

# Infectious Diseases and Tuberculosis Control Program Report 2012-2014

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Authors

April Smith, Kristy Wright and Christopher Harold

Contributors

David Aoki, June Armstrong, Chad Ludwig, and Glenna Murray

Editors

Christopher Harold, Kristy Wright, Karen Quigley-Hobbs, and Dr. Hsiu-Li Wang

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For more information about the Infectious Diseases and Tuberculosis Control Program please contact:

Infectious Diseases & Tuberculosis Control Program  
Infectious Diseases, Dental and Sexual Health Division  
Region of Waterloo Public Health  
99 Regina Street South, 3<sup>rd</sup> floor  
Waterloo, Ontario N2J 4V3  
Phone: 519-575-4400 ext. 5288  
Email: [KWright@regionofwaterloo.ca](mailto:KWright@regionofwaterloo.ca)

For more information about this report please contact:

Information and Planning Program  
Infectious Diseases, Dental and Sexual Health Division  
Region of Waterloo Public Health  
99 Regina Street South, 3<sup>rd</sup> floor  
Waterloo, Ontario N2J 4V3  
Phone: 519-575-4400 ext. 5322  
Email: [CHarold@regionofwaterloo.ca](mailto:CHarold@regionofwaterloo.ca)

## Abbreviations

	Name
ESW	Emergency Service Worker
GBS	Group B Streptococcal Disease
HPPA	Health Protection and Promotion Act
iGAS	Group A Streptococcal Disease
IMD	Invasive Meningococcal Disease
IPD	Invasive Pneumococcal Disease
iPHIS	Integrated Public Health Information System
MBTA	Mandatory Blood Testing Act
MOHLTC	Ministry of Health and Long-Term Care
OPHS	Ontario Public Health Standards
ROWPHE	Region of Waterloo Public Health and Emergency Services

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## 1.0 Introduction

Infectious diseases are illnesses caused by microorganisms such as bacteria, viruses and parasites which may cause serious illness or be transmitted to other individuals. In Ontario, the Health Protection and Promotion Act (HPPA) outlines all infectious diseases of public health importance that must be reported to local public health units by physicians, hospitals, institutions, schools, laboratories, and other healthcare practitioners<sup>1</sup>.

The Ontario Public Health Standards (OPHS) establish requirements for all public health programs and services, which include assessment and surveillance, health promotion and policy development, disease and injury prevention, and health protection.<sup>2</sup> The Infectious Diseases and Tuberculosis Control Program is responsible to the Board of Health for implementing requirements outlined in the Infectious Diseases Prevention and Control Standard and Tuberculosis Prevention and Control Standard. In addition, it adheres to the associated protocols that outline how the program should conduct its work.

Responsibility for the Infectious Disease Standard is shared with Public Health's Health Protection Investigation Division. Refer to Appendix A for a list of reportable diseases that are investigated and managed by the Infectious Diseases and Tuberculosis Control Program.

In order to meet its HPPA and OPHS requirements, the Infectious Diseases and Tuberculosis Control Program provides a variety of programs services related to infectious and tuberculosis disease prevention and control for residents and visitors of Waterloo Region. These services include:

- 1) Case and contact management of reportable infectious disease cases and exposures;
- 2) Assistance with respiratory outbreak management in institutions;
- 3) Health promotion activities and services for community groups, including, but not limited to, primary care providers, emergency service workers and childcare providers;
- 4) Clinic-based services for tuberculosis screening and management; and
- 5) Complaint-based investigation of infection prevention and control practices in facilities operated by regulated health professionals.

This report provides an overview of these services over the 2012 to 2014 time period to prevent and manage reportable infectious diseases, including tuberculosis, in Waterloo Region.

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<sup>1</sup> Health Protection and Promotion Act, R.S.O. 1990, c. H.7. Available from: [http://www.e-laws.gov.on.ca/html/statutes/english/elaws\\_statutes\\_90h07\\_e.htm](http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90h07_e.htm)

<sup>2</sup> Ontario Public Health Standards (2008). Ministry of Health and Long-Term Care.

## 2.0 Surveillance Snapshot

The Ministry of Health and Long-Term Care mandates each health unit to conduct surveillance of reportable infectious diseases. This section highlights surveillance findings for confirmed reportable diseases managed by the Program. For a full assessment please refer to the Waterloo Region Annual Infectious Disease Report (2014) at

<http://chd.region.waterloo.on.ca/en/researchResourcesPublications/reportsdata.asp#INFECTIOUSDISEASES>

Key surveillance findings include:

