

Tuberculosis

1. DISEASE REPORTING

A. Purposes of Reporting and Surveillance

1. To identify and ensure the adequate evaluation and treatment of persons with TB disease.
2. To identify the contacts of TB cases and ensure their evaluation.
3. To ensure that all eligible infected contacts are offered and complete preventive therapy

B. Legal Reporting Requirements

1. Health care providers: immediately notifiable to local health jurisdiction (WAC 246-101-101).
2. Hospital: immediately notifiable to local health jurisdiction (WAC 246-101-301).
3. Laboratories: initial culture notifiable to local health jurisdiction within two days; (WAC 246-101-201).
4. Local health jurisdictions: notifiable to the Washington State Department of Health (DOH) within 7 days of case investigation or summary required within 21 days (WAC 246-101).

C. Local Health Jurisdiction Investigation Responsibilities

1. Start the initial assessment of the patient within ≤ 1 work day of receiving the case report and do or assure the following:
<http://www.doh.wa.gov/cfh/TB/Manual/Sections/Section1.pdf>, page 1.11
2. Communicate to Washington State TB program staff:
 - Enter case into TB Public Health Issue Management System (PHIMS) within 7 days of the LHJ receiving notification of the suspect case AND
 - Submit the “Contact Investigation Form” to WA State TB Services within 2 weeks.

D. Washington State Tuberculosis Program Objectives through 2009

1. All newly diagnosed cases of TB will be reported to CDC using the electronic reporting system developed by the Washington State Department of Health, called PHIMS. There will be at least 95% completeness for the key variables in the expanded RVCT.
2. At least 80% of immigrants and refugees designated as Class B1, B2 were appropriately evaluated within 60 days.
3. At least 90% of patients with newly diagnosed TB, for whom therapy for 12 months or less is indicated, will complete a course of curative TB treatment within 12 months of initiation of treatment.
4. At least 80% of patients being treated for active tuberculosis will be on Directly Observed Therapy (DOT).
5. HIV status will be reported for at least 90% of all newly reported culture-positive TB cases age 25–44.

6. Drug susceptibility results will be reported for at least 95% of all newly reported, culture positive TB cases.
7. Decrease the TB incidence rate to 13.0 cases / 100,000 among American Indian/ Native Alaskan persons.
8. Contacts will be identified for at least 80% of newly reported sputum AFB-smear positive TB cases.
9. At least 60% of contacts to sputum AFB-smear positive TB cases will be evaluated for infection and disease.
10. At least 60% of infected contacts who are started on treatment for latent TB infection will complete a regimen.

2. THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Tuberculosis is a communicable disease caused by *Mycobacterium tuberculosis*, or the tubercle bacillus.

B. Description of Illness

When droplet nuclei are inhaled, most of the larger particles become lodged in the upper respiratory tract, where infection is unlikely to develop. However, smaller droplet nuclei containing the tubercle bacilli may reach the alveoli, where infection begins.

The tubercle bacilli that reach the alveoli are ingested by alveolar macrophages; the majority of these bacilli are destroyed or inhibited. A small number multiply intracellularly and are released when the macrophages die. These bacilli can spread through the lymphatic channels to regional lymph nodes and then through the bloodstream to more distant tissues and organs, including areas in which TB disease is most likely to develop: the apices of the lungs, the kidneys, the brain, and bone. Extracellular bacilli attract macrophages from the bloodstream. The immune response kills most of the bacilli, leading to the formation of a granuloma. At this point the person has TB infection, which can be detected by using the tuberculin skin test or IGRA (IFN-g release assay). It may take 2-10 weeks for the infected person to develop a positive reaction to the tuberculin skin test. Immune responses soon develop to kill the bacilli. Within 2 to 10 weeks after infection, the immune system is usually able to halt the multiplication of the tubercle bacilli, preventing further spread.

Persons who are infected with *M. tuberculosis*, but who do not have TB disease cannot spread the infection to other people. TB infection in a person who does not have TB disease is not considered a case of TB and is often referred to as latent TB infection (LTBI).

