

TUBERCULOSIS PREVENTION GUIDE FOR HOMELESS SERVICE PROVIDERS

For Staff of Shelters, Social Service Agencies
And Health Care Programs
Providing Services to Homeless People

EIGHTH EDITION
2007

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**TUBERCULOSIS PREVENTION GUIDE
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HOW TO USE THIS MANUAL

Shelters, health care providers and social service agencies that serve homeless people play a vital role in improving the public's health by preventing the spread of tuberculosis (TB) and other communicable diseases throughout their agencies and the community as a whole.

Since TB is frequently a disease of poverty and overcrowded living conditions, homeless people are at an especially high risk for tuberculosis.

This training guide is designed to assist you in working with homeless people by:

- 1) Providing you with guidelines for TB prevention and education
- 2) Preparing you to manage TB in your agency; and
- 3) Reducing unnecessary fears in the work environment.

This manual is written for agency directors and employees of the following types of agencies that serve homeless people:

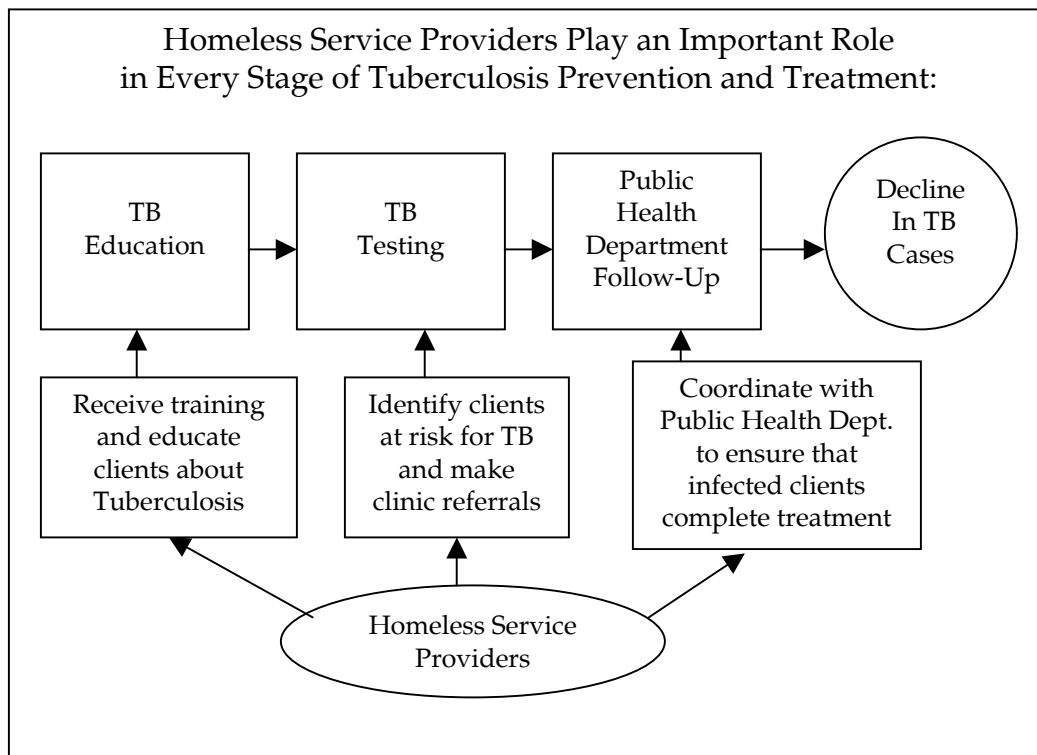
- **Shelters**
- **Missions**
- **Single Room Occupancy Hotels (SRO's)**
- **Drug Treatment Programs**
- **Community and Free Clinics**
- **Local Health Departments**
- **Hospitals and Health Centers**
- **Programs that Serve Persons with HIV/AIDS**
- **Mental Health Facilities**
- **Agencies Serving Infants, Women and Children**
- **Legal Service Organizations**
- **Other Social Service Organizations**

Directors can use this manual for assistance in developing agency TB policies and procedures for staff and clients. Staff, who play a key role in disease prevention, client education and referral assistance, will benefit from the section on staff responsibilities for prevention and education. We recommend that all employees read the entire manual, as each chapter provides important and useful information. **We also encourage you to make copies of the information in this manual for newly hired staff and clients in your programs.**

After reading this manual, we hope you will:

- Understand how TB is spread;
- Know the difference between TB infection and TB disease;
- Be well informed on real TB risks versus imaginary TB risks;
- Be an important TB resource person for clients and new staff; and
- Be well prepared to make environmental and policy changes in your agency to decrease the risk of TB transmission throughout your facility.

Many homeless people do not receive evaluations for tuberculosis or other health care needs. Your agency can be the entry point for getting homeless people into the health care system. By working together, homeless service providers and the health department can play important, coordinated roles in reducing the epidemic of tuberculosis in the community.



Overview and History of Tuberculosis

Tuberculosis (also known as "TB") is a disease that is as old as humankind. Almost two billion people (one third of the world's population) are infected with TB. Each year there are eight million new cases of TB disease worldwide, and three million people die from the disease. TB is a preventable and treatable disease that has reached epidemic proportions in Los Angeles County and throughout the United States. If untreated, a person with TB can, on the average, infect 10-15 people each year.

In the early 1900's, many people immigrated to the United States from other countries in search of greater opportunities. When the new immigrants arrived in this country, many lived in overcrowded living conditions and extreme poverty, contributing to an explosion of TB in the United States. At the turn of the century, there was no adequate medical treatment yet discovered for TB. Treatment consisted of bed rest, sunshine and fresh air. Thousands of adults and children were sent to respiratory hospitals (sanatoria) located far away from the urban centers of the TB epidemic. Some people recovered from the disease, but many others died from tuberculosis.

By the 1950's, rates of TB declined steadily as living conditions improved throughout the United States. Effective antibiotics were developed, and a coordinated health response was launched against the TB epidemic. Rates of TB declined, and health officials mistakenly predicted that by the year 2010, TB would be completely eliminated throughout the United States.

During the 1980's, the United States experienced a new epidemic of TB due to the re-creation of some of the living conditions found at the turn of the century such as increased poverty, overcrowding and homelessness. Other factors contributing to the new epidemic included immigration from countries with high rates of TB; the epidemics of HIV/AIDS and alcohol and drug use, which weaken the immune system, making people vulnerable to TB; and an inadequately funded public health care system, unable to respond to the number of people in need of TB testing and treatment.

Tuberculosis was thought to be a disease of the past, but today, it is considered a significant public health threat. The rise in TB cases peaked in 1992 and has declined since then, due in great part to an increased commitment by the federal government since the early 1990's to fund TB control programs. However, rates of homelessness continue to rise. History has shown when economic conditions are allowed to deteriorate in our cities and when persons are living in poverty, TB is a silent, constant threat to our communities and to our society as a whole.

TB Trends

According to the World Health Organization (WHO), tuberculosis (TB) kills two million people each year. The global epidemic is growing and becoming more dangerous. Currently, there are two billion people worldwide (one third of the world's population) infected with the TB bacillus-having latent TB infection, or (LTBI). The epidemics of HIV/AIDS and multidrug-resistant TB (MDR-TB) have also impacted on the spread of TB worldwide. TB is the single most common opportunistic infection for people with HIV. It accounts for about 13% of AIDS deaths worldwide.

In the United States, an estimated 9.6 - 14.9 million persons have latent TB infection (LTBI) with potential risk for future disease. In 2006, a total of 13,767 TB cases were reported in the U.S. The overall TB case rate of 4.6 cases per 100,000 persons was the lowest rate ever recorded since reporting began in 1953. The decline in the case rate from 2003 to 2004 was the smallest in more than a decade (3.3% compared with an average of 6.8 % per year). Los Angeles County (LAC) continued to have the highest number of TB cases in California for the year 2006. LAC accounted for 32 % of the TB cases in California's 2,781 cases (provisional data) and 6% of the 13,767 TB cases (provisional data) reported in the United States in 2006. The number of TB cases reported nationally declined by 2.3% from 2005 to 2006. In the State of California, TB cases also declined by 2.3% in 2006.¹

Outbreaks of MDR-TB (multidrug-resistant tuberculosis), particularly among HIV-infected persons, contributed to the resurgence of TB in the late 1980's and early 1990's. Since the Centers for Disease Control and Prevention (CDC) began monitoring TB drug resistance in 1993, levels of drug resistance have been relatively stable, with a slight increase in 1999. There were 12 cases of MDR-TB (1.4% of total cases) reported in Los Angeles County in 2006.

The decline in overall number of reported TB cases in recent years has been attributed to stronger TB control programs that emphasize promptly identifying persons with TB, initiating appropriate therapy and ensuring completion of therapy.

