



County of Orange Health Care Agency Pulmonary Disease Services Tuberculosis Fact Sheet, 2011

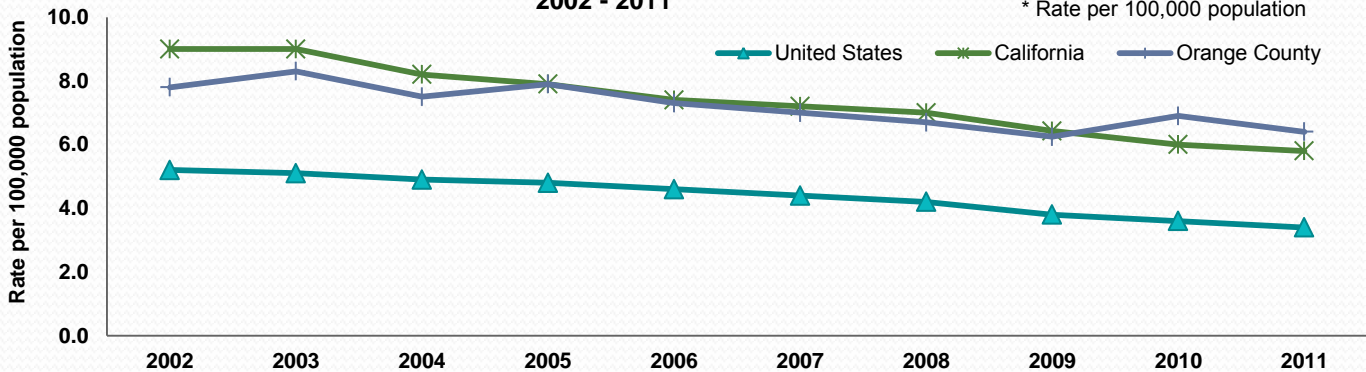
Tuberculosis Trend in Orange County

Orange County reported 209 cases of tuberculosis (TB) in 2011. This represents a decrease of 6.7% in the number of TB cases from 2010 when 224 cases were reported, a 15.7% decrease since 2003 when a 10-year high of 248 cases were reported and a 51.4% decrease from a historic high of 430 cases reported in 1993. The TB case rate for 2011 was 6.4 cases for every 100,000 Orange County residents. This compares to a rate of 5.8 and 3.4 cases per 100,000 population for California and the United States, respectively. TB rates in California and the United States decreased 3.3% and 6.4%, respectively, as compared to 2010, while the rate of reported TB cases in Orange County decreased 7.2% from 2010. For 2011, Orange County TB cases were more likely to be Asian, foreign-born and 65 years and older.

Year	Cases	Rate*
2002	230	7.8
2003	248	8.3
2004	230	7.6
2005	242	7.9
2006	226	7.3
2007	217	7.0
2008	210	6.7
2009	197	6.2
2010	224	6.9
2011	209	6.4

In 2011, Orange County ranked tenth in the State based on TB case rates and had the third highest number of TB cases in California behind Los Angeles and San Diego Counties. Orange County's 2010 rate of 6.4 cases per 100,000 remained higher than the national Healthy People 2020 objective of one (1) TB case per 100,000 population.

**Tuberculosis Rates,
Orange County, California, and the United States,
2002 - 2011**

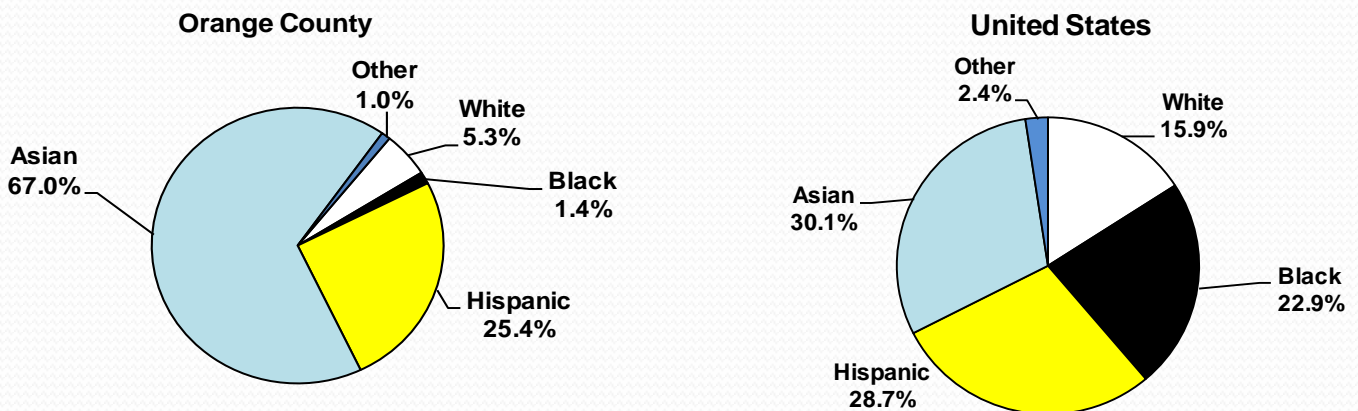


* Rate per 100,000 population

Race and Ethnicity

Racial and ethnic minorities disproportionately represent the majority of TB cases in Orange County. Asian (67.0%) and Hispanic (25.4%) accounted for 92.4% of Orange County's total TB cases for 2011. Orange County's TB case demographics differ from national statistics in which 38.8% of U.S. cases with known race/ethnicity were either White (15.9%) or Black (22.9%) compared to just 6.7% of Orange County cases.

