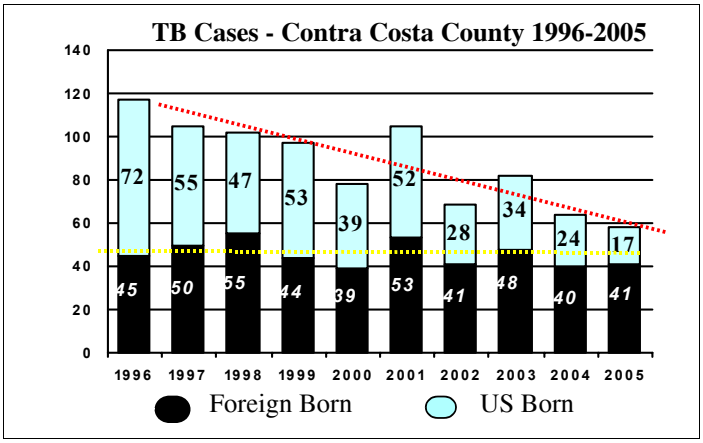
# Tuberculosis
## Epidemiology Report
**March 2006**

CONTRA COSTA
HEALTH SERVICES

# FURTHER GAINS IN TB CONTROL IN CONTRA COSTA IN 2005

## New Challenges Emerge with Tuberculosis Cases Resistant to Multiple Drug Treatments

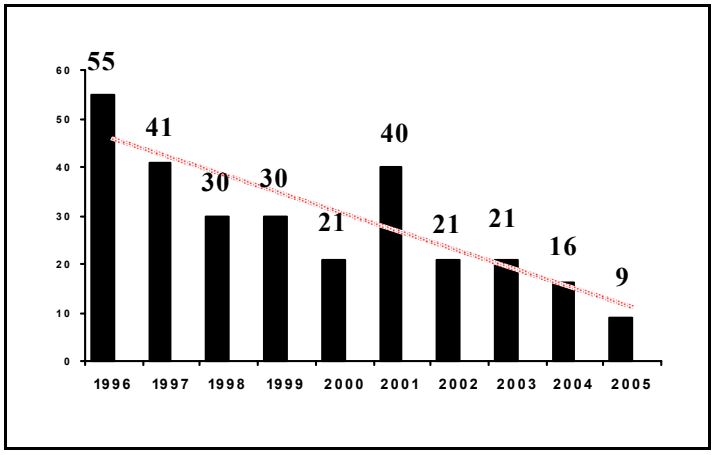
In 2005, 58 residents (TB cases) of Contra Costa County were diagnosed with tuberculosis (TB), a decline of 9% since 2004 (64 cases), and 50% since 1996 (117). It is the lowest number of cases since 1987 (50). The TB rate for Contra Costa in 2005 was 6.3 per 100,000, 20% below the rate for California (7.9 per 100,000).




Since 1996, 48% of our TB patients were born in the U.S., well above the corresponding proportion for CA (28% in year 2000). Of our U.S. born patients, 67% were African-Americans, the majority of whom lived in a 3 zip code region in Richmond and San Pablo. They developed TB as a result of recent infection. We have previously described the results of our investigation into this outbreak, which accounted for approximately one third of our cases, and our outreach efforts in that community, which have helped to bring it under control. During that period, African Americans, who comprised 9.5% of the population of CCC, accounted for 32% of our TB cases.
We are pleased to report that our overall decline in TB cases since 1996 is due to the decline in U.S. born TB cases, and among African Americans in particular, due in large part to our continued work with the community in the Richmond - San Pablo area.

Unfortunately, our successes in TB control among U.S. born persons has not extended to the foreign born population in Contra Costa County. While there has been a steady decline in the number of U.S. born cases over the past 10 years, the number of foreign born cases has remained relatively unaltered. In 2005, 71% of our TB cases were born outside of the U.S., which is similar to what is observed for California as a whole.

**TB Cases in Contra Costa African Americans 1996-2005**




**TB Resistant to Multiple Drug Treatments**

In 2004-2005, we had 4 cases of TB that is resistant to both INH and Rifampin, our two best drugs (MDR-TB), compared to only 6 MDR cases in the previous eight years (1996-2003). These patients are very difficult and expensive to treat, resulting in an enormous burden to our resource. With the assistance of the MDR Consultation Service, a joint program of the CA Department of Health Services, TB Control Branch, and the Francis J. Curry National TB Center, we are pleased to report that to date, all 4 of these patients are on their way to being cured.

The presence of MDR-TB highlights our need to intensify TB prevention messages to communities with large numbers of foreign born persons and

**Public Health Communicable Disease Programs**
*William Walker, M.D., Health Services Director*
*Wendel Brunner, M.D., Ph.D., M.P.H., Director of Public Health*
*Francie Wise, P.H.N., M. P.H., Communicable Disease Control Chief*
*Sirlura Taylor, P.H.N., Tuberculosis Program Supervisor*
*Charles Crane, M.D., M.P.H., Medical Director*
Prepared by: Epidemiology, Surveillance & Health Data Unit
*Juan Reardon, M.D., M.P.H. & Martin Lynch*

to the providers who serve them.

