

# TB in San Francisco, 2008

*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.*



In 2008, 118 new cases of active TB (14.6 cases per 100,000) were diagnosed in San Francisco, representing a 17.5% decrease from 2007 (143 cases) and the lowest TB incidence in San Francisco's history. Over the last decade, TB incidence has declined by more than 50% due to intensive efforts to prevent infection and active disease among San Francisco residents. While the decline in active disease over the last decade is encouraging, the rate of TB in San Francisco is more than three times the 2007 national average of 4.4 cases per 100,000 and twice the 2008 California average of 7.0 cases per 100,000. Some areas of San Francisco have extremely high rates of >100 cases per 100,000. See *Figure 1*.

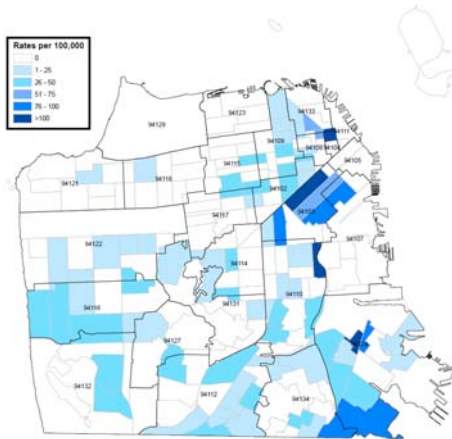


Figure 1. TB case rates by Census Tract, 2008.

## Age, Race, Ethnicity and Place of Birth

The median age of TB cases was 51 years old, with the majority of active TB being diagnosed in persons 25–64 years of age. See *Figure 2*. There were 4 pediatric cases (0–4 years old) diagnosed this year. TB cases among the elderly are stable compared to prior years; however, 16% (6 of 37) of cases in this group died compared to an

overall death rate of 9%. All but two deaths were in Asian foreign-born patients.

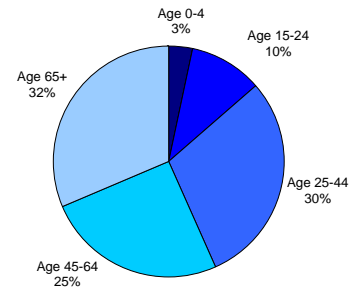


Figure 2. TB Cases by Age Group.

In San Francisco, the largest proportion of cases are reported in the Asian population (61%), although in 2008 the disease rate continued to decline as in previous years. The TB rate among the Hispanic population, however, has significantly increased since 2005 due to an ongoing outbreak of cases among day laborers and an increase in foreign-born Hispanics residing in San Francisco. In 2008, the TB rate in the Hispanic population declined to 22.8 cases per 100,000 (from 29.3) but remains high and is similar to the Asian case rate of 27.7 cases per 100,000.

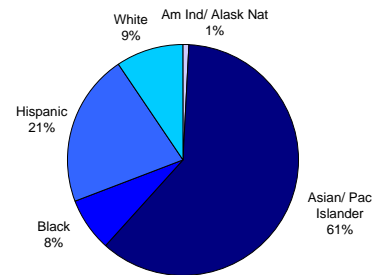


Figure 3. TB Cases by Race/Ethnicity.

Among black non-Hispanics, the TB rate declined for the first time since 2005 and may be due to a decline in both homeless and HIV co-infected cases reported in 2008 (see below). This year the TB rate in this group was 16.5 per 100,000, and while Hispanic and Asian cases tend to be foreign-born, African-American cases occur primarily among U.S.-born individuals. Among white, non-Hispanics, the number of cases has remained relatively stable for the past five years, with a very low case rate of 3.0 cases per 100,000 persons. See *Figure 3*.

As in prior years, 76% of all cases were reported among foreign-born individuals, with over 40% of these cases

coming from China. See Figure 4. Since 2004, the number of TB cases among U.S.-born persons has remained stable, while cases in the foreign-born have decreased. 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 results from recent transmission, while foreign-born TB is primarily due to reactivation of disease due to infection in their country of origin.

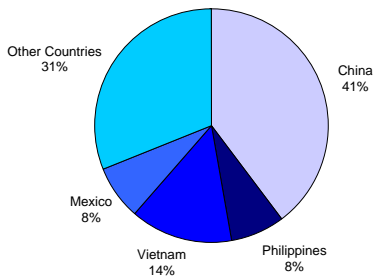


Figure 4. Foreign-born TB Cases by Country of Birth.

### Homelessness and Substance Abuse

Fifteen (15) homeless/marginally housed cases were reported in 2008, making up 12% of all TB cases reported this year. See Figure 5. During the later part of 2007, two large homeless contact investigations were successfully conducted through close collaboration with the Department of Human Services (DHS). Despite the large number of contacts screened, however, we are beginning to see secondary cases occur due to transmission in these settings. Ongoing collaboration with DHS and owners of public and private SRO hotels is crucial to prevent further outbreaks among the marginally housed.

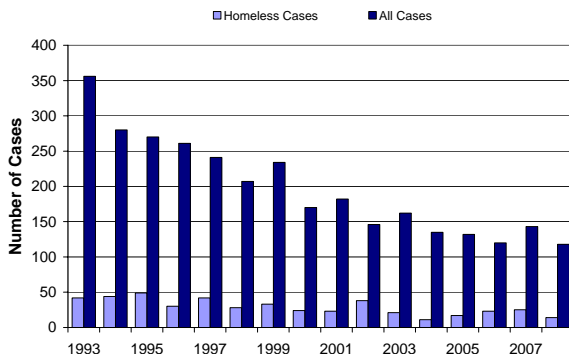


Figure 5. Homeless Cases by Year, 1993-2008.

In 2008, 7.6% of cases reported alcohol abuse, 10.2% reported non-injection drug use, and 3.4% reported injection drug use. These cofactors are often associated with homelessness and HIV infection.

### HIV Co-Infection

Eleven percent (11%) of TB cases were co-infected with HIV, a slightly higher proportion than in prior years. See Figure 6. HIV is common among African-American and white, non-Hispanic cases, and is present in 45% of cases from these racial groups. Among those with HIV co-infection, 5 (of 13) were also homeless. HIV infection is strongly associated with homelessness among cases of active TB disease in San Francisco and is a marker of recent transmission.

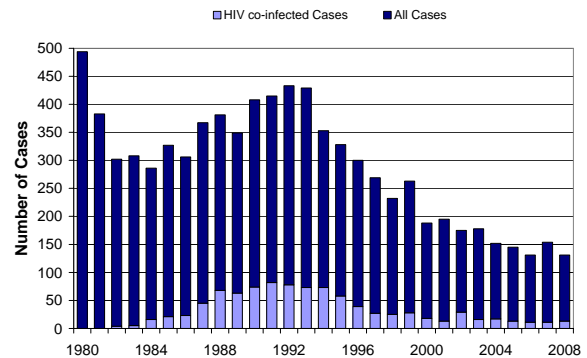


Figure 6. HIV Co-Infected Cases by Year, 1993-2008.

### Drug Resistance

For the last few years, drug resistance has remained relatively steady, with the exception of 2004, when drug resistance to at least one drug increased from 15% to 22% of culture-positive TB cases. In 2008, drug resistance among culture-positive cases declined slightly, from 13% to 11% compared to 2007. While the number of multidrug-resistant (MDR) cases has remained relatively low (1–4 cases per year, and 1–3% of all cases reported annually), these TB strains are usually highly resistant (four or more drugs) and are difficult and costly to manage. There was one case of MDR-TB in 2008, and unlike MDR cases with extensive resistance in prior years, this case was resistant to only Isoniazid and Rifampin.

*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*