a very high risk situation for reactivation and accounts for 18% of those placed on preventative therapy. They are largely identified by the post-landing immigration surveillance process. In 1998 we

received notification of some 1578 new arrivals that required surveillance as judged by the immigration medical.

- Those infected with HIV and TB are at a particularly high risk of reactivation. Tuberculin testing is indicated in every newly diagnosed HIV positive patient and preventative therapy is offered. This recommendation is attached to every HIV positive serology report.
- In terms of completion rates, 98% of patients completed at least six months of treatment which represents the standard short-course regimen for compliant patients being treated for a sensitive organism. 2.4% of patients (N=8) who had previously been treated for tuberculosis in British Columbia reactivated. Four of these were treated at least 20 years ago. For those previously treated outside British Columbia, the reactivation rate was 4.7%, twice that of those treated in province.
- The standard preventative regime for treating latent tuberculosis is twelve months in the province of British Columbia. Effective preventative therapy, however, is achieved with at least six months of medication, a regimen commonly used in other jurisdictions. Our data report at least six months completion of therapy in 88% of cases treated in 1997. Due to the overlap with patients still on treatment, we were not able to report data for 1998. Drug reactions and non-compliance are the commonest causes of non-completion of chemoprophylaxis. A considerable proportion of the Division's activities concerns contact investigations of active cases. Household contacts have a very high rate of active disease equivalent to 2000/100,000.

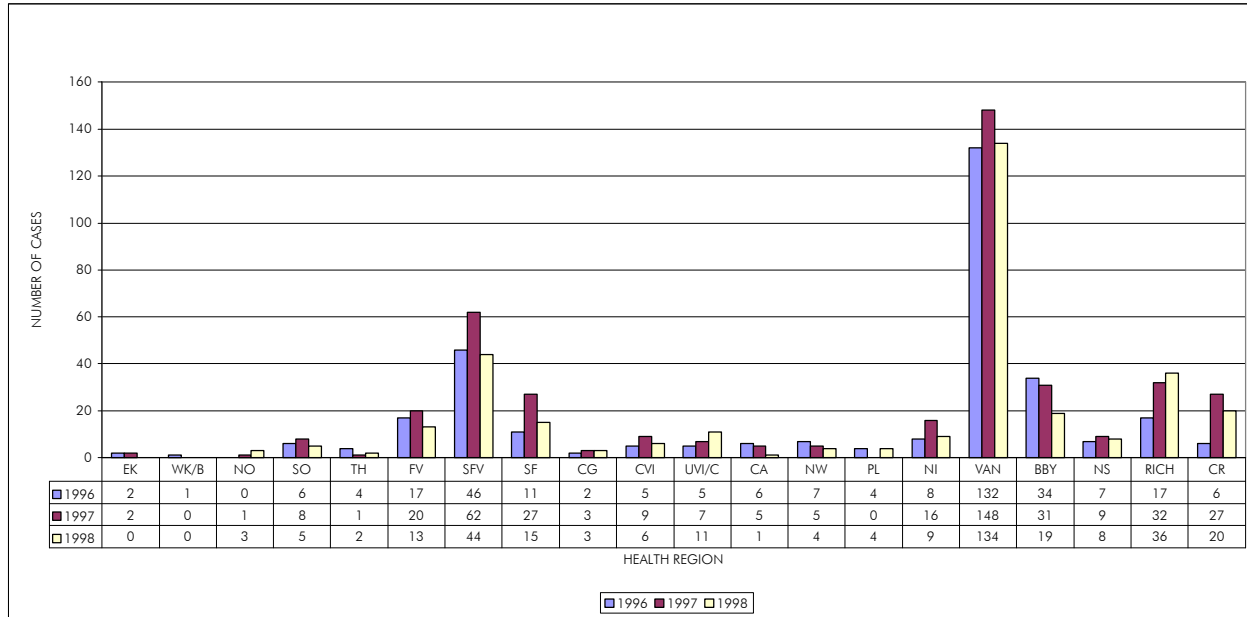
Table 1  
Active Cases - Summary  
Cases diagnosed active in  
British Columbia, 1998

		<b>(%)</b>
New Active (Not known to be previously active)	284	(84.3)
New Active (Diagnosed -Ex-Province prior to arrival in BC)	4	(1.2)
New Active (Diagnosed-outside Canada prior to arrival in BC)	4	(1.2)
Reactivated (Previously active in BC)	8	(2.4)
Reactivated (Previously treated or active outside BC)	16	(4.7)
Presumed TB Inactive (Not previously documented active)	21	(6.2)
<b>Total Active Cases</b>	<b>337</b>	<b>(100.0)</b>
<b>PROVINCIAL RATE: PER 100,000</b>		<b>8.4</b>
<b>Sex distribution</b>		
Male	171	(50.0)
Female	166	(50.0)
<b>Diagnosis</b>		
Respiratory (including Pleurisy)	243	(72.0)
Non-Respiratory	94	(28.0)
<b>Total cases</b>	<b>337</b>	<b>(100.0)</b>
Population of BC: 4,009,922		
Population estimates, BC STATS, BC Ministry of Finance and Corporate Relations.-1998		

337 cases were diagnosed with active tuberculosis in the Province in 1998 and represents a 20% reduction in the number of cases compared to 1997. The rate per 100,000 also similarly fell from 10.5/100,000 in 1997 to 8.4/100,000 in 1998. The 1998 figures are comparable to the average figures for BC over the last several years. The rate experienced in 1997 (10.5/100,000) exceeded the 1988 rate and has been attributed to the large number of immigrants arriving prior to 1997. The BC rate exceeds the national rate which, in 1996, was 6.2/100,000.