¹ Data compiled by L.A. County Department of Health Services, TB Control, 2005; website lapublichealth.org/tb

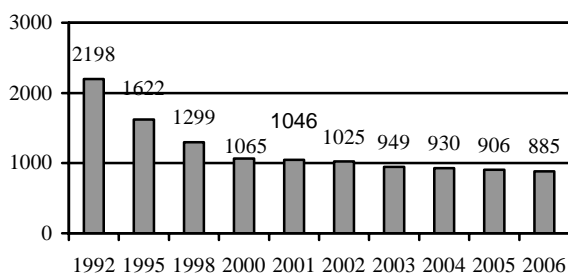
TB Trends in Los Angeles County

In 2006, 885 cases of Tuberculosis were confirmed in Los Angeles County. This represents a 2.3% decrease from 2005 (906 cases) and an overall 58.8% decrease since the peak reported in 1992 (2,198 cases), marking thirteen years of decline.

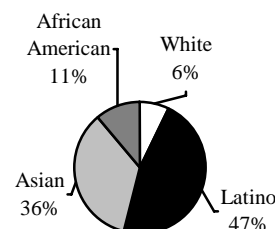
- In Los Angeles County during 2005, there were a greater number of TB cases diagnosed in males (541 cases, 59.7%) than in females (365 cases, 40.3%).
- The largest number of TB cases was in the 15 – 34 year age range, with 206 cases (22.7%), followed by the 65 years and older age range with 201 cases (22.2%), the 35 – 44 age range with 187 cases (20.6%), the 45 – 54 age range with 165 cases (18.2%), the 55 – 64 age range with 111 cases (12.3%), the 0 – 4 age range with 24 cases (2.6%) and the 5 – 14 age range with 12 cases (1.3%). Compared to 2004, there was an increase in the proportion of TB cases in 2005 for the 35 – 44 and the 45 – 54 age ranges.
- The racial/ethnic breakdown of TB cases reported in 2005 was as follows: 426 (47.1%) Latino, 323 (35.7%) Asian/Pacific Islander, 97 (10.7%) Black and 58 (6.4%) White. One (0.1%) Native American/Alaskan Native. One case was not identified.
- During 2005, 77.7% (704) of the 906 total TB cases occurred in foreign-born populations. Of the 704 foreign-born cases, 250 (35.5%) were from Mexico, 115 (16.3%) from the Philippines, 45 (6.4%) from Vietnam, 42 (6%) from China, 38 (5.4%) from Guatemala and 29 (4.1%) from El Salvador. Among the 704 foreign-born TB cases, 683 (97%) had date of arrival in the U.S. identified. Of the 704, 160 (22.7%) were recent immigrants who immigrated to the U. S. fewer than three years prior.
- Forty-five (5%) of the 906 TB cases were reported as homeless in 2005; 37 (82.2%) of the 45 homeless cases were male. Among all homeless TB cases, 23 (51.1%) were Black, 17 (37.8%) were Latino, 4 (8.9%) were White and 1 (2.2%) was Asian/Pacific Islander.
- In 2005, 65 (7.2%) TB cases were HIV co-infected. Of these 65, 52 (80%) were male. Among all HIV-infected TB cases, 41 (63.1%) were Latino, 16 (24.6%) were Black, 5 (7.7%) were White and 3 (4.6%) were Asian/Pacific Islander. Forty-one (63.1%) of the HIV co-infected cases were in the 25 – 44 year old age range and 22 (33.8%) were in the 45 – 64 year age range.

Data compiled by L.A. County Department of Health Services, TB Control 2005, website: lapublichealth.org/tb

Cases by Year in LA County



LA County Ethnic Breakdown of TB Cases in 2005



Homeless Tuberculosis Cases

1. In the United States, in the year 2004, of the 14,394 TB cases with information on homeless status, 932 (5.8%) were homeless.¹
2. In California 2004, of the 2,952 TB cases with information on homeless status, 188 (6.4%) were homeless.²

Los Angeles County 2005³

3. A total of 906 TB cases were reported in Los Angeles County in 2005. Forty-five (5%) were homeless. This represents a 34% decrease in the number of homeless cases from 2004 (68 cases).²
4. The majority (82.2%) of homeless TB cases were male (37 cases).
5. The highest number of homeless TB cases reported was in the 45 – 54 year age range (19 cases, 42.2%) followed by age 35 – 44 years (9 cases, 20%), 15 – 34 years (8 cases, 17.8%), 55 – 64 years (6 cases, 13.3%), 65 years and older (2 cases, 4.4%) and 5 – 14 years (1 case, 2.2%).
6. The racial/ethnic breakdown of homeless TB cases was 51.1% Black (23 cases), 37.8% Hispanic (17 cases), 8.9% White (4 cases), and 2.2% Asian (1 case).
7. Twenty-eight (62.2%) of the homeless TB cases were born in the U.S. Sixteen cases (35.6%) were foreign-born, and the country of origin was unknown for 1 case. Of the 16 foreign-born homeless TB cases, 8 cases (50%) were born in Mexico, 2 (12.5%) in Honduras and 2 (12.5%) in Guatemala. One case each was born in Cuba, Ecuador, India and Iran.
8. Of the 45 homeless TB cases, 86.7% (39 cases) were tested for HIV. Of these 39, 18% (7 cases) were identified with HIV co-infection. This is more than twice the percentage of HIV co-infected patients in Los Angeles County as a whole in 2005.
9. Most of the homeless cases (16 cases, 35.6%) were located in the Central Health District, a region characterized by high population density, severe poverty and large numbers of persons with other risk factors for TB such as HIV infection, injection/non-injection drug use and severe alcohol abuse. The Hollywood Health District had the second highest number of homeless TB cases (6 cases, 13.3%), followed by Northeast and West (each with 3 cases, 6.7%).
10. Thirty-nine homeless TB cases (86.7%) were diagnosed as pulmonary TB and 6 cases (13.3%) as extrapulmonary TB only.

¹ Reported Tuberculosis in the United States 2004. Website: www.cdc.gov/nchstp/tb/surv/surv/2004/default.htm

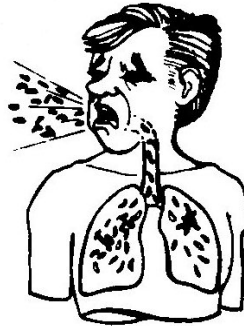
² Report on TB in California, 2004. Website: www.dhs.ca.gov/ps/dcdc/tbcb/TB%20Reports/TB_Report_2004.pdf

³ LADHS Epidemiology TB Control Program, TB Epidemiology Assessment (TEAM) Report 2005

What is TB?

Tuberculosis (TB) is a disease caused by bacteria, which are a type of a germ. Germs get into your body and can cause you to get sick. The scientific name of the bacterium that causes tuberculosis is *Mycobacterium tuberculosis* or *M. tuberculosis*. The TB germ can affect many different parts of the body. When TB affects the lungs, it is known as "pulmonary tuberculosis." But TB can also affect the joints and cause arthritis, affect the spine, the brain, the kidneys, the lymphatic system and other parts of the body as well. When the site of TB disease is outside of the lungs, it is known as "extra-pulmonary" TB. Extra-pulmonary TB disease is not very common and is most likely to happen in people with weakened immune systems. People with extra-pulmonary disease are generally not contagious.

TB Transmission



TB germs may get into the air when a person with contagious TB disease of the lungs or throat coughs, sneezes, talks, yells or sings. The person with contagious disease forces air past the infection site, pushing out air mixed with TB germs. Within this air mixture are drops of moisture from the lungs that carry TB germs in them. If another person is sharing the same airspace, she or he may then breathe in the TB germs and become infected. **Exposure to TB bacteria does not always cause an infection.** TB is spread most easily in closed spaces when a person is exposed over a long period of time.

TB is spread from person to person through the air. You must breathe the germ into your body in order to become infected. You cannot get TB from someone's hug, handshake, clothes, drinking glass or food. You won't get TB from using a public toilet, shower or swimming pool. Mosquitoes and other insects do not transmit TB.

TB Prevention and Control

Basic Principles of TB Control in the United States

There are four prioritized strategies to prevent and control TB in the United States.

- 1) **Promptly detect, report and treat** people who have contracted TB.
- 2) **Protect close contacts** from contracting TB infection and disease.
- 3) **Take action to prevent TB** by identifying those at high risk for progression from latent TB infection (LTBI) to active TB through targeted testing and treatment.
- 4) **Reduce the increase of TB** by identifying areas at high risk for transmission and applying effective infection-control measures to reduce risks.

Approaches for Increasing Targeted Testing and Treatment of Latent TB Infection (LTBI)

- 1) Encourage testing of people under a clinician's care for medical conditions such as HIV or diabetes.
- 2) Establish programs to reach people who have an increased prevalence of LTBI, an increased risk for developing active disease, if LTBI is present, or both.

TB Infection vs. TB Disease

It is important to understand the difference between TB infection and TB disease. For most people who breathe in TB germs and become infected, the body's immune system causes the germs to become inactive. This is TB infection, also known as latent TB infection (LTBI). The person remains healthy, without symptoms and is not contagious. The germs may later become active due to a weakened immune system, at which point the person can develop TB disease. People with TB disease usually have symptoms and may be contagious. Let's take a closer look at the differences between TB infection and TB disease.