When the immune system is not able to halt the multiplication of tubercle bacilli, TB disease results. TB disease presents as pulmonary TB (80%), extrapulmonary TB (20%), or a combination of the two. The symptoms of pulmonary TB include cough, chest pain, and hemoptysis; the specific symptoms of extrapulmonary TB depend on the site of disease. Systemic symptoms consistent with TB include fever, chills, night sweats, appetite loss, weight loss, and easy fatigability.

C. Tuberculosis in Washington State

Washington experienced a slight decrease in the number of TB cases with 291 cases reported in 2007 vs. 228 cases reported in 2008. The crude incidence rate of TB was an all time low (4.4/100,000 in 2007 vs. 3.5/100,000 in 2008). Sixteen of the 39 counties in Washington reported no new cases of TB in 2008 and 17 reported five or fewer cases. Ten counties reported greater than five TB cases. King (121), Snohomish (25) and Pierce (18) accounted for seventy-two percent of 2008 cases in Washington State.

Seventy-six percent of the 2008 tuberculosis cases in Washington were among foreign-born immigrants or refugees from counties with high rates of tuberculosis; Vietnam, Mexico, the Philippines, or Ethiopia. The proportion of foreign-born cases continues to rise in Washington (75% in 2007 vs. 76% in 2008).

Most TB cases among foreign-born people are likely the result of reactivation of infection acquired abroad, although some transmission is occurring in the U.S. The risk of disease among the foreign-born also appears related to chronological age and age at immigration; younger people and those who immigrated at younger ages are at lower risk for subsequent infection with TB.

D. Reservoir

Primarily humans, rarely primates; in some areas, diseased cattle, badgers, swine, and other mammals are infected.

E. Modes of Transmission

TB is spread from person to person through the air. When a person with pulmonary or laryngeal TB coughs, sneezes, speaks, or sings, droplet nuclei containing *M. tuberculosis* are expelled into the air. Depending on the environment, these tiny particles (1–5 microns in diameter) can remain suspended in the air for several hours.

If another person inhales air containing droplet nuclei, transmission may occur. The probability that TB will be transmitted depends on four factors:

1. The infectiousness of the person with TB (the number of organisms expelled into the air),
2. The environment in which exposure occurred,
3. The duration of exposure, and
4. The virulence of the organism.

The best way to stop transmission is to isolate patients with infectious TB immediately and start effective TB therapy. Infectiousness declines rapidly after adequate therapy is started, as long as the patient adheres to the prescribed regimen.

Persons at the highest risk of becoming infected with *M. tuberculosis* are close contacts, persons who had prolonged, frequent, or intense contact with a person with infectious TB. Close contacts may be family members, roommates, friends, coworkers, or others. Data collected by CDC since 1987 show that infection rates have been relatively stable, ranging from 21% to 23% for the contacts of infectious TB patients. HIV-positive persons with TB disease are not considered more infectious than HIV-negative persons with TB disease.

Extrapulmonary TB is rarely contagious (except for laryngeal TB); however, transmission from extrapulmonary sites has been reported during aerosol-producing procedures, such as autopsies and tissue irrigation.

F. Incubation Period

From infection to development of a positive Tuberculin Skin Test (TST) or IGRA is 2 to 10 weeks. The risk of developing tuberculosis disease is highest during the 6 months after infection and remains high for 2 years; however, many years can elapse between initial infection and disease.

G. Period of Communicability

Determining the infectious period focuses the investigation on those contacts most likely to be at risk for infection and sets the time frame for testing contacts. Because the start of the infectious period cannot be determined with precision by available methods, a practical estimation is necessary. On the basis of expert opinion, a person should be considered infectious approximately 3 months prior to diagnosis. In certain circumstances, persons may have been communicable for longer than three months prior to diagnosis.) For example, a patient (or the patient's associates) might have been aware of protracted illness (in extreme cases, >1 year). Information from the patient interview and from other sources should be assembled to assist in estimating the infectious period. Helpful details are the approximate dates that TB symptoms were noticed, mycobacteriologic results, and extent of disease (especially the presence of large lung cavities, which imply prolonged illness and infectiousness).