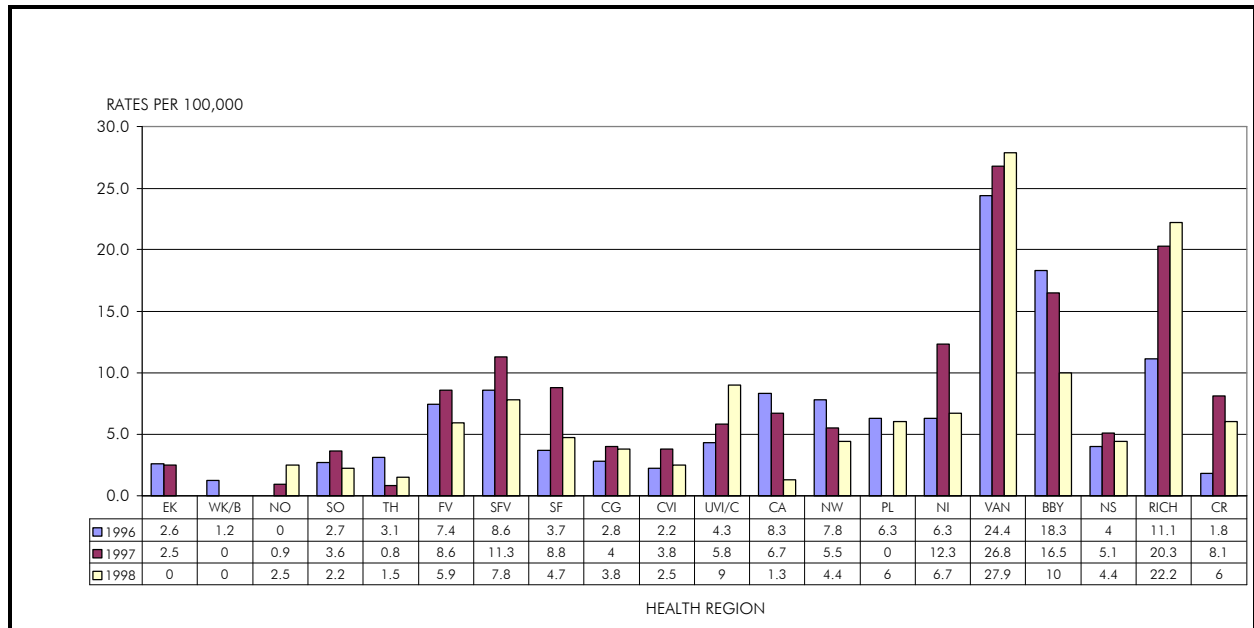


Fig...1  
 Number of active tuberculosis cases  
 by health region 1996 -1998  
 British Columbia



Numerically the largest number of cases at 134 in 1998 occurred in Vancouver health region which includes the Downtown Eastside area. Richmond, Burnaby and South Fraser Valley also contributed a significant number of cases.

Fig...2  
 TB rates/100,000 by health regions,  
 1996 - 1998  
 British Columbia



There is considerable variation in TB rates across health regions. This table represents three years and shows that the rate of tuberculosis exceeds 10/100,000 in both Vancouver and Richmond, approximately 2½ times the Provincial rate.