- The incidence of hepatitis A increased in 2014 compared to 2012 and 2013; however, the rate was not significantly higher than the provincial rate
- Vector-borne diseases such as Malaria and West Nile Virus are uncommon in Waterloo Region
  - Rates of malaria decreased in 2014 compared to 2012 and 2013
  - There were no confirmed cases of West Nile Virus from 2012 to 2014
- Influenza was the most commonly reported vaccine preventable disease. While there was an elevated level of activity in 2014-2015, the local incidence rate was lower than the provincial rate
- Local incidence rates of invasive pneumococcal disease have been decreasing since 2012; however, rates are generally higher than the provincial average
- Rates of varicella, mumps, invasive meningococcal diseases, measles and pertussis were either stable or decreased in 2014, and remained similar to or lower than the provincial rates
- The local rate of invasive group A streptococcal disease (iGAS) decreased from 2013 to 2014, with the local rate remaining statistically comparable to provincial rates
- There continues to be low incidence rates of Group B Streptococcal Disease
- The number of non-influenza respiratory outbreaks was lower in 2014-2015 compared to previous seasons
- The number of influenza outbreaks in long-term care and retirement homes increased in 2014-2015 compared to previous seasons. This is reflective of an increase in influenza activity experienced local and provincially
- There were no confirmed cases in Waterloo Region from 2012 to 2014 for the following diseases (although reports of suspect cases may have been received and investigated):
  - Acute Flaccid Paralysis
  - Chancroid
  - Diphtheria
  - Haemophilus Influenza b Disease (invasive)
  - Hemorrhagic Fever (including Ebola virus disease, Marburg virus disease, and other viral causes)
  - Leprosy
  - Ophthalmia Neonatorum
  - Poliomyelitis (acute)

- Severe Acute Respiratory Syndrome (SARS)
- Small Pox
- Transmissible Spongiform Encephalopathy (including Creutzfeldt-Jakob Disease)
- Tetanus
- Yellow fever

Primarily, the Infectious Diseases and Tuberculosis Control Program implements OPHS requirements and works to protect the health of the community by preventing the spread of the infectious diseases reported to, and confirmed by, Public Health. The programs and services offered to halt the spread of disease in the community are covered in the subsequent sections.

### **3.0 Infectious Diseases and Institutional Respiratory Disease Management**

In this section the Infectious Diseases and Tuberculosis Control Program's roles and responsibilities as they relate to reportable infectious diseases and institutional respiratory disease management are reviewed. Programs and services offered address 10 requirements in the Infectious Disease Prevention and Control section of the Infectious Diseases Program Standard. Services in this program area also comply with two protocols (Infectious Diseases Protocol and Institutional/Facility Outbreak Prevention and Control Protocol) which outline how the program should conduct its work. As outlined in the Standard, the overall goal of the Program is to "prevent or reduce the burden of infectious diseases of public health importance." The associated Board of Health Outcomes are listed in Appendix B.

#### **3.1 Case and Contact Management**

As per OPHS requirements, public health units must respond to suspected or confirmed reports of infectious diseases 24 hours of the day/7 days a week (24/7). The Infectious Diseases and Tuberculosis Control Program is responsible to the Board of Health for responding to all reports of infectious diseases of public health importance in accordance with the Infectious Diseases Protocol<sup>3</sup>.

Case and contact management of suspected and confirmed reportable infectious diseases may include, but is not limited to:

- Determining the source case and potential exposures;
- Identifying, declaring and coordinating management of infectious disease outbreaks;
- Conducting an investigation to identify and notify contacts;
- Providing information on disease prevention to cases and contacts;

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<sup>3</sup> Infectious Diseases Protocol (2013). Ministry of Health and Long-Term Care

- Recommending and/or coordinating prophylactic (prevention) medication, treatment, or immunization for cases and contacts, if appropriate;
- Continuing surveillance to monitor for future cases;
- If needed, arranging for the inspection of institutions or facilities where disease transmission may have occurred, and making infection prevention and control recommendations; and
- Documenting and reporting cases of infectious diseases in the Integrated Public Health Information System or iPHIS<sup>4</sup>

From 2012 to 2014, staff and management operated a telephone line to ensure confirmed or suspected infectious diseases could be reported 24/7. During this time the program responded to, and investigated, 100 per cent of suspected and confirmed reportable diseases received.

In terms of volume, the program investigated and managed 112 confirmed reports of infectious diseases in 2014, and 414 confirmed reports of influenza in the 2014-2015 influenza season. This does not include investigations that did not result in confirmation of a reportable infectious disease.

Time required for case and contact management varied on a case-by-case basis often depending on the communicability of the disease and its route of transmission. It is also important to note that not all infectious diseases reported to public health require contact follow-up.

### **3.3.1 Accountability Agreement Indicator**

Accountability agreement indicators are used by the Ministry of Health and Long-Term Care (MOHLTC) to monitor public health performance in different program areas. In 2011, MOHLTC introduced 14 Accountability Agreements which set out specific performance expectations and reporting requirements for boards of health<sup>5</sup>.

To fulfill its accountability agreement, the Infectious Diseases and Tuberculosis Control Program is responsible to the Board of Health for initiating case follow-up on confirmed cases of Invasive Group A Streptococcal Disease (iGAS) cases the same day the lab confirmation was received. The Ministry of Health and Long-Term Care target for all health units was set at 100 per cent.

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<sup>4</sup> iPHIS is an information system for public health reporting and surveillance in Ontario, under the *Health Protection and Promotion Act* (HPPA). iPHIS is used by front-line public health professionals in Ontario for case and contact follow-up outbreak management of reportable diseases (MOHLTC, 2012).

