***Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences***

***Summary Tuberculosis Statistics for the Year 2019***

### Tuberculosis - Massachusetts

In 2019, 178 cases (incidence rate 2.6 per 100,000 residents[[1]](#footnote-1)) of tuberculosis (TB) disease were reported to, and verified by, the Massachusetts Department of Public Health. This compares to the national case rate of 2.7 per 100,000 residents[[2]](#footnote-2). The number of cases in 2019 represents a 11% decrease from the previous year. The multi-year trend continues to show an overall decline. Comparing the most recent five-year period (2015-2019) with the previous period (2010-2014), the average number of cases declined 6%, from 207 to 194 per year. Health disparities are evident and reflect the global impact of TB, with populations born outside the United States (U.S.) at increased risk for TB.

### Race/Ethnicity

Racial/ethnic minorities are disproportionately affected by TB; 85% of active TB disease in 2019 was diagnosed in members of minority groups. The TB case rate per 100,000 residents in 2019 was 18.6 among Asian non-Hispanic residents, 7.3 among black non-Hispanic residents, and 2.6 among Hispanic residents; compared with 0.5 among white non-Hispanic residents. Compared with white residents, the relative risk for being diagnosed with TB in 2019 was approximately 35.7 times higher among Asian (95% CI 23.1-55.2), 14.1 times higher among Black (95% CI 8.5-23.24), and 5.0 times higher among Hispanic (95% CI 2.8-8.7) residents.

### Higher Risk Groups

Non-U.S. Born (persons born outside the U.S. and territories): Among 178 cases of TB in 2019, 150 (84%) were reported in non-U.S. born persons. 106 (60%) cases were in persons born in one of nine countries: India (26, 15%), China (15, 8%), Vietnam (15, 8%), Haiti (14, 8%), Cambodia (13, 7%), Nepal (7, 4%), Dominican Republic (6, 3%), Brazil (6, 3%), and Kenya (4, 2%). 44 cases (25%) occurred in persons born in 26 additional countries.

Children <15 Years of Age: In 2019, five cases of TB were diagnosed in children under 15 years of age (3% of cases, incidence rate <1/100,000 children under 15 years old). Three of the five children (60%) were born in the U.S.

Incarcerated in Prison/Jail: No cases of TB were diagnosed in persons in the Massachusetts correctional system in 2019.

Homeless: Of the 178 cases of TB reported in 2019, 4 (2%) were in persons experiencing homelessness within the previous year.

HIV Co-infected (preliminary): 3 persons (2%) diagnosed with TB in 2019 were known to be co-infected with human immunodeficiency virus (HIV).

Known Contacts to Massachusetts Cases: 9 persons (5%) were known contacts to previous TB cases in Massachusetts, an indicator of possible community transmission occurring within Massachusetts borders.

**Drug Resistance**

In 2019, 142 (80%) of the 178 TB cases were bacteriologically confirmed by positive culture for *Mycobacterium tuberculosis* and had isolates available for drug susceptibility testing. Resistance testing was successfully completed on 140 (99%) of the 142 isolates.

Resistance to one or more anti-TB drugs was detected in 21 (15%) of the 140 isolates. Resistance to isoniazid (INH), either alone or in combination with other agents, was seen in 12%. With MDR-TB increasing worldwide, MDR-TB in Massachusetts is carefully monitored and remains a priority of the TB program.

**Characteristics of TB Cases, 2019 (N=178)**

|  |  |
| --- | --- |
| **Demographics** | # (%) |
| Male | 95 (53%) |
| Female | 83 (47%) |
| Race Ethnicity  |  |
| White, non-Hispanic | 26 (15%) |
| Black, non-Hispanic | 37 (21%) |
| Hispanic | 22 (12%) |
| Asian, non-Hispanic | 93 (52%) |
| **Origin of Birth** |  |
| U.S.-born | 28 (16%) |
| Non-U.S. born | 150 (84%) |
| **Age (years)** |  |
| <5 | 3 (2%) |
| 5-14 | 2 (1%) |
| 15-19 | 8 (4%) |
| 20-24 | 14 (8%) |
| 25-44 | 56 (31%) |
| 45-64 | 46 (26%) |
| 65+ | 49 (28%) |

**Clinical Presentation**

**Primary site of disease**

|  |  |
| --- | --- |
| Pulmonary | 103 (58%) |
| Extra-pulmonary | 55 (31%) |
| Both  | 20 (11%) |

**Chest radiography**

|  |  |
| --- | --- |
| Cavitary disease only | 42 (24%) |
| Miliary disease only | 4 (2%) |
| Cavitary and miliary | 0 (0%) |
| Non-cavitary disease only | 92 (52%) |
| Normal | 28 (16%) |
| Not reported | 12 (7%) |

**Known Higher Risk Groups[[3]](#footnote-3) (N=178)**

|  |  |
| --- | --- |
| Non-U.S. born | 150 (84%) |
| Children <15 yrs old | 5 (3%) |
| Incarceration | 0 (0%) |
| Homelessness | 4 (2%) |
| Substance use[[4]](#footnote-4) | 4 (2%) |
| HIV co-infection | 3 (2%) |
| Contact to previous MA case | 9 (5%) |

**Drug Resistance** Culture confirmed cases with drug susceptibility results **(N=140)**

|  |  |
| --- | --- |
| Resistance to >1 drug | 21 (15%) |
| Resistance to INH | 17 (12%) |
| Resistance to INH and RIF (MDR-TB)  | 2 (1%) |

1. As of 9/9/2020 BIDLS calculates rates per 100,000 population using denominators estimated by the University of Massachusetts Donahue Institute using a modified Hamilton-Perry model (UMDI Oct 2016). Note that rates and trends calculated using previous methods cannot be compared to these. [↑](#footnote-ref-1)
2. *MMWR:* https://www.cdc.gov/mmwr/volumes/69/wr/mm6911a3.htm [↑](#footnote-ref-2)
3. Not mutually exclusive groups [↑](#footnote-ref-3)
4. Alcohol, injecting and non-injecting drug use [↑](#footnote-ref-4)