



# Tuberculosis in San Francisco, 2005

## Disease Incidence

In 2005, 132 (16.6 per 100,000) new cases of active tuberculosis (TB) were diagnosed in San Francisco, representing a 2% decline in cases from 2004 (135 cases) and the lowest annual incidence of TB ever reported in the city. Through intensive efforts over the last decade to prevent infection and active disease among San Francisco residents, we are moving closer to our goal of TB elimination. While declines in active disease over the last few years are encouraging, the rate of TB in San Francisco is still more than 3 times the 2004 national average of 4.9 cases per 100,000, and far from the Healthy People 2010 goal of 1 case per 100,000.

## Demographic Characteristics

**Age:** In 2004, there was a significant increase in the number of cases reported among 0-14 year olds due to an outbreak among U.S.-born, Hispanic children at an unlicensed daycare. In 2005, however, there were only 3 cases reported in this age group. Two (2) cases were U.S.-born and under the age of 5, representing recent transmission from infected adults. The other case was in a foreign-born child over the age of 5 who was most likely infected in the patient's country of origin. This year there was also a significant increase in the number of cases diagnosed in individuals over the age of 65. This increase may be due to the increase in foreign-born Chinese cases, as disease in this group tends to be among the elderly.

**Race and Ethnicity:** In San Francisco, the largest proportion of cases are reported among the Asian/Pacific Islander population, although in 2005 the disease rate continued to decline, as in previous years. For the past 5 years, however, the number of cases among white non-Hispanics and Hispanics and has remained relatively stable, with approximately 15 to 20 cases, respectively, reported in these groups each year. There was a slight increase in the number of cases reported among black non-Hispanics in 2005. This is most likely due to an increase in homeless cases identified through mandatory shelter screening (see below).

**Place of birth:** In 2005, 75% of all cases were reported among foreign-born individuals, with 50% 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 disease or infection in their country of origin.

## Social Factors

**Homelessness:** In 2005, 17 homeless cases were reported, and of these, 8 (48%) were co-infected with HIV. While this is a significant increase in homeless cases found from 2004, active case finding due to the implementation of mandatory TB clearance for shelter clients early in 2005 and intensified screening at a community resource center explains this increase in homeless cases in the absence of an ongoing outbreak in this population.

**Substance Abuse:** In 2005, 12% of cases reported excess alcohol use, 6% reported non-injection drug use, and 5% reported injection drug use. These co-factors are often associated with homelessness and HIV-infection.

**AIDS:** Although the overall number of cases with AIDS has declined annually since the peak in 1991, in 2002, the number of TB cases reported with AIDS more than doubled, increasing from 13 cases in 2001 to 29 cases in 2002. This increase was associated with the increase in homeless cases reported that year. In 2003 and 2004, the number of cases with TB and HIV returned to the pre-2000 baseline of approximately 10-12% of all cases reported. In 2005, an all-time low in HIV co-infected cases were reported, with only 9% of TB cases being infected with HIV.

## Drug Resistance

For the last several years, drug resistance has remained relatively steady. However in 2004, drug resistance to at least one (1) 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%. Isoniazid (INH) resistance, either alone or in combination with another drug, decreased from 10% in 2004 to 5% in 2005. 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 highly resistant (4 or more drugs) and difficult and costly to manage.

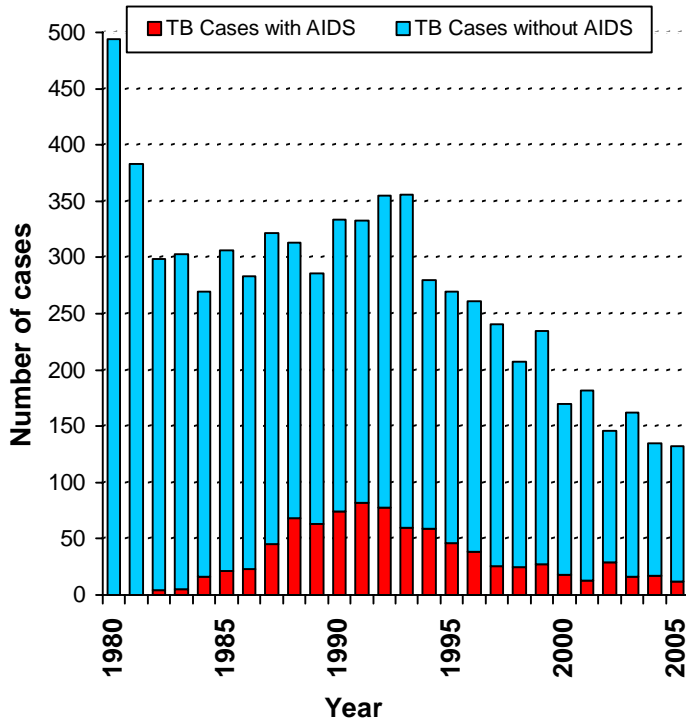
## Contact Investigation in a Resource Center in the Tenderloin

In May-November of 2005, intensified screening at a community HIV service program located in the Tenderloin was performed when a patient with culture-positive pulmonary disease was discovered to spend a great deal of time as a volunteer at this site. A total of 28 cases diagnosed over the last six years were identified as Resource Center clients; of these, 3 were diagnosed in 2004 and 9 were diagnosed in 2005. Genotyping of culture-positive clients identified three distinct clusters of cases, one of which is known to have caused outbreaks among the homeless in the past. This Resource Center serves as a congregation site for the highest-risk clients in San Francisco, and screening will continue to identify active TB cases and those eligible for LTBI treatment.

