Tuberculosis in Santa Clara County, 2024

About us

The Santa Clara County Public Health Department Tuberculosis (TB) Prevention & Control Program investigates all reports of persons with confirmed or suspected TB disease in Santa Clara County. We provide individualized case management to each patient to help ensure treatment completion and to prevent TB from spreading further. We work with Civil Surgeons to identify and treat latent TB infection (LTBI), and we provide consultation to medical providers and community organizations, thus creating partnerships for the prevention of tuberculosis.

TB Summary

TB is a preventable and curable communicable disease. TB is caused by the bacteria *Mycobacterium tuberculosis* (MTb), which can spread from person to person through the air when an individual with infectious TB disease coughs, sneezes, or speaks. Transmission occurs when others breathe in the bacteria while in close and prolonged contact with a person with infectious TB disease. TB bacteria can infect anyone regardless of their age, race, sex, or socioeconomic status, though it is not nearly as contagious as the common respiratory viruses.

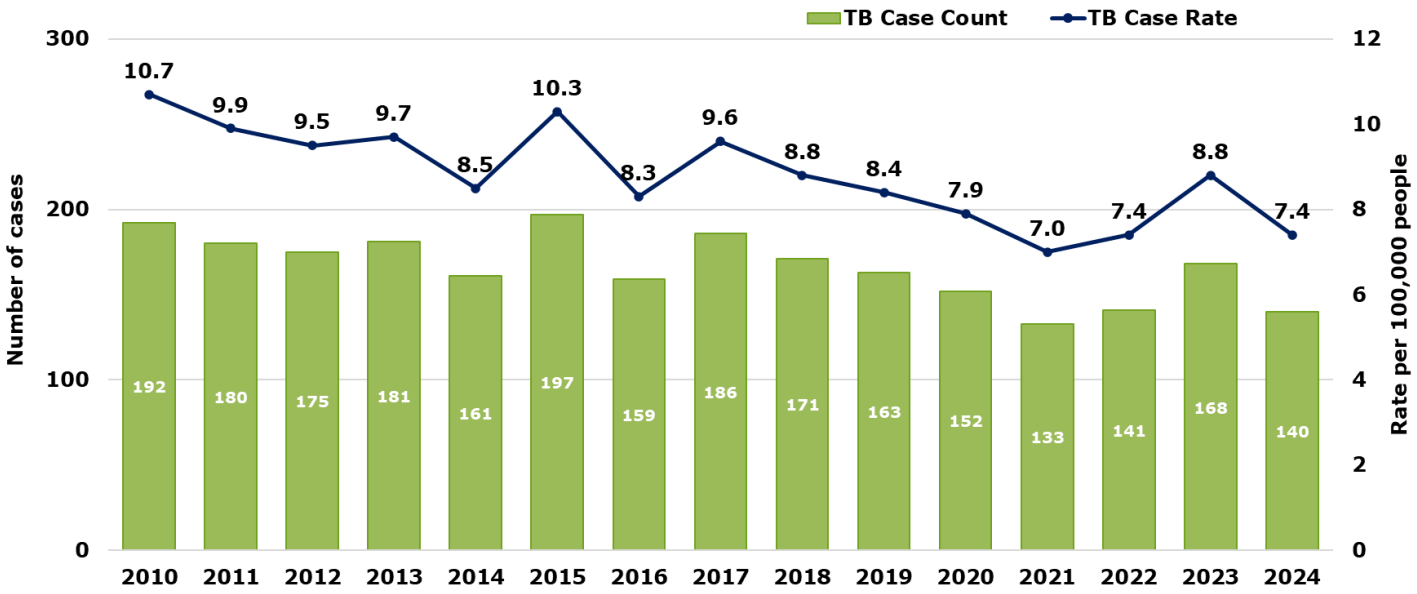
Latent TB infection (LTBI) occurs when individuals are infected with the bacteria that causes TB, but the person is not currently ill or contagious. If, over the course of months to years, the body's immune system can no longer control the latent infection, the bacteria multiply and cause TB disease. The risk of developing TB disease after infection is higher for folks with any condition that impairs the body's ability to control the infection, such as being underweight, living with HIV, taking immunosuppressing treatment, having diabetes, etc. [1]. TB disease is also most likely to develop in the first two years after initial infection. Certain behaviors, such as alcohol use and smoking, also increase an individual's risk for developing TB disease. If treatment is delayed, TB disease can cause serious illness and death. Fortunately, TB can be prevented, treated, and cured!

