INCREASING TUBERCULOSIS ACTIVITY AND WORKLOAD IN MIDDLESEX-LONDON

Background Information:

Tuberculosis (TB) prevention and control is a public health responsibility of utmost importance. The Infectious Disease Control Team (IDCT) is responsible for the prevention and control of TB in Middlesex-London. The TB program is divided into three principle components:

- The management of people with active TB and their contacts;
- Immigration Medical Surveillance for new immigrants / refugees who are identified by Citizenship and Immigration of Canada (CIC) as high-risk for developing active TB disease during a mandatory medical evaluation prior to arrival to Canada and reported to the Health Unit and;
- The follow-up of individuals with latent TB who are reported to the Health Unit or who are identified through the Targeted Screening Program as having a high risk of progression to active TB. This follow-up involves clinical components for assessment and ongoing treatment by the IDCT TB PHNs and includes both monthly physician and nurse led TB clinics.

Management of Active Tuberculosis (TB) in Middlesex-London

Two main presentations of TB are inactive (latent) TB infection and active TB disease. Latent TB develops when TB bacteria are inhaled, however, in the majority of the cases the bacteria does not grow within the body. Active TB develops when TB bacteria overcome the immune barrier of the body and start growing in the body. Active pulmonary TB, which involves lungs or throat, can be spread to others through the sharing of common airspace. From a public health perspective, this type of TB is the most concerning as there is a risk of the infection spreading to others.; in these situations, the IDCT's timely response is imperative to prevent and limit any spread of TB infection.

There are approximately 1,640 cases of new, active TB reported annually in Canada (2013 incidence rate of 4.7 per 100,000 population), including 624 from Ontario, and, on average, nine from Middlesex-London (2013 incidence rate of 2.4 per 100,000). While the incidence rate in Middlesex-London is lower than the Ontario rate, the 2013 local rate was 82% higher than the local 2012 rate. In 2014, MLHU followed 17 new active cases and, in 2015 to date, 7 new active cases have been identified including two multi-drug resistant cases. Figure 1 illustrates the number of new suspect and confirmed active cases reported to MLHU per year since 2009.

The IDCT performs case investigation and contact tracing for all active and suspected active TB cases. Measures to curtail spread of TB infection are established immediately and all active pulmonary TB cases receive'direct observation therapy' (DOTs) from IDCT staff to ensure medications regimens are followed properly. DOT regimens, administered daily during the first 8-12 weeks of treatment, last six to nine months but can take up to twelve months to complete. DOTs present significant and ongoing logistical challenges, particularly when required by multiple clients concurrently. Contact tracing involves establishing the infectiousness period of the index cases and estimation of the risk of transmission to others. Each active case's household contacts and others that have been at risk are followed-up and tested for TB infection.

Recent TB activity

In January, 2015, MLHU was notified of two multi-drug resistant (MDR-TB) cases. These were the first MDR-TB cases reported to MLHU since a lone case in 2010. While the principles of the case management do not change for MDR cases, contact management of MDR-TB cases is more resource intensive. In total, 64 contacts were screened during on-site TB skin testing clinics., resulting in 27 follow-up TB clinic appointments to date. Contacts of the MDR cases will continue to be followed for the next two years by regular chest-x rays and clinical examinations for early identification of an active TB disease.

Due to the lack of community physicians able to attend to the health care needs of refugee populations, the Middlesex-London Health Unit continues to provide clinics run by the IDCT TB team in partnership with a local Pediatric Infectious Disease Specialist and a Respirologist. The following graphs illustrate the increase in numbers of both physician-led and nurse-led TB clinics organized (Figure 2) and of clients seen (Figure 3).