Fig...2a

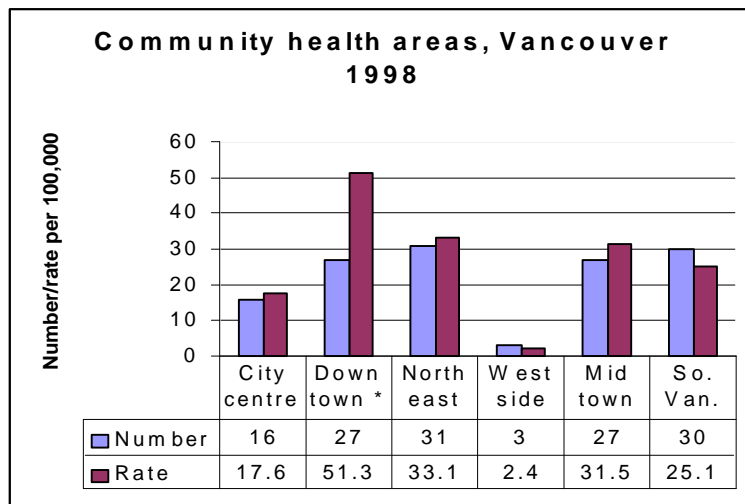
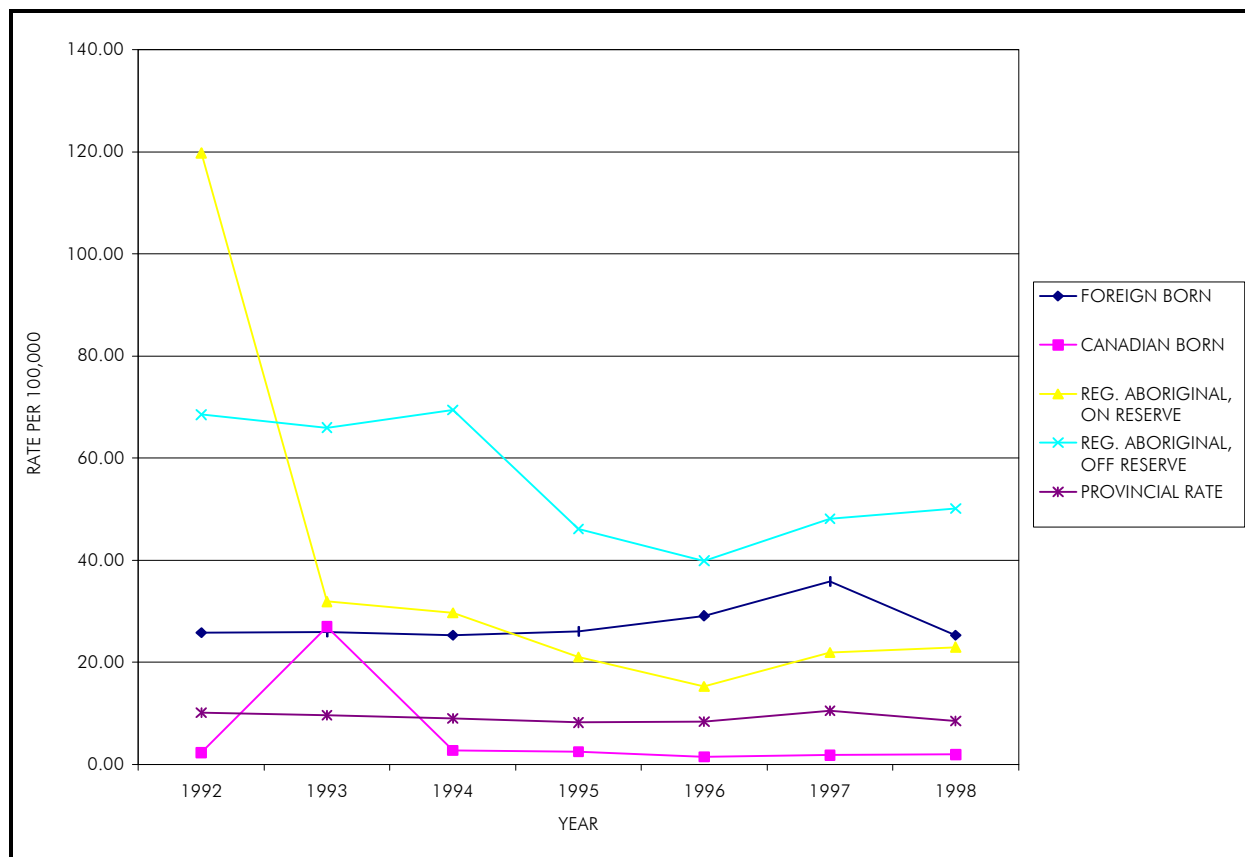


Fig...3  
 TB Rates among Canadian-born and Foreign-born  
 1992 - 1998  
 British Columbia



This table spans the years 1992 to 1998 inclusive. For different population groups, the Provincial rate is also provided for comparative purposes. Rates of tuberculosis among registered Aboriginals living off reserve exceeds that of the other population and is approximately 25 times the rate of the Canadian-born population. Registered Aboriginals on reserve had rates similar to the Foreign-born. The figure illustrates a dramatic reduction in the on-reserve rates compared to 1992, a year when a cluster of cases occurred, but a leveling off of these rates since 1995.

Table 2  
Bacteriological confirmation of active TB  
by anatomical site  
British Columbia, 1998

<b>Respiratory</b>	<b><u>Pos</u> <u>smear*</u></b>	<b><u>Pos cult</u> <u>only</u></b>	<b><u>Total</u></b>	<b><u>(%)</u></b>
Bacillary(1)	115	83	198	(81.5)
Non-bacillary			27	(11.1)
Bacillary status not known or not determined.			18	(7.4)
Total			243	(100.0)
<b>Non-Respiratory</b>				
Bacillary(1)	16	56	72	(76.5)
Non-bacillary			7	(7.4)
Bacillary status not known or not determined.			15	(15.9)
Total			94	(100.0)
<b>All cases</b>				
Bacillary(1)			270	(80.1)
Non-bacillary			34	(10.0)
Bacillary status not known or not determined.			33	(9.7)
<b>Total active cases</b>			337	(100.0)
(*) Includes 7 cases of positive smear only				
(1) Includes all types of specimen - sputum, biopsy, gastric lavage, pleural fluid, etc.				

Table 2a - continued  
 Bacteriological confirmation of active TB  
 by site of disease  
 British Columbia, 1998

<b>Diagnosis</b>		<b># tested</b>	<b>Bacillary(1)</b>	<b>(%)*</b>
<b>Respiratory</b>	243	225	198	(88.0)
<b>Non-respiratory</b>				
Meninges & Central Nervous System	3	1	1	(100.0)
Intestines and Peritonium	3	2	2	(100.0)
Bones & Joints	8	8	7	(87.5)
Skin & Subcutaneous Cell Tissuse	2	2	1	(50.0)
Lymphatic System	54	48	44	(91.6)
Genito-urinary system	8	5	5	(100.0)
Other organs	5	3	2	(66.6)
Disseminated (miliary)	10	9	9	(100.0)
<b>Total cases**</b>	337	304	270	(88.8)
(*) Percent of tested				
(**) Includes 16 cases in which bacteriology status was not known or not determined.				
(1) Includes all types of specimen - sputum, gastric lavage, pleural fluid, etc.				

