

While there have been substantial and consistent declines in tuberculosis (TB) disease cases in the United States in the past two decades, we must not become complacent and must continue to support community programs and services to achieve the goal of TB elimination because of the highly contagious nature of this disease and the increasing number of drug resistant strains of TB. State health agencies conduct a wide array of TB prevention and control activities, such as contact investigations, to limit the spread of disease, and directly observed therapy to reduce drug resistance. To maintain declines in TB disease and eventually reach the goal of elimination, state TB programs need continued support to carry out their prevention and control activities.

Case of TB in Student Requires 150 Screened and \$250,000 for Treatment

In December 2011, a student in Allen County, Indiana was diagnosed with multidrug-resistant TB. Nearly 150 students who were in contact with the case needed to be screened for TB. In addition, because the student did not have insurance or resources to pay for treatment, the county must pay for treatment, with estimated costs of \$250,000 for medication. Despite the high cost, the county has an “obligation to the public” to pay for treatment to prevent spread of disease. A Board of Health member noted that if there were three cases (for example, if the disease spread to 2 contacts), the cost of treatment would be the entire budget for the year.

Source: Sade, Vivian. “Virulent TB Case Rings Up Steep Bill.” *The Journal Gazette* 25 January 2012.

The Centers for Disease Control and Prevention (CDC) provides direct funding to state tuberculosis programs in all 50 states, D.C., nine cities, and eight territories through cooperative agreements. This funding is used to support the necessary core activities of TB prevention and control programs: finding all cases of active TB and ensuring completion of therapy, contact investigations, TB surveillance, and TB public health laboratory activities. These activities fall outside the scope of the health care system, and are essential population-based services for state health agencies to conduct. State funding and other resources are often used to supplement these activities, for example, to purchase and provide medication and treatment.

The ultimate goal of the state TB programs is to eliminate TB in the United States, with the following 2015 targets: less than 0.7 cases per 100,000 among the U.S.-born population and 14 cases per 100,000 among foreign-born populations. In 2010, the TB rate was 1.6 cases per 100,000 among the U.S.-born population and 18.1 cases per 100,000 among foreign-born populations.

According to an IOM Report¹, “we are now at a critical juncture” for eliminating TB. While TB rates are declining, the rate of decline is slowing. The annual percentage rate change of TB incidence decreased from 7.3% in 2000 to 3.8% in 2008. Efforts must be expended to find and treat existing cases of TB disease, as well as new cases introduced through international travel or activation of latent TB to TB disease. If not, the US may witness a resurgence of TB similar to that in the late 1980s and early 1990s, including new cases and harder to treat drug-resistant cases, with “major costs in suffering, death, and economic losses”.

Achieving the goal of elimination will require an adequate funding commitment so that state health agencies have the staff and capacity for TB treatment and control programs. Shrinking federal dollars may make elimination less likely. After a funding peak of \$96,882,867 in FY03, federal program funding eroded. The FY10 total funding level from CDC for the state TB programs is \$93,134,217. (See table on page 4.)

The number of TB cases reported in the United States continues to decline each year, and tuberculosis rates in the U.S. are at their lowest since nationwide surveillance of TB disease began in 1953. Rates of TB vary across the country:



<http://www.cdc.gov/tb/statistics/surv/surv2010/default.htm>

Currently, cooperative agreement funds are distributed in part using an incidence-based formula which helps distribute dollars for prevention and control activities, laboratory services, and human resource development. Prevention and control funding is allocated based on the number and complexity of cases. The laboratory formula is based on the number and types of TB laboratory tests conducted, and human resources development is designed to ensure TB programs have funding for a workforce knowledgeable in TB diagnosis and treatment.

However, due to changes in case distribution and funding, CDC's Division of Tuberculosis Elimination is examining options to restructure the National Tuberculosis Program. This might include a redistribution of the cooperative agreement funds. Other funding sources, such as the Epidemiology and Laboratory Capacity program, can supplement TB program activities.

Impact of Funding Cuts and Need for Continued Support

State capacity needs vary based on the number and complexity of cases. Because of reduced resources, some states have only one TB staff person, which means reduced capacity to find and treat infected persons and their contacts. For every case of TB disease that is reported, about 10 contacts need to be assessed for TB. In order to prevent the spread of disease, treatment needs to be assured as part of a comprehensive and effective public-private health care system. Traditionally public health has been the primary provider of detection and treatment of TB due to its unique complexity. Because of funding cuts, states may no longer have the ability to run adequate TB control programs, conduct contact investigations, or provide medication and treatment. However, most private sector health providers are not trained or equipped to address this disease. This gap in access to care may lead to a resurgence of cases of disease.

A disproportionate burden of disease persists among foreign-born populations and racial and ethnic minorities. Other populations are also at increased risk for TB (e.g., persons living with HIV, homeless, incarcerated). As TB becomes more concentrated in high-risk populations, public health staff must expend more effort identifying and reaching those who need treatment, and performing contact investigations to prevent further spread of disease. There are many potential barriers to treatment including the following categories: knowledge, attitudes, and perceptions; cultural beliefs;

socioeconomic status; language; patient satisfaction; inconvenience/infringement on autonomy/length of treatment; and medication side effects. Improved TB control and prevention activities among disproportionately affected populations are essential for reaching the goal of TB elimination.

