Infectious Disease Epidemiology Report

Latent Tuberculosis Infection, 2012

Background

Tuberculosis (TB) is caused by the bacteria *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 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 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

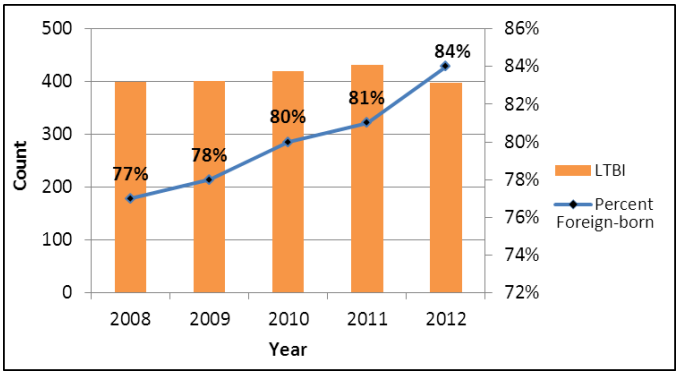
While active TB is monitored through mandatory reporting, LTBI is not a notifiable condition in Maine. The Maine CDC TB Control Program encourages providers to refer all LTBI cases so treatment can be offered and high risk individuals can receive Public Health Nursing services.

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 398 cases of LTBI were reported in 2012, compared to the 432 cases in 2011. Although case counts have remained relatively static, the proportion of foreign-born cases has steadily increased (Figure 1).

Figure 1. Annual cases of LTBI and percent foreign-born – Maine, 2008-2012



Forty-five percent of LTBI cases in 2012 occurred in the 25-44 age range, and 27% among persons 15-24 years of age.

Table 1. Descriptive epidemiology of LTBI – Maine, 2012

Sex	**Count**	**Percent** (%)
Male	213	53.5
Female	185	46.5
Race		
American Indian/ Alaskan Native	2	0.5
Asian	13	3.3
Black/ African American	247	62.1
Hawaiian/ Pacific Islander	15	3.8
White	73	18.3
Other/Unknown	48	12.1
Risk Factors†		
Foreign-born	335	84.2
Children <15 years	39	9.8
Recent TST converter	27	6.8
Congregate setting	15	3.8
Contact of a case	14	3.5
Immunocompromised	7	1.8
Substance abuse	2	0.5

† *Risk factors not mutually exclusive*

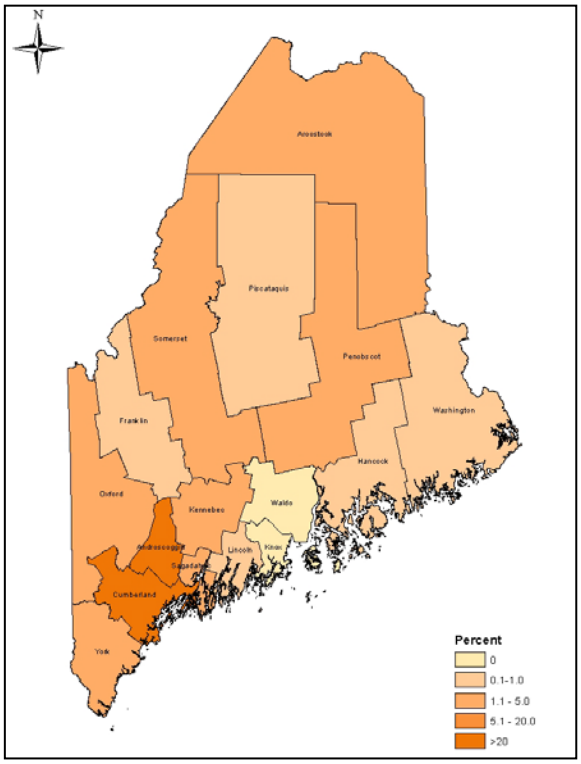
Individuals with LTBI came from 47 different countries, excluding the US. A broad range of languages were reported; the most common foreign languages were Somali and French (Table 2).

Table 2. Provider reported languages – Maine, 2012

Language‡	Count	Percent (%)
Amharic	1	0.2
Arabic	24	5.6
Cambodian	2	0.5
Cantonese	1	0.2
Chinese, unspecified	3	0.7
Dari	1	0.2
English	181	42.5
French	58	13.6
Kinyarwanda	17	4.0
Kirundi	18	4.2
Kurdish	1	0.2
Lingala	1	0.2
Mandarin	4	0.9
Pashto	2	0.5
Portuguese	10	2.3
Russian	5	1.2
Somali	84	19.7
Spanish	7	1.6
Swahili	2	0.5
Tagalog	2	0.5
Vietnamese	2	0.5

‡ *Languages not mutually exclusive*

Figure 2. LTBI by county – Maine, 2012



The largest proportion of cases, 80.7% combined, was reported to reside in Cumberland and Androscoggin counties (Figure 2).

Discussion

The Maine CDC TB Control and Public Health Nursing Programs, in collaboration with community partners, conduct targeted screening in populations with highest risk of developing active TB. 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 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 highlight the need to tailor 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 encouraged.

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

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

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12/20/2013