Table 2b  
Tuberculosis cases resistant to at least one drug  
British Columbia  
1997 - 1998

	Year	# Cultures	Drug Resistant	Resistant (%)
<b>British Columbia</b>	1997	341	30	9%
	1998	264	28	11%

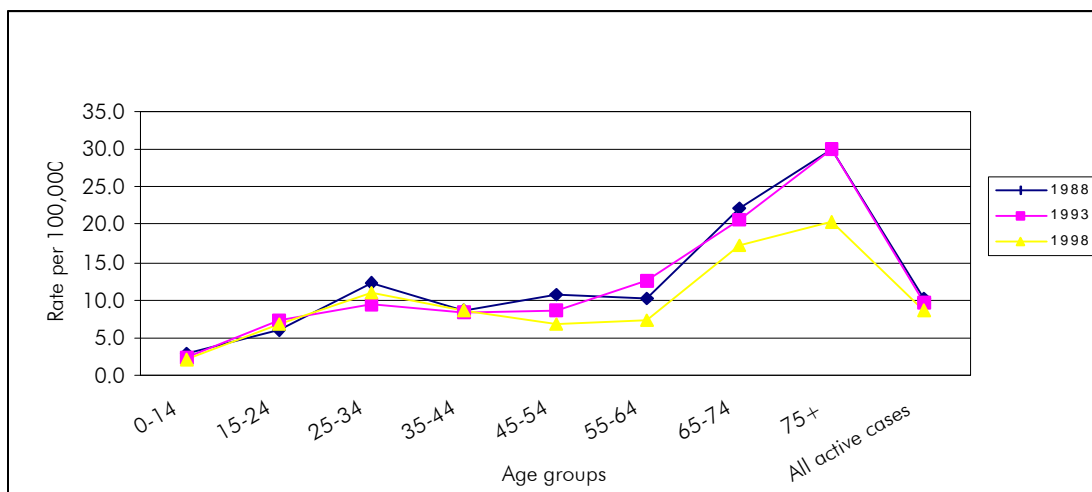
Monoresistance to Isoniazid is the commonest drug resistance pattern observed in BC, accounting for over 50% of all drug resistant cases. Multiple drug resistance (resistant to both Isoniazid and Rifampin) accounts for less than 1% of cases.

Table 3  
Incidence of active tuberculosis by  
age group, gender, and bacillary status  
British Columbia, 1998

Age group	Males				Females				Total			
	Bacillary cases	Rate	All active cases	Rate	Bacillary cases	Rate	All active cases	Rate	Bacillary cases	Rate	All active cases	Rate
<b>0 - 14</b>	4	1.0	7	1.8	2	0.5	9	2.4	6	0.8	16	2.1
<b>15 - 24</b>	10	3.7	12	4.4	17	6.6	24	9.3	27	5.1	36	6.8
<b>25 - 34</b>	32	10.3	39	12.5	22	7.2	28	9.2	54	8.8	67	10.9
<b>35 - 44</b>	25	7.2	29	8.3	27	7.8	31	8.9	52	7.5	60	8.6
<b>45 - 54</b>	14	5.0	17	6.1	13	4.7	20	7.2	27	4.9	37	6.7
<b>55 - 64</b>	11	6.3	16	9.1	7	4.0	10	5.7	18	5.1	26	7.4
<b>65 - 74</b>	22	16.3	26	19.2	20	13.6	23	15.6	42	14.8	49	17.3
<b>75 &amp; over</b>	24	27.1	25	28.2	20	14.5	21	15.2	44	19.4	46	20.3
<b>Total</b>	142	7.1	171	8.6	128	6.3	166	8.2	270	6.7	337	8.4

Rates per 100,000 population  
1998 Population: PEOPLES population #24-BC STATS Ministry of Finance & Corporate affairs.

Fig...4 Active tuberculosis cases, age specific,  
Selected years, British Columbia



This table illustrates the age-specific rates over a nine year period. The shape of the curve is similar to other developed countries with the highest rates occurring in the older cohorts and the lowest rates occurring in those under fourteen.

Table 4  
Contributions of reactivations to total  
active tuberculosis cases by age group  
for 1998  
British Columbia

<b>Age group</b>	<b>0-24</b>	<b>25-44</b>	<b>45-64</b>	<b>65+</b>	<b>Total</b>
<b>Total number of active cases</b>	59	124	67	87	337
<b>Type of case</b>					
<b>Number of reactivations 1</b>	0 (0%)	9 (7.3%)	3 (4.5%)	12 (13.8%)	24 (7.1%)
<b>Number of reactivations 11</b>	1 (1.7%)	4 (3.2%)	5 (7.5%)	11 (12.6%)	21 (6.3%)
<b>Total</b>	1 (1.7%)	13 (10.5%)	8 (12.0%)	23 (26.4%)	45 (13.3%)
Reactivations 1: Derived from inactive tuberculosis cases (previously documented active). Reactivations 11: Derived from presumed pulmonary tuberculosis, inactive (not previously documented active tuberculosis cases).					