<sup>5</sup> Technical Document: Public Health Accountability Agreement Indicators (2012). Ministry of Health and Long-Term Care.

Table 1: Percentage of Confirmed Invasive Group A Streptococcal Cases Where Case Investigation was Initiated the Same Business Day the Case was Reported

Year	%
2011	95%
2012	100%
2013	100%
2014	100%

In 2011, 95 per cent of reported iGAS cases were followed up by Infectious Diseases and Tuberculosis Control Program on the same day that laboratory confirmation was received. From 2012 to 2014, 100 per cent of all iGAS cases were followed up by Public Health on the same day that laboratory confirmation was received; meeting the target of 100 per cent set by the province. Refer to Table 1.

**3.2 Institutional Respiratory Outbreak Management**

The Infectious Diseases and Tuberculosis Control Program provides assistance to institutions in the management of suspected or confirmed respiratory outbreaks in institutions such as hospitals, long-term care or retirement homes, or childcare facilities. Staff and management are required to respond to reports from an institution within 24 hours of its receipt, and must document these suspected or confirmed outbreaks in iPHIS. Either Public Health or the institution may declare that an outbreak has occurred; however, Public Health’s Medical Officer of Health, Associate Medical Officer of Health, or his/her designate, are solely responsible for confirming and declaring that the outbreak has ended.

The Program also provides assistance to institutions through the following actions as required in the Institutional/Facility Outbreak Prevention and Control Protocol<sup>6</sup>:

- Assisting the institution with confirming and/or declaring the outbreak;
- Reviewing and discussing case information provided by the institution;
- Establishing a case definition for disease cases;
- Determining what populations are at risk;
- Assisting the institution in identifying active disease cases; and
- Providing consultation and guidance to the institution about implementation of outbreak control measures and preventing the spread of infection.

Finally, staff or management will review recommend infection prevention and control practices to be implemented during and after an outbreak to prevent future cases from occurring.

Recently, the Program established a new model of operations whereby staff were assigned to support specific facilities. This approach provides facilities with one

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<sup>6</sup> Institutional/Facility Outbreak Prevention and Control (2015). Ministry of Health and Long-Term Care.

consistent contact person that can be reached if they have questions, need advice, education or support related to outbreak management. The goal is to build stronger relationships in order to facilitate improved outbreak management practices in these facilities.

In terms of volume, the program investigated and managed 53 confirmed reports of respiratory outbreaks in the 2014-2015 influenza season. This does not include investigations that did not result in confirmation of a reportable infectious disease.

From 2012 to 2014 the program responded to, and investigated, 100 per cent of suspected and confirmed respiratory outbreaks.

### **3.3 Health Promotion and Community Partnerships**

#### **3.3.1 Primary Care Providers**

The Infectious Disease and Tuberculosis Control Program provides a variety of services to support primary care providers in the medical management of infectious disease cases and keep providers up to date on current infectious disease issues. These Public Health services include:

- Responding to questions and concerns of primary care providers related to infectious disease prevention, diagnosis, treatment, or management through the 24/7 reporting line;
- Providing resources, event information and educational materials on Public Health's website, specifically for use by primary care providers;
- Developing and distributing physician advisories on urgent matters of public health importance in order to provide guidance on how to treat infectious diseases and prevent disease transmission;
- Developing and distributing fact sheets on current infectious disease issues;
- Providing in-depth information (when necessary) through Public Health's monthly physician newsletter, Physician's Update

#### **3.3.2 Hospitals**

The Infectious Diseases and Tuberculosis Control Program creates and distributes advisories on current infectious disease issues to hospitals across the region. In addition, Public Health routinely meets with hospital Infection Control Practitioners to exchange information on current infectious disease issues and discuss updates to infection prevention and control best practices.

#### **3.3.3 Long-Term care and Retirement Homes**

In partnership with the Waterloo Wellington Infection Control Network (WWICN) and Public Health's Health Protection and Investigation Division, the Infectious Diseases and Tuberculosis Control Program hosts Infection Control Forums twice a year for long-

term care and retirement home staff in Waterloo Region. Public Health creates presentations and displays to disseminate information on reportable diseases, infection prevention and control best practices, respiratory outbreak management and other emerging issues related to infectious disease management.

Public Health also uses this forum to promote the annual influenza vaccination campaign known as the “Big Shot Challenge”. The aim of this campaign is to increase influenza immunization coverage rates among long-term care and retirement home staff in Waterloo Region, so staff does not transmit the disease to patients. Coverage rates in retirement homes from the 2012-2013 to the 2014-2015 influenza seasons were fairly consistent ranging from 76 per cent to 78 per cent. Rates in retirement homes over the same period ranged from 71 per cent to 79 per cent. This is consistent with the provincial average.

Immunization coverage rates for long-term care and retirement home residents are also monitored. Coverage rates from the 2012-2013 to the 2014-2015 influenza seasons ranged from 80 to 93 per cent.