The TB clinic has increased its client base to include all Government Assisted Refugees (GARs) as of September, 2013. he IDCT continues to see high-risk individuals; the majority of clients seen in the TB clinic are GARs who have been targeted for TB screening due to high burden of TB in this population and their increased risk of progression from latent to active disease (see Figure 4). Although Citizenship and Immigration Canada requires all individuals coming to Canada be screened for TB, the objective is to detect active TB (not to screen for latent TB). Individuals found to have active TB are not permitted to enter the country until treated and those with suspicious chest-rays that may require further follow-up are referred to the receiving health units. Due to the limitations of this screening, the Canadian TB Standards recommend post-landing screening of refugees. Since 2010, the TB clinic has been instrumental in the early diagnosis of 8 active cases of TB in newly arrived GARs. Without MLHU's TB clinics, diagnosis of these active cases would have been significantly delayed with resulting implications for increased risk of disease transmission to the public.

Over the past three years, the IDCT has gained efficiencies from the following investments: enhancements to its TB-dedicated Microsoft Access Database, the contributions of individuals participating in the New Nurse Graduate Program and, most recently, from the addition of a 0.2 full time equivalent Clinical Team Assistant. However, the TB component of the IDC budget continues to grow as logistical costs associated with swelling service delivery needs (e.g. additional staffing hours, interpretation services, transportation, medications) outpace funding.

Conclusion

As of the time of this report, the IDC TB Team continues to follow 7 active cases, 7 suspect active cases, 153 contacts of active cases, 228 latent cases, and 61 individuals monthly in the TB clinic. Further, another 72 government assisted refugees are booked for TB screening in June, 2015.

The workload specific to TB has grown significantly over the past several years and the IDCT has responded by undergoing a team-wide, data-driven, workload redistribution process to dedicate more team resources to TB management and follow-up. However, as clientele rosters continue to increase, particularly for physician- and PHN-lead clinics, increasing logistical costs and nursing time are placing the IDC budget in a structural deficit position. Despite further assistance from within the team, there remains an inability to dedicate resources to TB health promotion activities, as stated in the MOHLTC's TB Prevention and Control Protocol and recommended in the latest Canadian TB Standards.

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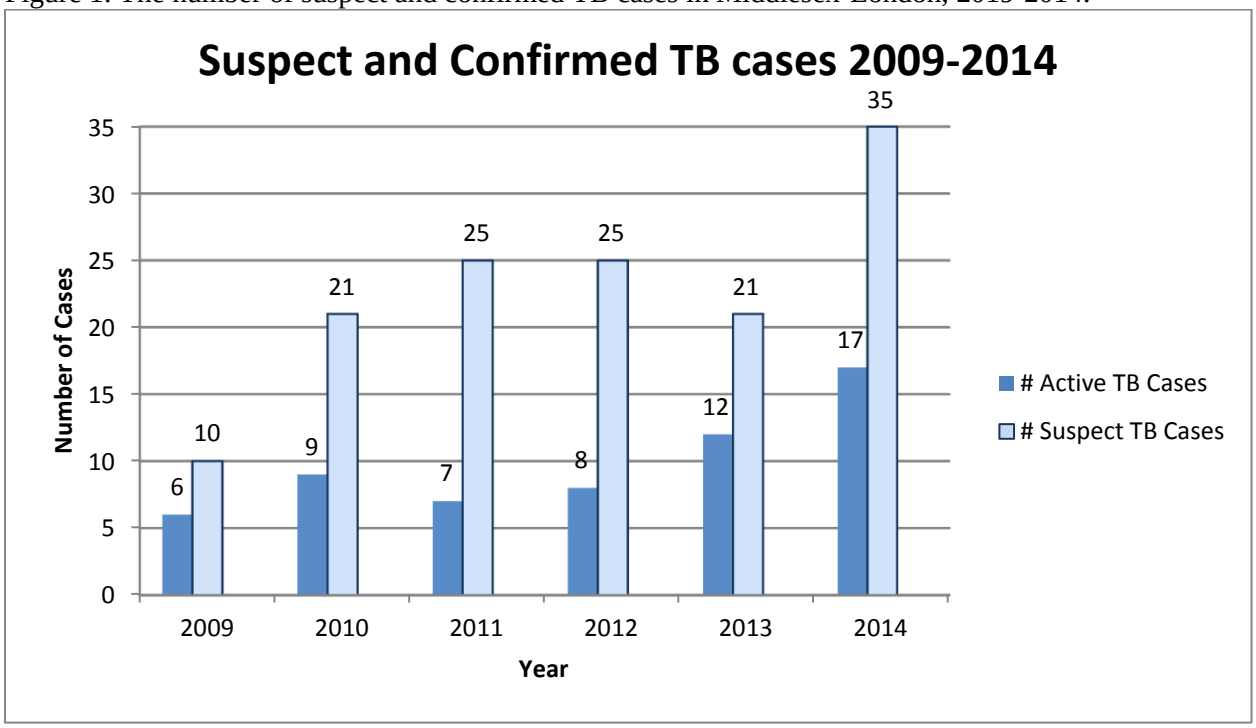
This report addresses the following requirement(s) Ontario Public Health Standards:

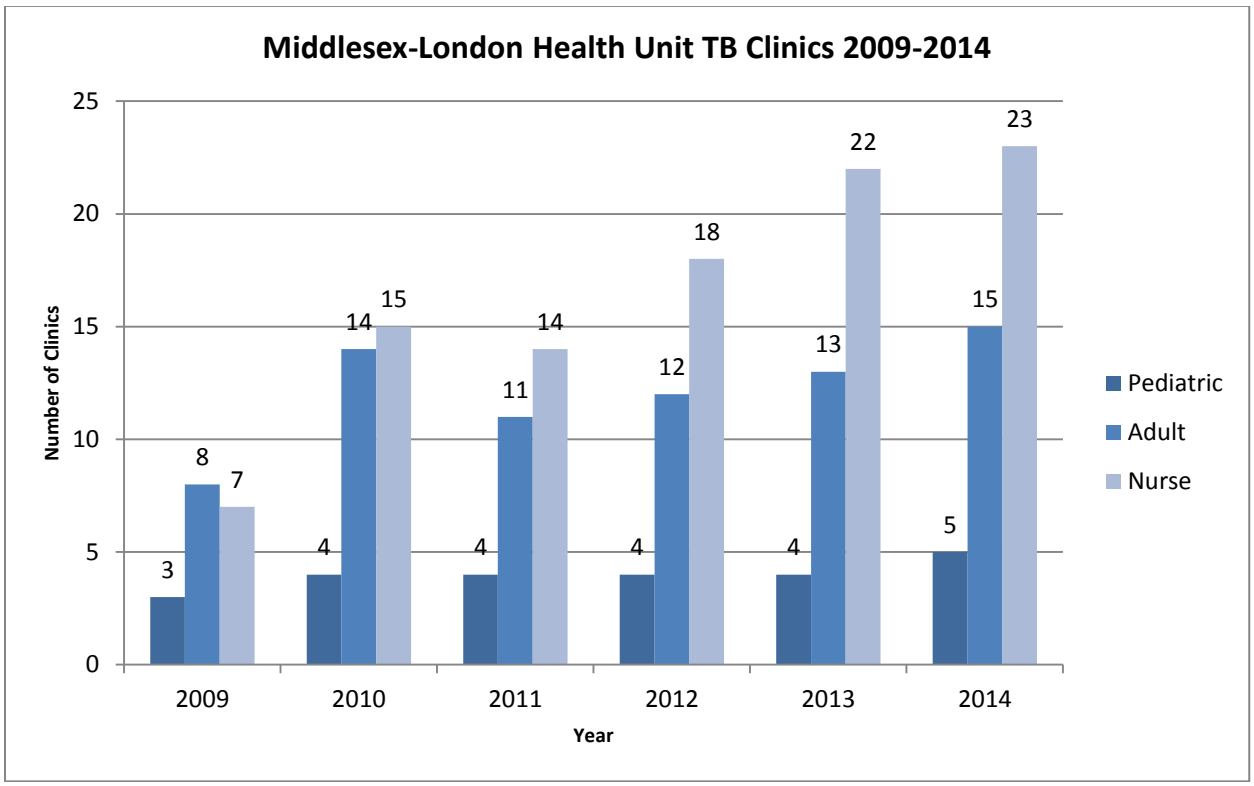
Tuberculosis Prevention and Control: To prevent or reduce the burden of tuberculosis

Figure 1: The number of suspect and confirmed TB cases in Middlesex-London, 2019-2014.