Table 5  
Principal diagnosis of active tuberculosis  
among non-Aboriginals and Registered Aboriginals  
(on and off reserve)  
British Columbia, 1998

	<b>Non-Aboriginals (1)</b>		<b>Registered Aboriginals</b>	
		<b>(%)</b>		<b>(%)</b>
<b>Respiratory</b>	216	72.0	27	73.0
<b>Non Respiratory</b>				
Meninges/Central Nervous System	3	0.9	0	0
intestines & Peritonium	3	0.9	0	0
Bones & Joints	5	1.6	3	8.1
Skin & Subcutaneous Cell Tissue	2	0.6	0	0
Lymphatic System	50	16.6	4	10.8
Genito Urinary System	7	2.3	1	2.7
Multiple Sites & Other Organs	6	1.9	0	0
Disseminated /Miliary	8	2.6	2	5.4
<b>TOTAL</b>	300	100	37	100
1 Includes 6 non-status Aboriginals				

Pulmonary tuberculosis is the most common form of tuberculosis. The Aboriginal population was twice as likely to represent with cavitory disease suggesting that they present later in the course of their illness. Twenty-seven percent of the active cases were extra-pulmonary with the commonest site being lymph glands which was much more common among the foreign born.

Table 6  
 Previous radiological findings in  
 active cases diagnosed in 1998  
 British Columbia

<b>KNOWN PRE-EXISTING CHEST X-RAY ABNORMALITY:</b>		(%)
<b>REACTIVATION 1</b>		
Inactive tuberculosis (Previously documented active episode(s))	24	7.1
<b>REACTIVATION 11</b>		
(Presumed tuberculosis inactive)	<u>22</u>	<u>6.5</u>
Sub-total	48	13.6
<b>OTHER PRE-EXISTING CHEST X-RAY ABNORMALITY</b>		
Pulmonary Fibrosis (Localized and Diffuse)	3	0.9
Old pleurisy and other pleural changes	2	0.6
Healed primary complex	5	1.5
Other conditions	3	0.9
Sub-total	13	3.8
<b>NO PRE-EXISTING CHEST X-RAY ABNORMALITY</b>	35	10.4
<b>NO PREVIOUS CHEST X-RAY TAKEN OR AVAILABLE</b>	243	72.1
<b>TOTAL CASES</b>	337	100
Total includes: 4 cases diagnosed inside Canada (other Provinces) 4 cases diagnosed outside Canada (prior to arrival)		

Table 7  
Place of treatment of active tuberculosis cases,  
according to principal bacteriological findings,  
British Columbia, 1998

Diagnosis	<b>Domicillary</b>		<b>Hospital, TB ward</b>		<b>General Hospitals (1)</b>		<b>Total</b>	
		(%)		(%)		(%)		(%)
<b>Respiratory</b>								
Positive smear and culture	67	(63.0)	23	(21.5)	17	(15.9)	107	(100.0)
Positive culture only	66	(87.0)	3	(4.0)	7	(9.0)	76	(100.0)
Negative smear and culture	25	(100.0)	0	(0)	0	(0)	25	(100.0)
Not examined	12	(100.0)	0	(0)	0	(0)	12	(100.0)
Pathlogy	5	(71.4)	1	(14.3)	1	(14.3)	7	(100.0)
Sub total	175	(77.1)	27	(11.9)	25	(11.0)	227	(100.0)
<b>Non-respiratory</b>								
Positive smear and culture	7	(58.3)	1	(8.3)	4	(33.3)	12	(100.0)
Positive culture only	47	(87.0)	2	(3.7)	5	(9.2)	54	(100.0)
Negative smear and culture	1	(100.0)	0	(0)	0	(0)	1	(100.0)
Not examined	2	(66.6)	0	(0)	1	(33.3)	3	(100.0)
Pathlogy	16	(88.8)	1	(5.5)	1	(5.5)	18	(100.0)
Sub total	73	(83.0)	4	(4.5)	11	(12.5)	88	(100.0)
<b>Total</b>	<b>248</b>	<b>(78.7)</b>	<b>31</b>	<b>(9.8)</b>	<b>36</b>	<b>(11.4)</b>	<b>315</b>	<b>(100.0)</b>

Note: In addition to the above total 15 persons were diagnosed at death.  
In addition to the above total 7 persons were diagnosed receiving no treatment.  
1. Treatment had been started in other hospitals in British Columbia or in other wards than the designated TB ward.

Seventy-nine percent of patients were treated outside hospital and 10% received some part of their treatment in the designated TB ward.

Table 8  
Completion of therapy of  
active tuberculosis  
1995 - 1997  
British Columbia

	<b>1995</b>	<b>1996</b>	<b>1997</b>
<b>Number Active</b>	311	323	411
<b><u>Treatable cases</u></b>	<u>294</u>	<u>306</u>	<u>386</u>
<b><u>Self administered treatment</u></b>	<u>250 (85.0%)</u>	<u>256 (83.6%)</u>	<u>307 (79.5%)</u>
Completed	207 (82.8%)	205 (80.1%)	238 (77.5%)
<b>Reasons for non-completion</b>			
Still on therapy	10 (4.0%)	11 (4.3%)	9 (2.9%)
Drug reaction	3 (1.2%)	4 (1.6%)	11 (3.6%)
Moved	13 (5.2%)	14 (5.5%)	26 (8.5%)
died	7 (2.8%)	8 (3.1%)	13 (4.2%)
non compliant/lost	7 (2.8%)	8 (3.2%)	4 (1.2%)
Other	3 (1.2%)	6 (2.3%)	6 (1.9%)
<b><u>Supervised treatment</u></b>	<u>44 (15.0%)</u>	<u>49 (16.0%)</u>	<u>79 (20.4%)</u>
Completed	37 (84.1%)	34 (69.4%)	63 (79.7%)
<b>Reasons for non-completion</b>			
Still on therapy	0 (0%)	1 (2.0%)	3 (3.8%)
Moved	2 (4.5%)	1 (2.0%)	5 (6.3%)
died	2 (4.5%)	5 (10.2%)	4 (5.1%)
non compliant/lost	3 (6.8%)	7 (14.3%)	3 (3.8%)
Other	0 (0%)	1 (2.0%)	1 (1.3%)