Immunization coverage rates from Waterloo Region hospital staff over the same time period ranged from 41 to 44 per cent. This is lower than the provincial average which ranged from 51 to 61 per cent.

### **3.3.4 Emergency Service Workers**

The Program also investigates reports of infectious diseases of public health importance to assess for possible exposure of emergency service workers (ESWs). If an exposure risk exists, Public Health will notify the designated officer<sup>7</sup> at the ESW’s place of employment and assist in determining the appropriate response. In some cases, a designated officer will report an exposure directly to Public Health. Public Health is available 24 hours of the day and 7 days a week to receive these reports, and will respond as soon as possible, but no later than 48 hours following notification (Refer to Section 3.1 for a list of actions that may be taken).

Public Health plays also plays a key role in administrating the Mandatory Blood Testing Act, legislation which enables ESWs who, in the course of their work, may have been exposed to the blood or body fluids of another person. Under the Mandatory Blood Testing Act, ESWs may apply to have the blood of an individual tested for hepatitis B, hepatitis C and HIV. Public Health receives and reviews these applications and facilitates the collection of blood and reporting of results to the applicant.

In addition to these activities, Public Health also conducts in-depth training with designated officers in exposure prevention and response. In 2012, the Program completed an overhaul of its training and support strategies based on feedback

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<sup>7</sup> All emergency services (i.e. paramedics, police officers, firefighters, etc.) in Waterloo Region assign internal designated officers to manage occupational infectious disease exposures among their staff.

provided by emergency service workers. The changes were designed to provide designated officers with better training and resource materials, and to improve their ability to manage exposure risks. The program will be reviewed and updated on a continual basis.

All ESWs have access to the designated officer manual (provided by Public Health) and to the educational materials and resources available on Public Health's website.

### **3.3.5 Child Care Centres and Schools**

Region of Waterloo Children's Services Division holds an educational forum every year for licensed childcare centres in Waterloo Region. The Infectious Diseases and Tuberculosis Control Program creates presentations and displays to disseminate information on infectious disease prevention, respiratory outbreak management, and immunization. In addition, the program developed and circulated guidelines for the prevention and management of infectious disease cases in school settings; these are updated on an ongoing basis.

### **3.3.6 General Public**

Educational materials related to infectious disease prevention and control are available on Public Health's website for use by the general public. Members of the public can also contact the 24/7 phone line with questions or concerns related to infectious disease prevention and management.

## **4.0 Tuberculosis Control**

In this section of the report, Public Health's roles and responsibilities related to tuberculosis control in Waterloo Region are reviewed. Activities in this program area address all 10 requirements outlined in the Tuberculosis Prevention and Control Standard. Activities in this program area also comply with the Tuberculosis Prevention and Control Protocol which outlines how the program should conduct its work. The overall goal of this Standard is to "prevent or reduce the burden of tuberculosis". The associated Board of Health Outcomes are listed in Appendix C.

### **4.1 Tuberculosis**

Tuberculosis is a curable infectious disease caused by the tuberculosis bacteria. TB disease usually infects the lungs (pulmonary TB) but can also infect other parts of the body such as the kidneys, spine, and brain (non-pulmonary TB). Pulmonary TB is contagious and people who are ill with pulmonary TB spread TB bacteria through the air by coughing, sneezing, and talking. Symptoms of TB disease include a cough that lasts two weeks or more, weight loss, fever, night sweats, and loss of appetite.

If healthy people inhale TB bacteria, they may develop inactive TB where the bacteria lays dormant in their body (inactive TB infection or latent TB infection). Populations at risk include:

- Persons in close contact with an individual infected with pulmonary TB;
- Persons born in or having travelled to a country with a high prevalence of TB;
- Immunosuppressed individuals or individuals with other underlying medical conditions;
- Individuals who received inadequate treatment of a previous TB infection; and
- Priority populations (e.g. homeless, under-housed, persons who use substances, Aboriginal persons).

Latent TB infection is usually non-damaging to the body but may develop into TB disease over time if the body is not able to control the growth of the bacteria. Latent TB infection has no symptoms and is not transmissible to others unless the infection becomes active TB. People at highest risk of progression from latent to active TB include recent contacts of an active case, the immunocompromised and recent arrivals to Canada.

The Mantoux tuberculin skin test (TST) is used to determine if a person has been infected with TB. If the skin test is positive, a chest x-ray is required to rule out pulmonary TB disease. Persons with active pulmonary or non-pulmonary TB disease must be treated as the disease may be fatal if left untreated. In addition, treatment will prevent transmission of the disease. Persons with latent TB infection may be assessed for treatment. Treatment for latent TB infection is undertaken to prevent active disease in infected persons with positive skin tests but where active disease has been ruled out. TB treatment is available free of charge from Public Health for both active TB disease and latent TB infection.

The following section contains a summary of the burden of tuberculosis (TB) in Waterloo Region and an overview of the TB clinical and case and contact management services offered by Public Health to residents and visitors of Waterloo Region to prevent TB transmission in the community.

