Preliminary figures indicate that 44 cases of tuberculosis disease were recognized in Fresno County during 2007. This represents 4.8 cases per 100,000 people, and continues the downward trend since a 2003 peak incidence (See Figure 1). In 2006 TB affected 4.6/100,000 people in the US, 7.4/100,000 in California, and 6.9/100,000 in Fresno County. The current public health goal for reducing TB disease (Healthy People 2010) is 1/100,000.

Of the 44 cases of TB disease in 2007, 35 were male (79.5%) and 9 were female (20.5%). Eleven of the 44 (25%) had extrapulmonary disease including meningitis (1), scrofula (4), pleural TB (3), peritoneal TB (1), testicular TB (1), and one patient with both meningitis and adrenal TB (see Figure 5). Nine patients had a history of treatment for TB in the past.

Twenty four TB disease patients (54.5%) were Hispanic and 9 (20.5%) were Southeast Asian (See Figure 2 for further details). Thirty two cases (72.7%) were foreign born (Mexico, Philippines, Laos, Cambodia, El Salvador, and India).

Homeless persons accounted for three (6.8%) cases of TB. Three (6.8%) patients with TB reported drug use and 2 (10.5% of those TB disease patients tested) were HIV positive (25 of the 44 cases had unknown HIV status). Two patients with TB died in 2007. One TB patient (2.3%) was diagnosed with TB while incarcerated in the county jail.

The median age of TB patients diagnosed in Fresno County in 2007 was 39.3 years with a range from 3 to 80 years. (See Figure 3 for age related details). One (2.3%) patient was age five or younger.

Of the 44 cases of diagnosed TB in 2007, 14 (31.8%) were culture negative. Of the 30 culture positive TB cases 1 (3.3%) was MDR, 1 (3.3%) was INH resistant only, and 1 (3.3%) was resistant to both INH and streptomycin (see Figure 6). Twenty seven (90%) were pansensitive.

Referral for TB disease in Fresno County came from hospitals (20), private medical providers (12 ), Department of Community Health contact investigations (3), immigration B Notifications (2), school screenings (3), Department of Community Health targeted testing (2), county jail diagnosis (1), and self referral after listening to a radio program (1) (see Figure 4).

Figure 7 indicates TB disease by zip code in Fresno County in 2007.

Fully 1/3 of the world’s population is infected with TB. Worldwide there are nine million new cases of TB disease annually with two million deaths. TB is the second leading cause of infectious disease – related deaths worldwide, the leading cause of death in those with HIV/AIDS, and the leading killer of women of childbearing age.
It is estimated that 10% of Californian’s are infected with TB and of these 10% will develop TB disease during their lifetime.

Recent recognition of TB disease that is resistant to both INH and rifampin as well as any fluoroquinolone and any second line injectable medication poses a grave threat to public health. In the United States 4% of MDR or multi-drug resistant TB (those resistant to at least INH and rifampin) were found to be this XDR (extensively drug resistant) TB between 2000 and 2004. These drug resistances make the disease almost untreatable with currently available antibiotics and the mortality rate in those with this disease and co-infection with AIDS is extremely high. There have been no known cases of XDR-TB recognized in Fresno County to date.

California statute (Title 17) requires notification of the county health department of all diagnosed or suspicious cases of tuberculosis by telephone or fax within one working day of identification. Health and Safety Code statute (121362) also requires that providers treating persons with active TB report to the local health officer any information as required at such times as the health officer requires.

Three recognized processes are involved in the control of, and attempt to eliminate, TB. The first of these is finding and promptly and adequately treating individuals that have active disease. The second process in TB control is identifying individuals who have been exposed to someone with TB disease and evaluating them for TB infection or TB disease then treating them if they have either of these. The third process in the control of TB is “targeted testing” and involves screening individuals known to be at higher risk for contracting TB to determine if they may have the infection or the disease. Two programs within the Department of Community Health’s Communicable Disease Division are busy daily with these three aspects of TB control. The dedicated, knowledgeable, and professional staff of the Chest Clinic and the Communicable Disease Investigations program identify and treat TB disease and infection, identify and evaluate exposures to TB, and screen high risk populations.

If you have any questions regarding TB infection or disease or the control of TB in Fresno County please contact our Community Liaison Nurse at 559-445-3413.
FIGURE 1

Tuberculosis

FRESNO COUNTY 2007
6-Year Incidence Rates Per 100,000 Population

Source: Fresno County Department of Community Health, Epidemiology Program

Race / Ethnicity Distribution (Figure 2)

- Hispanic (24, 54.5%)
- Laotian (4, 9.1%)
- Hmong (4, 9.1%)
- Filipino (3, 6.8%)
- Caucasian (1, 2.3%)
- Cambodian (1, 2.3%)
- Black (2, 4.5%)

Source: Fresno County Department of Community Health, Epidemiology Program
Patient Age

Incidence

Age Distribution (Figure 3)

Referral Source (Figure 4)

Hospital (20, 45.5%)

Private provider (12, 27.3%)

Contact investigation (3, 6.8%)

School (3, 6.8%)

Jail (1, 2.3%)

Targeted testing (2, 4.5%)

B Notification (2, 4.5%)

Radio program (1, 2.3%)

Referral Source (Figure 4)
Disease Site (Figure 5)

- Pulmonary (33, 75.0%)
- Scrofula (4, 9.1%)
- Pleural (3, 6.8%)
- Meningitis & Adrenal (1, 2.3%)
- Peritoneal (1, 2.3%)
- Testicular (1, 2.3%)
- INH & Streptomycin (1, 2.3%)
- INH (1, 2.3%)
- MDR (1, 2.3%)
- None (27, 61.4%)
- No culture (14, 31.8%

Drug Resistance (Figure 6)

- MDR (1, 2.3%)
- INH (1, 2.3%)
- INH & Streptomycin (1, 2.3%)
- None (27, 61.4%)
- No culture (14, 31.8%)

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Scrofula (4, 9.1%)
Pleural (3, 6.8%)
meningitis & adrenal (1, 2.3%)
meningitis (1, 2.3%)
peritoneal (1, 2.3%)
testicular (1, 2.3%)
Pulmonary (33, 75.0%)
Drug Resistance (Figure 6)

- MDR (1, 2.3%)
- INH (1, 2.3%)
- INH & Streptomycin (1, 2.3%)
- None (27, 61.4%)
- No culture (14, 31.8%)
FIGURE 7

Fresno County TB Cases by Zip Code 2007

Number of TB Cases

Zip Code of Residential Address

0 1 2 3 4 5

93212 93622 93631 93646 93654 93657 93662 93668 93701 93702 93703 93705 93706 93710 93711 93720 93721 93722 93725 93727 93730 Homeless Jail