LATENT TB INFECTION (LTBI)

What happens when TB is transmitted? TB germs have a high affinity for oxygen; they like to be around oxygen. So, when a person breathes in TB germs, the germs go to the lungs and begin to grow. A healthy immune system will then try to fight the germs by keeping them in an inactive state. The bacteria then become “dormant”; this immune response can take two to 12 weeks to occur. As long as the germs are asleep, the person has TB infection, also known as latent TB infection (LTBI). People with LTBI will have no symptoms and will not be contagious. Many people have LTBI and don't even know it. Most people with latent TB infection (90%) live their whole lives and never develop any problems from the infection; they never get sick and are not able to spread it to other people.

Once a person has contracted LTBI, the risk for progression to TB disease varies. The greatest risk for disease occurs within the first two years after infection. Multiple clinical conditions are also associated with increased risk for progression from LTBI to active TB Disease. HIV infection is the strongest known risk factor. Other key risk factors, because of their prevalence in the U.S. population, are diabetes, LTBI in infancy or early childhood and changes consistent with old TB disease.

Another risk factor for progression from LTBI to TB disease is the use of medications used to treat some autoimmune-related conditions like Crohn's disease and rheumatoid arthritis. Cases of TB have been reported among patients receiving infliximab, etanercept and adalimumab. The CDC has published guidelines when these medications are used for TB prevention.

TB DISEASE

People develop TB disease when the TB germs become active in the lungs and begin to multiply and eat away at the lung tissue. Remember that with TB infection, the TB germs are dormant or asleep in the lungs. If the body's immune system weakens, the TB germs can awaken. Persons with TB disease, also known as active tuberculosis, are contagious and will have symptoms, unless they receive proper antibiotic treatment. The symptoms depend on what part of the body the germ has affected. Symptoms of pulmonary TB disease include:

- coughing (for up to three weeks or more)
- chest pain
- coughing up blood
- fever

- chills
- night sweats
- loss of appetite
- weight loss
- fatigue

These symptoms continue to get worse over several weeks to months. If left untreated, TB disease can be fatal.

The Difference Between TB Infection And TB Disease

There is a big difference between TB infection and TB disease. It is important for you to know the difference between infection and disease in order to give accurate information to other staff and clients and to reduce unnecessary fears about TB in your agency.

<u>TB INFECTION</u>	<u>TB DISEASE</u>
there are TB germs in the body from breathing in the germs of someone who has TB disease	there are TB germs in the body from breathing in the germs of someone who has TB disease
positive skin test	positive skin test
negative (normal) chest x-ray	positive (abnormal) chest x-ray if there is TB disease of the lungs
there are no symptoms	there may be symptoms that get progressively worse over several weeks to months (cough for 3 weeks or more, chest pain, coughing up blood, weakness, feeling sick, weight loss, fever, night sweats)
not contagious	may be contagious if there is TB disease of the lungs that is not properly treated with antibiotics for the disease
may be prescribed antibiotics for 4 – 9 months to prevent TB disease in the future	a combination of the following antibiotics will be prescribed for 9 months: <i>Isoniazid</i> <i>Pyrazinamide</i> <i>Rifampin</i> <i>Ethambutol</i> other drugs may be used in some circumstances
at risk for developing TB disease of the lungs in the future	active TB disease of the lungs or in another part of the body

Who is at Risk for TB Infection?

It is important to understand that **exposure to TB germs does not always cause infection**. For persons **to become infected, they usually must be in close contact** with someone who has contagious TB disease of the lungs. Anyone can get latent TB infection (LTBI). However, the following describes people who are at higher risk for TB infection than the general population:

- **People who live or stay in overcrowded, poorly ventilated environments** such as missions and shelters, people who are homeless and families who are doubled or tripled-up, living in single family dwellings.
- **Substance misusers** such as alcoholics, cocaine users or injection drug users. The frequent use of drugs weakens a person's immune system, placing that person at higher risk for communicable diseases such as TB and HIV.
- **People with weakened immune systems** such as those with HIV/AIDS or other types of chronic illnesses and people who are poorly nourished.
- **People who live or lived in institutional settings** such as jails, prisons, residential living facilities (dormitory style sleeping arrangements) and nursing homes.
- **Recently arrived immigrants to the United States** who have lived in countries with high TB rates such as most countries in Latin America and the Caribbean, some parts of Africa and Southeast Asia.
- **Migrant farm workers and their children** who often live in overcrowded living conditions and lack access to regular health care.
- **People with inadequate health care**, e.g. homeless persons.
- **Health care workers** in frequent contact with at risk populations.
- **Homeless service providers** who are in frequent contact with at risk populations.
- **People who live or work in close contact with people with TB disease of the lung.**

Surveillance and surveys from throughout the United States indicate certain epidemiologic patterns of TB are consistently observed among these groups, suggesting that the basic prevention and control principles (see page 9) are applicable to each.

Who is at Risk for Developing TB Disease?

TB disease develops when the body's immune system can no longer stop the TB germs from growing. For people with healthy immune systems, about one in every 10 with TB infection will develop TB disease in their lifetime. For most people, the highest risk of developing TB disease occurs within the first two years after becoming infected. The longer persons with healthy immune systems live with TB infection, the less likely they are to develop disease, except for the elderly.

For people with weak immune systems, the risk of developing disease increases each year. However, the risk of developing TB disease is not substantially greater for a person with a weak immune system if he or she is treated with the appropriate preventive medications in a timely fashion.

Some conditions that increase a person's risk for developing disease are:

- HIV/AIDS
- substance use
- diabetes mellitus
- silicosis (miner's lung)
- cancer of the head and neck
- severe kidney disease
- certain medical treatments (such as corticosteroid treatment or organ transplants)
- low body weight (10% or more below ideal body weight)
- poor nutrition/malnourished

Environmental Risk Factors for TB Transmission

There are also environmental risk factors for TB in the agency setting. The following describes some environmental factors and recommendations for reducing the spread of TB in a facility.

- **People with contagious TB in the agency setting.**

Recommendations: People with contagious TB disease who are not on medication or taking medication incorrectly can contribute to the spread of TB within the agency. A person with a cough lasting three or more weeks along with one or more other symptoms of TB disease should be evaluated by a health care provider as soon as possible. Clients who appear ill should also be referred for a health evaluation as soon as possible or asked to wear a surgical mask or use tissues to cover their mouths and noses when coughing. If an immediate health evaluation is not feasible, separate sleeping quarters apart from other clients should be provided until a health care professional determines that the client in question is not contagious for TB disease. However, please note that separate sleeping quarters may not reduce the risk of TB transmission if the same ventilation system is shared throughout the facility. Training employees and administrators will also reduce the spread of TB in agencies by providing staff with important health referrals and procedures for working with clients with TB infection or disease.

- **Poor air circulation due to inadequate ventilation.**

Recommendations: Open doors or windows to ensure adequate ventilation. Check your air-conditioning system; the type that recirculates old air increases the risk of transmitting airborne diseases throughout the facility. Ventilation/air conditioning units that pump fresh air from the outside to the inside of the building are recommended. Regular maintenance is also important. Replace lint filters in ventilation units with pleated type filters. Consider using portable HEPA filter units to improve ventilation, especially in unventilated offices and crowded rooms.

- **Bed spacing in shelter and residential settings.**

Recommendations: The risk of disease transmission increases when people are crowded too closely together or when people are sleeping head-to-head. This is common in missions and other dormitory-type facilities. Place beds as far from neighboring beds as possible, with head-to-foot, instead of head-to-head, arrangement of beds. Invite the public health nurse from your local health center to walk through your facility and make suggestions for reducing health risks.

- **Inadequate agency infection control methods.**

Recommendations: Communicable disease transmission can occur in a facility when people do not cover their mouths and noses when sneezing or coughing. Consistently use disposable tissues and ask others to cover their mouths and noses when sneezing or coughing. Put posters on walls to remind people to cover their coughs. Place tissues throughout the agency, so that they are visible and easily accessible to staff and clients. Shelters and other agencies should be well supplied with tissues. Additionally, latex gloves, toilet paper, liquid soap, bleach and paper towels reduce the spread of other communicable diseases throughout the facility.

Screening for Tuberculosis

Since persons with TB infection have no symptoms and are not sick, they may not even know they are infected. This is why screening for tuberculosis is an extremely important method of detecting TB infection and for reducing the spread of disease throughout a community. Testing is also done to identify people who are at high risk for developing contagious TB disease. The whole community benefits from early detection and treatment of infected individuals.

Usually two to 12 weeks after a person has been exposed to and infected with the TB germ, their TB test will be positive. A TB test, also known as the PPD (*purified protein derivative*) skin test, is one way to tell if a person has TB infection. The TB skin test is administered by a health worker who injects a small amount of tuberculin into the skin of the forearm. A person cannot get TB by taking a PPD skin test. The skin test given by this "Mantoux" method is the most widely available.