## **4.2 Surveillance Snapshot**

In 2014 there were 10 cases of active TB in Waterloo Region with an incidence rate of 1.8 cases per 100,000. This rate is lower than the previous five-year annual average rate for 2009-2013 (2.2 per 100,000). Local rates of active TB have been significantly lower than those of the province since 2009.

In Waterloo Region in 2014, there were 289 cases of latent TB infection for an annual incidence rate of 52.9 cases per 100,000. In 2014, the local rate of latent TB infection was significantly lower than the provincial rate. Data previous to 2014 is not reported due to data quality issues.

## **4.3 Clinical Services**

### **4.3.1 Active TB Clinic**

The model for case management of TB cases in Waterloo Region changed in 1991 from one practitioner to a group of local respirologists who rotated through a clinic hosted by, and supported by nurses from the Infectious Diseases and Tuberculosis Control Program. The clinic continues to operate under this model and there are currently eight respirologists on the roster. The partnership allows for comprehensive TB case management and offers clients coordinated and expert care in the management of their TB disease.

#### **4.3.1.1 Overview of Active TB Clinical Services Provided**

The active TB clinic at Public Health is held bi-monthly on Tuesday mornings from approximately 9:00 a.m. to 1:00 p.m. at 99 Regina St. South in Waterloo. Appointments range in duration depending on the needs of the client and can be from 20 minutes to one hour. On average, five to seven appointments are booked for each clinic. The cost of the appointment itself is covered by one of three sources:

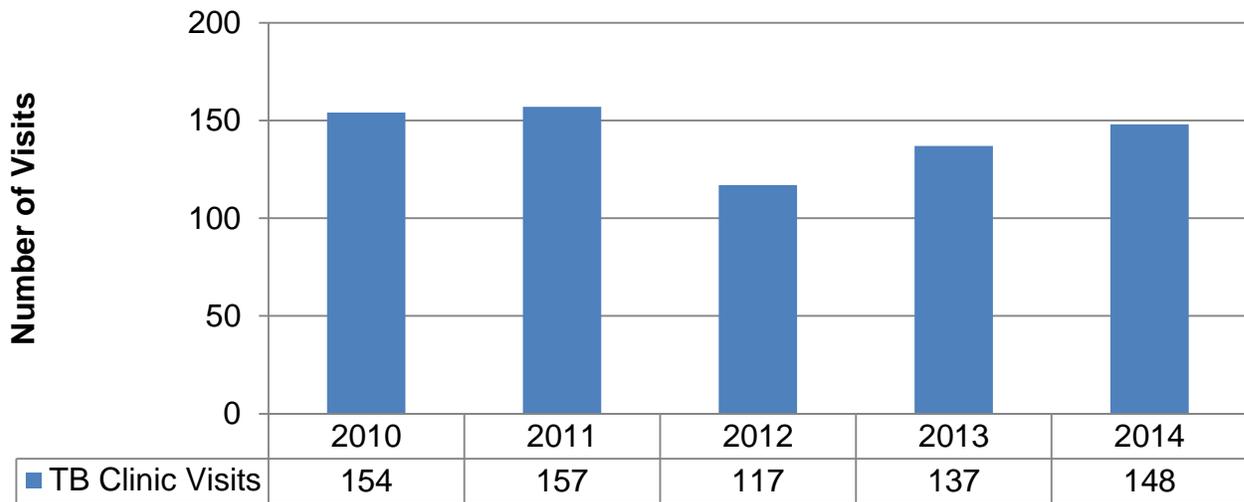
- the Ontario Health Insurance Program (OHIP);
- a private insurance plan such as the University Health Insurance Plan (UHIP) which is typically utilized by international students; or
- TB Uninsured Persons Program (TB-UP) – a program funded by the Ministry of Health and Long-Term Care that covers the cost of diagnostic tests and treatment for TB. TB-UP is available for persons who are not covered by OHIP, the Interim Federal Health Program, or any other private health insurance plan.

Clients at the clinic are seen on a referral basis from local family physicians. Clinic appointments involve a physical assessment, review of medical imaging, and assessment of blood work and other relevant medical information. The respirologist may recommend treatment for active or inactive TB, or order further investigation to rule out TB. Public Health Nurses also meet with all clients who are on treatment for active or latent TB requiring follow-up to ensure proper case and contact management, and to provide the appropriate health education and referrals. All TB medications are dispensed by Public Health.

#### **4.3.1.2 Active TB Clinic Attendance**

The number of visits to the active TB clinic remained relatively stable from 2010-2014, with a slight decrease in 2012 (Figure 1). There is no known reason for the decrease.

Figure 1. Annual visits to the Public Health TB clinic, 2010-2014.



Source: Region of Waterloo Public Health Infectious Diseases and Tuberculosis Control Program data

### 4.3.2 Skin Testing Clinic

The TB skin testing clinic is held every fourth Monday in Cambridge and every Tuesday in Waterloo. Both clinics are by appointment only. The Waterloo clinic offers both daytime and evening clinic appointments. The fee for a TB skin test at Public Health is \$25.00 per step, unless required for medical investigation or treatment purposes. This service is not mandated under the Ontario Public Health Standards.

