

## Stalled Progress Underscores Need for Expanded Approach

After more than 20 years of progress toward tuberculosis (TB) elimination in the United States, recent data show the annual rate of TB (the number of new cases per 100,000 people) has leveled.

- The TB rate held steady at approximately 3.0 new cases per 100,000 from 2013 to 2015.
- An uptick in TB cases was reported in 2015, increasing from 9,406 in 2014 to 9,563 in 2015.
- The nation's TB elimination goal is less than one case per 1 million people; however, there were 30 cases per 1 million people in 2015.

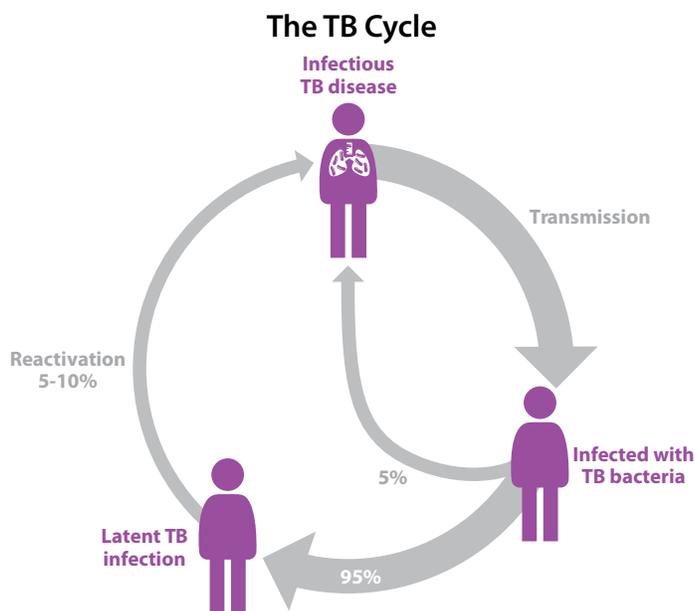
An expanded approach to address two TB-related conditions – *TB disease* and *latent TB infection* – is needed to overcome the nation's elimination stalemate.

### TB Disease

TB bacteria become active if the immune system cannot stop them from growing. When TB bacteria are active (multiplying in the body), this is called TB disease. People with TB disease are sick and may also be able to spread the bacteria to other people.

### Latent TB infection

TB bacteria can live in the body without making a person sick. This is called latent TB infection. People with latent TB infection are not infectious and cannot spread TB bacteria to others. Latent TB infections can, however, progress to TB disease, which can be transmissible.



## A Dual Approach to Eliminating TB

Resuming and accelerating progress toward TB elimination will require an intensified, dual approach that includes strengthening existing systems to prevent transmission of infectious TB disease and increasing efforts to detect and treat latent TB infection before it progresses to infectious TB.

Current TB control strategies prioritize the early diagnosis, isolation, and treatment of people with infectious TB disease. This approach protects patients' health, prevents transmission to others, and allows for timely contact investigations to detect and prevent additional cases.

These TB control efforts are essential, but by themselves cannot eliminate the disease from the United States. More than 85 percent of U.S. TB cases are associated with longstanding, untreated latent TB infections.



# Stopping TB Before the First Symptom: Tackling Latent TB Infection

## The Challenge

- Up to 13 million people in the United States have latent TB infection, many of whom were born outside the United States and were infected many years earlier in areas of the world where TB is common.
- On average, 5 to 10 percent of people with latent TB infection will progress to infectious TB disease in their lifetime. However, this is much higher for some people.
- The vast majority of TB cases in the U.S. now are associated with these persons with longstanding, untreated latent TB infections which progress to active disease.

