

Tuberculosis in San Francisco, 2010

The mission of the San Francisco TB Control Section is to control, prevent and finally eliminate tuberculosis in San Francisco by providing compassionate, equitable and supportive care of the highest quality to all persons affected by this disease.



2010 was a benchmark year for San Francisco TB Control with only 98 new cases of active TB reported (12 cases per 100,000). This represents the lowest TB incidence in San Francisco's history and a 14.8% decrease from 2009 (115 cases). Despite a leveling off in the rate of decline in the U.S. and California, TB rates in San Francisco continue to decline at an uneven pace (several years of big declines followed by periods of leveling off). While the decline in active disease is encouraging, some areas of the city have extremely high rates of TB (>100 cases per 100,000) and the rate of TB in San Francisco is more than three times the 2009 national average of 3.8 cases per 100,000 and twice the 2009 California average of 6.4 cases per 100,000. See Figure 1.

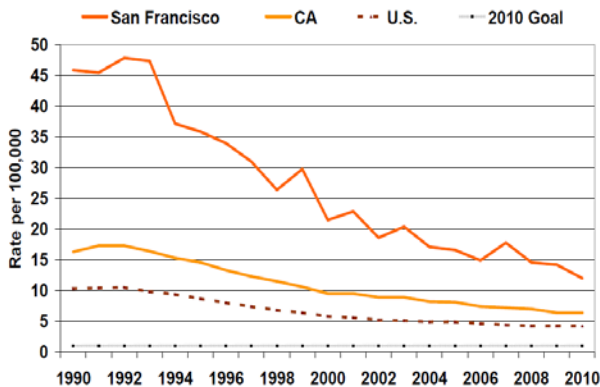


Figure 1. TB Case Rates by Year, 1990-2010

Age, Race, Ethnicity and Place of Birth

As in prior years, the average and median age of TB cases was 53 years, with the majority of active TB being diagnosed in persons 45–64 years of age. See Figure 2. There were 2 pediatric cases (0–14 years old) diagnosed this year; one U.S.-born child with history of travel to Mexico and one Chinese immigrant newly arrived in the U.S. TB cases over the age of 65 declined slightly; however, 21% of cases (6 of 28) in this group died compared to an overall death rate of 10% for all cases.

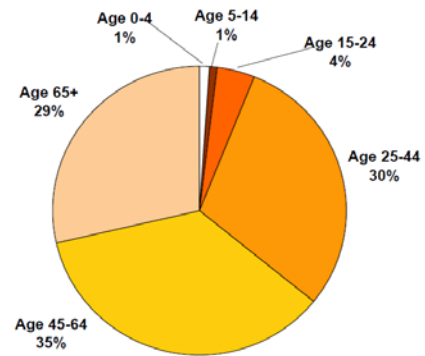


Figure 2. 2010 TB Cases by Age Group

In San Francisco, the largest proportion of cases is reported in the Asian population (75%). As in prior years the majority of Asian and Hispanic cases are foreign-born while white- and black-, non-Hispanic cases are U.S.-born. Unlike prior years, the number of U.S.-born, homeless cases significantly declined resulting in the 66% drop in African American cases this year. See Figure 3.

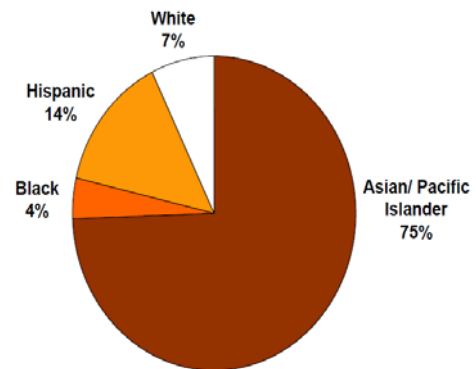


Figure 3. 2010 TB Cases by Race/Ethnicity

In 2010, 85% of all cases were reported among foreign-born individuals, with 40% of these cases coming from China. See Figure 4. Between 2005 and 2009, the number of TB cases among U.S.-born persons remained relatively stable, while cases in the foreign-born have decreased. In 2010, however, TB cases declined by 46% while foreign-born cases only declined by 6%. The epidemiology of U.S.- and foreign-born cases differ significantly and DNA typing of the TB bacteria indicates TB among the U.S.-born (primarily homeless and marginally-housed persons) results from recent transmission, while foreign-born TB is primarily due to reactivation of disease due to infection in TB-endemic countries.

