

# TB and HIV Coinfection



## What Can HIV/AIDS Service Organizations Do to Help?

- ▶ Collaborate with your local health department's tuberculosis (TB) control program
- ▶ Educate your staff about TB
- ▶ Educate your staff about the importance of TB skin testing in the prevention of TB

**HIV-Related TB Can Be Prevented and Cured  
– and You Can Help!**

## Many people think tuberculosis (TB) is a disease of the past.

However, in spite of fewer people in this country suffering with TB, it remains a serious threat for HIV-infected persons. In fact, worldwide TB is responsible for the deaths of one in three people living with HIV/AIDS – making it the leading cause of death among people infected with HIV. As someone working in an AIDS service organization (ASO), you can play a critical role in ensuring that HIV-related TB can be prevented and cured in your clients.

### What is TB?

TB is a disease caused by bacteria called *Mycobacterium tuberculosis*. This disease primarily affects the lungs, but can attack any organ in the body. TB is spread through the air from one person to another. The bacteria are put into the air when a person with TB disease of the lungs or throat coughs or sneezes. People nearby may breathe in these bacteria and become infected. However, not everyone infected with TB bacteria becomes sick. As a result, two TB-related conditions exist: **latent TB infection and active TB disease**. Both of these conditions are treatable and curable.

### What is the difference between latent TB infection and active TB disease?

In most people who breathe in TB bacteria and become infected, the body is able to fight the bacteria and stop them from growing. The bacteria become inactive, but they remain alive in the body and can become active later. This is called **latent TB infection**. *There are an estimated 10 to 15*

*million persons in the United States with latent TB infection.* Many people who have **latent TB infection** never develop **active TB disease**. In these people, the TB bacteria remain inactive for a lifetime without causing disease. A person with **latent TB infection** does not feel sick and cannot spread TB bacteria to others.

However, in some cases TB bacteria can become active if the immune system can't stop them from growing. These bacteria begin to multiply in the body and cause **active TB disease**.

Because HIV weakens the immune system, people with latent TB infection and HIV infection are at **very high risk** of developing active TB disease. In fact, the risk is **800 times** greater for a person with HIV infection.

### What is a TB skin test?

The TB skin test is a method used to diagnose TB infection. A small needle is used to inject some testing material, called tuberculin, into the upper layers of the skin, usually done on the inside of the forearm. The person getting the test must return two to three days later to have the test



#### People with latent TB infection:

- ▶ have TB bacteria in their body that are alive, but inactive
- ▶ do not feel sick
- ▶ cannot spread TB bacteria to others
- ▶ may become sick if the bacteria become active in their body
- ▶ usually have a positive TB skin test
- ▶ need treatment for latent TB infection **as soon as possible** to prevent them from developing active TB disease

#### People with active TB disease:

- ▶ have active TB bacteria in their body
- ▶ feel sick and may experience symptoms such as fever, weight loss, and a bad cough that lasts longer than 2 weeks
- ▶ may spread TB bacteria to others
- ▶ usually have a positive TB skin test
- ▶ need to take medicine to cure active TB disease
- ▶ **can die from this life threatening disease if undiagnosed or untreated**

## Why should I be concerned about TB and HIV coinfection?

- ▶ Without treatment, as with any other opportunistic infection, HIV and TB can work together to shorten the life of the person infected.
- ▶ Someone with **latent TB infection** and HIV infection is up to **800 times** more likely to develop **active TB disease** during his or her lifetime than someone without HIV.
- ▶ Among people with **latent TB infection**, HIV is the strongest known risk factor for progressing to **active TB disease**.
- ▶ A person that has both HIV and active TB disease has an AIDS-defining condition.

*The best way to find out if your client is coinfecting with TB is to ensure that he or she has a TB skin test.*



site on the arm examined by a nurse or doctor. If there is a reaction on the arm, the size of the reaction is measured. A positive reaction, usually a small bump, means that the person probably has TB infection. Other tests are needed to determine if the person has latent TB infection or active TB disease.

All HIV-infected people should be given a TB skin test to find out if they have TB infection. Some people who are infected with both HIV and TB will not react to the TB skin test. This is because the immune system is not working properly. Anyone who is HIV infected and has a negative TB skin test should also be given other medical tests such as a chest x-ray if they have symptoms of active TB disease. To find out where TB skin tests are offered in your community or to determine if your organization should provide skin testing services, contact your local health department's TB control program.

