



# Infectious Disease Epidemiology Report



## Tuberculosis, 2012

### Background

Tuberculosis (TB) is caused by the bacteria *Mycobacterium tuberculosis*. The bacteria are spread through the air by droplets when a person with infectious TB coughs, talks, sings or sneezes. Tuberculosis is only infectious when the disease is in the lungs (pulmonary) or larynx. Extrapulmonary disease is not infectious and occurs outside of the lungs or larynx. Latent tuberculosis infections (LTBI) occur when the body's immune system keeps the bacteria under control and inactive, so that disease does not develop. Individuals with LTBI are not symptomatic and not infectious to others.

Two tests are available to screen for tuberculosis, either can be used. The TB skin test, called the tuberculin skin test (TST), has been used for many years. A newer blood test called interferon gamma release assays (IGRAs) is also available. Both tests do not differentiate between latent or active TB. All positive results require additional evaluation.

Maine monitors the incidence of active TB through mandatory reporting by health care providers, clinical laboratories and other public health partners. Although not reportable, Maine also monitors LTBI diagnoses.

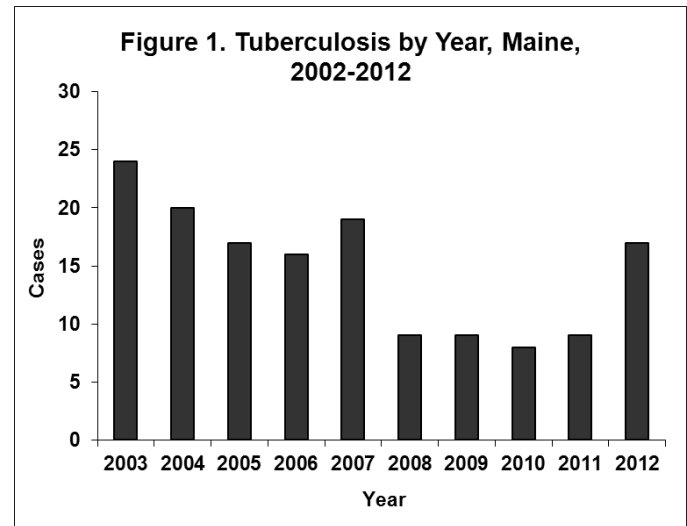
### Methods

All active TB cases in Maine are evaluated by a healthcare provider in consultation with a TB Consultant physician; and receive case management services and directly observed therapy (DOT) by a Public Health Nurse (PHN). The TB Control Program coordinates TB clinic visits and routinely reviews case management with PHN and the State Epidemiologist. Cases are also reviewed with TB Consultants at quarterly meetings.

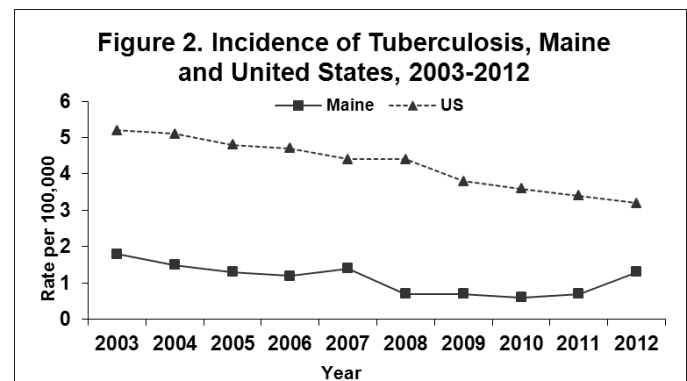
A confirmed case of TB must meet either clinical criteria or be laboratory confirmed with one of the following tests: isolation of *M. tuberculosis*; demonstration of *M. tuberculosis* by polymerase chain reaction (PCR); or demonstration of acid-fast bacilli when a culture has not been or cannot be obtained.

### Results

A total of 17 confirmed cases of TB were reported in 2012 (Figure 1), almost double the number of cases from 2011. No cases of multi-drug resistant (MDR) TB or extensively drug resistant (XDR) TB were reported in Maine in 2012.



The incidence rate of TB in Maine in 2012, 1.3 cases per 100,000 population, is less than the national rate of 3.2 (Figure 2). Nationwide, the case rate decreased from 2011 by 5.9%.



The median age of TB cases was 47 years (range 3 years - 88 years). Cases resided in five counties, Androscoggin (3), Aroostook (1), Cumberland (10), Hancock (1) and York (2).

**Table 1. Clinical characteristics of TB Cases, Maine, 2012**

	Cases (%)
Pulmonary	13 (76)
Extrapulmonary	4 (24)
Tuberculin skin test (TST)	15 (88)
--Positive TST	5
IGRA	6 (35)
--Positive IGRA	4
<b>Pulmonary cases (N = 13)</b>	
Abnormal chest x-ray or CT scan	13 (100)
Positive sputum culture	5 (38)
Positive sputum acid fast bacilli (AFB) smear	4 (31)
Positive bronchial fluid culture	4 (31)

Risk factor information was available for all cases. Three (18%) cases were co-infected with HIV. Ten (59%) cases were born outside of the US. Five (50%) arrived in the US less than a year before their diagnosis.

**Table 2. Characteristics and Risk Factors for TB Cases, Maine, 2012**

	Cases (%)
<b>Demographics</b>	
Male	9 (53)
Female	8 (47)
Hispanic	1 (6)
Non-Hispanic	16 (94)
Asian	2 (12)
Black or African American	7 (41)
White	7 (41)
Pacific Islander/Hawaiian	1 (6)
<b>Country of origin</b>	
U.S.	7 (41)
Non –U.S.	10 (59)
Unknown	0 (0)
<b>Risk Factors</b>	
Correctional facility at time of diagnosis	0 (0)
Injected drug use in past year	0 (0)
Non-injected drug use in past year	2 (12)
Excess alcohol use within past year	2 (12)
Homeless within past year	1 (6)
HIV status known	17 (100)
Incomplete LTBI therapy	1 (6)

There were nine contact investigations in 2012 (one patient investigation performed by another jurisdiction, two cases were considered not to be infectious and two cases were from the same family and had the same contacts). Eighty-seven percent (87%) of identified contacts were evaluated. Four individuals were identified with latent TB infection, and two (50%) started treatment.

In 2012, Maine received 398 reports of persons with LTBI. Eighty-four percent of LTBI cases were diagnosed among persons who are foreign-born. The country of birth reported includes 47 different countries (excluding the US) and 20 primary languages besides English were reported.

**Discussion**

Nationwide, the incidence of TB has decreased during recent years. In Portland, collaboration between the Tuberculosis Control Program, Public Health Nursing and homeless shelters provides TB screening. There have been two outbreaks of TB in Maine among the homeless population in the past 10 years. The Public Health Nursing program continues to screen all newly arriving primary refugees for TB to facilitate case finding and treatment initiation and completion.

Early identification, reporting, prevention and targeted education about TB is necessary to keep TB disease from spreading and protect the public’s health. The evaluation and treatment of TB disease is more costly than LTBI treatment.

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. The state Health and Environmental Testing Laboratory (HETL) provides all confirmatory TB testing for the state.

Additional information about tuberculosis is available at:

- Maine CDC: [www.maine.gov/idepi](http://www.maine.gov/idepi)
- Federal CDC: <http://www.cdc.gov/tb/>
- World Health Organization: <http://www.who.int/tb/en/>