H. Treatment

For most patients, the preferred regimen for treating TB disease consists of an initial 2-month phase of four drugs: isoniazid, rifampin, pyrazinamide, and ethambutol followed by a 4-month continuation phase of isoniazid and rifampin. Streptomycin may be substituted for ethambutol, but must be given by injection. Ethambutol (or streptomycin) can be discontinued when drug susceptibility results show the infecting organism to be fully drug-susceptible. TB treatment regimens may need to be altered for HIV-positive patients taking HIV protease inhibitors. Whenever possible, the care for HIV-related TB should be provided by or in consultation with experts in the management of both TB and HIV disease. The major determinant of the outcome of treatment is patient adherence to the drug regimen. Thus, careful attention should be paid to measures designed to foster adherence, and treating all patients with directly observed therapy (DOT) is strongly recommended.

Multidrug-resistant TB (i.e., TB resistant to both isoniazid and rifampin) presents difficult treatment problems and requires expert consultation. The consequences of treatment failure and further acquired drug resistance make DOT a high priority for cases of drug-resistant TB.

For additional information regarding treatment of TB:

<http://www.doh.wa.gov/cfh/TB/Manual/Sections/Section5.pdf>

3. CASE DEFINITIONS

A. Clinical Case Definition (must meet ALL of the following criteria):

- Positive tuberculin skin test (negative test is allowed for those patients with proven anergy or an AIDS diagnosis); AND
- Other signs and symptoms compatible with TB, such as an abnormal or unstable chest x-ray or clinical evidence of current disease; AND
- X-ray improvement on chemotherapy; AND
- Treatment with two or more anti-tuberculosis medications; AND
- Completed diagnostic evaluation.

B. Laboratory Criteria for Diagnosis (must meet ANY of the following criteria)

- Isolation of *Mycobacterium tuberculosis* using culture techniques from a clinical specimen; OR
- Demonstration of *Mycobacterium tuberculosis* from a clinical specimen by DNA probe or mycolic acid pattern on high-pressure liquid chromatography; OR
- Demonstration of acid-fast bacilli in a clinical specimen when a culture has not been or cannot be obtained in a patient with clinical symptoms of tuberculosis.

C. Case Definition

- Suspect Tuberculosis - Any person who reports clinical symptoms associated with TB, e.g. productive, prolonged cough, chest pain, hemoptysis, fever, chills, loss of appetite, or weight loss, and is evaluated by a medical practitioner for tuberculosis, which may include diagnostic X-rays and bacteriology collection, is considered a suspect. All practicing physicians are required by Washington State law to report all suspects of TB to their local health authorities immediately (WAC 246 -101-101); in turn, local health authorities are required to report these suspects within seven days to the WA State TB Services (WAC 246 -101- 510).
- Clinical Case definition – A case that meets the following criteria: A positive tuberculin skin tests, other signs and symptoms compatible with tuberculosis, treatment with two or more antituberculosis medications, completed diagnostic evaluation.
- Laboratory criteria for diagnosis- Isolation of *M. tuberculosis* from a clinical specimen or, demonstration of *M. tuberculosis* from a clinical specimen by nucleic acid amplification test or, demonstration of acid-fast bacilli in a clinical specimen when a culture has not been or cannot be obtained.
- Confirmed Tuberculosis: a case that meets the clinical case definition or is laboratory confirmed

4. DIAGNOSIS AND LABORATORY SERVICES

A. Diagnosis

Persons suspected of having TB should be referred for a medical evaluation, which should include a medical history, a physical examination, a test for TB including a Mantoux or IGRA, a chest radiograph, and any appropriate bacteriologic or histologic examinations. Positive bacteriologic cultures for *M. tuberculosis* confirm the diagnosis of TB. Clinicians should not wait for bacteriologic culture results before starting therapy. Therapy should be started when the potential risks of TB exceed the risk of therapy.

<http://www.doh.wa.gov/cfh/TB/Manual/Sections/Section10.pdf>

B. Tests Available at PHL

Laboratories are required to submit *M. tuberculosis* isolates to PHL. PHL routinely confirms the identification of the organism and performs antibiotic susceptibility testing on at least one isolate from each patient. Routine susceptibilities include IRZE, however susceptibilities for second line agents can be done by request.

