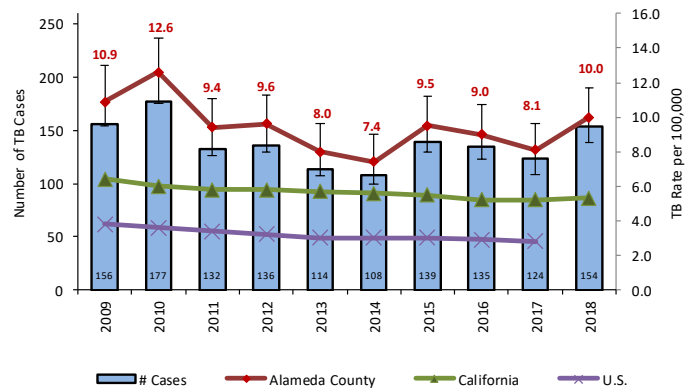


# Tuberculosis Fact Sheet Alameda County 2018

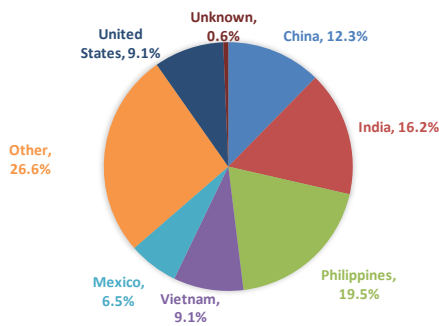
## OVERVIEW

During 2018, 154 tuberculosis (TB) cases were reported to Alameda County (excluding the City of Berkeley). The 2018 TB case rate in Alameda County was 10.0 cases per 100,000 residents, a 24.2% increase from the 2017 rate. The 2018 rate ranks third among all jurisdictions in California and is 1.9-fold higher than the California state rate of 5.3 cases per 100,000 residents. Compared to other Bay Area jurisdictions, the Alameda County rate ranks lower than San Francisco (13.2 per 100,000), and higher than Santa Clara (8.6 per 100,000), San Mateo (7.9 per 100,000), Solano (6.6 per 100,000), and Contra Costa (5.2 per 100,000) counties.

**Figure 1. Tuberculosis Cases and Rate per 100,000 in Alameda County, 2009-2018**



**Figure 2: Incident TB Cases (2018) by Place of Birth, Alameda County**



**Table 1. Number of Incident TB Cases and Annual Average Case Rates per 100,000, Alameda County**

|                         |                          | Number of 2018 Cases (N=154) | Percent | Average Case Rate per 100,000 (2016-2018) |
|-------------------------|--------------------------|------------------------------|---------|---|
| <b>Sex</b>              | Males                    | 94                           | 61.0%   | 11.0                                      |
|                         | Females                  | 60                           | 39.0%   | 7.0                                       |
| <b>Age Group</b>        | 0-4 yrs                  | 3                            | 1.9%    | *   |
|                         | 5-14 yrs                 | 2                            | 1.3%    | *   |
|                         | 15-24 yrs                | 13                           | 8.4%    | 6.6                                       |
|                         | 25-44 yrs                | 39                           | 25.3%   | 7.5                                       |
|                         | 45-64 yrs                | 54                           | 35.1%   | 10.9                                      |
|                         | 65+ yrs                  | 43                           | 27.9%   | 21.0                                      |
| <b>Race / Ethnicity</b> | Black / African American | 11                           | 7.1%    | *   |
|                         | Asian / Pacific Islander | 116                          | 75.3%   | 22.9                                      |
|                         | Amer Ind / Native AK     | 3                            | 1.9%    | *   |
|                         | Hispanic / Latino        | 17                           | 11.0%   | 4.5                                       |
|                         | White                    | 5                            | 3.2%    | *   |
|                         | <b>Birthplace</b>        | United States                | 14      | 9.1%                                      |
|                         | Outside of United States | 139                          | 90.3%   | 24.5                                      |

\* Categories with <10 average annual cases are unstable and not presented

## PATIENT DEMOGRAPHICS

Similar to previous years, a majority of TB cases were male (61.0%). During 2018, the largest proportion of TB cases occurred among adults 45 to 64 years old (35.1%), and the lowest proportions occurred among children 5 to 14 years old (1.3%) (Table 1).

The majority of 2018 TB cases (95.3%) occurred among non-White residents (Table 1). From 2016 to 2018, Asian/Pacific Islander (API) residents in Alameda County had an average annual case rate of 22.9 cases per 100,000 residents, followed by Hispanic residents at 4.5 cases per 100,000 residents.

During 2018, 90.3% of TB cases were born outside of the U.S. (Table 1). The most frequent birthplaces outside of the U.S. remain the Philippines, India, China, Vietnam, and Mexico (Figure 2). The 2016-2018 average annual case rate for cases born outside of the U.S. was 24.5 per 100,000, 16 times the rate for cases born in the U.S. (1.5 per 100,000). For 2018 cases born outside of the U.S., 61.2% had resided in the U.S. for 10 years or more before being diagnosed with TB.

The largest proportion of 2018 TB cases occurred among residents of Oakland (36.4%), Fremont (18.2%) and San Leandro (11.0%). Five-year average rates were highest in Downtown and East Oakland, and South Fremont (over twice the five-year county average of 8.8 per 100,000) (Figure 3).

### CLINICAL CHARACTERISTICS

Of all 2018 TB cases, 77.2% had any pulmonary involvement and 22.7% were extrapulmonary only (Table 2). Of all pulmonary cases, a majority (58.0%) were acid-fast bacilli (AFB) smear-negative and 68.9% did not have evidence of cavitary disease on chest radiography. Only 1.3% of 2018 TB cases were co-infected with HIV. The most common comorbidity was diabetes (26.6%).

