



# Tuberculosis in San Francisco, 2007

## Disease Incidence

In 2007, 143 (17.8 per 100,000) new cases of active tuberculosis (TB) were diagnosed in San Francisco, representing a 19.2% increase in cases from 2006 (120 cases). This is the first year since the TB resurgence in 1993 that we have seen a significant reversal in trend toward declining annual case counts. Although we have made intensive efforts over the last decade to prevent infection and active disease among San Francisco residents, budget cuts and diminishing resources in recent years are having a serious impact on our ability to control outbreaks and prevent new cases from occurring. While we have made intensive efforts over the last decade and declines in active disease over the last decade are encouraging, the rate of TB in San Francisco is almost four times the 2006 national average of 4.6 cases per 100,000, and far from the Healthy People 2010 goal of 1 case per 100,000.

## Demographic Characteristics

**Age:** In 2007, the majority of active TB cases were diagnosed in persons 25–64 years of age, with a significant increase of 20 cases in this age group compared to last year. Pediatric cases are at an all-time low, with only one case reported, in a U.S.-born child under the age of 5. TB cases among the elderly are stable compared to prior years; however, 33% (13 of 40) cases in this group died with active TB disease. All but two of the deaths were among Asian foreign-born patients.

**Race and Ethnicity:** In San Francisco, the largest proportion of cases is reported among the Asian population, although in 2007 the disease rate continued to decline as in previous years. The TB rate among the Hispanic population has significantly increased since 2005 due to an ongoing outbreak of cases among day laborers. In 2007, the TB rate in the Hispanic population of 29.3 cases per 100,000 is similar to the Asian rate of 31.9 cases per 100,000. Among black non-Hispanics, the TB rate continues to steadily increase. In 2007, the TB rate in this group was 24.3 per 100,000. 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 four years, with approximately 13 cases per year, or 3.9 cases per 100,000 persons.

**Place of birth:** In 2006, 76% of all cases were reported among foreign-born individuals, with 30% of these cases from China. Since 2000, the number of TB cases among U.S.-born persons has remained relatively stable, with the exception of 2001 and 2002, when the number of cases increased due to ongoing outbreaks in the homeless population. Much of the TB seen among the U.S.-born is a result of recent transmission, while TB in the foreign-born population tends to represent reactivation of disease or infection in their country of origin.

## Social Factors

**Homelessness/Marginally Housed:** In 2007, 25 homeless/marginally-housed cases were reported. Twelve (12) of the 25 were housed in single residency hotels (SROs) and only one case was in shelter at the time of diagnosis. During the later part of 2007, two large homeless contact investigations were successfully conducted through close collaboration with the Department of Human Services (DHS). In both investigations, DHS and TB Control worked cooperatively to identify, notify, and successfully screen shelter residents for TB. To date no additional TB cases have been identified from either investigation.

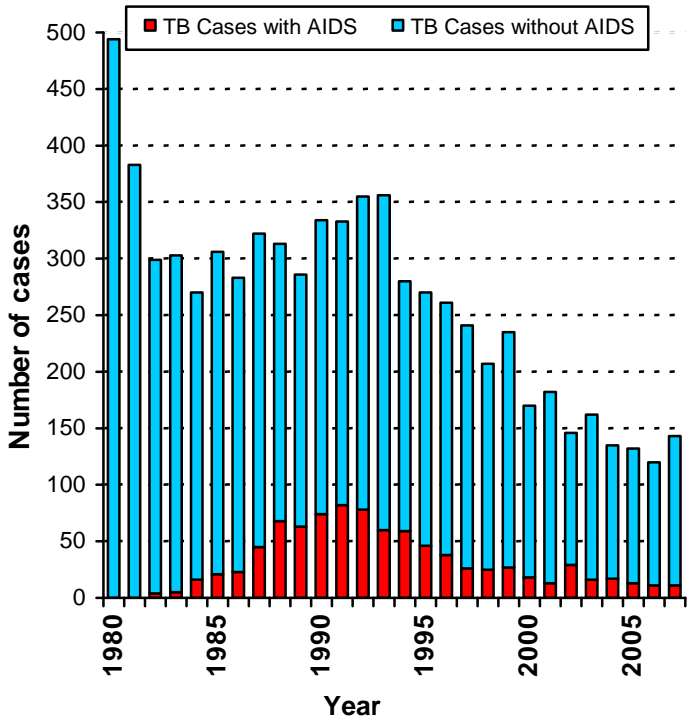
**Substance Abuse:** In 2007, 9% of cases reported alcohol abuse, 9% reported non-injection drug use, and 5% reported injection drug use. These cofactors are often associated with homelessness and HIV infection.