A TB skin test must be read by a health worker between two and three days and no more than 72 hours after tuberculin (PPD) has been administered under the surface of the skin. Sometimes there is a bump or a reaction to the test. If there is a reaction, a clinician will measure the size of the bump on the surface of the skin to determine if the test is positive. Some people may have a slight allergic reaction to the TB skin test, which makes their arm red at the injection site. Results are based on the width of the swelling, not on redness.

The Centers for Disease Control (CDC) has recently recommended a blood test that may replace the traditional skin (PPD) test. The test is called QuantiFERON®-TB Gold (QFT-G). According to the CDC, it can be used in all circumstances where skin testing is now used.

What if I Test Positive for TB? A positive reaction usually means that the person has been infected with the TB germ, sometimes referred to as "latent TB infection" (LTBI). It does not necessarily mean that the person has active TB disease, but it does mean that exposure and infection have taken place. Other tests, such as a chest x-ray or a sputum sample, are needed to see if the person has active TB disease.

Many people with LTBI whose x-rays are normal will be instructed to take antibiotic medication to prevent the infection from developing into TB disease. People with LTBI will need to have a TB symptom assessment at least annually, or as determined by a health care provider. A person who has tested positive for TB infection should not take any PPD skin tests in the future, because they will continue to test positive. Therefore, it is important to keep documentation of a positive skin test and not lose it.

What if the Test is Negative? A negative test usually means the person is not infected. However, the test may be falsely negative in a person who has been recently infected. The test may also be falsely negative if the person's immune system is not working properly or if they have been recently vaccinated with a live virus vaccine such as measles or chicken pox. There are special recommendations regarding the reading of the skin tests of people living with HIV or other immune system problems.

Current Requirements for TB Screening Of Immigrants

U.S. immigration law mandates screening outside the United States for applicants designated as immigrants who are applying for permanent residence status and for applicants designated as refugees or asylees. The current list of infectious diseases that are grounds for non-admittance to the U.S. include: infectious TB, HIV infection, leprosy and certain sexually transmitted infections. Worldwide, approximately 400 licensed local physicians, designated as panel physicians, perform the medical examinations to determine an applicant's health status. Panel physicians are appointed by U.S. embassies and consulates that issue visas. The CDC is responsible for monitoring the quality of these examinations and for providing technical guidance and consultation for TB diagnosis and treatment.

The TB screening process is a program for active TB case detection designed to deny entry to persons with infectious pulmonary TB, (identified by positive sputum acid fast bacilli (AFB) smear result). For persons over 15 years of age, a brief medical history and chest x-ray are obtained. If the chest x-ray is considered compatible with pulmonary TB, three sputum specimens are obtained and examined for AFB. Those under 15 years of age are evaluated, if they have symptoms that are consistent with TB or are a contact of a person with infectious TB.

Persons with abnormal chest x-ray and AFB positive smear results are classified as having Class A TB, which is a condition for denying entry into the United States. They have two options: 1) to complete a course of treatment for TB, including documented negative sputum AFB smears at the end of treatment, at which point they are classified according to their chest x-ray and may enter the United States; or 2) to receive TB treatment until sputum smear results for AFB convert from positive to negative, at which point they may apply for an immigration waiver. A U.S. health-care provider, who agrees to assume responsibility for the completion of TB treatment after a person's arrival in the United States, should sign the waiver. The waiver is countersigned by a representative of the jurisdictional public health agency of the person's intended U.S. destination. A person whose chest x-ray is compatible with active TB, but whose sputum AFB smear results are negative, is classified as having Class B1 status and may enter the U.S. If the chest x-ray shows inactive TB (LTBI), no specimens are required, and the person may enter the U.S. with Class B2 status.

Immigrants with Class A waiver or with Class B1 or B2 status are identified at port of entry to the U.S. and reported to the CDC's Division of Global Migration and Quarantine (DGMQ). The DGMQ notifies state and local health departments of refugees and immigrants with TB classifications who are moving to their jurisdictions and need follow-up evaluations. Persons with Class A waiver are required to report a local public health agency for evaluation or risk deportation. For persons with Class B1 and B2 status, the evaluation is voluntary.

Those people seeking to adjust their immigration status after residing in the United States with non-immigrant visa status should undergo a medical evaluation by one of the medical providers designated by DGMQ as a civil surgeon. TB screening by civil surgeons is based on the PPD skin test; QFT-G is also approved for detecting LTBI. If the test shows a positive result, the person is referred to the jurisdictional public health agency for further evaluation or treatment.

Treatment for TB Infection and TB Disease

Treatment for tuberculosis is extremely important for controlling the TB epidemic. Completion of treatment can take up to one year. The many difficulties, that homeless people face on a daily basis, make it difficult for them to take the medicine as prescribed. Providers play a very important role in helping their clients successfully complete TB treatment.

Once a person has tested positive for TB or is diagnosed as having latent TB infection (LTBI), they may choose to begin preventive treatment to decrease the likelihood of developing TB disease. Treatment may begin with an antibiotic called isoniazid (INH) for six to nine months. Treatment usually lasts six months, if the person has a healthy immune system and is in a low-risk group for developing TB disease, and nine if the person is HIV-positive (see page 20) or in a high-risk group.

A medical provider may choose not to prescribe the antibiotic, because INH can sometimes damage the liver. This is why treatment is generally prescribed to people who are at higher risk for developing disease and not to all groups. Once a person is on medication, the liver is periodically checked for damage that could be occurring. Some other possible side effects of the INH treatment may include: tingling sensations in the hands or feet, nausea, vomiting and lack of appetite. Isoniazid has been shown to reduce the likelihood of developing disease by 90%.

Decisions about infectiousness of a person on treatment for active TB disease should always be individualized on the basis of 1) the extent of illness; 2) the presence of cavitary pulmonary diseases; 3) the degree of positivity of sputum AFB smear results; 4) the frequency and strength of cough; 5) the likelihood of infection with multidrug-resistant organisms; and 6) the nature and circumstances of contact between the infected person and exposed contacts.

Directly observed therapy (DOT) is the standard of care for all patients with active TB disease.* Treatment may be daily or twice weekly for a period of six to 9 months.

People with active TB disease of the lungs are usually contagious until they take their medicine correctly for a few weeks. After taking medicine for a few weeks, the person will begin to feel better, but needs to continue taking the medicine. If persons do not take the medicine correctly, or long enough, they may become sicker, spread TB germs to others and be harder to treat.

Treatment for active TB disease is mandatory under public health law since it is communicable and, therefore, a threat to the community. A person is treated with several antibiotics including isoniazid, rifampin, pyrazinamide and ethambutol. In other circumstances, another drug type may be used. Some of the possible side effects include: liver damage, changes in vision, skin rash, headaches, nausea, vomiting and a tingling sensation in the hands or feet. Rifampin can also cause urine and tears to turn orange. The good news is that treatment for TB disease has a 98% success rate if treatment is completed and drug resistance does not occur.

*CDC , Controlling TB in the U.S.; MMWR 11/05, vol. 54, No.RR12

*CDC, Guidelines for Preventing TB; MMWR 12/05, vol. 54, No. RR17

The Connection between TB and HIV

Although TB and HIV are transmitted differently, many homeless people are at extremely high risk for both TB and HIV. Staff needs to know how TB affects people with HIV or AIDS. Staff must also pass this information to clients and teach others how to reduce unnecessary fears in the agency environment.

- People with HIV are at high risk for TB because HIV damages the immune system, placing them at high risk for developing active TB disease once exposed to TB bacteria.
- People with both TB infection and HIV/AIDS have an 8 – 10% chance *each year* of progressing to TB disease, unless they take preventive medicines.
- A person who has HIV infection should be screened for TB at a health care facility to rule out active TB disease.
- People with HIV/AIDS may have a negative PPD skin test, even if they have TB infection.
- People with HIV/AIDS and TB should be under the direct care of a health care provider, because TB treatment may last longer and be more difficult.

TB disease may accelerate HIV replication; however, TB medications reduce viral load.

- People with HIV/AIDS are more likely to have atypical or extra-pulmonary TB than people with a healthy immune system.
- **Agency staff must maintain client confidentiality for TB, HIV and all other medical conditions.**

People with HIV/AIDS or other immune system disorders who receive aerosolized pentamidine or other aerosolized medications and have a confirmed or suspected lung infection, such as pneumocystis pneumonia (PCP) or pneumonia caused by *P. jaroveci*, formerly *P. carinii*, are at risk for developing TB disease. These patients should be screened for active TB disease before starting treatment with aerosolized pentamidine. If TB disease is suspected or confirmed, and if clinically practical, the CDC suggests treatment with an oral prophylaxis for pneumocystis pneumonia instead of aerosolized pentamidine*.

*CDC, Guidelines for Preventing the Transmission of TB; 12/20, vol. 54, No. RR17

Therapy for Latent TB Infection (LTBI) In HIV-Infected Persons with Positive PPD

In most cases, HIV-positive persons a) who have positive reactions to PPD tuberculin, b) who have not already been treated for TB infection and c) whose test results exclude active TB should be considered for therapy for LTBI (see Screening for TB, page 16). This therapy is indicated even if the date of PPD skin-test conversion cannot be determined.