TB Cases and Rates

There were 140 cases of TB disease in Santa Clara County (SCC) diagnosed in 2024 which is a 17% decrease compared to 2023 (168 TB cases) (Figure 1). We do not have a good explanation for this decline in cases as we have not noted a marked

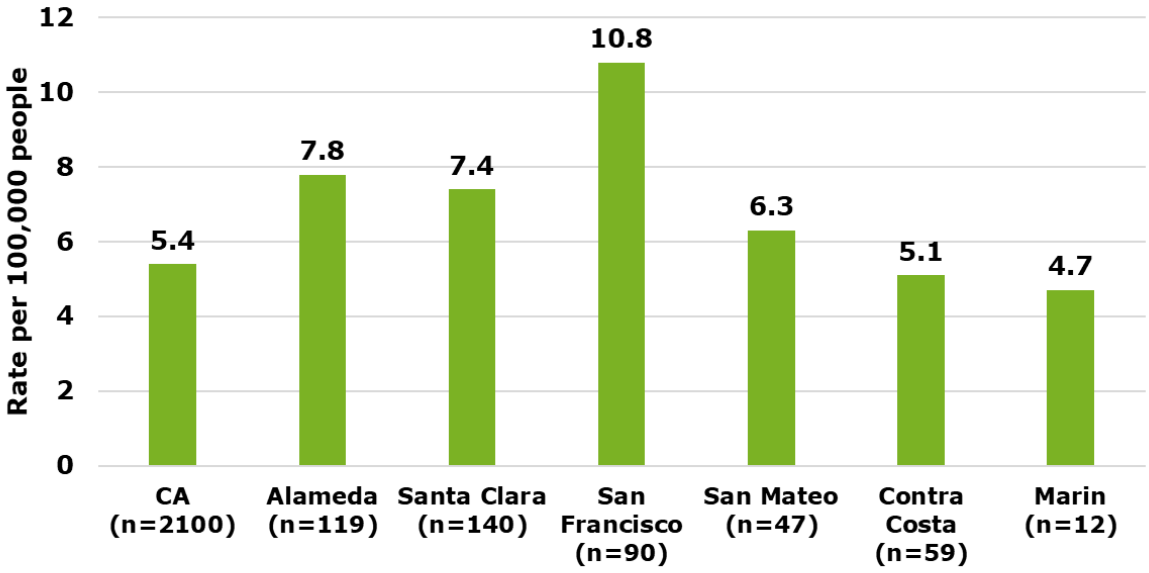
improvement in treatment of LTBI. The 140 cases represent a rate of 7.4 per 100,000 people. This case rate is 37% higher than the 2024 overall California rate (5.4) (Figure 2) and more than double the national rate (3.0) in 2024 [2,3]. In 2024, SCC had the third highest case rate among Bay Area counties behind Alameda and San Francisco (Figure 2). Among all California jurisdictions, SCC had the seventh highest case rate and Imperial County had the highest case rate at 27.3.[2]

Figure 1: Trends in TB Case Counts and Rates in Santa Clara County, 2010-2024



Data Source: [1][3][4]

Figure 2: TB Case Rates for California and San Francisco Bay Area Counties, 2024



Data Source: [2]

Medical Comorbidities

In 2024, 40% of people with TB in SCC had one or more medical conditions associated with an increased risk of progression from latent tuberculosis infection to TB disease. The most common comorbidity in 2024 was diabetes mellitus (26%). Other risk factors included immunosuppression not related to HIV/AIDS (9%), alcohol use (3%), drug use (3%), and HIV infection (1%). Improved diabetic control and reduction of these other conditions would result in fewer TB cases.

TB Cases by Race/Ethnicity

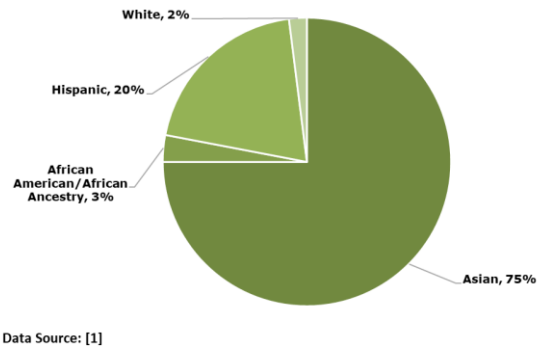
TB cases in SCC during 2024 occurred predominantly among Asian (75%) and Hispanic (20%) populations, with a small percentage in African American/African Ancestry (3%), and White (2%).