In addition, it is important to appropriately treat TB to avoid the development of drug resistance. Inappropriate or incomplete treatment can lead to the development of multi-drug resistant or extremely-drug resistant TB. These cases are more complicated to treat. Funding to state health agencies can support directly observed therapy (DOT) to ensure proper treatment regimens are followed. However, DOT is time consuming and labor intensive, and requires adequate staff capacity. At each encounter a healthcare provider or designee must: meet the patient, check for potential side effects, verify medication, watch the patient take pills, and document the visit. Often times, DOT programs also perform case management functions, such as providing education and social services. These activities need to be funded to ensure proper treatment completion and minimize the development of drug-resistant TB.

The number of TB cases has reached a historic low in the U.S., but to maintain that success state TB programs need continued support to carry out their prevention and control activities. State health agencies need the resources and capacity for disease surveillance, case management, treatment, contact investigation, and other necessary services to ensure there is not a resurgence of TB in the U.S. and to advance our collective efforts toward the elimination of TB.

For more information visit www.cdc.gov/tb.

1. IOM Report. *Ending Neglect: The Elimination of Tuberculosis in the United States*. Lawrence Geiter, Editor. Washington, D.C.: National Academy Press, 2000. Available at http://www.nap.edu/catalog.php?record_id=9837

State	Cases†	Case Rate†	CDC Award FY10
Alabama	168	3.6	\$ 1,081,636
Alaska	37	5.3	\$ 427,966
Arizona	232	3.5	\$ 1,416,132
Arkansas	82	2.8	\$ 637,340
California*	2470	6.7	\$ 17,626,215
Colorado	85	1.7	\$ 583,526
Connecticut	95	2.7	\$ 629,220
Delaware	19	2.1	\$ 295,141
D.C.	41	6.8	\$ 662,122
Florida	821	4.4	\$ 7,629,212
Georgia	415	4.2	\$ 2,827,938
Guam	102	57.2	\$ 426,170
Hawaii	117	9	\$ 792,877
Idaho	18	1.2	\$ 181,326
Illinois*	418	3.2	\$ 3,207,625
Indiana	119	1.9	\$ 730,050
Iowa	42	1.4	\$ 365,943
Kansas	64	2.3	\$ 414,476
Kentucky	77	1.8	\$ 726,354
Louisiana	194	4.3	\$ 1,374,598
Maine	9	0.7	\$ 179,671
Marshall Islands	140	217	\$ 153,244
Maryland*	218	3.8	\$ 1,799,096
Massachusetts	243	3.7	\$ 1,555,981
Michigan*	144	1.4	\$ 1,357,147
Micronesia	143	133.1	\$ 184,143
Minnesota	161	3.1	\$ 1,115,032
Mississippi	122	4.1	\$ 793,839
Missouri	80	1.3	\$ 652,415
Montana	8	0.8	\$ 187,435
Nebraska	32	1.8	\$ 214,670
Nevada	106	4	\$ 595,058
New Hampshire	16	1.2	\$ 242,743
New Jersey	405	4.7	\$ 4,339,232
New Mexico	48	2.4	\$ 371,512
New York*	1006	5.1	\$ 11,258,801
North Carolina	251	2.7	\$ 1,951,169
North Dakota	5	0.8	\$ 166,662
North Marianas	32	62.2	\$ 296,019
Ohio	180	1.6	\$ 1,211,074
Oklahoma	102	2.8	\$ 776,635
Oregon	89	2.3	\$ 650,517
Palau	18	86.6	\$ 131,941
Pennsylvania*	236	1.9	\$ 1,818,253
Puerto Rico	63	1.6	\$ 834,372
Rhode Island	24	2.3	\$ 327,519
Samoa	4	6.1	\$ 96,765
South Carolina	164	3.6	\$ 1,342,120
South Dakota	18	2.2	\$ 267,457
Tennessee	202	3.2	\$ 1,492,963
Texas*	1501	6.1	\$ 10,152,923
Utah	37	1.3	\$ 289,087
Vermont	7	1.1	\$ 153,275
Virginia	273	3.5	\$ 1,510,113
Virgin Islands	\$ 86,938
Washington	256	3.8	\$ 1,545,203
West Virginia	19	1	\$ 330,036
Wisconsin	67	1.2	\$ 472,345
Wyoming	2	0.4	\$ 194,945
TOTAL	11545	3.8	\$ 93,134,217

†2009 case and case rate (per 100,000) data from the CDC; totals are for states only.

*Includes funding for directly-funded cities and counties. CA includes Los Angeles (county), San Diego and San Francisco; IL includes Chicago; MD includes Baltimore; MI includes Detroit; NY includes New York City; PA includes Philadelphia; and TX includes Houston.

Source: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6011a2.htm?s_cid=mm6011a2_e%0d%0a