

# TUBERCULOSIS

## A SERIOUS RE-EMERGING THREAT

### UNMET NEEDS

- Provide federal funding of \$210 million as authorized in Public Law 110-392. HHS Secretary's Advisory Council for the Elimination of Tuberculosis has recommended \$252.4 million to meet the CDC goal of tuberculosis (TB) elimination in the US.
  - > Develop government/private partnerships designed to encourage the development of new tuberculosis assays.
- Increase funding for laboratories to implement new and existing diagnostic tests that can identify tuberculosis and screen for drug resistance.
- Standardize drug susceptibility testing methods in the US for first- and second-line drugs used to treat TB patients to improve clinical outcome.
- Provide funding for CDC to conduct an assessment of laboratory tuberculosis testing capacity.
- Develop a plan of action that will address extensively drug resistant tuberculosis (XDR-TB) to prevent it from invading the US.
- Direct CDC to develop a strategic plan for implementing and maintaining a systems approach to TB control that includes laboratory systems.
- Assess the true costs of providing TB laboratory services because the cost to identify individual cases rises as the number of cases declines and the cost of services will vary from one jurisdiction to another.
- Develop recommended testing methods for different patient populations, as well as

### CDC FUNDED

(Dollars in millions)

**FY 2009 \$143 (Enacted)**

**FY 2010 \$210 (APHL Required Amount)**

guidelines to help jurisdictions select the appropriate level of service.

- Improve laboratory staff proficiency in complex tuberculosis testing procedures in light of fewer specimens being tested in relation to the decline in tuberculosis.
- Train new laboratory staff in tuberculosis testing procedures in light of a rapidly aging workforce.

### BACKGROUND

Tuberculosis is a serious re-emerging infectious disease that affects the lungs and respiratory system as well as other organs and can lead to death if left untreated. This illness is transmitted person-to-person via the air by coughing, sneezing and even talking. Tuberculosis has re-emerged as a co-infection with Human Immunodeficiency Virus (HIV) because HIV weakens the immune system and makes the patient more susceptible to infection and severe TB disease.

Today, despite an overall decline in cases, tuberculosis continues to incur significant social, public health and economic costs in the US.

Approximately one-third of the world's population is latently infected with the bacterium that causes tuberculosis. An estimated 10 million to 15 million US citizens have latent tuberculosis infection, and about 10% of these individuals will develop tuberculosis at some point in their lives. Approximately 13,500 new cases of tuberculosis disease were diagnosed in 2007 in the US. Costly tuberculosis outbreaks still occur, and multi-drug resistant tuberculosis continues to spread. Now the nation is facing a new tuberculosis threat, extensively drug resistant tuberculosis (XDR-TB), a form of tuberculosis that is resistant to the two most important first-line drugs and at least two of the most important second-line drugs available for treatment. XDR-TB is a deadly form of tuberculosis that can be incurable, especially to people with HIV/AIDS, and is swelling to epidemic proportions in southern Africa. A number of laboratories have already reported this deadly new form of tuberculosis in the US. The CDC provisionally estimates that the direct medical treatment costs of an XDR-TB patient (\$132,000) are on average 2.5 times higher than those of a multi-drug resistant tuberculosis (MDR-TB) patient (\$53,000) and may be much higher depending on hospitalization length and location of treatment. Altogether, tuberculosis-related costs approach \$1 billion each year in the US.

To reach the goal of the elimination of tuberculosis in the US, improvements in laboratory testing must be maintained and translated into improvements in the treatment, prevention and control of tuberculosis. Despite advances in laboratory methods, lack of coordination for

referral of specimens and cultures continues to lead to unnecessary delays in laboratory testing, reporting and initiation of treatment.

Currently all 50 state public health laboratories perform some level of tuberculosis testing and serve as referral and reference laboratories for culture identification and tuberculosis drug susceptibility testing in support of other public and private sector laboratories. State public health laboratories have used CDC funding over a period of many years to create modern laboratories with the latest diagnostic equipment approved for tuberculosis isolation and identification, biosafety equipment to protect laboratory staff and premises, personnel sufficient to meet the need for rapid laboratory confirmation of tuberculosis and ongoing staff training in the use of state-of-the-art diagnostic equipment and rapid testing procedures. As laboratories have become better equipped and personnel better trained, federal funds have been used less to upgrade tuberculosis laboratories and more to maintain core tuberculosis capabilities and infrastructure.

Of the \$140 million allocated for tuberculosis control, only \$8 million goes to supporting public health laboratory testing. This number has been stagnant at \$8 million annually since 1995. With inflation factored in, the funding has experienced a 25% decrease in real dollars. Although it is tempting to think that funding can decrease in proportion to the decrease in the number of tuberculosis cases, below a certain point this reasoning falls apart, since a base level of funding (in real dollars) is necessary to maintain the tuberculosis control infrastructure. ■