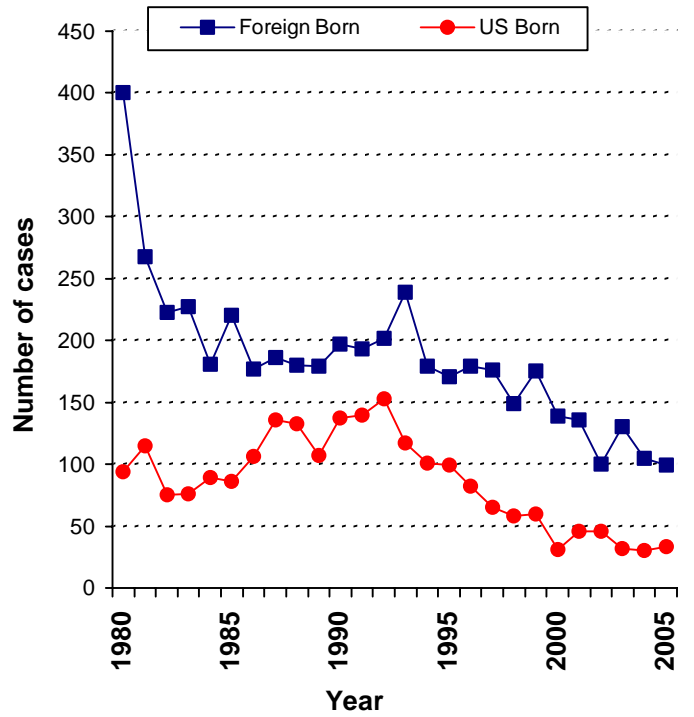
## Implementation of Mandatory TB Clearance for Shelter Clients

In February-March 2005, mandatory TB clearance for all clients staying in a San Francisco shelter for more than three days (in a 30 day period) was implemented. Since then, 3,092 clients have been screened for TB and provided with a TB clearance card. Overall, implementation of this program has been very successful and few clients have been denied shelter services due to this mandatory program.

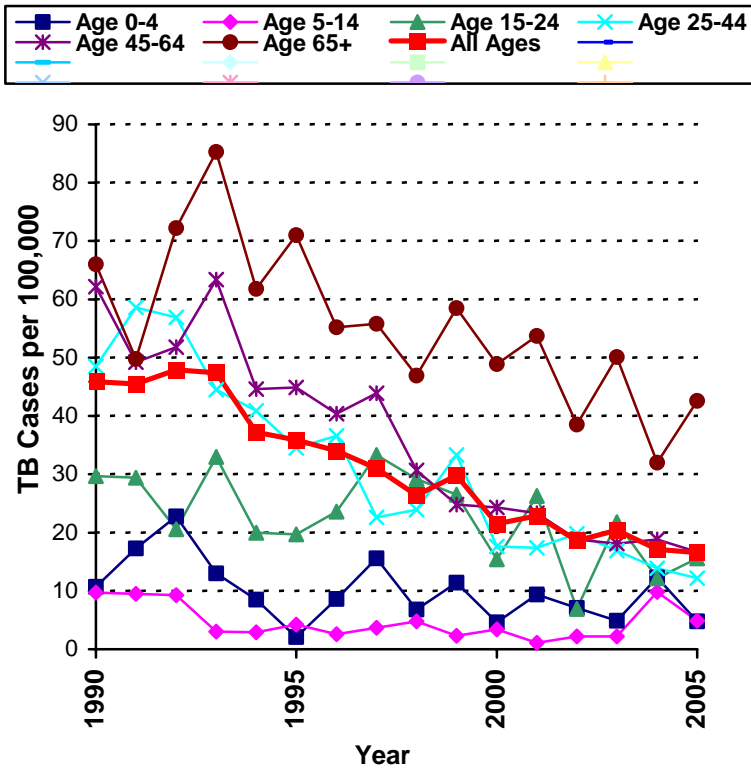
**TB Cases in San Francisco by AIDS Status, 1980-2005**



**TB Cases in San Francisco by Place of Birth, 1980-2005**



**Rates of TB in San Francisco by Age Group, 1990-2005**



**Rates of TB in San Francisco by Race and Ethnicity, 1990-2005**