Definitions: "Completion": the patient had received an adequate or satisfactory course of therapy according to the policies of the TB Control program.

"Other": the treatment was stopped for a reason specific to the patients care. (i.e. pregnancy, mentally challenged, surgery intervention).

***Excluding unavoidable causes of non-completion, 93% of cases completed an adequate regimen likely to be curative.***

Table 9  
 Indication for preventive therapy  
 starting in 1998  
 British Columbia

<b>Indication for therapy</b>		
<b>Positive Tbn Reactors</b>	255	(32.0)
<b>Convertors</b>	66	(8.2)
<b>Contacts</b>	247	(30.5)
<b>HIV Positive</b>	13	(1.6)
<b>Primary prophylaxis</b>	38	(4.7)
<b>Radiological evidence of inactive tuberculosis</b>	152	(17.7)
<b>Miscellaneous</b>	36	(6.0)
<b>Total</b>	808	(100.0)

808 patients were placed on preventive therapy for tuberculosis in 1998. The commonest reasons were an incidental tuberculin skin test reported as positive or a history of contact with an active case. Radiological evidence of inactive tuberculosis in patients never treated for pulmonary tuberculosis in the past accounted for 18% of those on preventive therapy. These are usually identified by the post-landing surveillance process.

Table 10  
Completion of chemoprophylaxis  
1995 - 1997  
British Columbia

	<b>1995</b>	<b>1996</b>	<b>1997</b>
<b><u>Number of cases</u></b>			
<b><u>starting chemoprophylaxis</u></b>	<u>1032</u>	<u>844</u>	<u>1006</u>
<b><u>Self administered</u></b>			
<b><u>treatment</u></b>	<u>893 (86.5%)</u>	<u>698 (82.7%)</u>	855 (84.9%)
Completed	505 (56.5%)	383 (54.9%)	489 (57.2%)
	<b>Reasons for non-completion</b>		
Still on therapy	14 (2.8%)	18 (2.6%)	18 (2.1%)
Drug reaction	112 (22.2%)	85 (12.2%)	84 (9.8%)
Moved	29 (5.7%)	21 (3.0%)	38 (4.4%)
Died	9 (1.8%)	4 (0.6%)	4 (0.5%)
Non-compliant/lost	134 (26.5%)	123 (17.6%)	152 (17.7%)
Others	90 (17.8%)	64 (9.2%)	70 (8.2%)
<b><u>Supervised treatment</u></b>	<u>139 (13.5%)</u>	<u>146 (17.3%)</u>	<u>151 (15.0%)</u>
Completed	80 (57.5%)	71 (48.6%)	71 (47.0%)
	<b>Reasons for non-completion</b>		
Still on therapy	3 (2.2%)	7 (4.8%)	2 (1.3%)
Drug reaction	17 (12.2%)	18 (12.3%)	19 (12.6%)
Moved	2 (1.4%)	1 (0.7%)	0 (0%)
Died	0 (0%)	3 (2.0%)	1 (0.6%)
Non-compliant/lost	30 (21.6%)	39 (26.7%)	46 (30.5%)
Others	7 (5.0%)	7 (4.8%)	12 (7.9%)

The Divisional standard preventative regimen for treating latent tuberculosis infection is twelve months. Effective preventative therapy, however, is achieved with at least six months of medication, a regimen commonly used in other jurisdictions. Drug reactions and non-compliant patients being lost to follow-up are the commonest causes of non-completion therapy.

Table 11  
 Active tuberculosis  
 agency providing initial investigation (usually x-ray)  
 leading to the diagnosis  
 British Columbia, 1998

<b>Division of TB Control</b>	44	13%
<b>TB Services to Aboriginals</b>	2	0.50%
<b>General Hospitals</b>	205	61.00%
<b>Private Radiologists</b>	59	17.50%
<b>Private Physician</b>	5	1.50%
<b>Mental Health Services</b>	1	0.30%
<b>Ex-Province</b>	9	2.60%
<b>Provincial jails</b>	2	0.60%
<b>Notified on death</b>	10	2.90%
<b>Total</b>	337	100%

Table 12  
Tuberculosis (active) deaths  
Deaths while on treatment or notified after death  
British Columbia, 1998

	<b>TB principal cause of death</b>	<b>TB contributing cause of death</b>	<b>TB not related to death</b>	<b>Total</b>
<b>Notified after death (diagnosis at or after death)</b>	3	3	2	8
<b>Diagnosed and notified before death*</b>	2	5	13	20

\*These cases were diagnosed active and may have rec'd treatment prior to death.

