

Tuberculosis - Massachusetts

In 2012, 215 cases of active tuberculosis (TB) were reported to, and verified by, the Massachusetts Department of Public Health, Division of TB Prevention and Control. The incidence rate is 3.2 per 100,000 population, an increase of 10% over the 2011 case rate. However, even as the rate increased in 2012, Massachusetts has had a decreasing trend in case rate from 4.0 to 3.2 since 2008, representing a 19% decrease overall. Case rates in the United States have declined more steeply and the state and national rates are now the same at 3.2.

Drug Resistance

In 2012, 153 (71%) of these 215 TB cases were bacteriologically confirmed by positive culture for *Mycobacterium tuberculosis*.

Drug resistance to one or more anti-TB drugs was detected in 21/151 (14%) of TB cases that had drug-susceptibility testing completed. Resistance to isoniazid (INH), either alone or in combination with other agents, accounted for 9% of the 151 cases.

In 2012, there were two (1%) multi-drug resistant TB cases (MDR, defined as resistance to at least INH and rifampin (RIF)), and no XDR-TB cases (extremely drug resistant, defined as MDR-TB with additional resistance to any fluoroquinolone and at least one injectable second-line drug [amikacin, kanamycin or capreomycin]).

Race/Ethnicity

Racial/ethnic minorities are disproportionately affected by TB. The case rate in 2012 was 22.9 per 100,000 among Asian residents, 15.8 per 100,000 among black residents, and 4.9 per 100,000 among Hispanic residents, compared with 0.9 among white residents. Black individuals are 18.8 times more likely than whites to be diagnosed with TB, Hispanics 5.9 times more likely, and Asians 27.1 times more likely than whites.

Higher Risk Groups

Non-U.S. born (persons born outside the United States and its territories): Among 215 cases, 186 (87%) were reported in non-U.S. born persons in 2012: 89 cases (41%) were from five countries, with India and Haiti accounting for 24 cases (11%) each, followed by China with 16 cases (7%), Vietnam with 13 cases (6%) and Cambodia with 12 cases (6%). The remaining 126 cases (59%) included persons from 42 different countries. In 2012, 48/186 (25%) of non-US born persons were diagnosed with TB within one year of entry in the US and 91/186 (49%) were diagnosed within five years of arrival.

Homeless: Of the 215 cases of TB reported in 2012, six (3%) were in persons reported to have been homeless. Among the six cases in homeless individuals, two (33%) were reported from Boston and four (66%) from other Massachusetts communities.

Incarcerated: In 2012, five cases (2%) were diagnosed in persons in correctional facilities.

HIV co-infected (preliminary): Among those individuals for whom HIV test results reported, 16/126 (13%) were HIV-positive. HIV testing is recommended for all persons diagnosed with active TB.

Children: In 2012, two children under 15 years of age were diagnosed with active TB (<1% of cases, incidence rate <1 per 100,000 among children <15 years old).

Characteristics of TB Cases 2012 (N=215)	
Demographics	# (%)
Sex	
Male	122 (57%)
Female	93 (43%)
Race Ethnicity	
White, non-Hispanic	42 (20%)
Black, non-Hispanic	62 (29%)
Hispanic	31 (14%)
Asian	80 (37%)
Country of Birth	
U.S.	29 (13%)
Other than U.S.	186 (87%)
Age (years)	
<5	1 (<1%)
5-14	1 (<1%)
15-19	6 (3%)
20-24	19 (9%)
25-44	82 (38%)
45-64	57 (27%)
65+	49 (23%)
Clinical Presentation	
Site of Disease	
Pulmonary	133 (62%)
Extra-pulmonary	61 (28%)
Both	21 (10%)
Chest X-Ray Findings (pulmonary involvement, N=154)	
Cavitary disease only	30 (19%)
Miliary disease only	4 (3%)
Cavitary & miliary disease	0 (0%)
Non-cavitary disease only	109 (71%)
Normal	7 (4%)
Not Done (CT scan only)	4 (3%)
High Risk Groups⁺	
Non-U.S. born	186 (87%)
Children < 15 years	2 (1%)
Prison/jail	5 (2%)
Homeless	6 (3%)
Substance use*	20 (9%)
HIV positive	16/126(13%)
Drug Resistance Patterns (N=151) Bacteriologically confirmed cases with drug susceptibility test results	
Resistant to ≥ 1 drug	21 (14%)
Resistant to at least INH	13 (9%)
Resistant to at least INH+RIF (MDR-TB)	2 (1%)
⁺ Not mutually exclusive groups [*] Alcohol, injecting and/or non-injecting drug use	