

Tuberculosis in Ottawa, 2011



Knowledge to Action Report

Fall 2011

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Tuberculosis is caused by the bacterium *Mycobacterium tuberculosis*, which spreads from person to person through the air. It typically affects the lungs, but it can also infect other parts of the body such as the brain, the kidneys or the spine.

In “active” cases of tuberculosis, the body is unable to fight the infection and the person usually feels sick. In “latent” tuberculosis infections, individuals carry live bacteria but are neither ill nor infectious; they are however at risk of developing the disease should their immune system weaken. Both active and latent tuberculosis can be detected and treated.

At a population level, limiting the spread of tuberculosis depends on timely diagnosis and management of individuals with pulmonary tuberculosis, who spread the disease through coughing or sneezing. Ideally, the time between the onset of symptoms and the beginning of treatment is as short as possible to reduce risk to both the general population and the infected individual.

To better inform the planning and implementation of strategies that address tuberculosis in Ottawa,

OPH compiled the *Tuberculosis in Ottawa, 2011* report. Data from 2010 were extracted from the integrated Public Health Information System (iPHIS) and analyzed to provide a local picture of tuberculosis in Ottawa. The report includes the number of active cases diagnosed in 2010, incidence by age and sex, sites of disease and prevalence of latent tuberculosis infection. Data from case follow-up complete the picture with a look at exposure settings as well as medical and behavioural risk factors that could increase susceptibility.

Impact on the health of Ottawa's residents

In 2010, 47 cases of tuberculosis were reported in Ottawa. The incidence of tuberculosis in Ottawa has fluctuated from year to year over the past 10 years, with 40 to 60 cases reported every year. During the same period, the rest of Ontario showed a slight decline.

As shown in Table 1, pulmonary tuberculosis, which can be transmitted to others, accounted for more than half of all tuberculosis cases in Ottawa in 2010.

Table 1 – Tuberculosis sites of disease, Ottawa, 2010*

	2010	% of cases
Total number of tuberculosis cases	47	
Pulmonary	30	58
Lymphatic system (lymph nodes)	9	17
Disseminated in the body (miliary)	3	6
Brain (meningitis)	3	6
Other organs	2	4
Genitourinary	2	4
Bones and joints	1	2
Ocular (uveitis)	1	2
Skin and subcutaneous tissue	1	2
Total sites infected	52	

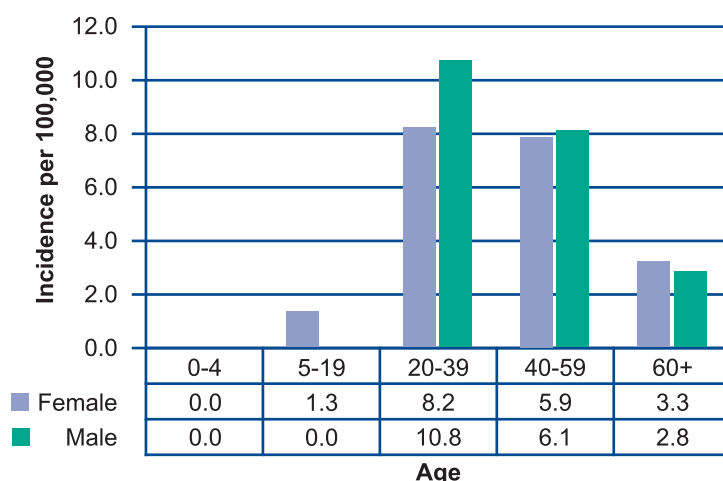
*An individual case may have more than one site of infection
Source: iPHIS, Ottawa Public Health, data extracted June 21, 2011

People who contract tuberculosis may not seek care immediately upon becoming sick, particularly if the symptoms are not severe.

The most affected residents

Tuberculosis in Ottawa tends to disproportionately affect young and middle-aged adults (Figure 1). Men and women are affected equally, with 24 and 23 cases diagnosed in 2010, respectively.

Figure 1 – 2010 incidence of tuberculosis in Ottawa by sex and age



Source: iPHIS, Ottawa Public Health, data extracted 14 June, 2011

Nine in ten people with active tuberculosis in Ottawa were born outside of Canada. All immigrant applicants to Canada, those who come as refugees and some visitors, are required to undergo an immigration medical examination prior to entry. If active tuberculosis disease is found, the person is denied entry until they receive adequate treatment and have been reassessed. Medical surveillance is conducted on new immigrants who are identified as being at risk for developing pulmonary tuberculosis.

How people are exposed

In 2009 and 2010, many Ottawa residents with active tuberculosis had travelled to and lived in countries where the incidence of tuberculosis is high. There was an increase in 2010 in the number of cases who were exposed to tuberculosis in workplace setting, including hospitals, an embassy of a high incidence country and summer work in a high incidence country. Most of these cases also had lived in high incidence areas in the past.



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The earlier tuberculosis is detected and treated, the less it is spread to contacts of infected individuals. Between 2006 and 2010, 75% of cases were treated within 74 days of symptom onset and 25% were treated within nine days of symptom onset. Some cases can have longer delays with less than 10% of cases having between 174 to 625 days between symptom onset and treatment.