A TB skin test identifies persons infected by the TB bacteria requiring further assessment to rule out active TB disease. One step and two step tests are offered. A one step test uses a single TB skin test to screen for TB exposure. Two step tests involve the administration of two tests, one to four weeks apart, to rule out a false negative test. Two step tests are recommended for persons who:

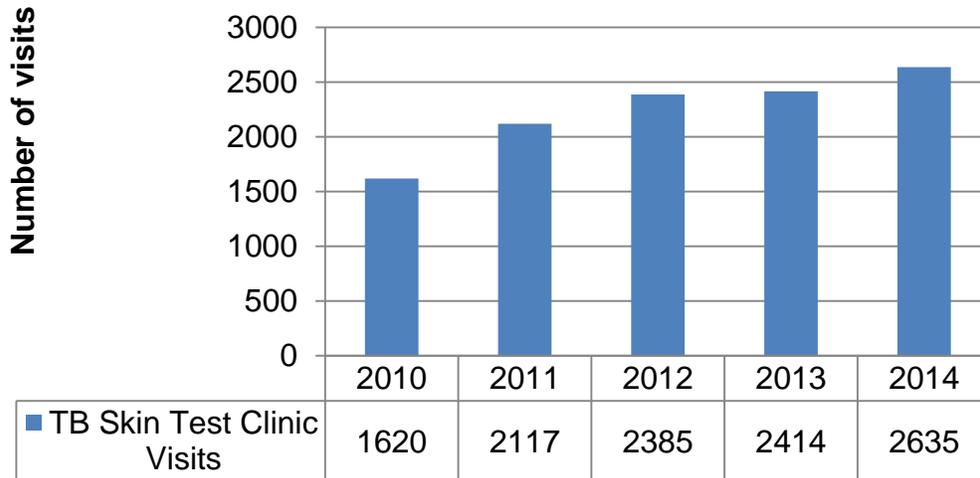
- Require subsequent (serial) testing (e.g. health care workers);
- Are residents < 65 years of age or staff of a long-term care facility or retirement home;
- Are from countries with a high prevalence of TB; or
- Are undergoing medical investigation.

#### 4.3.2.1 TB Skin Testing Clinic Attendance

The number of visits to the TB skin testing clinic increased from 2010 and 2014 (Refer to Figure 2). This increase is partially due to an expansion in TB skin testing clinic hours implemented as part of the 2010 Infectious Diseases, Dental and Sexual Health Division reorganization. The reorganization introduced evening appointments to increase and improve client access to clinical services. In addition, there have provincial changes to

the funding of TB skin tests by the Ministry of Health and Long-Term Care which has impacted client demand for our service. Primarily, the Ministry of Health and Long-Term Care is no longer providing the product for skin testing free of charge for health care workers and volunteers. This reduced the number of primary care providers that offer this service as they do not want to order and maintain their own stockpile of TB skin tests. As a result, demand for Public Health’s clinic has increased.

Figure 2. Number of visits to the TB skin testing clinic by year, 2010-2014.



Source: Region of Waterloo Public Health Infectious Diseases and Tuberculosis Control Program data

#### 4.3.2.2 Partnership and Referral from Local Health Care Providers

The Infectious Diseases and Tuberculosis Control Program provides government funded tuberculin or Tubersol (used for TB skin testing) to local health care providers for the purpose of screening contacts of cases, and medical investigation of high risk individuals and priority populations. Health care providers are required to report positive skin tests to the program. Healthcare providers may also refer their patients to Public Health’s active TB clinic to be further assessed for latent or active infection. Additionally, staff are available to local health care providers for consultation around patient specific concerns.

#### 4.3.3 Clinical Services for Priority Populations

Public Health also provides clinical services to priority populations in partnership with Reception House Waterloo Region, a temporary home for government-assisted refugees.

Most clients of Reception House come from countries with a high incidence of TB, and areas with compromised living conditions (e.g. refugee camps). Public Health partners with Reception House to provide onsite skin testing to their clients. This process facilitates client convenience and timely referrals for further assessment if needed.

Reception House staff also provide translation (paid for by Public Health), caseworkers and other supports which make it conducive to serving these new residents onsite rather than in Public Health's clinics.

From 2010 to 2014, 630 TB skin tests were conducted by Public Health nurses at Reception House (refer to Table 1).

Table 2. Number of skin tests performed at Reception House, 2010-2014.

Year	Number of Skin Tests Performed
2010	182
2011	121
2012	116
2013	100
2014	111
<b>Total</b>	<b>630</b>

Source: Region of Waterloo Public Health Tuberculosis Program data

#### **4.4 Case and Contact Management**

The Ministry of Health and Long-Term Care outlines the basic principles of care for persons with confirmed or suspected TB. These principles include:

- A diagnosis is established promptly and accurately;
- Standardized treatment regimens of proven efficacy are used with appropriate treatment support and supervision;
- The response to treatment is monitored; and
- The essential public health responsibilities are carried out.