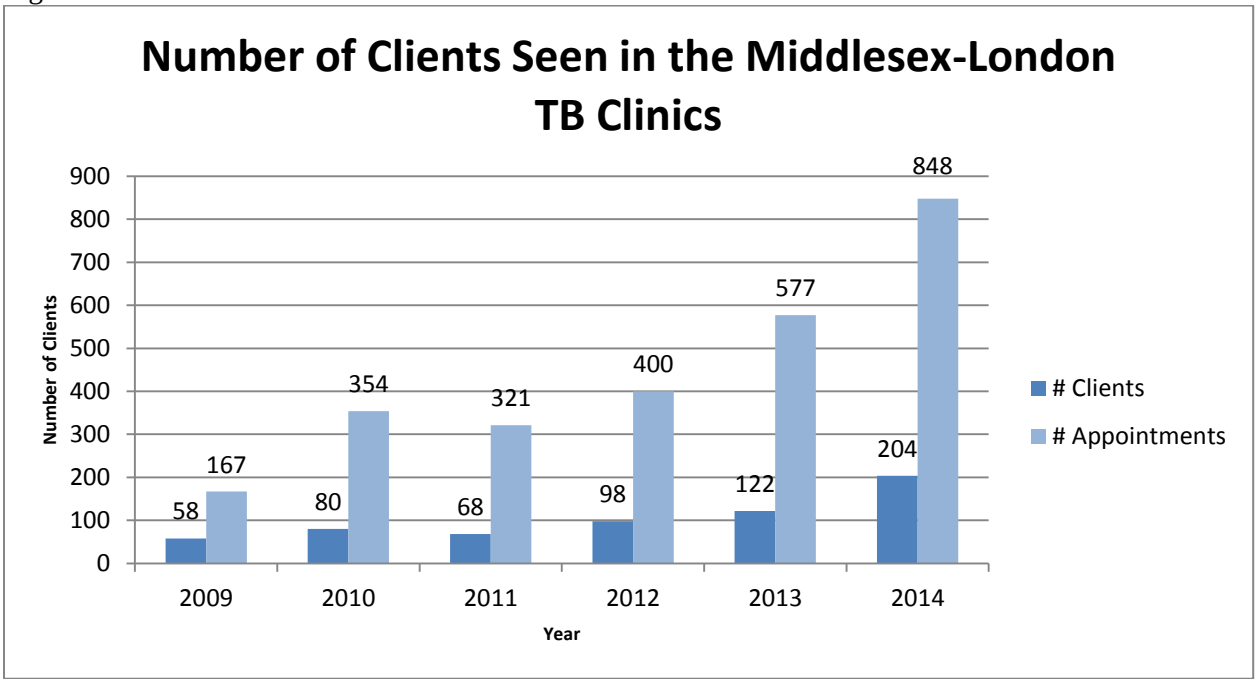
Note: In September, 2013, the TB Team began screening all GARs in partnership with the LCCLC. Previous to this, MLHU screened only the Karen and Bhutanese Regugees as recommended by the Minishtry of Health and Long Term Care.

Figure 2:The number of pediatric, adult, and nurse-led TB clinics held at Middlesex-London Health Unit, 2009-2014.