### Good News

The good news is that HIV-infected persons with either latent TB infection or active TB disease

can be effectively treated. The first step is to identify HIV-infected persons with latent TB infection or active TB disease by ensuring that they get a TB skin test and any other needed tests. The second step is to help the people with latent TB infection and those with active TB disease get proper treatment. Rapid progression from latent TB infection to active TB disease can easily be prevented. Active TB disease can be treated and cured in HIV-infected persons.

### Treatment

There are a number of treatment options for HIV-infected persons with either latent TB infection or active TB disease. For the latest guidelines about the different treatment regimens, refer to the resources listed on the back of this brochure and also consult with your local health department. It is important for HIV-infected patients to be closely monitored by a physician during any type of treatment to prevent negative drug interactions.

### The medicine usually used to treat latent TB infection:

- ▶ Isoniazid (INH)

Taken as prescribed, INH will kill the TB bacteria in the body and prevent the development of active TB disease.

### The medicines usually used to treat active TB disease:

- ▶ Isoniazid (INH)
- ▶ Rifampin
- ▶ Pyrazinamide
- ▶ Ethambutol
- ▶ Streptomycin

To treat active TB disease, several different drugs are needed because there are many bacteria to be killed. Taking several drugs will do a better job of killing all of the bacteria and preventing them from becoming resistant to the drugs.

A crucial component of treating active TB disease is **directly observed therapy (DOT)**. With DOT, a health worker watches the patient swallow each dose of TB medication. DOT increases patient adherence and prevents relapses, continued transmission, and the development of drug resistance. If resources are available, DOT may also be beneficial for the treatment of latent TB infection, especially in HIV-infected persons. To find out if your organization can help with DOT services, please contact your local health department's TB control program.

## How can your organization help prevent HIV-related TB in your clients?

Collaborate with your local health department's TB control program to:

- ▶ Educate your staff about TB
- ▶ Educate your staff about TB skin testing
- ▶ Educate your staff about the proper treatment of persons coinfecting with TB and HIV

Other ways your organization may be able to help:

- ▶ Provide TB skin tests for your high-risk clients
- ▶ Assist in the delivery of DOT for latent TB infection

## Publications about TB for your health care providers:

*Core Curriculum on Tuberculosis – What the Clinician Should Know*, Fourth Edition, 2000. Detailed information about latent TB infection; active TB disease; TB skin testing; and treatment of latent TB infection and active TB disease.

*Self-Study Modules on Tuberculosis* (Modules 1-5) Modules covering basic epidemiology, transmission and pathogenesis, diagnosis, treatment of latent TB infection and TB disease, and infection control.

*Forging Partnerships to Eliminate Tuberculosis* Resource guide to strengthen TB elimination strategies through partnerships.

*TB Elimination: Now Is the Time!* Brochure about the status of the TB epidemic in the U.S., HIV-TB coinfection, TB's disproportionate burden on minorities, and what needs to be done to eliminate TB in the U.S.

## Publications about TB for your clients:

*Questions and Answers About TB* – A booklet about TB transmission, skin testing, and treatment, including DOT and side effects of medications.

*Tuberculosis – The Connection Between TB and HIV (the AIDS Virus)* – A pamphlet on the risk of HIV-related TB, TB skin testing, and treating TB and HIV coinfection. Available in English and Spanish.



- ▶ These and other CDC publications about TB can be viewed and ordered at no cost by visiting the CDC Division of TB Elimination Web Site at:

<http://www.cdc.gov/tb>

Or by written request at the following address:

### Office of Communications

NCHSTP, CDC  
1600 Clifton Road NE  
Mailstop E-07  
Atlanta, Georgia 30333

- ▶ For more information, the following resources are also available:

### CDC National Prevention Information Network

<http://www.cdcnpin.org>  
1-800-458-5231

### E-mail News Service

A free electronic subscription to summaries of HIV, STD, and TB news articles can be obtained by sending a blank message to:  
<http://www.preventionnews-subscribe@cdcnpin.org>.

Allow 48 hours for subscription to become effective.

### CDC Voice Information System

1-800-232-3228

