



Infectious Disease Epidemiology Report

Latent Tuberculosis Infection, 2013



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 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

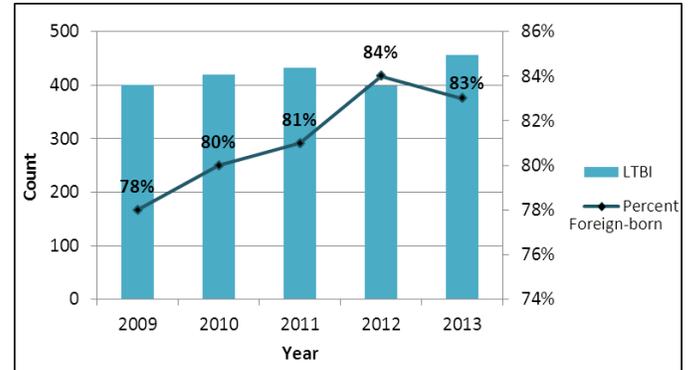
While active TB is monitored through mandatory reporting, LTBI is not a notifiable condition in Maine. Maine CDC's TB Control Program encourages providers to refer all LTBI cases so treatment can be offered and high risk individuals can receive Public Health Nursing services.

The TB 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 test results from applicable TB diagnostics.

Results

A total of 456 cases of LTBI were reported in 2013, compared to the 398 cases in 2012. The general upward trend of reported cases continues into 2013, while maintaining a foreign-born majority (Figure 1).

Figure 1. Annual cases of LTBI and percent foreign-born – Maine, 2009-2013



Forty-nine percent of LTBI cases in 2013 occurred in the 25-44 age range. Sixteen percent were among persons 15-24 years of age, the group with the greatest change (↓11%) from 2012.

Table 1. Descriptive epidemiology of LTBI – Maine, 2013

Sex	Count	Percent (%)
Female	234	51.3
Male	222	48.7
Race		
Black	249	54.6
White	80	17.5
Hawaiian/Pacific Islander	30	6.6
Asian	18	4.0
Multi-race	14	3.1
Not reported	65	14.3
Risk Factors†		
Foreign-born	376	82.6
Children <15 years	54	12.0
Contact of a case	46	10.2
Recent TST converter	34	7.5
Congregate setting	25	5.5
Immune-compromised	9	2.0
Substance use	7	1.6

† Risk factors not mutually exclusive

Individuals with LTBI came from 51 different countries, excluding the US. A range of 15 languages were spoken among reported cases; the

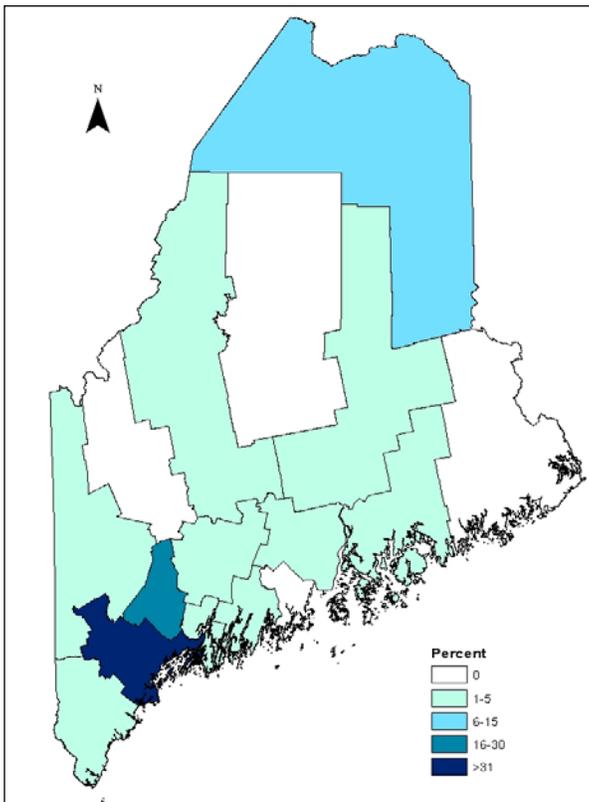
most common foreign languages were Somali and French. Since last year's report, four additional languages were noted among the case population – Acholi, Burmese, Korean, and Tigrinya (Table 2).

Table 2. Reported languages spoken by LTBI cases – Maine, 2013

Language‡	Count	Percent (%)
Acholi	1	0.2
Arabic	51	10.7
Burmese	2	0.4
English	201	42.2
French	115	24.2
Khmer/Cambodian	1	0.2
Kinyarwanda	10	2.1
Kirundi	8	1.7
Korean	1	0.2
Lingala	2	0.4
Portuguese	14	2.9
Somali	61	12.8
Spanish	6	1.3
Swahili	1	0.2
Tigrinya	2	0.4

‡ Languages not mutually exclusive

Figure 2. LTBI cases by county – Maine, 2013



The largest proportion of cases, 79.6% combined, resides in Cumberland and Androscoggin counties. Due to an active TB contact investigation in 2013, targeted testing contributed to an increase in Aroostook county LTBI cases (Figure 2).

Discussion

Maine CDC’s TB Control and Public Health Nursing Programs, in collaboration with community partners, conduct targeted screening in populations with highest risk of developing active TB. As a result, the data for this report reflect this pool of individuals. These groups include but are not limited to the homeless, newly arriving primary refugees, and contacts of active cases. Due to focused testing and dependence on provider-reported information, it is challenging to precisely characterize LTBI in Maine.

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. Results continue to highlight the importance of tailoring actions toward identifying and addressing these barriers to diagnosis and care.

The use of this report is encouraged to guide more culturally and linguistically appropriate public health action 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 protect the public’s health.

All suspected or confirmed cases of active TB must be reported immediately to the Tuberculosis Control Program at Maine CDC by calling 1-800-821-5821. Reporting of LTBI cases is highly 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/