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

***Summary Tuberculosis Statistics for the Year 2020***

### Tuberculosis - Massachusetts

In 2020, 142 cases (incidence rate 2.0 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 2.2 per 100,000 residents[[2]](#footnote-2). The number of cases in 2020 represents a 20% decrease from the previous year. It is extremely likely that some proportion of this decrease in cases relates to the COVID-19 pandemic, perhaps due to decreased travel, increased precautions for airborne pathogens, or declines in care-seeking behaviors. Additional research will be required to better understand the causes or extent of COVID-19 influence on TB case numbers and case finding in 2020.

### Race/Ethnicity

Racial and ethnic minority groups are disproportionately affected by TB; 86% of active TB disease in 2020 was diagnosed in members of minority groups. The TB case rate per 100,000 residents in 2020 was 12.4 among Asian non-Hispanic residents, 5.7 among black non-Hispanic residents, and 3.4 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 2020 was approximately 30.7 times higher among Asian (95% CI 18.5 to 50.7), 14.1 times higher among Black (95% CI 7.9 to 24.9), and 8.7 times higher among Hispanic (95% CI 4.9 to 15.2) residents.

### Higher Risk Groups

Persons Born outside the U.S. and Territories (non-U.S. born): Among 142 cases of TB in 2020, 125 (88%) were reported in non-U.S. born persons. 78 (55%) cases were in persons born in one of seven countries: India (16, 11%), Haiti (15, 11%) China (12, 8%), Vietnam (12, 8%), Brazil (9, 6%) Cambodia (8, 6%), Dominican Republic (6, 4%). The remaining 33% of cases born outside the U.S. occurred in persons born in one of 22 additional countries. (17 cases were in U.S.-born persons.)

Children <15 Years of Age: In 2020, three cases of TB were diagnosed in children under 15 years of age (2% of cases, incidence rate <1/100,000 children under 15 years old). All three children were born in the U.S.

Incarcerated in Prison/Jail: One case of TB was diagnosed in persons in the Massachusetts correctional system in 2020.

Homeless: Of the 142 cases of TB reported in 2020, 5 (4%) were in persons experiencing homelessness within the previous year.

HIV Co-infected (preliminary): 8 persons (6%) diagnosed with TB in 2020 were known to be co-infected with human immunodeficiency virus (HIV).

Known Contacts to Massachusetts Cases: 3 persons (2%) were known contacts to previous TB cases in Massachusetts, an indicator of possible community transmission occurring within Massachusetts.

**Drug Resistance**

In 2020, 113 (80%) of the 142 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 all 113 (100%) of the cultured isolates.

Resistance to one or more anti-TB drugs was detected in 15 (13%) of the 113 isolates. Resistance to isoniazid (INH), either alone or in combination with other agents, was seen in 10%. With MDR-TB increasing worldwide, MDR-TB in Massachusetts is carefully monitored and remains a priority of the TB program.

**Characteristics of TB Cases, 2020 (N=142)**

|  |  |
| --- | --- |
| **Demographics** | # (%) |
| Male | 63 (44%) |
| Female | 79 (55%) |
| Race Ethnicity  |  |
| White, non-Hispanic | 20 (14%) |
| Black, non-Hispanic | 28 (20%) |
| Hispanic | 30 (31%) |
| Asian, non-Hispanic | 63 (44%) |
| Other |  1 (0.70%) |
| **Origin of Birth** |  |
| U.S.-born | 17 (12%) |
| Non-U.S. born | 125 (88%) |
| **Age (years)** |  |
| <5 | 0 (0%) |
| 5-14 | 3 (2%) |
| 15-19 | 7 (5%) |
| 20-24 | 17 (12%) |
| 25-44 | 38 (27%) |
| 45-64 | 37 (26%) |
| 65+ | 40 (28%) |

**Clinical Presentation**

**Primary site of disease**

|  |  |
| --- | --- |
| Pulmonary | 81 (57%) |
| Extra-pulmonary | 36 (25%) |
| Both  | 25 (18%) |

**Chest radiography**

|  |  |
| --- | --- |
| Cavitary disease only | 34 (24%) |
| Miliary disease only | 6 (4%) |
| Cavitary and miliary | 2 (1%) |
| Non-cavitary disease only | 90 (63%) |
| Normal | 10 (7%) |
| Not reported | 0 (0%) |

**Known Higher Risk Groups[[3]](#footnote-3) (N=142)**

|  |  |
| --- | --- |
| Non-U.S. born | 128 (88%) |
| Children <15 yrs old | 3 (2%) |
| Incarceration | 1 (1%) |
| Homelessness | 5 (4%) |
| Substance use[[4]](#footnote-4) | 6 (4%) |
| HIV co-infection | 8 (6%) |
| Contact to previous MA case | 3 (2%) |

**Drug Resistance** Culture confirmed cases with drug susceptibility results **(N=113)**

|  |  |
| --- | --- |
| Resistance to >1 drug | 15 (13%) |
| Resistance to INH | 11 (10%) |
| Resistance to INH and RIF (MDR-TB)  | 3 (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. [↑](#footnote-ref-1)
2. MMWR: 2021;70:409-414. <https://www.cdc.gov/mmwr/volumes/70/wr/mm7012a1.htm?s_cid=mm7012a1_w> [↑](#footnote-ref-2)
3. Not mutually exclusive groups [↑](#footnote-ref-3)
4. Alcohol, injecting and non-injecting drug use [↑](#footnote-ref-4)