In 2024, about 94% of TB cases occurred among persons born outside the U.S., primarily from the following countries: Vietnam (24%), the Philippines (16%), India (14%), China (14%), and Mexico (11%). Case rates by country of origin was highest among those born in the Philippines (42.1 per 100,000 people) and Vietnam (33.3) followed by India (14.5), Mexico (13.5), and China (12.9), which are much higher than the SCC overall case rate (7.4) (Figure 4). The ordering of these case rates by birth country from highest to lowest is not different from that of 2023.

Length of Time in US

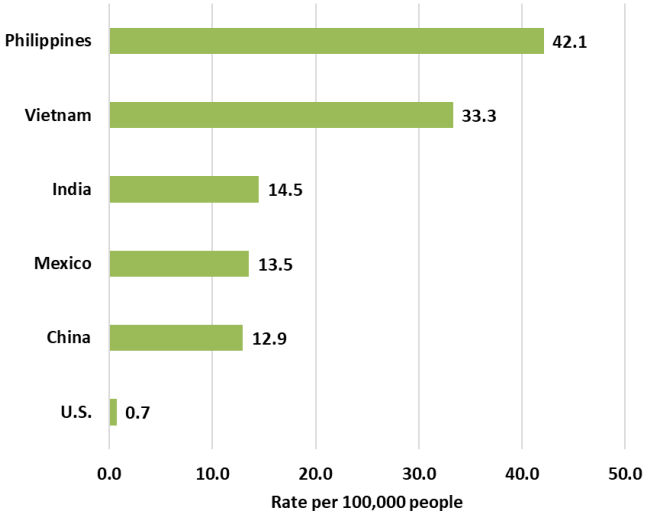
In 2024, about 25% of persons with TB in SCC who were born outside the U.S. had lived in the U.S. for less than 5 years. Most persons with TB (61%) had lived in the U.S. for at least 10 years.

Figure 3: TB Cases by Race/Ethnicity in Santa Clara County, 2024



Data Source: [1]

Figure 4: TB Case Rate by Country of Birth, 2024



Data Source: [1] [3][4] [5]

Age Group

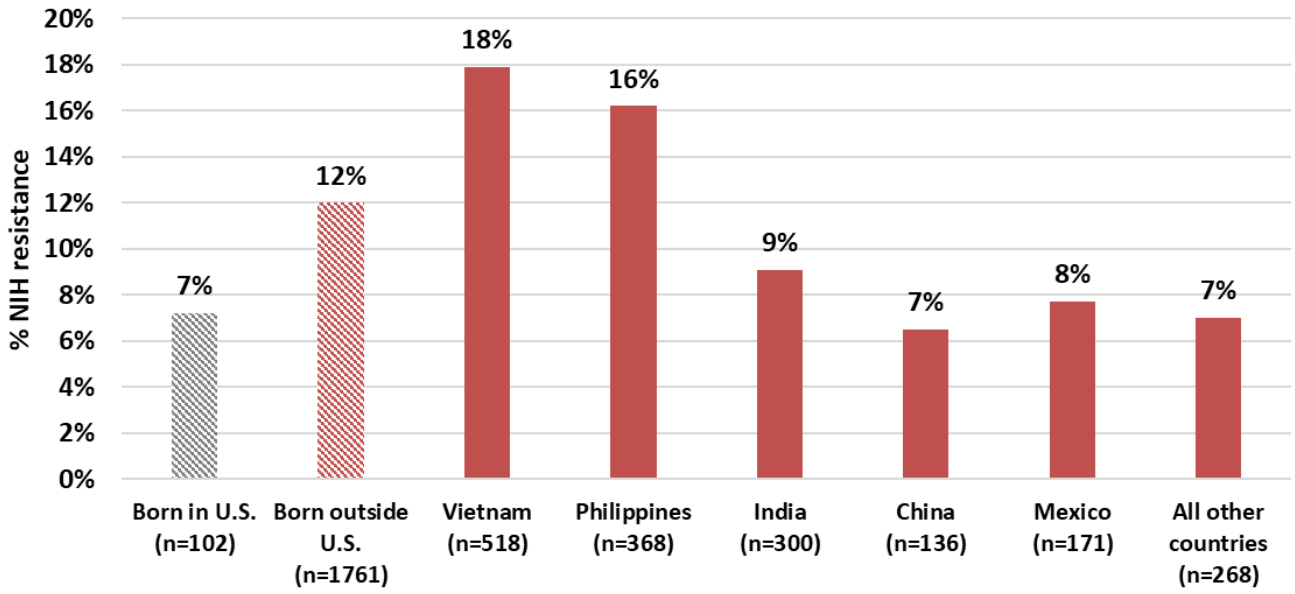
In 2024, people over 65 years old accounted for most TB cases (39%), followed by people 45-64 years old (31%), then 25-44 years old (22%). People less than 25 years old accounted for 8% of TB cases.