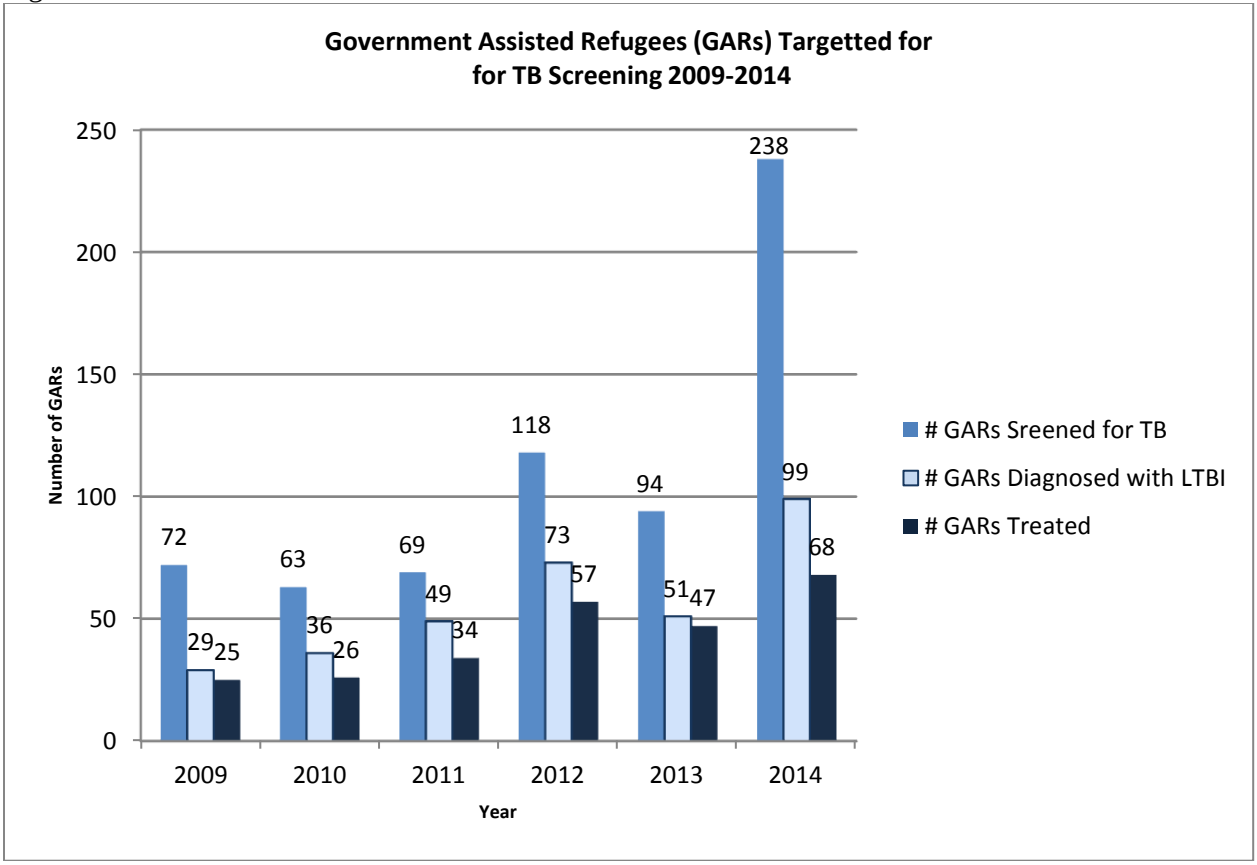
Note: In 2010-2011 there was a reduction in the number of client visits by physician and an increase in visits by PHN due to changes in the Canadian TB Standards' recommendations that individuals on LTBI medication be seen monthly.

Figure 3:



Note: Clients who start on TB medication are seen monthly by either the Physician or PHN. In the adult clinics, clients who start TB medication are seen once by the Physician and the PHN monthly for the balance of nine months. In the pediatric clinics, clients who start TB medication are seen by the physician four times and the PHN for the balance.

Figure 4:



Note: In September 2013, the TB Team began screening all GARs in partnership with the London Cross Cultural Learners Centre. Previous to this, only the Karen and Bhutanese refugees were screened.