**Lessons Learned from Our Experience**

The prevention of TB in foreign born persons relies on a different strategy than in U.S. born persons. In our studies of the TB outbreak in West CCC, we learned that a high proportion of patients developed TB as a result of recent exposure to an infectious patient. In many cases, that patient was either unable or unwilling to identify all of the people he or she exposed (contacts), or those contacts did not cooperate with recommended testing and treatment which could have prevented their TB. The other significant factor in the propagation of that outbreak was that in 67% of cases we reviewed, there was a delay in the diagnosis of infectious patients. In many cases, patients were not aware of TB symptoms, or of how sick they had become by the time they went to the doctor. In some cases, the diagnosis was delayed even after the patient saw a doctor. By engaging community members and their providers in our prevention messages, we were able to identify, test and treat more contacts, and to reduce diagnostic delays, resulting in the dramatic results discussed above.

**Preventing TB in Foreign Born Residents**

When foreign born persons get TB, it is generally the result of an asymptomatic infection acquired in their country of origin which progressed to TB disease after immigration into the U.S.

In addition to better screening protocols abroad, the most effective strategy to prevent active TB in U.S. citizens and residents who were born abroad is **targeted testing and treatment of latent TB infection (LTBI)**. With this strategy, we recommend that persons who are at risk for TB, including foreign born persons who have come to the U.S. in the past five years, should have a TB test, either as a part of their routine health care or through a special screening program. If the test is positive, a 6-9 month course of medication called INH is given to treat their LTBI before it progresses to TB disease.

The traditional method of testing for LTBI is the tuberculin skin test (TST). It does require that the patient returns after 2-3 days for the test to be read. Additionally, BCG vaccination, a TB vaccine used in most of the world, but not here in the U.S., can at times lead to inaccurate results with the TST. *(Note that in testing persons at risk for TB, BCG vaccination should be ignored in the process of administering and reading TSTs).*

**QuantiFERON-TB Gold A New Blood Test for TB**

We are pleased to announce the availability of a new blood test for latent TB infection and active TB: QuantiFERON-TB Gold (QFT), manufactured by Cellestis, Ltd. QFT has many advantages over the tuberculin skin test (TST). It takes only one visit, and it is not affected by BCG vaccination, making it more accurate than the TST for testing foreign born persons, most of whom have had BCG. It was approved by the FDA in June, 2005, and the Centers for Disease Control and Prevention (CDC) issued guidelines for its use in December, 2005. According to these guidelines, QFT may be used as an alternative to the TST in all situations in which the TST is indicated. We recommend its use for testing foreign born persons, and in situations when reading a TST is unlikely or costly. We expect QFT to be available in our Public Health Laboratory in the near future. For further information, call us at 925-313-6740.

| | TB in 2004 (n=64) | TB in 2005 (n=58) |
|---|---|---|
| ***Gender:*** | | |
| ***Male*** | ***29 (45.3%)*** | ***33 (56.9%)*** |
| ***Female*** | ***35 (54.7%)*** | ***25 (43.1%)*** |
| ***Age:*** | | |
| ***0-4 years*** | ***0*** | ***0*** |
| ***5-14 years*** | ***1 (1.6%)*** | ***2 (3.5%)*** |
| ***15-24 years*** | ***5 (7.8%)*** | ***6 (10.3%)*** |
| ***25-44 years*** | ***24 (37.5%)*** | ***12 (20.7%)*** |
| ***45-64 years*** | ***19 (29.7%)*** | ***27 (46.6%)*** |
| ***65 + years*** | ***15 (23.4%)*** | ***11 (19.0%)*** |
| ***Teens (13-19 years of age)*** | ***3*** | ***1*** |
| ***Children < 13*** | ***1*** | ***2*** |
| ***Race/Ethnicity:*** | | |
| ***White*** | ***17 (26.6%)*** | ***5 (8.6%)*** |
| ***African American*** | ***16 (25.0%)*** | ***9 (15.5%)*** |
| ***Latinos*** | ***9 (14.0%)*** | ***19 (32.8%)*** |
| ***Asian/PI*** | ***22 (34.4%)*** | ***25 (43.1%)*** |
| ***Country of Origin:*** | | |
| ***US*** | ***24 (37.5%)*** | ***17 (29.3%)*** |
| ***Other*** | ***40 (62.5%)*** | ***41 (70.7%)*** |
| *- Philippines* | *13* | *16* |
| *- Mexico/Central/South America* | *11* | *14* |
| *- Vietnam/Laos/Bhutan/China* | *6* | *5* |
| *- India/Indonesia* | *5* | *2* |
| *- Other* | *5* | *4* |
| ***Region*** | | |
| ***West*** | ***25 (39.1%)*** | ***28 (48.3%)*** |
| *3 zip codes in Richmond-North Richmond /San Pablo* | ***13 (20.3%)*** | ***17 (29.3%)*** |
| *Other .....* | *12* | *11* |
| ***Central*** | ***22 (34.4%)*** | ***15 (25.9%)*** |
| ***East*** | ***17 (26.6%)*** | ***15 (25.9%)*** |
| ***Risk Factor*** | | |
| ***Any Substance Abuse*** | ***8 (12.5%)*** | ***13 (22.4%)*** |
| ***Homeless*** | ***4 (6.3%)*** | ***7 (12.1%)*** |
| ***HIV/AIDS*** | ***5 (7.8%)*** | ***2 ( 3.5%)*** |