### DRUG RESISTANCE

More drug-resistant isolates were identified among culture-positive cases during 2018 compared to 2015-2017 (20.0% vs. 4.8%-11.5%). During 2018, 25 TB cases were resistant any TB treatment drug, and 24 to at least one first-line treatment drug (isoniazid, rifampin, ethambutol or pyrazinamide). Sixteen (64.0%) were resistant to isoniazid only. Alameda County had three multidrug-resistant TB cases (resistant to both isoniazid and rifampin) in 2018, compared to one in 2017.

### DIAGNOSTIC TESTING

Among 2018 TB cases with any pulmonary disease, 73.9% received a nucleic acid amplification (NAA) test at diagnosis, a higher proportion than among 2017 cases (61.5%). Similar to 2017, more 2018 cases with positive sputum AFB smears received NAA tests compared to patients with negative sputum AFB smears (89.4% and 62.3%, respectively); a larger proportion of 2018 cases with negative sputum AFB smears received a NAAT test compared to 2017 (62.3% and 38.2%, respectively).

### SUMMARY

TB remains an important public health problem in Alameda County, where the case rate ranks third among all jurisdictions in California. Preliminary analyses suggest that the higher case rate in 2018 was not due to increases among clinical cases or as a result of recent transmission. A large proportion of Alameda County TB cases continue to occur among older adults, those born outside of the U.S., and non-U.S.-born cases who have been in the U.S. for 10 years or more before TB diagnosis; all are known risk factors for latent TB infection (LTBI). Reports have also indicated that 80%-85% of all TB cases are due to LTBI reactivation. Therefore, identifying and treating LTBI is a key TB control strategy. TB Control also continues to encourage early diagnosis through the use of NAA tests, as this practice may facilitate earlier TB treatment initiation and reduce disease transmission.

Figure 3: Average Annual TB Rates per 100,000 by Zip Code (2014-2018), Alameda County

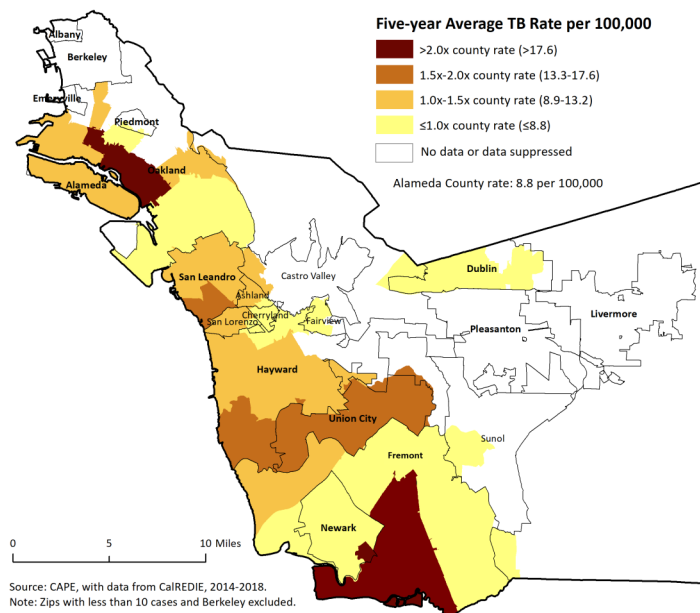


Table 2: Clinical & Laboratory Characteristics of TB Cases (2018) Alameda County

|  |   | Number                           | Percent |       |
|--|---|----------------------------------|---------|-------|
| <b>Site of disease</b>   | Pulmonary only  | 88                               | 57.1%   |       |
|  | Extrapulmonary only   | 35                               | 22.7%   |       |
|  | Both  | 31                               | 20.1%   |       |
| <b>Among cases with any pulmonary disease (N=119)</b>                  |   |                                  |         |       |
| <i>Sputum smear</i>  | <i>Positive</i>   | 47                               | 39.5%   |       |
|  | <i>Negative</i>   | 69                               | 58.0%   |       |
|  | <i>Not done</i>   | 3                                | 2.5%    |       |
| <i>Cavitary disease</i>  | <i>Present</i>  | 37                               | 31.1%   |       |
|  | <i>Absent</i>   | 82                               | 68.9%   |       |
| <b>Comorbidities</b>   | HIV/AIDS  | 2                                | 1.3%    |       |
|  | Diabetes  | 41                               | 26.6%   |       |
|  | End-stage renal disease   | 8                                | 5.2%    |       |
|  | Other immunosuppression*  | 7                                | 4.5%    |       |
|  | <b>Drug resistance among culture-positive cases</b>                             | Resistance to any TB medications | 25      | 20.0% |
|  | Resistance to INH only  | 16                               | 12.8%   |       |
|  | Resistance to PZA only  | 3                                | 2.4%    |       |
|  | Resistance to Streptomycin only   | 1                                | 0.8%    |       |
|  | Resistance to INH and any other non-first-line medication                       | 2                                | 1.6%    |       |
|  | Multidrug resistance  | 3                                | 2.4%    |       |
| <b>Nucleic Acid Amplification Testing (NAAT) practice at diagnosis</b> | <b>Among cases with any pulmonary disease and sputum smear performed (N=88)</b> |                                  |         |       |
|  | Sputum smear positive (N=47)  | NAAT performed                   | 42      | 89.4% |
|  |   | NAAT positive                    | 41      | 97.6% |
|  | Sputum smear negative (N=69)  | NAAT performed                   | 43      | 62.3% |
|  |   | NAAT positive                    | 21      | 48.8% |

\* Due to a medical condition, such as hematologic or reticuloendothelial malignancies or immunosuppressive therapy, such as prolonged use of high-dose adrenocorticosteroids.