TB Drug Resistance

Isoniazid Resistance

Drug-resistant TB is harder and more expensive to treat than drug-susceptible TB. Among people born outside the U.S. with culture-positive TB during 2010–2024, isoniazid (INH) resistance was present in 12% of those who had no prior history of TB and 19% of those with a prior history of TB. In general, for those with a prior history of TB including patients born in the U.S., 18% showed INH resistance. In 2023, in the U.S. as a whole 8.5% of TB cases were resistant to INH [4]. In SCC, among people with culture-positive TB and no prior history of TB, isoniazid resistance rates were highest among those born in Vietnam (18%), the Philippines (16%), and India (9%) (Figure 5).

Figure 5: Percentage of INH Resistance per Country of Birth — Santa Clara County, 2010–2024



Note: Cases are culture-positive with initial drug susceptibility testing done and no prior history of TB. Excludes cases with susceptibility testing not done or unknown for isoniazid.
Data Source: [1]

Multidrug-Resistant (MDR), pre-Extensively Drug-Resistant (pre-XDR), and XDR TB

Definitions for TB drug resistance were updated in 2022 [5]. MDR-TB cases are resistant to both isoniazid and rifampin; pre-XDR cases are additionally resistant to a fluoroquinolone or a second-line injectable. XDR cases are resistant to isoniazid, rifampin, and at least one fluoroquinolone, and either a second-line injectable OR bedaquiline OR linezolid. Using these new definitions, from 2010–2024 there have been 36 people diagnosed with MDR-TB in SCC: 39% were born in India, 28% were born in Vietnam, 8% were born in the Philippines, 6% were born in the U.S., and 3% were born in Mexico. Since 2010, there have been seven pre-XDR cases and no known XDR cases in SCC. There were two MDR-TB cases and no pre-XDR or XDR cases in 2024.

Rapid Molecular Testing to Detect Mycobacterium tuberculosis *and Multidrug - Resistance*

CDC recommends the use of a rapid molecular test (nucleic acid amplification tests [NAAT]) on at least one specimen from each patient with signs and symptoms of pulmonary tuberculosis for whom a diagnosis of tuberculosis is being considered but has not been established [6]. Results from these tests are usually available within days of specimen collection, compared to 1 – 2 months for traditional testing. Use of molecular tests directly on clinical samples has been shown to shorten time to diagnosis and provide an early indication of possible rifampin resistance (e.g. Xpert MTB/RIF) [6,7,8]. As almost all people with rifampin resistance have multidrug-resistance, this information can expedite initiation of an appropriate treatment regimen in consultation with the Public Health Department. The Xpert MTB/RIF assay is available through the Santa Clara County Public Health Laboratory and most other TB labs. In 2024, NAATs were used for 96% of pulmonary TB cases in SCC.

Global Perspective

The World Health Organization (WHO) estimates that about one out of four people in the world, or 2 billion people, are infected with MTb [1]. An estimated 10.8 million people developed TB disease and 1.25 million died of TB disease in 2023. Most cases of TB disease occurred in South-East Asia (45%), Africa (24%), and the Western Pacific (17%). An estimated 6.1% of incident TB cases had HIV co-infection in 2023. Among new incident TB cases, about 3.2% were estimated to have multidrug-resistant TB. Unfortunately, many people throughout the world are never treated for their TB. Treatment coverage is the percentage of the estimated number of people who develop TB disease who are provided with quality-assured diagnosis and treatment. Estimated TB treatment coverage was only 75% in 2023, which is improved compared to 70% in 2022, and 62% in 2021.

Prevention

The California Department of Public Health estimates that in Santa Clara County, about 168,000 people have latent TB infection (LTBI) [9]. This represents a very large reservoir of individuals from which future cases of TB disease will develop. In order to significantly decrease the number of people with TB disease, more individuals with risk factors for TB need to be tested and treated for LTBI. This underscores the need for primary care providers to conduct targeted testing and treatment for LTBI as part of routine preventive care. Treatment for LTBI is very effective – it can decrease the risk of developing TB disease by over 90% when medications are taken as prescribed [7]. Short-course regimens (i.e. isoniazid-rifapentine, which is given weekly for 12 weeks, rifampin, which is given daily for 4 months, or isoniazid plus rifampin, which is given daily for 3 months) are preferred (except in persons for whom there is a contraindication, such as a drug interaction or contact to a person with drug-resistant TB) due to similar efficacy and higher treatment completion rates as compared with the old standard regimen of isoniazid given daily for 9 months [7,10,11,12,13].