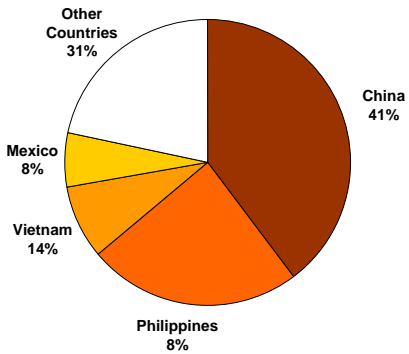


Figure 4. 2010 Foreign-born TB Cases by Country of Birth

Homelessness and Substance Abuse

Only 7 homeless/marginally-housed cases were reported in 2010, the lowest number reported in the last 20 years. See Figure 5. Since the implementation of mandatory screening for shelter residents in 2005, we have seen a decline in TB in the shelters and an increase in transmission among residents of Single Room Occupancy (SRO) hotels. This year, 2 cases occurred in the shelters (only 1 required TB clearance) and 2 occurred in SROs.

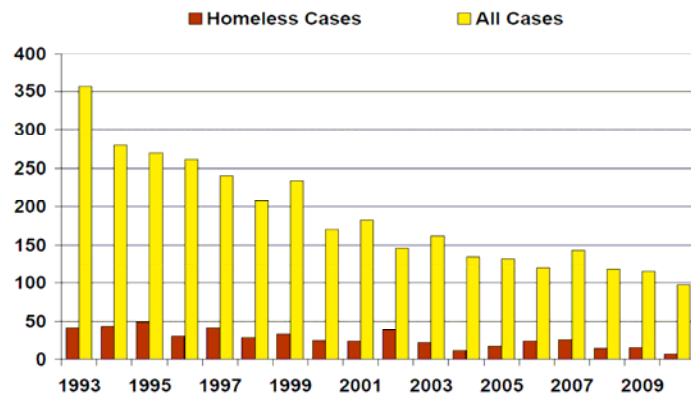


Figure 5. Homeless Cases by Year, 1993-2010

In 2010, 7.1% of cases reported alcohol abuse, 5.1% reported non-injection drug use, and 0% reported injection drug use. These co-factors are often associated with homelessness and HIV infection in the U.S.-born population.

HIV Co-Infection

Only 4.1% (4 cases) of TB cases were co-infected with HIV this year, a 55% decline from 2010 and the lowest number of HIV-positive TB cases since the epidemic began in the mid-80s. See Figure 6. In the past, HIV co-infection was common among African-American and white, non-Hispanic cases, and was present in 8-25% of cases from these racial groups. HIV infection was also strongly associated with homelessness and serves as a marker of recent transmission. In 2010, only one HIV+ case was also homeless, suggesting reduced transmission in this vulnerable population. It is unknown whether an overall decline in HIV-infection in the homeless also contributed to this decline.

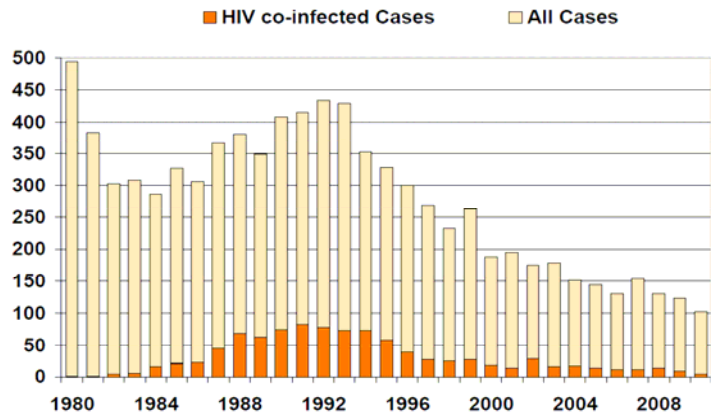


Figure 6. HIV Co-Infected Cases by Year, 1993-2010

Drug Resistance

As the number of cases go down each year, the proportion of cases with any form of drug resistance increases. In 2010, 17 cases (22% of culture-positive cases) were resistant to at least one anti-TB drug. The majority of cases were resistant to Isoniazid (INH, 10 cases) and unlike last year when no multidrug-resistant (MDR) cases were reported, 3 cases of MDR-TB were reported. Eighty-eight percent (88%) of drug resistant cases were foreign-born and reflect the drug resistance patterns seen in Asian and Eastern Europe.

For additional information regarding the data presented in this report, please contact:

Jennifer Grinsdale, MPH,
 Program Manager/ Epidemiologist,
 San Francisco Dept. of Public Health,
 TB Control Section,
 Jennifer.Grinsdale@sfdph.org