



# Epidemiology of

# Tuberculosis

*in Sonoma County*

2007 Annual Report

*prepared by*

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May 2007

## Executive Summary

The rate of tuberculosis (TB) in California is regularly above the national average of 4.8 cases per 100,000 persons and, in 2007, California had the 3<sup>rd</sup> highest rate of TB in the nation at 7.6 cases per 100,000 persons.<sup>1</sup> Sonoma County was ranked 27<sup>nd</sup> among counties in California with a rate of 2.6 new cases per 100,000 persons in 2006.<sup>2</sup>

People at higher risk for tuberculosis include immigrants from parts of the world where TB is still widespread, people with HIV infections, the homeless, the elderly and close contacts of people with infectious TB.

Of particular note in Sonoma County:

### Overall

- Thirteen cases of TB were diagnosed in Sonoma County in 2007, for a rate of 2.6 cases per 100,000 persons.<sup>3,4</sup>
- Of the 13 cases diagnosed in 2007, 61% (N=8) were pulmonary. All of the pulmonary and the majority of the non-pulmonary cases were culture confirmed (N=12, 92%).

### Race/Ethnicity

- Consistently high rates of TB among Asians and Hispanics.
- Foreign-born persons account for a high proportion of new TB cases in 2007 (69%).

### Clinical Characteristics

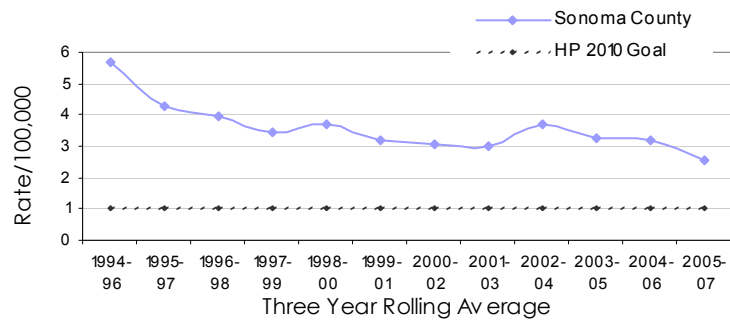
- One 2007 case of TB diagnosed at time of death.
- Increased proportion of non-pulmonary disease in 2007.
- Sixteen percent of 2007 isolates resistant to isoniazid.
- Of the four US-born cases, two were homeless.

## Rates and Demographics

In 2007, the rate of new cases remained constant at 2.6 cases per 100,000 persons (N=13). Over the past few years, the rate of TB disease in Sonoma County has decreased slightly (Figure 1).

With the 2007 rate of 2.6 cases per 100,000 persons, Sonoma County meets the national definition for a low-incidence jurisdiction (<3.5 cases per 100,000 persons).<sup>6</sup> However, the rate of TB infection in Sonoma County is consistently higher than Healthy People 2010 goal of 1.0 case per 100,000 population.<sup>7</sup>

Figure 1 – Rate of TB Infection, Three-year Rolling Average, Sonoma County and Healthy People 2010 Goal 1994-2007<sup>5</sup>



Source: State of California, Department of Health Services, TB Control Branch.

### Age

Because the absolute number of cases is small, it is difficult to evaluate changing trends in age groups. In 2007, the two groups most affected by TB infection were persons aged 25-44 and persons aged 65+. Since 2000, persons aged 25-44 have had the highest age-specific rates of TB, ranging from 3.0 to 8.8 cases per 100,000 persons.

### Race/Ethnicity

Persons who are Asian or report Hispanic ethnicity have a much higher rate of disease (19 and 4 cases per 100,000 persons, respectively, Table 1). In 2007, 31% of TB cases reported Hispanic ethnicity and 31% reported Asian race, the majority from South-East Asia. Compared to the 2007 Sonoma County population, 19% Hispanic and 4% Asian, these two groups are disproportionately affected by TB.