Therapy for Latent TB Infection (LTBI) In HIV-Infected Persons with Negative PPD

When assessing HIV infected persons who have negative PPD-tuberculin skin test results or who are known to be anergic, the most important factors in considering TB therapy are the likelihood of exposure to transmissible active TB and the likelihood of latent TB infection. Therapy should be offered to HIV-infected persons, regardless of their skin test status, who have had recent contact with people who have infectious pulmonary TB. Repeat PPD testing of initially PPD-negative contacts three months after the last contact with infectious TB is used to assist in decisions about the length of therapy. However, most of these individuals should complete a full nine-month course of isoniazid therapy.

Anergy

Anergy is the condition that occurs when a person has a delayed or no response to the PPD-tuberculin skin test. Anergy testing is a diagnostic procedure that was formerly used to obtain information about how well the immune system was functioning.

The use of anergy testing in conjunction with PPD testing is no longer routinely recommended for screening programs that test for TB infection in HIV-infected populations in the United States.

Drug Resistant and Multidrug-Resistant Tuberculosis (DR-TB, MDR-TB and XDR-TB)

The most recent and serious TB problem to emerge has been the development of drug resistant (DR-TB), multidrug-resistant (MDR-TB) and extensively drug-resistant (XDR-TB). Inappropriate or incomplete therapy can lead to TB patients developing and spreading drug-resistant strains of TB. When the tuberculosis germ develops "resistance" to the standard drugs used for TB treatment, the drugs become ineffective at killing the germ, allowing it to spread throughout the body. MDR-TB means that the germs become resistant to at least isoniazid (INH) and rifampin. Often the drugs used to treat MDR-TB are not as effective as the usual drugs and may cause more side effects. XDR-TB means that the germs are resistant to INH, rifampin and two other specific classes of second line TB drugs. Although most cases of DR-TB and MDR-TB can be treated with drugs, drug-resistance is a serious public health problem, which can lead to sickness and possible death if not treated aggressively and quickly. The CDC has listed MDR-TB as a possible lower-risk biological weapon. Each year in California, there approximately 80 multidrug-resistant TB patients undergoing treatment.

Who Develops Resistance to TB Medications? Drug resistance develops when people with active TB disease do not take their medicines as prescribed. People who are exposed to other persons who have drug-resistant TB can also contract this type of TB. Homeless people are at high risk for developing drug-resistant TB because their daily struggle for shelter, food and other basic necessities makes it difficult for them to get health care and follow TB treatment. Persons with drug-resistant TB must be closely monitored by a health care provider and must be under direct supervision to ensure that they are taking their medicines properly.

Shelter staff, clinic personnel and other homeless providers play a crucial role in reducing the epidemics of TB and drug-resistant TB among their homeless clients by helping them properly complete their treatment.

Staff can provide clients with a safe place to store their TB medications, assist them with their health care appointments by giving them access to a telephone for making appointments and by providing transportation. For more tips, call your local TB control program to assist you in this area.



TB and Pregnancy

Preventive Therapy and Risk Factors

Pregnant women with a positive skin test and a negative (normal) chest x-ray (a lead apron should cover the entire abdomen during x-ray) should be started on therapy with INH *beginning after the first trimester* if they have one or more of the following risk factors:

1. Documented recent conversion of skin test;
2. HIV-positive or those with HIV risk factors who choose not to test for HIV; or
3. Close contact with a person who has TB (at physician's discretion).

Women who have a positive skin test and do not have any of the above risk factors should wait three to six months after the end of pregnancy to receive therapy.

Treatment of Tuberculosis in Pregnancy

Active tuberculosis disease discovered during pregnancy should be treated without delay. A pregnant woman with a positive skin test and abnormal chest x-ray compatible with active tuberculosis disease, and who has not been treated, should be started on treatment. Three sputum cultures should be taken. The outcome of the cultures will determine the remainder of treatment. **Pregnant women should not take pyrazinamide or streptomycin.**

Bacillus Calmette Guerin (BCG) Vaccine

BCG vaccine is not commonly used in the United States. However, it is often used in countries with high rates of tuberculosis. BCG is not recommended for any individual who has a weak immune system or is HIV-positive. Although no harmful effects of BCG on a fetus have been observed, **it is advisable to avoid vaccination during pregnancy.**

There are many different types of the BCG vaccine that may or may not be effective. The greatest protection occurs during childhood and may last for about a year. The vaccine may not prevent TB infection and may not prevent against developing TB disease. A vaccination may cause a PPD skin test to be positive, but the skin test usually returns to negative after a period of time. **A person who has had a BCG vaccination can (and should) still have a TB skin test.**

Staff Responsibilities in TB Prevention

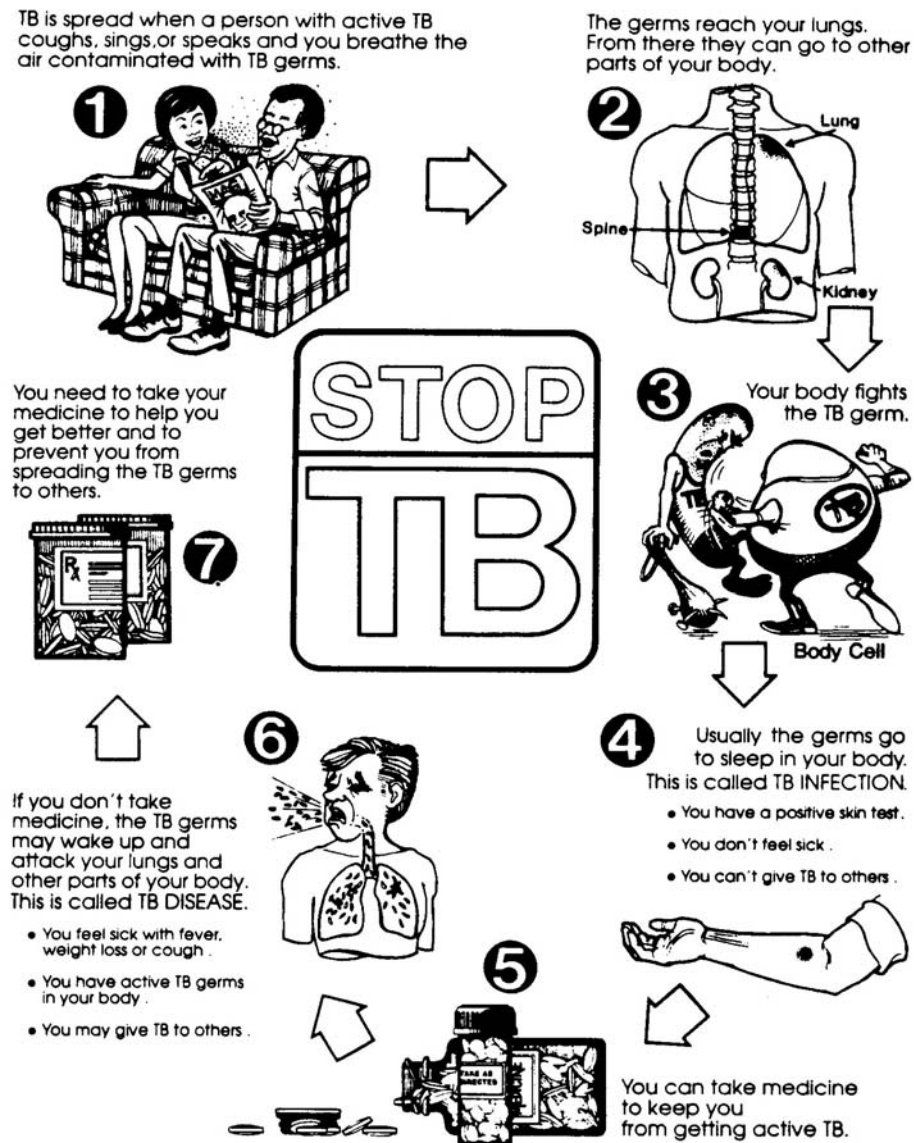
Tuberculosis is a preventable disease. There are a number of ways that staff can reduce the threat of TB transmission in the agency setting. Listed below are concrete steps that you can take to make your facility "TB safe":

- **Staff and clients should be screened for TB every 12 months.**
- **Staff and clients who test positive for TB infection should get regular symptom assessments as often as determined by their health care provider. Treatment should be provided when appropriate and taken correctly for the full length of time prescribed.**
- **Create a TB-free environment throughout your facility.**
Have tissues readily accessible and encourage clients and staff to use them; carry tissues in your pocket; talk with clients and co-workers about the importance of covering their mouths and noses when coughing or sneezing; ventilate rooms adequately; and ensure that beds are positioned head to foot if in a dormitory-type facility. Also, educate by displaying TB information.
- **Learn how to provide a health assessment for all clients in your program** to check for TB and other health conditions. (See sample TB assessment questions and sample health questionnaire on page 38).
- **Assist clients in getting TB care and other necessary health care.**
Provide written referrals, transportation assistance and follow-up for health care appointments and provide incentives for clients to complete their full treatment. Most importantly, advocate on behalf of your clients by ensuring that their TB needs and other health care needs are effectively handled in your agency.
- **Establish a working relationship with your local public health nurse.**
Staff can provide an important link between the client and the Health Department by coordinating all referrals for clients in need of TB care as soon as possible. Get to know your public health nurses *before* you need their help.
- **Help clients cooperate with directly observed therapy (DOT).**
Staff can help clients coordinate their directly observed therapy provided by The Department of Public Health to ensure TB medications is taken as prescribed.
- **Use your eyes and ears.** Symptoms of contagious TB disease are sometimes similar to HIV and other diseases. Refer a client who looks sick or complains of symptoms to a health professional immediately.
- **Provide/require yearly TB education** in-service training for all agency staff. This includes administrators, front-line staff and volunteers.