Table 13  
Tuberculosis (active) deaths by  
Country of birth  
British Columbia, 1998

	<b>TB principal cause of death</b>	<b>TB contributing cause of death</b>	<b>TB not related to death</b>	<b>Total</b>
<b>Canadian born</b>				
<b>Aboriginals</b>	1	1	1	3
<b>Others</b>	0	0	3	3
<b>Foreign born</b>	1	4	7	12
<b>Unknown</b>	3	3	4	10
<b>Total</b>	5	8	15	28



Table 14  
Tuberculosis (active) deaths by  
age, gender, and cause of death  
British Columbia, 1998

<b>Age</b>	<b>TB principal cause of death</b>	<b>TB contributing cause of death</b>	<b>TB not related to cause of death</b>	<b>Total</b>
<b>0-24</b>	0	0	0	0
<b>25-44</b>	1	3	2	6
<b>45-64</b>	2	0	2	4
<b>65-84</b>	2	3	10	10
<b>85 &amp; Over</b>	0	2	1	3
<b>Total</b>	5	8	15	28

Table 15  
Tuberculosis (active) deaths by  
diagnosis and cause of death  
British Columbia, 1998

	<b>TB principal cause of death</b>	<b>TB contributed to cause of death</b>	<b>TB was not related to cause of death</b>	<b>Total</b>
<b>Respiratory</b>	2	5	13	22
<b>Non-respiratory Bones &amp; Joints</b>	0	0	1	1
<b>Disseminated (Miliary)</b>	3	3	1	7
<b>Total</b>	5	8	15	28

Table 16  
 Incidence of active TB among registered aboriginals  
 (on and off reserve) by age group and gender  
 British Columbia, 1998

Age group:	MALES		FEMALES		TOTAL	
	Number	Rate	Number	Rate	Number	Rate
<b>0 - 14</b>	0	0	4	28.2	4	13.6
<b>15 - 24</b>	1	10.4	2	21.8	3	16.0
<b>25 - 34</b>	4	42.1	3	31.1	7	36.5
<b>35 - 44</b>	4	47.9	6	63.0	10	55.9
<b>45 - 54</b>	6	124.6	3	53.6	9	86.4
<b>55 - 64</b>	0	0	1	31.3	1	17.2
<b>65 &amp; over</b>	1	47.1	2	70.8	3	60.6
<b>Total</b>	16	30.7	21	38.8	37	34.8

Fig...5

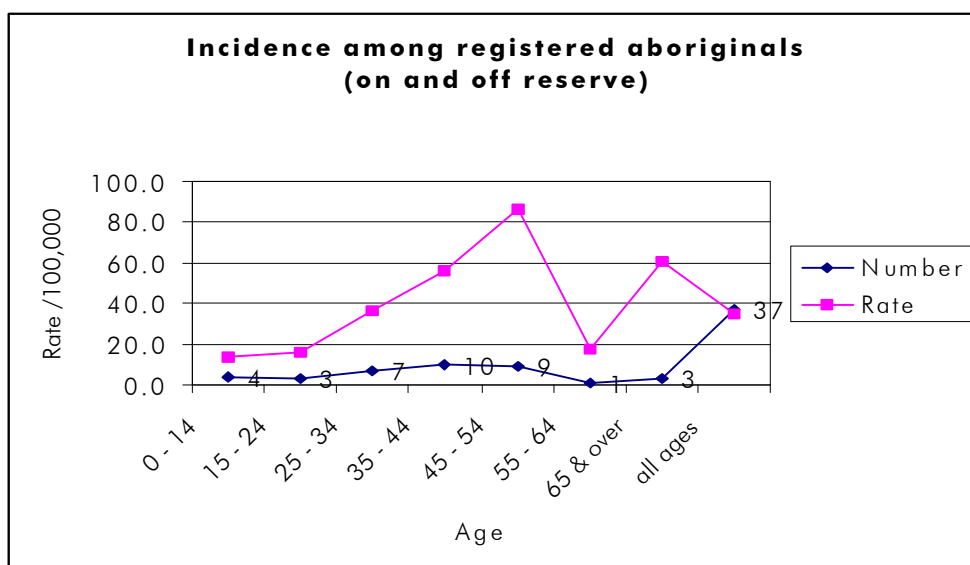


Table 17  
Active tuberculosis by health authority  
of residence for registered aboriginals  
British Columbia, 1998

<b>Health Authority</b>	
East Kootenay	0
West Kootenay/Boundary	0
North Okanagan	1
South Okanagan/Similkameen	0
Thompson	0
Fraser Valley	2
South Fraser Valley	0
Simon Fraser	1
Coast Garibaldi	0
Central Vancouver Island	1
Upper Island/Central Coast	3
Cariboo	0
North West	0
Peace Liard	0
Northern Interior	1
Vancouver City	12
Burnaby	1
North/West Vancouver	0
Richmond	0
Capital	1
South Pacific Zone	9
North Pacific Zone (West)	1
North Pacific Zone (East)	4
Total	37

Table 18  
BCG vaccinations given by Aboriginal Services  
1994 - 1998  
British Columbia

<b>Age:</b>	<b>0-89 days</b>	<b>&gt; 90 days</b>	<b>Adverse reactions</b>
<b>Year</b>			
<b>1994</b>	482	54	4
<b>1995</b>	451	23	3
<b>1996</b>	474	13	5
<b>1997</b>	374	15	5
<b>1998</b>	321	7	3

BCG vaccination is given only to newborns on reserve. Adverse reactions are likely to be under reported. Recent deliberations by MSB has resulted in a decision to continue vaccination.