The Infectious Diseases and Tuberculosis Control Program plays an integral role in the management of TB cases. TB cases are received via physician referral, the Immigration, Refugees and Citizenship Canada medical surveillance program, or Public Health's TB skin test clinic. Public Health assumes responsibility for monitoring TB cases and ensuring appropriate follow-up as outlined by the Ministry of Health and Long-Term Care.

##### **4.4.1 Active Case Management**

The Infectious Diseases and Tuberculosis Control Program is responsible for active case management of TB disease according to the Tuberculosis Prevention and Control Protocol<sup>8</sup>. This includes, but is not limited to:

- Ensuring an initial investigation commences within 24 hours of receiving the case report;

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<sup>8</sup> Tuberculosis Prevention and Control Protocol (2008). Ministry of Health and Long-Term Care.

- Conducting a contact investigation to identify the source case and possible transmission;
- Educating the patient and family about the disease process, communicability of TB, treatment protocol and public health supervision;
- Recognizing those individuals who may not adhere to medication guidelines (e.g. children, homeless, those with bias against treatment) and placing them on Directly Observed Therapy (DOT);
- Dispensing medication for the duration of treatment (typically 6-9 months);
- Fulfilling the minimum requirements for ongoing follow-up;
- Discharging patients once the prescribed treatment has been completed; and
- Reporting all information to the Ministry of Health and Long-Term Care through the Integrated Public Health Information System<sup>9</sup> (iPHIS).

In Waterloo Region, there were 10 cases of active TB in 2012, eight in 2013 and 10 in 2014.

#### **4.4.2 Latent TB Infection Case Management**

Latent TB infection is not infectious; however, individuals are at increased risk of developing active TB disease. According to MOHLTC's Tuberculosis Prevention and Control Guidance Document, management of latent TB infection cases should include:

- Documenting and reporting the case in iPHIS;
- Ensuring the patient is not infectious;
- Conducting a contact investigation for the possible source case;
- Dispensing medication for the duration of treatment (typically 6-9 months);
- Advising the patient about the side effects of TB medication;
- Assessing the patient's ability to comply with medication and medical follow-up;
- Assessing the need for Directly Observed Therapy (DOT);
- Connecting with the patient at one month and every two months thereafter until treatment completion; and
- Connecting with the treating physician as required and discharging the patient from iPHIS as appropriate.

As of 2014, the Infectious Diseases and Tuberculosis Control Program actively reports (yearly) confirmed latent TB infections in its annual report on infectious diseases. There were 289 cases in 2014.

#### **4.4.3 Immigration and Medical Surveillance**

The purpose of medical surveillance is to identify TB disease and TB infection among new immigrants to Canada in order to prevent the spread of TB in the community. Newcomers are screened for TB using a chest x-ray. Individuals with an abnormal chest x-ray are provided with appropriate medical follow-up and offered TB treatment if

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<sup>9</sup> iPHIS is an information system for public health reporting and surveillance in Ontario, under the *Health Protection and Promotion Act* (HPPA). iPHIS is used by front-line public health professionals in Ontario for case and contact follow-up and outbreak management of reportable diseases (MOHLTC, 2012).

required. This information is documented through online reporting with the Ministry of Health and Long-Term Care and forwarded onto Immigration, Refugees and Citizenship Canada.

Public Health initiates and continues medical surveillance for a period up to two years or until the person has been discharged (active TB in recent arrivals to Canada often develops within the first two to five years of their immigration). When the program receives a referral the responsibilities include:

- Contacting the person by letter, telephone, or in person;
- Advising the person of the signs and symptoms of active disease, requirements of medical surveillance, instructions on how to obtain Ontario Health Insurance Plan (OHIP) coverage, and the need to inform Public Health of an address change; and
- Ensuring all the appropriate medical information is included on the medical assessment form.

From 2010 to 2014, an average of 91 individuals per year were referred to Region of Waterloo Public Health for medical surveillance (refer to Table 3).

Table 3. Number of individuals referred to Public Health for TB medical surveillance, 2010-2014.

Year	Number of Individuals Referred for TB Medical Surveillance
2010	123
2011	87
2012	105
2013	90
2014	49
<b>Average per year</b>	<b>91</b>

Source: Region of Waterloo Public Health Tuberculosis Program data

## 5.0 Infection Prevention and Control

### 5.1 Background

Public Health is responsible to the Board of Health for responding to all complaints regarding the infection prevention and control (IPAC) practices of regulated health care professionals in Waterloo Region and/or the facilities in which they practice. Regulated health professions include, but are not limited to, doctors, nurses, physiotherapists, pharmacists, chiropractors, naturopaths and dentists. Most case investigations are complaint-driven; however, previous investigations have been initiated after review of suspicious infectious disease surveillance data.

## 5.2 Case Investigation

An investigation of all complaints must be initiated within 24 hours of receiving the complaint to determine if there is a risk of infectious disease transmission to the premises' clients, attendees or staff.