Table 1 – Race- and Ethnicity-specific Rates\* of Tuberculosis, Sonoma County 2007

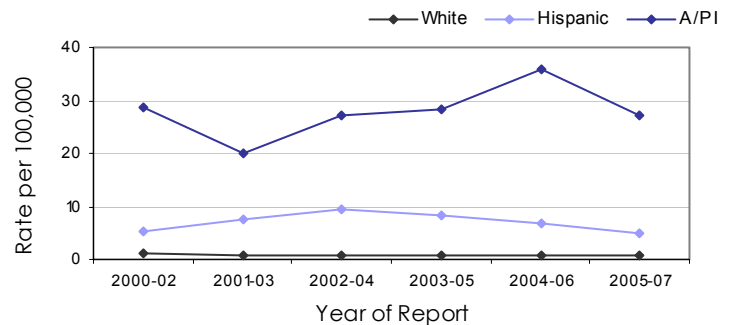
	Tuberculosis Cases			Population	
	Rate	Cases	Percent	Number	Percent
<b>County Total</b>	<b>2.6</b>	<b>13</b>	<b>100%</b>	<b>498,868</b>	<b>100%</b>
White	0.9	3	23%	354342	71%
Hispanic	4.1	4	31%	98461	20%
Asian/Pacific Islander	19.3	4	31%	20732	4%
African American	25.7	2	15%	7784	2%
American Indian/Alaska Native	0.0	0	0%	6282	1%

\*Rates per 100,000 population

Source: State of California, Department of Health Services, TB Control Branch

The rate of TB among Asians has remained consistently high in the past five years (2003-2007 average of 27 cases per 100,000 persons). Similarly, the rate in persons reporting Hispanic ethnicity remains higher than non-Hispanics at 6.8 cases per 100,000 persons during the same time period (Figure 2). Not shown in the figure is the emergence of TB cases among African Americans. Two of the 13 2007 cases reported African American race.

Figure 2 – Rates\* of TB by Race/Ethnicity, Sonoma County 2000-2007



\*Rates per 100,000 population

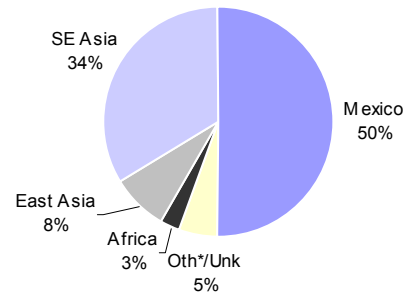
Source: State of California, Department of Health Services, TB Control Branch

### Birth Country

Over the past ten years, an average of 69% of Sonoma County's TB cases occurred in foreign-born individuals (range 50-91%). In 2007, 69% of cases reported a non-US birth country (N=9; 4 Mexico, 3 Southeast Asia, 2 Other).

In California in 2007, 77% of all reported tuberculosis cases occurred in persons born outside of the United States, compared to 58.5% of cases nationally.<sup>8,9</sup> As shown in Figure 3, between 2001 and 2007, the most common country of origin reported for Sonoma County TB cases was Mexico, (N=37, 50%), followed by countries in South-east Asia (N=25, 34%) and East Asia (N=6, 8%).

Figure 3 – Country/Region of Origin of Foreign-born TB cases, Sonoma County 2001-2007 (N=74)



\*Oth\*/Unk includes one case each from India, Haiti, UK and one not specified.

Source: State of California, Department of Health Services, TB Control Branch

### Clinical Characteristics

Of the TB cases reported in 2007, one was diagnosed at death. Forty percent of 2007 cases of TB were extra-pulmonary (Table 2). The majority of all cases were culture positive (92%) and pan-susceptible (83%). The two resistant cases were isoniazid resistant alone (1) and resistant isoniazid and one other drug (1). The most recent cases resistant to both isoniazid

and rifampin (MDR-TB) occurred in 2003 (1) and 2006 (2). There has never been a case of XDR-TB in Sonoma County.

Table 2 – Selected Clinical Characteristics of TB Cases, Sonoma County 2003-2007

Clinical	2007		2003-07	
	N	%	N	%
Total Cases	13	--	74	--
Deaths				
Diagnosed at death	1	8	2	3
Died while on treatment	0	0	1	1
Site of Disease				
Pulmonary	6	46	51	69
Extra-pulmonary	5	39	19	26
Both	2	15	4	5
Sputum Smear (pulmonary only)				
Positive	3	38	21	38
Negative	4	50	30	55
Not done	1	12	4	7
Culture Result (any source)				
Positive	12	92	60	81
Negative	1	8	13	18
Not done	0	0	1	1
Drug Sensitivity (culture positive)				
Susceptible	10	83	52	87
Resistant				
INH only	1	8	3	5
INH and Other	1	8	1	1
MDR (INH & RIF)	0	0	3	5
Other	0	0	1	1

## REFERENCES

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