## TB SKIN TESTING

Persons without a regular doctor or health insurance can call Contra Costa Public Health toll free at **1-877-405-8573** to find out where to get a TB skin test. To see a doctor at Contra Costa Regional Medical Center and Clinics, call **1-800-495-8885**. A Financial Counselor will assist you in applying for financial coverage and making an appointment.

**www.cchealth.org/groups/epidemiology/tb**

# New Challenges Emerge with Tuberculosis Cases Resistant to Multiple Drug Treatments

**TB CASES 2005**

| **Site of Disease** | | **Infectiousness** *(Pulmonary cases only = 44)* | | **Drug Resistance** *(Culture positive= 45)* | |
|---|---|---|---|---|---|
| Pulmonary Only | 35 | Smear +/ Culture + | 19 | Fully susceptible | 40 |
| Pulmonary/Non-Pulmonary | 9 | Smear -/ Culture + | 14 | Resistant INH | **4** |
| Non-Pulmonary Only | 14 | Culture -/ not done | 11 | Resistant INH only | 0 |
| | | | | Resistant INH & RIF | 2 |
| | | | | Resistant INH & Other | 2 |
| | | | | Other Resistance | **1** |

**DRUG RESISTANCE IN TB CASES 1993-2005**

**Resistance to Isoniazid**:
Between 1993 and 2005 there were 863 culture positive cases of TB and 81 (9.4%) of these were Isoniazid resistant.

**Resistant only to Isoniazid**:
48 (5.6%) of the 863 culture positive cases of TB occurring between 1993 and 2005 were resistant **only** to Isoniazid. Of these 48, 20 were US born and 28 were foreign born (14 from Philippines, 11 from other Asian countries, two from Latin America, and one from Africa). The median age was 46 years of age.

**Multiple Drug Resistance** (MDR) and **Polydrug Resistance** (PDR):
**33** of the 863 culture positive cases were resistant either to
both Isoniazid and Rifampin (n=9) (MDR)
or to both Isoniazid and other drugs (n=24) (PDR)

Of the 33 MDR/PDR, **5 (15%) were US born** and **28 (85%) were foreign born**. The MDR/PDR cases among foreign born occur at anytime after entry into the US (from 0 to 40 years later) . On the average MDR/PDR cases occurred **9 years after entry** into the US. The average age at time of diagnosis for MDR/PDR **cases is 40 years of age. 12** of the MDR/PDR cases are from the Philippines, **12** are from other Asian countries and **4** are from Latin America.
Among the most recent 10 MDR/PDR cases (diagnosed in 2004 and 2005) 7 arrived in the U.S. within the past 5 years and half (n=5) were under 30 years of age.

**Other Drug Resistance:** Additionally there are 35 culture positive cases of TB occurring between 1993 and 2005 with resistance to one or more drugs, but susceptible to Isoniazid.

**TB Reporting**

CA law (i) requires that all health care providers and facilities must report patients with confirmed or suspected TB to the local health department within one working day of diagnosis. This requirement applies specifically to all patients with any of the following (ii):

1. Positive AFB smear, unless a nucleic acid amplification test is negative for M.Tb.
2. AFB culture (including preliminary results) positive for M.Tb.
3. Radiographic findings consistent with TB (e.g. upper lobe or cavitary lesions)
4. Pathologic findings consistent with TB
5. Clinical level of suspicion for active TB high enough to warrant the initiation of therapy
6. Latent TB infection (LTBI, positive TB skin test [TST], normal CXR) who are:
    a. Under the age of 4 years
    b. TST converter within 24 months (documentation of prior PPD required)
    c. HIV positive

Reports should be made by completion of a Confidential Morbidity Report (CMR) and transmittal by FAX to the TB Program at (925) 313-6465. A separate reporting form is required for hospitalized patients. CA law (iii) requires that a patient with confirmed or suspected TB may not be discharged or transferred from a health care facility (except for a higher level of care) without the approval of a written Discharge Plan by the TB Program. Contact the TB Program at (925) 313-6740 for CMR and other forms, or for further information on TB reporting and discharges. *(i)CCR Title 17, Section 2500*
*(ii)CDHS/CTCA Joint Guidelines for Reporting TB in CA (available at http://ctca.org) (iii)H&S Code, Section 121361*

*Contra Costa Health Services*
*Public Health Communicable Disease Programs*
*Tuberculosis Control Program*
*597 Center Ave, Suite 200-A*
*Martinez, CA 94553*

**5843**