The Ministry of Health and Long-Term Care outlines the steps for an IPAC complaint investigation which includes:

- Review of communicable disease surveillance data to assess any link to the premises names in the complaint;
- Reporting and collaborating with the appropriate regulatory college if there is an infectious disease transmission risk linked to the professional conduct of a regulated health care professional;
- Conducting an assessment to identify if an IPAC lapse has occurred;
- Taking actions to manage the transmission risk;
- Maintaining a record of all complaints received; and
- Posting an initial and final report online for any identified IPAC lapses.

As part of conducting an assessment to determine if an IPAC lapse has occurred, Public Health may complete a site assessment to investigate compliance with current provincial IPAC best practice recommendations. A site assessment involves the following activities:

- Interviewing facility staff directly involved in the practice under assessment;
- Determining if other complaints have been filed and if any actions were taken;
- Directly observing IPAC practices at the facility; and
- Reviewing relevant documentation such as policies, records or logs.

If an infectious disease transmission risk is identified, Public Health must take action to manage the transmission risk. This may include:

- Recommending implementation of appropriate IPAC practices in the facility;
- Providing education on current IPAC practices;
- Scheduling a re-inspection to assess compliance with recommended IPAC practices;
- Developing a risk-communication strategy for notification of identified cases; and/or
- Ordering corrective action based on the findings of the investigation.

Investigations of suspected and/or confirmed IPAC lapses vary; some are small and involve answering client questions about a particular practice or process used at a health care facility. Others can be large scale investigations about suspected disease transmission at a facility. One large investigation completed in 2014 based on a 2013 incident was at a colonoscopy clinic where transmission of hepatitis C was confirmed. However, as this process is new, there is little data to report on the volume of investigations. Data will be reported in subsequent program reports.

## **6.0 Future Directions**

The Ontario Public Health Standards are currently under revision, which could result in the implementation of modifications or enhancements to current public health services over the next few years. In addition, the Board of Health mandate for tuberculosis programming is under review by the Ministry of Health and Long-Term Care and Public Health Ontario, which could also result in changes being made to this program in the near future.

Public Health will continue to update healthcare practitioners with information on current infectious disease issues and local trends. Educating healthcare professionals and the general public on infectious disease prevention, control and management practices will remain an important focus of this program. Through the provision of case and contact management, health promotion, clinical services and IPAC investigations, Public Health will continue to work towards the prevention of infectious disease transmission in Waterloo Region.

The Infectious Diseases and Tuberculosis Control program is currently working with community health care partners to enhance access for refugees and new Canadians. It also plans to review its latent Tuberculosis skin testing services offered to immigrants and refugees in 2016.

## Appendices

### Appendix A

#### Reportable Infectious Diseases Investigated and Managed by the Infectious Diseases and Tuberculosis Control Program

- Acute Flaccid Paralysis
- Chancroid
- Diphtheria
- Encephalitis/Meningitis
- Group A Streptococcal Disease, Invasive (iGAS)
- Group B Streptococcal Disease, Neonatal
- Haemophilis Influenza b Disease (invasive)
- Hemorrhagic Fever (including Ebola virus disease, Marburg virus disease, and other viral causes)
- Hepatitis A
- Influenza
- Institutional Influenza and Respiratory Outbreaks
- Invasive Meningococcal Disease (IMD)
- Invasive Pneumococcal Disease (IPD)
- Leprosy
- Malaria
- Measles
- Mumps
- Ophthalmia Neonatorum
- Pertussis
- Poliomyelitis (acute)
- Severe Acute Respiratory Syndrome (SARS)
- Small Pox
- Transmissible Spongiform Encephalopathy (including Creutzfeldt-Jakob Disease)
- Tetanus
- Tuberculosis
- Varicella (chicken pox)
- West Nile Virus
- Yellow Fever

## Appendix B

### Board of Health Outcomes for the Infectious Diseases Prevention and Control Standard

- The board of health achieves timely and effective detection and identification of cases/outbreaks of infectious diseases of public health importance, their associated risk factors and emerging trends.
- The board of health is aware of and uses epidemiology to influence the development of healthy public policy and its programs and services to prevent or reduce the burden of infectious diseases of public health importance.
- There is increased public awareness of infection prevention and control practices.
- Community partners and health care providers are aware of the local epidemiology of infectious diseases of public health importance.
- Community partners and health care providers are aware of infection prevention and control practices.
- Settings that are required to be inspected are aware of appropriate infection prevention and control practices.

## Appendix C

### Board of Health Outcomes for the Tuberculosis Prevention and Control Standard

- The board of health achieves timely and effective detection and identification of TB trends, emerging risks, and associated risk factors.
- The board of health is aware of and uses epidemiology to influence the development of healthy public policy and its programs and services to prevent and reduce the burden of TB.
- The board of health has effective partnerships with committees, advisory bodies, networks, and community organizations to address the prevention and control of TB.
- Public health risks associated with active TB are mitigated.
- Individuals with infectious TB are isolated.
- Individuals with active TB (cases) receive the appropriate medication.
- Individuals with active TB or LTBI are identified.
- Individuals with LTBI are offered appropriate treatment.