Starting January 1, 2025 a new California law, AB 2132, requires healthcare providers to offer a TB risk assessment screening to adult patients in primary care settings [14]. This has been a national best practice for adults and children for many years. The Medical Board of California developed a summary of AB 2132 which is available online [15]. CDPH has provided a concise risk assessment that gives additional details about screening and treatment of LTBI [16].

References

1. World Health Organization. *Global Tuberculosis Report 2024*.
2. California Department of Public Health, Tuberculosis Control Branch. *World TB Day Provisional TB Data Tables, 2024*.
3. Centers for Disease Control and Prevention, *Provisional 2024 Tuberculosis Data, United States*, Provisional 2024 Tuberculosis Data, United States | Tuberculosis Data | CDC
4. Division of Tuberculosis Elimination, National Center for HIV, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention, *Reported Tuberculosis in the United States, 2023.*
5. Division of Tuberculosis Elimination, National Center for HIV, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention. *Surveillance definitions for extensively drug resistant (XDR) and pre-XDR tuberculosis*. January 18, 2022.

6. Lewinsohn DM, et al. *Official American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention Clinical Practice Guidelines: Diagnosis of Tuberculosis in Adults and Children*. Clinical Infectious Diseases. 2017; 64(2): 1-33.
7. Guidelines for the Treatment of Latent Tuberculosis Infection: *Recommendations from the National Tuberculosis Controllers Association and CDC, 2020*
8. Boehme CC, Nicol MP, Nabeta P, et al. *Feasibility, diagnostic accuracy, and effectiveness of decentralised use of the Xpert MTB/RIF test for diagnosis of tuberculosis and multidrug resistance: a multicentre implementation study*. Lancet 2011; 377: 1495–505.
9. California Department of Public Health, Tuberculosis Control Branch. *Report on Latent Tuberculosis Infection in California, 2022.*
10. U.S. Preventive Services Task Force. *Screening for Latent Tuberculosis Infection in Adults: US Preventive Services Task Force Recommendation Statement*. JAMA. 2016; 316: 962-969.
11. Sterling TR, Villarino ME, Borisov AS, et al. *Three months of rifapentine and isoniazid for latent tuberculosis infection.* N Engl J Med. 2011; 365: 2155-66.
12. Menzies D, Adjobimey M, Ruslami R, et al. *Four Months of Rifampin or Nine Months of Isoniazid for Latent Tuberculosis in Adults.* N Engl J Med. 2018; 379: 440-453.
13. Centers for Disease Control and Prevention. *Update of Recommendations for Use of Once-Weekly Isoniazid-Rifapentine Regimen to Treat Latent Mycobacterium tuberculosis Infection.* MMWR. 2018; 67: 723-726.
14. Assembly Bill 2131 Health care services: tuberculosis; hyperlink: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202320240AB2132
15. Medical Board of California, Tuberculosis Assessments/Screenings Required in Primary Care Settings; hyperlink: Tuberculosis Assessments and Screenings | Medical Board of California
16. Tuberculosis Control Branch, TB Risk Assessments; hyperlink: TB Risk Assessment

Data Sources

1. Santa Clara County Public Health Department, California Reportable Disease Information Exchange, 2025. Data as of February 3, 2025, and are provisional.
2. California Department of Public Health, Tuberculosis Control Branch

3. State of California, Department of Finance, E-2. California County Population Estimates and Components of Change by Year — July 1, 2010–2021, December 2021.
4. State of California, Department of Finance, E-2. California County Population Estimates and Components of Change by Year — July 1, 2020-2024, December 2024.
5. U.S. Census Bureau; 2019-2023 American Community Survey 5-Year Estimates, Table B05006, Table DP02; generated by Public Health Science Branch, using data.census.gov; Accessed March 5, 2025

Additional Resources

- SCC Public Health Department - Residents: www.sccphd.org/tbinfo; Providers: www.sccphd.org/tb
- Centers for Disease Control and Prevention TB resources: https://www.cdc.gov/tb/
- California Department of Public Health Tuberculosis Control Branch: https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/TBCB.aspx
- Curry International Tuberculosis Center: http://www.currytbcenter.ucsf.edu
- California Tuberculosis Controllers Association (CTCA): http://www.ctca.org

Santa Clara County Public Health Department
Tuberculosis Prevention and Control Program
976 Lenzen Ave., 2nd Floor, San Jose, CA 95126
Phone: (408) 792-1381, Fax: (408) 855-2331
WWW.SCCPHD.ORG