**AIDS:** In 2007, an all-time low in HIV-coinfected cases was reported, with only 7.7% of TB cases being infected with HIV. Among those with HIV coinfection, 5 (of 11) were also homeless. In 2005, approximately one-half of homeless TB cases were coinfecting with HIV. In the last two years, 20–25% of homeless cases were infected with HIV. Despite the decline in HIV coinfection among the homeless, HIV and homelessness remain strongly associated among cases of active TB disease in San Francisco.

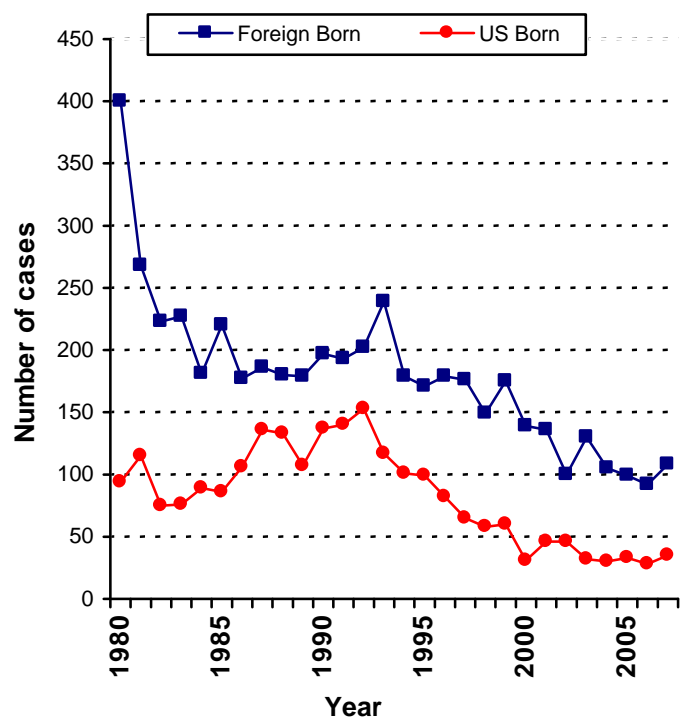
## Drug Resistance

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 2005, drug resistance among culture-positive cases reached an all-time low of 8% before climbing again to 13–14% in 2006 and 2007. In 2006 and 2007, INH resistance in combination with other non-rifampin drugs increased significantly due to an outbreak of an INH-, ethambutol-, and streptomycin-resistant strain in 2006 and the identification of additional cases in 2007. While the number of 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 acquired rifampin resistance in a patient with INH resistance, leading to acquired MDR-TB in 2006 due to delayed drug susceptibility results. This issue highlights the need for adoption of more rapid drug-susceptibility technology by all laboratories.

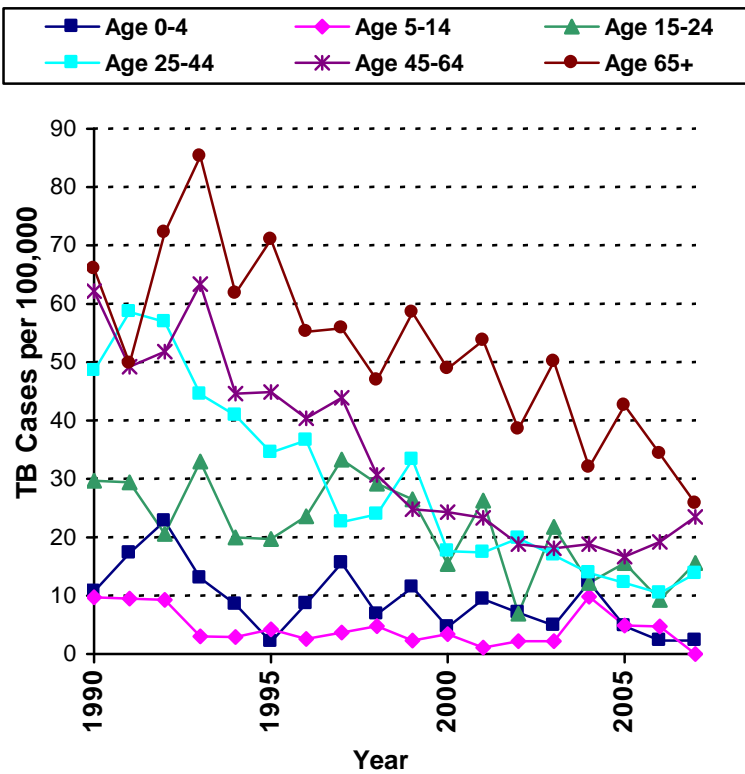
**TB Cases in San Francisco by AIDS Status, 1980-2007**



**TB Cases in San Francisco by Place of Birth, 1980-2007**



**Rates of TB in San Francisco by Age Group, 1990-2007**



**Rates of TB in San Francisco by Race and Ethnicity, 1990-2007**