Other factors affect the severity and treatment of the disease, both of which can have an impact on transmission to others:

- People infected with drug-resistant strains of tuberculosis can be difficult to treat and will require a longer treatment period. In 2010, 23% of cases cultured in Ottawa were resistant to at least one anti-tuberculosis drug and two cases were resistant to several drugs.
- People with HIV are more susceptible to tuberculosis infection because their immune system is suppressed. Tuberculosis can cause much more serious disease in those co-infected with HIV, and treatment is more challenging. In Ottawa, a small proportion (4%) of 2010 tuberculosis cases were co-infected with HIV.

Reducing tuberculosis in Ottawa

Ottawa Public Health's role to prevent and reduce the incidence and transmission of tuberculosis is accomplished by:

Facilitating early diagnosis, prompt treatment and follow-up of all suspect and confirmed cases of tuberculosis

Managing cases of tuberculosis through comprehensive case management to ensure successful completion of treatment

Identifying and testing contacts of pulmonary tuberculosis cases and ensuring all required follow-up is complete

Screening populations at high risk of being exposed to individuals with tuberculosis and providing required follow-up

Investigating individuals with latent tuberculosis infection placed on medical surveillance by Citizenship and Immigration Canada and ensuring all required follow-up is complete

Providing consultation, information and education to local health care providers about the presentation, treatment and control of both active and latent tuberculosis

Distributing tuberculosis medications, which are free of charge, to clients with active or latent tuberculosis

Preventing and reducing the incidence and transmission of tuberculosis in Ottawa includes building skills, raising awareness, creating supportive environments, strengthening community action, developing public health policy and re-orienting health services to better meet community needs.

Building skills

Enhancing the skills of health care providers can increase their knowledge and understanding regarding the presentation, control and treatment of active or latent tuberculosis.

- Continue to provide tuberculosis consultation, information and education to local health care providers, including family physicians, nurse practitioners and community nurses through biannual Tuberculosis Prevention Workshops and ongoing communication (e.g., telephone, fax, e-mail)

- Continue to provide annual education sessions for Personal Support Workers contracted to provide Directly Observed Therapy (DOT) to active tuberculosis cases, to increase their knowledge and understanding of tuberculosis and how it is managed in Ottawa
- Continue to distribute various tuberculosis resources such as The Tuberculin Skin Test (TST) video (produced by Ottawa Public Health educating health care providers on how to administer and interpret a TST) and ThinkTB rulers and pens
- Revision and distribution of the Tuberculosis Screening Guidelines for health care providers, which offer information on screening and treatment protocols of high risk groups (e.g., clients born in endemic areas) for latent tuberculosis infection

Raising awareness

Tuberculosis is a disease that some believe has been eliminated in Ottawa. By raising awareness, individuals will recognize the symptoms of tuberculosis and health care providers can provide prompt diagnosis and treatment.



Tuberculosis is a disease that many believe has been eradicated and does not occur in Ottawa.

- Conduct annual promotion of World TB Day activities, held on March 24, using the Together We Can Stop TB display and social media (e.g., Twitter) to disseminate key messages to health care providers, Ottawa Public Health staff and the general public
- Collaborate with Ottawa Public Health's Priority Populations Team to develop tuberculosis fact sheets that will service Ottawa's multicultural population, making information more accessible to clients that may be at increased risk for the development of tuberculosis

Creating supportive environments

Supportive environments can be created through:

- Continue to advocate for cases of tuberculosis, by acting as a liaison, to ensure they are receiving essential services that will support them through treatment completion (e.g., food, lodging, transportation to medical appointments)
- Continue to screen for latent tuberculosis infection in groups at high risk of being exposed to individuals with active tuberculosis, by providing annual tuberculin skin testing clinics at shelters and drop-in centres

Strengthening community action

As the incidence of tuberculosis is a global health concern, it is imperative that all potential barriers to clients receiving and completing treatment are removed.



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- Initiate new partnerships in the community, such as The Inuit Family Health Care Team, Wabano Aboriginal Health Centre, to educate health care providers on tuberculosis screening protocols, follow-up of latent tuberculosis infection and how to identify new cases
- Continue to participate as a member of a multidisciplinary team at The Ottawa Hospital and The Children's Hospital of Eastern Ontario Tuberculosis Clinics, providing a liaison role to work collaboratively with hospital staff to ensure clients with tuberculosis are treated according to the Canadian Tuberculosis Standards, ensuring comprehensive case management and successful completion of treatment

- Investigate individuals with latent tuberculosis infection placed on medical surveillance by Citizenship and Immigration Canada and ensuring all required follow-up is complete
- Continue to collaborate with Revera, the independent health care agency that provides daily DOT service and Medical Arts Dispensary for the distribution of tuberculosis medications for active cases

Developing public health policy

To ensure proper management of tuberculosis, Ottawa Public Health will:

- Collaborate with Ottawa Public Health's Sexual Health Centre Case Management Team to develop educational tuberculosis resources for use in clients diagnosed with HIV to reinforce being tested for latent tuberculosis infection as they are at an increased risk for the development of active tuberculosis
- Continue to participate in provincial workgroups that guide tuberculosis practices

Re-orienting health services to better meet community needs

To meet community needs, Ottawa Public Health will continue to inform health care providers on new and emerging tuberculosis issues and current epidemiological information, such as articles in the Physician's Update e-bulletin. The control of tuberculosis requires the continued coordinated efforts of Ottawa Public Health with health care providers and health care agencies within the community.



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