- **Provide a client TB education program at your agency.**

Provide one-on-one TB information to newly enrolled clients. (See pages 35 - 37 for a summary of basic points.) Facilitate a health "rap" group; show TB videos to clients; review TB information in brochures and posters; and distribute and post the information.

- **Assign a health "point person" for your agency** to coordinate TB and other health-related activities. The point person can order and display educational brochures and posters throughout your agency; develop your own TB materials designed to meet the needs of clients; provide instructional videos on TB; conduct or schedule client health groups; attend TB and other health workshops in the community; share health resources; and serve as a health resource to other staff and residents.
- **Be smart, not scared.** Know the difference between TB infection and TB disease and teach this information to others.



TB Policy and Procedure Recommendations For Directors of Homeless Programs

The development of TB prevention policies and procedures for shelters and social service agencies is important for three main reasons: (1) to prevent TB transmission to other people in the agency setting; (2) to address the needs of clients and staff with TB; and (3) to ensure that staff comply with their TB responsibilities. Listed below are recommendations for directors of homeless programs to assist with creating a comprehensive agency TB policy.

EMPLOYEE-RELATED MEASURES

1. Require documentation of TB screening for new employees and volunteers before hire.

- Evidence of a negative TB skin test or a physician statement that the employee/volunteer is free from communicable TB is acceptable documentation.
- The Los Angeles County TB Control Program recommends two-step baseline testing of new employees in homeless shelters. The determination of candidates for two-step testing should be made by a health care provider based upon CDC guidelines issued in 2005.¹
- Employer maintains employee TB screening documentation in a medical record or in a confidential TB database, as appropriate for agency.
- Results of TB screening remain confidential and are treated as personal medical information.

2. Require annual TB screening for employees and volunteers.

- Screen all employees and volunteers who have previously had a negative skin test at least every twelve months by repeating the PPD skin test and symptom assessment questions or requiring documentation from staff. All persons with a new positive skin test should have a baseline chest x-ray.
- Employees who have had a documented positive TB skin test in the past should not re-test. Instead, they should be screened with a baseline chest x-ray and have periodic TB symptom assessments, as directed by a clinician.
- Employees suspected of having active TB (TB disease) should be excluded from work until a written clearance to return to work is obtained from a physician.

3. Require all staff and volunteers to attend an annual TB in-service training.

¹ Centers for Disease Control and Prevention, Guidelines for Preventing the Transmission of *Mycobacterium Tuberculosis* in Health Care Settings, 2005. MMWR 2005; 54 (No. RR-17): pages 28-29.

4. **Teach all staff how to conduct a TB symptom assessment for all new clients** to assess for TB and other health problems. Suggested questions to ask are:
 1. "Have you ever been treated for tuberculosis or ever had a positive skin test for TB?"
 2. "Have you spent time with anyone who has TB?"
 3. "Do you have a cough that produces mucous that has lasted at least three weeks?"
 4. "Have you coughed up any blood?"
 5. "Have you felt feverish or had chills or night sweats for more than one or two weeks?"
5. **Assign a TB "resource person" at the agency** to serve as a health resource for other staff and clients, to coordinate staff and client TB training and to order and distribute TB educational materials.

CLIENT-RELATED MEASURES

1. **Require TB screening for clients, either on-site or by an outside provider.**
 - Staff should be alert to any drop-in or day care person with TB-like symptoms.
 - Residential clients should be screened for TB symptoms within one week of admission to the facility. Ideally, TB clearance would be done prior to admission. Residential drug treatment facilities are mandated by federal block grant funding to provide TB screening.
 - Medical providers should provide a comprehensive TB clearance. This would include:
 1. A TB history, exposure and symptom review.
 2. PPD skin test, unless written documentation of a previously positive skin test is provided.
 3. Chest x-ray if PPD is positive.
 4. Exclusion of residents suspected of having active TB until a written clearance is obtained from a physician.
2. **Identify and appropriately refer clients with symptoms of TB.**
 - All staff must be proactive in identifying a person who is coughing or who has TB-like symptoms. This would apply to drop-in, day program, etc. as well as residential clients.
 - Immediately provide this person with tissues to cover their mouth and nose when coughing and notify the TB resource person.
 - Remove coughing persons to a well-ventilated area as soon as possible.
 - Conduct interviews with clients with TB-like symptoms in a well-ventilated room or outside.
 - Refer persons with TB-like symptoms to a medical facility as soon as possible and before lengthy interviews are conducted.

3. Arrange for regular TB education for clients.

ENVIRONMENT-RELATED MEASURES:

1. Proper Ventilation

- Keep windows and doors open to maintain adequate airflow in all rooms where individuals or groups receive services.
- Clean and maintain ventilation systems on a regular basis. Functional ventilation systems move air more efficiently.
- Consult an engineer about your agency's ventilation system, if resources are available. If system re-circulates old air, consider upgrading it to a once-through system to reduce the risk of TB transmission.
- Replace lint filters with pleated type filters.
- Use portable HEPA filtration units to clean the air, if possible.

2. Other Environmental Measures

- Provide tissues throughout the facility and instructions on when and how to use them.
- Position beds head-to-foot with 44-inch-unblocked aisle ways.

SAMPLE TB POLICY FOR AGENCIES

PURPOSE:

In almost all instances, TB is both preventable and curable if diagnosed and treated in a timely fashion. Therefore, to insure, to the best extent possible, the safety of its staff, volunteers and clients, _____ (name of agency) has instituted the following guidelines.

POLICY:

All staff, volunteers and clients are required to have tuberculosis (TB) screening and appropriate follow-up as needed. The agency promotes education and practices to minimize the risk of infection.

PROCEDURES:

1. All staff and volunteers must have a TB skin test and symptom assessment prior to employment and annually thereafter. If the TB test is positive, the employee/volunteer must have a chest x-ray with a statement by a physician that he/she is free from communicable disease. If an individual has a documented previous positive skin test, he/she should not re-test. Instead, a physician statement that the person is free from communicable TB is required. If there is no documentation, the skin test should be repeated. Employees with suspected pulmonary TB will be excluded from work until a written physician clearance is obtained.
2. Results of TB screening remain strictly confidential and are treated as personal medical information.
3. All staff will instruct coughing persons to use tissues and cover their mouths.
4. All staff and volunteers are required to attend an annual TB prevention training from a community provider or agency staff person. Documentation of attendance at training will be kept on agency file.
5. _____ (name of person or position) is the TB “resource person” and serves as a health resource for staff and clients, coordinates staff and client TB training and orders and distributes TB educational materials.
6. To assist clients in meeting their health needs, all clients shall receive a health assessment regarding TB and other health issues. This agency shall have a referral sheet which identifies the nearest Health Department location, including the telephone number and the name of the Public Health Nurse to handle TB screening, referrals, follow-up and on-going care.
7. Identify and appropriately refer clients with symptoms of TB.
 - All staff must be proactive in identifying a person who is coughing or who has TB-like symptoms. Symptoms of TB are a progressive cough lasting three weeks or more, fever, fatigue, night sweats, unexplained weight loss and coughing up blood.
 - Immediately provide this person with tissues to cover their cough and notify the TB resource person.

- Remove coughing persons to a well-ventilated area as soon as possible.
 - Conduct interviews with clients with TB-like symptoms in a well-ventilated room or outside. Suggested symptom assessment questions to ask are:
 1. “Have you ever been treated for tuberculosis or ever had a positive skin test for TB?”
 2. “Have you spent time with anyone who has TB?”
 3. “Do you have a cough that produces mucous that has lasted at least three weeks?”
 4. “Have you coughed up any blood?”
 5. “Have you felt feverish or had chills or night sweats for more than one or two weeks?”
 - Refer persons with TB-like symptoms to a medical facility as soon as possible. This agency has an established referral procedure with a local health care provider for all medical referrals.
8. TB education for clients will be provided at least annually, and educational brochures will be available year around.
9. Environmental measures to reduce the risk of TB transmission will be followed as applicable: order and stock tissues, open doors and windows to allow for adequate ventilation, position beds head-to-foot, provide regular maintenance for ventilation system and replace lint air filters with pleated type filters.

I have read and understood the above TB policy.

