



Infectious Disease Epidemiology Report

Latent Tuberculosis Infection, 2014



Background

Tuberculosis (TB) is caused by the bacterium *Mycobacterium tuberculosis*. Latent tuberculosis infection (LTBI) occurs when *M. tuberculosis* is present in the body without signs and symptoms, or evidence of TB disease. The bacterium is kept under control and inactive by the body's immune system. Individuals with LTBI cannot spread TB bacteria to others. While not everyone with LTBI will develop active TB, approximately 5 – 10% of those with an untreated latent infection will develop TB disease at some point in their life. Early identification and treatment of persons with LTBI at highest risk of developing TB disease will help support national elimination efforts.

Two tests are available to screen for the presence of *M. tuberculosis* bacterium in the body; either can be used. The skin test, called the tuberculin skin test (TST), is the standard method and has been used for many years. A newer blood test measuring immune reactivity, the interferon gamma release assay (IGRA), is also available. All positive results require additional evaluation as neither test differentiates between latent or active TB.

Methods

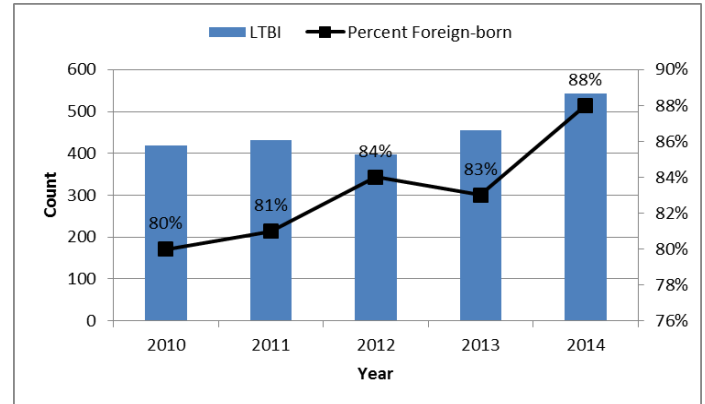
While active TB is monitored through mandatory reporting, LTBI is not a reportable condition in Maine. Maine CDC's Infectious Disease Epidemiology (ID Epi) Program encourages providers to refer all LTBI cases so treatment can be offered and high risk individuals can receive Public Health Nursing services.

The ID Epi Program gathers LTBI case information and data through referral forms reported by a healthcare provider. The form captures patient demographics, risk factors, prescribed treatment regimen, and TB test results.

Results

A total of 543 cases of LTBI were reported in 2014, compared to 456 cases in 2013. The general upward trend of reported cases continues into 2014. As in previous years, the majority of LTBI cases were foreign-born (Figure 1).

Figure 1. Annual cases of LTBI and percent foreign-born – Maine, 2010-2014



Forty percent (40%) of LTBI cases in 2014 occurred in persons 25-44 years old. Twenty-three percent were among persons 15-24 years of age.

Table 1. Descriptive epidemiology of LTBI – Maine, 2014

Sex	Count	Percent (%)
Female	263	48.4
Male	280	51.6
Race		
Black	279	51.4
White	89	16.4
Hawaiian/Pacific Islander	38	7.0
Asian	15	2.8
Multi-race	15	2.8
Not reported	107	19.7
Risk Factors†		
Foreign-born	477	87.8
Children <15 years	90	16.6
Contact of a case	43	7.9
Recent TST converter	35	6.4
Congregate setting	39	7.2
Immune-compromised	3	0.5
Substance use	7	1.3

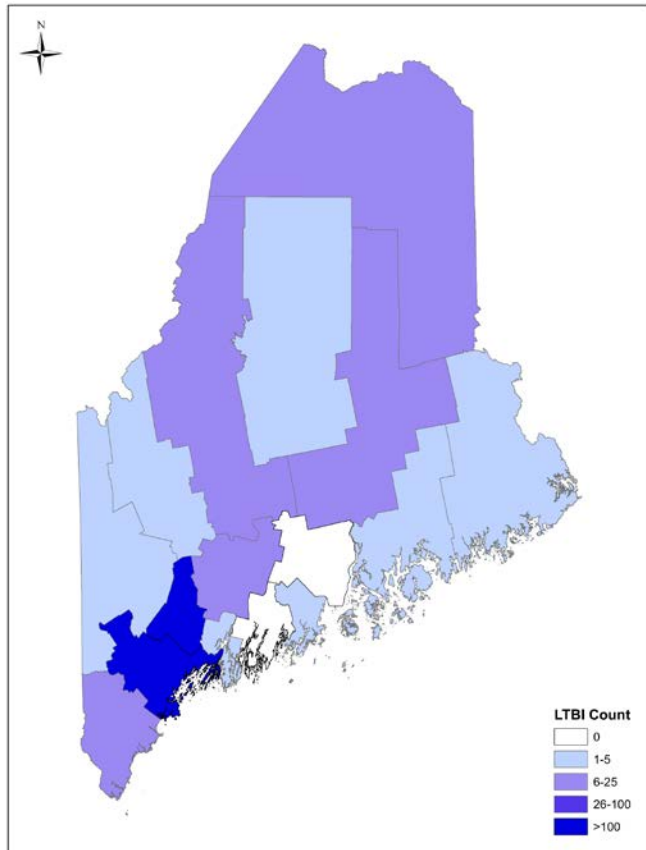
† Risk factors not mutually exclusive

Individuals with LTBI came from 52 different countries, excluding the US. Twenty different languages were reported among cases; the most

common foreign languages were Arabic (13.2%), Somali (13.6%), and French (21.1%).

The largest proportion of cases, 84% combined, resides in Cumberland and Androscoggin counties (Figure 2).

Figure 2. LTBI cases by county – Maine, 2014



Discussion

LTBI reporting is not required, thus the numbers presented are an underestimate of LTBI diagnosed in Maine. To obtain financial assistance with treatment and public health nursing monitoring it is required. This impacts the data presented in this report.

Maine CDC's ID Epi and Public Health Nursing Programs, in collaboration with community partners, conduct targeted screening in populations with highest risk of developing active TB. Persons at high risk of developing TB include but are not limited to homeless individuals, newly arriving primary refugees, and contacts of active cases.

It is important to consider the constantly evolving demography and growing impact of foreign-born populations in the state of Maine. Tuberculosis control efforts are often impeded by linguistic, cultural, and health-services barriers. The continued high percentage of foreign born individuals with LTBI highlights the importance of tailoring actions toward identifying and addressing these barriers to diagnosis and care.

This report should be used to guide more culturally and linguistically appropriate public health actions regarding TB prevention and outreach. This may include the need for language interpretive services and targeted educational materials.

The evaluation and treatment of active TB disease is more costly than LTBI treatment. Early identification, reporting, and treatment of LTBI are essential activities to keep TB disease from spreading and to protect the public's health.

All suspected or confirmed cases of active TB must be reported immediately to the ID Epi Program at Maine CDC by calling 1-800-821-5821. Though reporting of LTBI cases is not mandated, it is strongly encouraged.

Additional information about latent TB infection and tuberculosis is available at:

- Maine CDC: www.maine.gov/idepi/
- Federal CDC: www.cdc.gov/tb/
- World Health Organization: www.who.int/tb/en/