## Priorities

- Resuming progress toward TB elimination in the United States will require increased efforts to detect and treat latent TB infection. Public sector efforts alone will be insufficient to reach all of those who need to be tested and treated. Private providers and community health centers will play a key role in ensuring all those at risk are tested and offered treatment.
- Screening for latent TB should be targeted to individuals at high risk for TB disease, including:
  - People who were born or have lived in countries with high rates of TB
    - Because of the high exposure levels to TB in countries like Vietnam, the Philippines, China, India, Mexico, Guatemala, and Haiti, the prevalence of latent TB infection is much higher among individuals born in these nations.
    - Studies indicate the majority of new TB cases in people born outside of the U.S. occurred at least 6 years after entry into the U.S.
  - Others who are more likely to have had exposure to TB, including those who have lived in group settings where exposure is more likely
  - Healthcare workers and others who work in places at high risk for TB transmission
  - People at increased risk of progressing from latent TB infection to TB disease:
    - Currently, there is no test that can predict which people with latent TB infection will progress to TB disease, but certain risk factors increase the likelihood of activation, including:
      - HIV infection
      - Having been recently infected with TB bacteria (in the last 2 years)
      - Other health problems, like diabetes, that make it hard for the body to fight bacteria
      - Use of illegal drugs or abuse of alcohol
- Individuals at risk of developing TB disease who are diagnosed with latent TB infection should be prioritized for treatment. Completing a treatment regimen for latent TB infection can reduce a person's chance of developing TB disease by 90%.
  - CDC research has identified a simpler treatment regimen that can prevent the progression to TB disease in people who are diagnosed with latent TB infection. This FDA-approved regimen is 12 once-weekly doses of isoniazid and rifapentine, compared to other treatment regimens that include a 270-dose, nine-month daily regimen of isoniazid.

**85% of TB diagnoses in the U.S. associated with long-standing, latent TB infection**



# Ending TB Transmission: Treating TB Disease

## The Challenge

- Efforts to control TB are largely focused on quickly identifying and treating people with TB disease in order to cure the disease and prevent ongoing transmission. This work is led by CDC and health departments across the country.
- These efforts have had a major impact, preventing as many as 300,000 cases between 1995 and 2014.
- Enhanced control efforts will be needed to resume progress toward TB elimination.

## Priorities

- Strengthening health department TB control programs is essential to protect the health of individuals and communities.
- The latest national TB surveillance data, combined with information from recent outbreak investigations, confirm that preventing the transmission of infectious TB disease remains a challenge.
  - TB among people born in the United States, particularly children, is a key marker of recent transmission. After years of decline, TB rates have stopped declining among people born within the United States. In addition, more than one in 10 TB cases among persons born in the United States occurred among children (younger than 15).
- TB control programs in state and local health departments need to maintain the ability to respond to every case of infectious TB disease.

## Combating Drug Resistance

Given the severity of this disease, it is essential to strengthen TB control systems and ensure that every active case of TB disease is effectively detected and treated. Treatments for TB disease can be difficult to complete, and failing to do so can result in TB bacteria becoming drug resistant. Treating drug resistant TB disease can be a complex, long, challenging, and expensive process.

Multidrug-resistant TB (MDR TB) is resistant to at least two of the best and most important anti-TB drugs: isoniazid and rifampin. Extensively drug-resistant TB (XDR TB) is a rare type of MDR TB that is resistant to isoniazid and rifampin, as well as any fluoroquinolone and at least one of three injectable second-line drugs (i.e., amikacin, kanamycin, or capreomycin).

People undergoing treatment for MDR or XDR TB face the most devastating consequences. Treatment can take two or more years and the medicines are more expensive, less effective, and can often cause serious side effects. (See "[The Costly burden of Drug-Resistant TB in the U.S.](#)")

## The Path to Elimination

Eliminating TB, a debilitating and potentially life-threatening disease, would protect the health of Americans and reduce the burden on the health care system. Treatment for infectious TB disease typically requires at least 180 days of medicine, blood tests, and doctor visits. Treatment costs per case range from \$17,000 up to \$482,000 for extensively drug-resistant TB. In comparison, treatment for latent TB infection can take as little as 3 months and typically costs \$500.

While public health efforts have been focused largely on the necessity of stopping transmission and curbing outbreaks, it is critical to also address the pool of individuals with latent TB infection at risk for developing infectious TB disease.

The end game of TB elimination requires engaging additional partners who can identify people at high risk for latent TB infection in their states and communities – and can test, diagnose, and treat them. Providers serving communities with high-risk populations, and leaders in these communities, are crucial to the successful expansion of testing and treatment initiatives for people with latent TB infection.

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