Signature: _____ Date: _____

The Role of the Public Health Department in TB Control

The Public Health Department depends on the cooperation of all homeless providers to assist them in finding new cases of TB disease within the homeless population. It is very important that people who have symptoms of TB be referred to the Public Health Department for evaluation as soon as possible. All agency directors and staff should know the name and phone number of their local Public Health Department office and their public health nurse.

Homeless service providers play a key role in stopping the spread of TB through early identification of persons with symptoms and timely referrals to the Health Department.

Delay or failure by staff to refer sick clients with TB disease to the Community Health Services/Health Department can result in continued transmission of TB to others, increased costs for diagnosis and treatment in the future, prolonged hospitalization and possible death for those who are affected.

The Public Health Department lacks the resources and staff to visit every shelter and agency on a regular basis in search of new cases of TB and depends upon your help. Working together, the community health clinics and homeless service providers play an important role in reducing the epidemic of tuberculosis throughout your communities.

Role of the Public Health Nurse (PHN) in TB Control. Every suspected case of TB found by the Public Health Department is assigned to a PHN. The PHN contacts persons with TB and gives them appointments to be seen at the Community Health Services TB clinic. The PHN also does the contact investigation and will give a TB skin test and possibly a chest x-ray to anyone who has been in close contact with the person who has TB.

Public Health Laws for TB Control. Since TB is a communicable disease, which can endanger the health of others, public health laws have been developed to reduce its spread. People who have contagious TB are required to take their medicine. Refusing to follow TB treatment or knowingly spreading the disease is a misdemeanor in many states.

Maintain TB Data and TB Registry. Physicians and laboratories are required by law to report all diagnosed or suspected cases of TB to Tuberculosis Control.

Current Trends in TB Prevention, Treatment and Elimination

Agency staff plays an extremely important role in preventing the spread of TB in the community. One way to accomplish this is by acting as an advocate for clients by seeing that their TB needs are met with timely treatment and follow-up. The following information describes trends in TB prevention, treatment and elimination that have been implemented in Los Angeles and in other cities nationwide. Call the local TB control program in your area to learn about current TB programs that serve homeless people.

•**Directly Observed Therapy.** Directly observed therapy (DOT) is an extremely effective treatment method for persons who may have difficulty completing their course of treatment. DOT is important for preventing multidrug-resistant TB. DOT consists of public health department staff person or other responsible adult who observes the person swallow TB medication on a daily basis or twice or three times per week. This allows careful monitoring to ensure that the person completes treatment and to observe any drug side effects.

Fully aware of the difficulties homeless people face in completing TB treatment, many cities have developed directly observed therapy programs targeting homeless people. DOT workers visit shelters, missions, clinics, street outreach programs and other residential programs.

•**Food and Housing Programs for Homeless TB Patients.** Another successful method for increasing compliance with TB treatment is the use of incentives or enablers. Health departments throughout the United States recognize that homeless people have immediate needs that must be met in order for them to complete TB treatment successfully. The Los Angeles County TB Control program provides free meals and housing for homeless persons during the time they are completing their course of TB treatment. Each time an appointment for DOT is kept, patients are given vouchers for food and/or housing, which can be used until their next scheduled appointments. The voucher becomes the incentive that motivates the person to follow their drug treatment schedule.

•**Residential Program for Chemically Dependent TB Patients.** There are programs to provide drug treatment, food and residential services in a closely supervised environment to ensure compliance with TB treatment. In Los Angeles County, this program is located in Acton/Warm Springs.

For more information on any of the above programs, contact Los Angeles County TB Control at (213) 744-6160.

Model Prevention and Treatment Programs

NATIONAL PROGRAMS

- **American Lung Association**
1740 Broadway
New York, NY 10019-4374 (212) 315-8700
*Check your phone book for local affiliates. Sample brochures are free.
Bulk orders are available at reduced rates.*
- **Birmingham Health Center for the Homeless Coalition**
712 25th St., North
Birmingham, AL 35202 (205) 323-5311 ext. 226
*Determination of TB Status and Treatment. Tuberculosis and Children.
Contact: Pat Osborne*
- **Boston Health Care for the Homeless**
Mc Innis House
461 Walnut Ave.
Jamaica Plain, MA 02130 (617) 522-7080
*TB respite services. PPD skin test and chest x-rays; substance abuse program; referrals to
the Health Department-DOT; three respite beds for those who have been on treatment for
one week.
Contact: Mark Yoder, Medical Director*
- **Centers for Disease Control and Prevention**
Division of Tuberculosis Elimination
1600 Clifton Rd. NE
Mailstop E-10
Atlanta, GA 30333 (404) 639-8120
Request line for free brochures, posters and videotapes: (888) 232-3228
- **Chicago Health Outreach**
1015 W. Lawrence Ave.
Chicago, IL 60640 (773) 275-2060
*Creation of Task Forces. Private provider funded by the city to provide TB services
including DOT and primary health care.
Contact: Heidi Romans, Executive Officer of Health Care for the Homeless Project in
Chicago or Nancy Chira, TB Program Supervisor.*
- **Department of Community Medicine**
St. Vincent's Hospital
153 West 11th
New York, NY 10011 (212) 604-8822

- **Francis J. Curry National Tuberculosis Center**
 3180 18th St., Suite 101
 San Francisco, CA 94110 (415) 502-4600 www.nationaltbcenter.edu
The Center provides training, technical assistance, demonstration projects and enhanced program activities in order to decrease TB morbidity. All services and products are free of charge.
- **Health Care for the Homeless Information Resource Center**
 Policy Research Associates Inc.
 345 Delaware Ave.
 Delmar, NY 12054 (888)-439-3300 ext. 246
TB resource kits, sample curricula, TB resource guides and annotated bibliographies.
- **Homeless Health Care Los Angeles**
 2330 Beverly Blvd.
 Los Angeles, CA 90057 (213) 381-0511
*TB technical assistance training and consultation for directors and staff of homeless programs, disease control specialists and governmental agencies.
 Contact: Eve Rubell, Director, Training & Education e-mail: erubell@hhcla.org*
- **National Health Care for the Homeless Council, Inc.**
 PO Box 60427
 Nashville, TN 37206-8019 (615) 226-2292
*Resource for agency directors on TB policies and practices. Information on innovative TB programs nation-wide.
 Contact: John Lozier, Executive Director*
- **National Jewish Medical and Research Center**
 1400 Jackson Street
 Denver, CO 80206 (303) 388-4461
 Physician Line: 1-800-652-9555 or e-mail physicianline@njc.org
This free service is exclusively for physicians to call for patient referrals and phone consultations with a National Jewish physician.
- **National Tuberculosis Center at New Jersey Medical School**
 (800) 482-3627
The Resource Center operates a toll-free information line to provide state-of-the-art information to health care professionals and the public. Senior medical staff and nurses are available to respond to calls Monday-Friday from 9:00 a.m. to 5:00 p.m. EST.
- **Swope Parkway Community Health Center**
 3801 Blue Parkway
 Kansas City, MO 64130
 (816) 922-7645, Ext. 6307
*TB Task Force and homelessness. TB screening including mobile chest X-ray.
 Contact: Anne Lesser*

LOS ANGELES COUNTY PROGRAMS

- **Breathe California of Los Angeles County**
(Formerly the American Lung Association of Los Angeles County)
5858 Wilshire Blvd., Suite 300
Los Angeles, CA 90036
(323) 935-5864

- **Homeless Health Care Los Angeles**
2330 Beverly Blvd.
Los Angeles, CA 90057
(213) 381-0512
*Contact: R.Gerald Smith, Senior Health Educator for TB training for staff and/or clients.
e-mail: rsmith@hhcla.org*

- **County of Los Angeles Department of Public Health TB Control Program**
2615 South Grand Ave.
Los Angeles, CA 90007
(213) 744-6160
*Contact: Bob Miodovski for information and free educational materials.
Health Information: 231-744-6229*

APPENDIX A

TUBERCULOSIS 101
SAMPLE CURRICULUM OUTLINE

It is recommended that staff attend a TB training annually. There are agencies and organizations, which have experience providing these types of health education sessions. However, if you decide to develop your own training, the following topics should be included in your program:

- What is tuberculosis?
- How TB is transmitted?
- What is TB infection?
- What is TB disease?
- Who is at risk for TB infection and disease?
- The TB screening process
- Treatment and preventive therapy
- Drug resistant TB
- The connection between TB and HIV
- TB prevention measures
- The importance of identifying and referring persons with TB-like symptoms for medical evaluation
- Agency specific TB policies and procedures

TUBERCULOSIS 101

QUESTIONS AND ANSWERS

1. What is TB?

TB, or tuberculosis, is a disease caused by germs (bacteria) that attack the lungs and/or other parts of the body and can cause sickness and eventual death if untreated.

2. How Is TB Spread?

TB is spread from person to person through the air. TB germs are spread through the air when a person with contagious TB disease of the lungs coughs or sneezes. People who share the same airspace may breathe in the germs and become infected.

