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

***Summary Tuberculosis Disease Statistics for the Year 2023***

### Tuberculosis Disease - Massachusetts

In 2023, 224 residents of Massachusetts were diagnosed with tuberculosis (TB) disease (incidence rate 3.2 per 100,000 residents[[1]](#footnote-1)). This number does not include Massachusetts residents diagnosed with latent tuberculosis infection (LTBI)[[2]](#footnote-2). The 2023 national TB disease case rate is 2.9 per 100,000 residents[[3]](#footnote-3). The number of TB cases increased by 46% from 2022 to 2023. The historically low number of TB cases in Massachusetts, of 143 in 2020, likely reflects the impacts of the COVID-19 pandemic. The average number of TB cases increased to 176 in the following three years (2021-2023), still below the pre-pandemic five-year annual average of 194 cases. The increase in TB cases observed in 2023 are most likely attributable to factors such as increased healthcare-seeking behaviors and access, increased international travel and migration, and decreased respiratory illness precautions.

### Race/Ethnicity

Racial and ethnic minority groups are disproportionately affected by TB; 92% of active TB disease in 2023 was diagnosed in members of minority groups. The TB case rate per 100,000 residents in 2023 was 17.4 among Asian non-Hispanic residents, 13.4 among black non-Hispanic residents, and 5.2 among Hispanic residents; compared with 0.4 among white non-Hispanic residents. Compared with white residents, the relative risk for being diagnosed with TB in 2023 was approximately 44.3 times higher among Asian (95% CI 27.0 to 72.7), 34.1 times higher among black (95% CI 20.4 to 56.9), and 13.3 times higher among Hispanic (95% CI 7.8 to 22.7) residents.

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### Higher Risk Groups

*Persons Born outside the U.S. and Territories (non-U.S. born)*: Among 224 cases of TB disease in 2023, 198 (88%) were reported in non-U.S. born persons. 142 (63%) cases were in persons born in one of ten countries: Haiti (39, 17.5%), India (20, 9%), China (18, 8%), Vietnam (17, 8%), Dominican Republic (12, 5%), Brazil (11, 5%), Cambodia (7, 3%), Colombia (6, 3%), Ecuador (6, 3%), Nepal (6, 3%). Fifty-six (25%) cases occurred in persons born in one of 35 additional countries outside the U.S.

*Children <15 Years of Age*: In 2023, nine cases of TB disease were diagnosed in children under 15 years of age (4% of cases, incidence rate <1/100,000 children under 15 years old).

*Incarcerated in Prison/Jail*: No cases of TB disease were diagnosed in persons in the Massachusetts correctional system in 2023.

*Unstably Housed*: Of the 224 cases of TB disease reported in 2023, six (3%) were in persons experiencing homelessness within the previous year.

*HIV Co-infected*: Eight persons (4%) diagnosed with TB disease in 2023 were known to be co-infected with human immunodeficiency virus (HIV).

*Known Contacts to Massachusetts Cases*: Six persons (3%) were known contacts to previous TB disease cases in Massachusetts, an indicator of possible community transmission occurring within Massachusetts.

**Drug Resistance**

In 2023, 199(89%) of the 224 TB disease cases were bacteriologically confirmed by positive culture for *Mycobacterium tuberculosis* and had isolates available for drug susceptibility testing. Resistance testing was successfully completed on all 197 (99%) of the cultured isolates.

Resistance to one or more anti-TB drugs was detected in 41(21%) of the isolates. Resistance to isoniazid (INH), either alone or in combination with other agents, was seen in 14(7%) isolates. Five isolates were also identified as MDR-TB. With MDR-TB increasing worldwide, MDR-TB in Massachusetts is carefully monitored and remains a priority of the TB program.

**Characteristics of TB Disease Cases, 2023 (N=224)**

|  |  |
| --- | --- |
| **Demographics** | # (%) |
| Male | 120 (54%) |
| Female | 104 (46%) |
| Race/Ethnicity  |  |
| White, non-Hispanic | 19 (8%) |
| Black, non-Hispanic | 64 (29%) |
| Hispanic | 46 (20%) |
| Asian, non-Hispanic | 89 (40%) |
| Other, non-Hispanic |  6 (3%) |
| **Origin of Birth** |  |
| U.S.-born | 26 (12%) |
| Non-U.S. born | 198 (88%) |
| **Age (years)** |  |
| <5 |  7 (3%) |
| 5-14 |  2 (1%) |
| 15-19 |  6 (3%) |
| 20-24 | 10 (4%) |
| 25-44 | 92 (41%) |
| 45-64 | 51 (23%) |
| 65+ | 56 (25%) |

**Clinical Presentation**

**Primary site of disease**

|  |  |
| --- | --- |
| Pulmonary | 157 (70%) |
| Extra-pulmonary | 55 (25%) |
| Both  | 12 (5%) |

**Chest radiography**

|  |  |
| --- | --- |
| Cavitary disease only | 77 (34%) |
| Miliary disease only | 8 (4%) |
| Cavitary and miliary | 0 (0%) |
| Non-cavitary disease only | 114 (51%) |
| Normal | 24 (11%) |
| Not done | 1 (0%) |

**Known Higher Risk Groups[[4]](#footnote-4)**

|  |  |
| --- | --- |
| Non-U.S. born | 198 (88%) |
| Children <15 yrs old | 9 (4%) |
| Incarceration | 0 (0%) |
| Homelessness | 6 (3%) |
| Substance use[[5]](#footnote-5) | 19 (9%) |
| HIV co-infection | 8 (5%) |
| Contact to previous MA case | 6 (3%) |

**Drug Resistance** Culture confirmed cases with drug susceptibility results **(N=197)**

|  |  |
| --- | --- |
| Resistance to >1 drug | 48 (24%) |
| Resistance to INH | 16 (8%) |
| Resistance to INH and RIF (MDR-TB)  | 5 (3%) |

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. Denominators were last updated in 2020. [↑](#footnote-ref-1)
2. Persons with LTBI have a positive TB skin test or TB blood tests but are not sick and are not infectious to others. [↑](#footnote-ref-2)
3. Williams PM, Pratt RH, Walker WL, Price SF, Stewart RJ, Feng PI. Tuberculosis — United States, 2023. MMWR Morb Mortal Wkly Rep 2024; 73:265–270. DOI: http://dx.doi.org/10.15585/mmwr.mm7312a4 [↑](#footnote-ref-3)
4. Not mutually exclusive groups [↑](#footnote-ref-4)
5. Alcohol, injecting and non-injecting drug use. [↑](#footnote-ref-5)