Table 19  
Yield of contact tracing  
**Type of case: Respiratory**  
Type of contact: Household and Close non-household  
British Columbia, 1996 - 1998

	<u>Household</u>	<u>Active cases</u>	<u>Close non-household</u>	<u>Active cases</u>
<b>1996</b>	442	12 (2.0%)	2673	7 (0.3%)
<b>1997</b>	642	13 (2.0%)	1542	10 (0.6%)
<b>1998</b>	493	13 (2.6%)	1101	2 (0.2%)

This table illustrates the yield of contact investigation according to the closeness of contact. Household contacts have a very high rate of active disease, equivalent to 2000/100,000.

Table 20  
Yield of contact tracing by  
bacillary status of source case  
British Columbia, 1998

	RESPIRATORY												NON-RESPIRATORY		
	Household contact			Close-non-household contact			Casual contact			Total Respiratory Contacts			Household contact		
	Total contacts	active	%	Total contacts	active	%	Total contacts	active	%	Total contacts	active	Rate*	Total contacts	active	%
<b>Source bacteriology</b>	495	14	2.8	1105	4	0.4	1642	9	0.5	3242	27	832.8	128	1	0.8
<b>Positive Smear &amp; Culture</b>															
<b>Total contacts</b>	348	12	3.4	1063	4	0.4	1566	9	0.6	2977	25	839.7	26	1	3.8
<b>Tuberculin positive contacts(1)</b>	119	5	4.2	245	3	1.2	400	6	1.5	764	14	1832.4	8	1	12.5
<b>Positive Culture only</b>															
<b>Total contacts</b>	132	2	1.5	29	0	0	73	0	0	234	2	854.0	91	0	0
<b>Tuberculin positive contacts(1)</b>	46	0	0	11	0	0	0	0	0	57	0	0	34	0	0
<b>Negative Smear &amp; Culture or no specimens submitted</b>															
<b>Total contacts</b>	15	0	0	13	0	0	1	0	0	29	0	0	0	0	0
<b>Tuberculin positive contacts(1)</b>	8	0	0	7	0	0	0	0	0	15	0	0	3	0	0

(1) includes persons with a reaction of 10mm or greater.

\*Rate per 100,000

Table 21  
Total admission/re-admissions to TB ward  
Vancouver General Hospital, Vancouver Health Sciences Centre  
by eventual diagnosis  
British Columbia, 1998

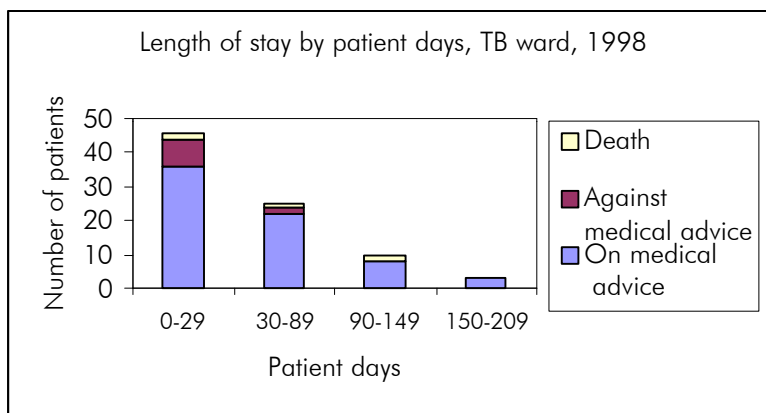
	<b>Total admissions</b>	<b>1st admissions</b>	<b>Re-admissions</b>
<b>Active tuberculosis</b>	68	55	13 (19%)
<b>Respiratory</b>	62	51	11
<b>Non Respiratory</b>	6	4	2
<b>Suspect TB</b>	9	7	2 (22%)
<b>Mycobacteria other than tuberculosis</b>	3	3	0
<b>Non-tuberculous disease</b>	2	1	1 (50%)
<b>Total admissions</b>	82	66	16 (20%)
Note: The total admissions are represented by 74 patients			

The designated TB Ward is located at Vancouver Health Science Centre, VGH. This ward serves the whole province of BC and medical coverage is provided by the UBC Division of Respiratory medicine. In 1998 there were 82 admissions representing 74 individual patients. 55% of patients stayed less than 29 days and 85% stayed less than 89 days. Discussions are currently underway to relocate this facility.

Table 22  
 Length of stay, TB ward,  
 Vancouver General Hospital, Health Science Centre  
 by gender and type of discharge  
 British Columbia, 1998

		Length of stay					
		Mos. Under 1	1 - 2	3 - 4	5 - 6	7 - 11	Total
Type of discharge		Days 0 -29	30 - 89	90 - 149	150 - 209	210 - 364+	
<b>On Medical advice</b>	M	20	15	5	3	0	43
	F	16	7	3	0	0	26
<b>Against medical adv</b>	M	2	1	0	0	0	3
	F	6	1	0	0	0	7
<b>Death</b>	M	2	1	2	0	0	5
	F	0	0	0	0	0	0
<b>Total</b>		46	25	10	3	0	84

Fig...6



The 84 discharges spent a total of 3,762 patient days on the TB ward. The average stay was 45 days. The majority of these were for active respiratory disease.