3. How Do You Catch TB?

To become infected, one is usually exposed to a sick person such as a household member or co-worker with contagious TB disease over a period of days or weeks. A person is contagious when the disease has spread to the lungs and if the person is not receiving proper treatment for the disease. TB is an airborne germ. You cannot get TB from clothes, drinking glasses, cups, handshakes or toilets.

4. Who is At Risk for TB?

The following are more likely to be exposed to TB: 1) people who live or work in close contact with someone with infectious TB disease; 2) people who live in overcrowded or poorly ventilated conditions, such as homeless shelters; 3) people with poor health care; 4) alcohol or other substance users; 5) people housed in jails or nursing homes; 6) people who immigrated to the U.S. from countries where TB is common; and 7) people who work with the above groups.

Those who are at high risk for developing disease after infection include: 1) people with HIV/AIDS, diabetes, malnutrition or other conditions that weaken the immune system; 2) people who are very underweight; 3) people who inject drugs; and 4) people who were recently infected with TB.

5. How Can I Tell if I Have TB?

A TB skin test is the most common way to find out if you have TB infection. If the skin test is positive, you will probably be given a chest x-ray or other tests to see if you may also have active TB disease.

6. What is TB Infection?

People with latent TB infection (LTBI) have the TB germ in their body. They do not have any symptoms and are not sick, because the germ is inactive. They cannot spread TB to others. The germs may become active in the future and cause disease. Medicine is sometimes given to people with TB infection to prevent developing active TB disease in the future.

7. What is Active TB Disease?

People with TB disease are sick from the germs that are active in their body. They usually have one or more symptoms of TB. People with active TB disease can often pass the disease to others. Permanent body damage and death can result if medicines that can cure TB are not taken.

8. What are the Symptoms of TB?

People who have latent (LTBI) or dormant TB infection have no symptoms and are not contagious. People who have active TB disease can be contagious and may have the following symptoms that get worse over several weeks or months: coughing, chest pain, coughing up blood, night sweats, weight loss, fever, weakness and feeling sick.

9. Is There A Cure for TB?

People with LTBI can be treated with medicine (antibiotics) to help prevent them from getting TB disease in the future. People with active TB disease can also be treated with medicine to kill the TB germs in their body and prevent the spread of disease to other people. A person is usually not contagious after the symptoms improve, which usually happens after two weeks of correctly taking medicine, but it is necessary to continue to take the medicine for six to nine months to kill all the TB germs.

10. What is the Difference Between TB Infection and Disease?

In most people who breathe in TB germs and become infected, the body is able to fight the germs to keep them from growing. The germs become inactive but remain alive in the body. This is called TB infection. People with TB infection do not feel sick and cannot spread the disease to others.

Most people who have TB infection never develop TB disease. But in some people the germs become active, especially in people with weak immune systems. The active germs begin to grow in the body and cause TB disease. People with TB disease can spread TB to other people if the TB disease is in the lungs and if they are not receiving proper treatment.

11. How Can I Prevent Spreading TB?

Cover your mouth and nose when sneezing or coughing; have a clean tissue in your pocket at all times; and see a health professional immediately if you are coughing, feel sick or have other symptoms of TB. If someone is coughing or sneezing near you, ask them to cover their mouth.

SAMPLE TB ASSESSMENT QUESTIONS AND PROCEDURES

To assist clients in meeting their health needs, all clients should be interviewed regarding TB and their other health concerns at intake. These symptom assessment questions should also be used during staff annual TB screening.

Factors to consider include: a history of a positive TB skin test; prior close contact with someone who has or is suspected of having active TB of the lungs or throat; or diagnosis or treatment of prior active TB.

Suggested questions to ask are:

1. Have you ever been treated for tuberculosis or ever had a positive skin test for TB?
2. Have you spent time with anyone who had TB?
3. Do you have a cough that produces mucous that has lasted for at least three weeks?
4. Have you coughed up any blood?
5. Have you felt feverish or had chills or profuse sweating (night sweats) for more than one or two weeks?

Follow-up questions should be asked following any "yes" answers. People with these symptoms or a history of TB disease should be evaluated as quickly as possible before being allowed into any common room or dormitory with other clients or staff. If possible, the individuals should be given a private room that does not share the ventilation system with the rest of the building until they have a medical evaluation and are determined to be non-infectious. People who are obviously ill should be referred and/or transported to a medical facility.

Adult Health Questionnaire

NAME _____ DOB _____ DATE _____

1. Where do you usually go for health care?

_____ Private Doctor	_____ HMO (Kaiser, Cigna, etc.)
_____ Free, Community or County Clinic	_____ Veterans Administration Medical
_____ County Hospital	_____ None
_____ Other Hospital	_____ Other _____

2. When was your last physical exam? _____ last PPD? _____ Result? _____
 last dental exam? _____ last tetanus shot? _____

3. Do you have any of the following health problems?

	how long?		how long?		how long?
diarrhea	_____	fever	_____	runny nose	_____
change in appetite	_____	cough	_____	breathing trouble	_____
itching	_____	skin sores	_____	light colored stool	_____
vomiting	_____	rash	_____	dark colored stool	_____
sore teeth	_____	sore gums	_____	yellow skin/eyes	_____
sore throat	_____	tea-colored	_____	teeth cavities	_____
sweat when asleep	_____	urine	_____	difficulty sleeping	_____
other	_____	<i>specify:</i> _____			

4. Do you have any of the following chronic health problems?

Allergies	_____	<i>specify:</i> _____		
Anemia	_____	Heart Problem	_____	Seizures
Asthma	_____	High blood pressure	_____	Skin problems
Bronchitis	_____	Kidney problem	_____	Tuberculosis
Diabetes	_____	Mental health problem	_____	Vision problem
Hearing problem	_____	Mental retardation	_____	Other

5. Are you taking medication? YES NO If yes, complete Medical Flow Sheet

6. Have you ever been prescribed a medication and chosen not to take it? YES NO

If yes, list medication and reason for not taking it: _____

7. Have you been hospitalized in the last 6 months? YES NO If yes, specify when, where, why, length:

8. Have you ever been a victim of violence? If yes, explain _____

9. Has your partner or ex-partner recently hit you or physically hurt you or threatened to hurt someone close to you? YES NO

If yes, complete below safety assessment, provide resources and file mandated report

_____ Are you afraid to go home?	_____ Have there been threats of homicide or suicide?
_____ Are there weapons present?	_____ Are family members being abused or at risk?
_____ Can you stay w/ family or friends?	_____ Do you need access to a shelter?
_____ Do you want police intervention?	

DRUG HISTORY

10. Do you smoke cigarettes? YES NO If yes, number of packs per day: _____

11. Have you ever used drugs or alcohol? YES NO
If yes, explain: _____

12. Have you ever injected drugs? YES NO If yes, did you or do you:
share needles ___ all of the time ___ often ___ some of the time ___ rarely ___ never
clean needles ___ all of the time ___ often ___ some of the time ___ rarely ___ never
bleach needles ___ all of the time ___ often ___ some of the time ___ rarely ___ never

SEXUAL HISTORY

13. Are you currently sexually active? YES NO If yes, do you use birth control? YES NO
What method(s): _____

14. How often are you and your partner(s) using condoms? ___always ___ often ___sometimes ___never

15. How many partners have you been with in the last 6 months? _____ Sex of partners: M / F / BOTH

16. Are any of your partners known to be HIV positive or to have AIDS? YES NO

17. Have you ever exchanged sex for drugs or money? YES NO

WOMEN'S HEALTH HISTORY

18. When was your last normal menstrual period? _____
Results? _____

19. When was your last Pap smear? _____ Brest exam? _____

20. Pregnant? YES NO If yes, receiving prenatal care? YES NO
Where? _____
EDC _____ gravida (# pregnancies) _____ parity (# live births) _____ # abortions _____

FOLLOW-UP NEEDS

PROGRESS NOTES

General Medical

___ TB screening _____
___ tetanus booster _____
___ dental evaluation _____

Drug History

___ smoking cessation _____
___ drug tx program _____

Sexual History

___ HIV info/ed _____
___ STD screening _____

Women's Health

___ Pap/breast screening _____
___ family planning _____
___ prenatal care _____
___ pregnancy test _____

Domestic Violence

___ safety assessment _____

Signature: _____ Date: _____

APPENDIX B

Resources for Education and Training Materials Websites

Fact Sheets

www.cdc.gov/nchstp/tb/pubs/dtbefax.htm

Interactive Core Curriculum on Tuberculosis

www.cdc.gov/nchstp/tb/webcourses/CoreCurr/index.htm

Los Angeles Resources

www.lapublichealth.org/tb

Major Guidelines

www.cdc.gov/tb

Publication – Reemerging Tuberculosis: Tuberculosis Genotyping Network. *Emerging Infections Diseases*, 8(11), 2002

www.cdc.gov/ncidod/eid/vol8no11/contents_v8n11.htm

Slide Sets

www.cdc.gov/nchstp/tb/pubs/slidesets/slides.htm

TB Education and Training Resources

www.findtbresources.org

Tuberculosis Self-Study Modules

www.cdc.gov/phtn/tbmodules