**Tuberculosis Cases by Race/Ethnicity,
Orange County and the United States, 2011**





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Foreign-born Cases

Immigration of persons from countries with high rates of TB continues to be a major issue in TB control. Of the 209 cases with known birthplace reported in Orange County in 2011, 90.0% were among persons born outside the United States; 44.1% of these were from Vietnam, 19.7% from Mexico, 14.4% from the Philippines, 7.4% from Korea, 4.3% from India and 2.1% from Guatemala. By comparison, 62.5% of U.S. 2011 cases and 77.9% of California 2011 cases with known birthplace were foreign-born. In 2011, the TB rate for foreign-born persons living in Orange County's was 20.2 cases per 100,000. This rate is higher than the national Healthy People 2020 objective of 14.0 TB cases per 100,000 foreign-born population.

TB and HIV co-infection

HIV is the strongest risk factor for the progression of TB infection to active disease. In Orange County, the epidemiology of TB/HIV co-infection reflects the population at high risk for TB: foreign-born persons from countries with high prevalence of TB. From 2002 to 2011, 42 cases were reported with TB/HIV co-infection in Orange County. Approximately 85.7% of these TB cases were foreign-born, and 83.3% of these foreign-born TB/HIV co-infected cases were Hispanic.

City of Residence

Six Orange County cities accounted for more than half (63.6%) of Orange County TB cases in 2011: Santa Ana (40), Garden Grove (34), Anaheim (24), Westminster (19), and Irvine and Fullerton (8 each).

Age Groups and Gender

Between 2002 and 2011, 86.1% of all TB cases reported in Orange County occurred among individuals 25 years and older. Persons aged 25-44 years, 45-64 years and 65 years and older accounted for 32.0%, 29.9% and 26.1% of cases, respectively. During this ten-year period, the gender distribution of cases remained stable, 56.8% male and 43.2% female.

Pediatric Cases

TB in children under five years of age indicates ongoing or recent transmission. Children under five years are also susceptible to rapid progression from TB infection to TB disease. Two TB cases (0.96%) under five years were reported in 2011, a decrease from the six cases (2.7%) reported in 2010. Screening high priority contacts to infectious TB cases and use of directly observed therapy for TB medications increase the success rate of finding and treating adult TB cases, thereby decreasing TB exposure and infection of children under five years of age.

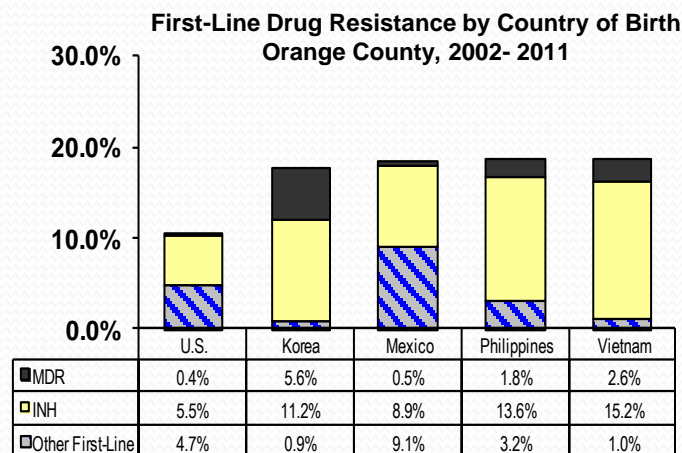
Drug Resistant TB

Drug susceptibility results for *Mycobacterium tuberculosis* isolates were available for 185 (98.9%) of the 187 Orange County 2011 culture positive TB cases. Of these 185 cases, 27 (14.6%) were resistant to one or more of the first-line drugs used to treat TB (isoniazid (INH), rifampin (RIF), ethambutol (EMB) and pyrazinamide (PZA). Nineteen (10.3%) were resistant to at least INH.

Multidrug-resistant (MDR) and extensively drug-resistant (XDR) TB cases greatly complicate the control of TB. MDR-TB is TB that is resistant to at least INH and RIF, while XDR-TB is MDR-TB plus resistance to any fluoroquinolone (e.g. ciprofloxacin, ofloxacin, levofloxacin, or moxifloxacin) and resistance to at least one second-line injectable drug (e.g., amikacin, capreomycin, or kanamycin).

As compared to 2010, incidence of MDR-TB in Orange County increased in 2011, from one case to four cases (2.2% of those with susceptibilities available). In comparison, 1.3% of U.S. cases for which drug-susceptibility test results were reported in 2010 were MDR-TB (latest year available). In 2011, 1 XDR-TB case was reported in Orange County. Nationally, four cases of XDR-TB were reported in 2011.

In Orange County, drug resistance patterns vary by country of birth. During the 10-year time period 2002-2011, the proportion of TB cases with INH drug resistance was highest in persons born in Vietnam (15.2%) and the Philippines (13.6%). However, a higher proportion of Korean-born cases were multidrug-resistant (5.6%). In Orange County, first-line drug resistance among U.S. born persons with TB remained low at 10.6% (0.4% MDR, 5.5% INH resistant-not MDR, and 4.7% other first-line drug resistance).



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