Table 1: Turn Around Times for Tests Performed at PHL

Test:	Timeline:
Acid-fast bacilli (AFB) smear	Within 24 hours from receipt of specimen in the laboratory Monday through Friday
Culture	Cultures are incubated for up to 8 weeks before reported as negative. Time to detection of mycobacterial growth is dependent on growth rate. Ideally, growth of <i>Mycobacterium tuberculosis</i> should be detected within 14 days of culture set up, although this is dependent upon many factors, including overgrowth by other organisms, etc.
Culture identification	The goal for <i>M.tuberculosis</i> complex identification should be within 21 days of culture set up. Time to <i>M. tuberculosis</i> complex identification is dependent upon growth rate.
Drug susceptibility	Ideally, results of first-line drugs should be available within 28 days from specimen receipt in the laboratory, but this is dependent on many factors (for example, growth rate and presence of other organisms which must be eliminated to provide a pure culture for testing). An additional 3-4 weeks is needed for the confirmation of resistance and testing for the second line anti-TB drugs.
Nucleic acid amplification (NAA) test (MTD)	Within 2-3 working days from receipt of specimen in the laboratory. Tuesday and Thursday
Epidemiologic Monitoring	
Genotyping	Isolates forwarded to Berkeley Laboratory for genotyping. Ideally 2 to 4 weeks from receipt of specimen at the Berkeley Laboratory Results reported to LHJ by WA State TB Services

C. Specimen Collection

Information regarding the TB Specimen Collection kits can be found at:

<http://www.doh.wa.gov/EHSPHL/PHL/Brochures/flyerTBship.pdf>

All specimens should be submitted with a completed PHL FORM:

<http://www.doh.wa.gov/ehsphl/phl/Forms/Mycobacteriology.pdf>

For detailed information regarding case investigations and a Diagnosis of TB Check

List, see:

<http://www.doh.wa.gov/cfh/TB/Manual/Sections/Section4.pdf>

A. Evaluate the Diagnosis / Assess the Patient

1. When a suspected or confirmed case of tuberculosis (TB) disease is reported to the local public health agency: Receive the case report

- Assign the case manager

2. Take infection control precautions (see Section 6 of TB guidelines)

3. Perform the initial assessment of the patient:

- Start the initial assessment within ≤ 1 business day of the case report for infectious patients; and ≤ 3 business days of the case report for others.
- Consult with medical provider, local health officer, or DOH TB Medical Consultant within ≤ 1 business day of the case report
- Conduct an initial interview of the patient and visit the patient's home:
 - If the patient is hospitalized, conduct the initial assessment during the patient's hospitalization. If the patient is not hospitalized, conduct the initial assessment at the first clinic visit or during a home visit
 - Collect and submit 3 sputum samples for AFB smear and culture (if not done earlier). Obtain specimens 8 to 24 hours apart with one being an early morning specimen
 - Visit the patient's home (if initial visit occurred in the hospital) within ≤ 3 business days of hospital discharge
 - Reinterview the patient within 1 to 2 weeks after the initial interview
- If the patient is hospitalized outside of his or her county of residence: The role of the LHJ TB Program in the county in which the patient is hospitalized is to coordinate with the LHJ TB Program in the county of the patient's residence.
- Assure medical evaluation of the patient within 1 week of referral
- Submit the "Tuberculosis Contact Investigation Form" to WA State TB Services within 2 weeks
- Use the data collected from the physician consultation(s), record review, and patient interviews to complete the following tasks:
 - Review demographic information
 - Ascertain the extent of TB illness
 - Review the patient's health history
 - Determine the index patient's infectious period (count 3 months back from start of symptoms-cough, weight loss, fever, chest pain, night sweats)
 - Evaluate the patient's knowledge and beliefs about TB
 - Administer, measure, and interpret a Mantoux TST or IGRA
 - Screen for HIV

- Obtain baseline biochemistry tests (CBC, liver function) for toxicity monitoring (order tests based on drug regimen and for special situations such as HIV infections, history of liver disease, alcoholism, and pregnancy):
 - Complete blood count
 - Platelets
 - Liver function tests
 - Uric acid measurements
 - Assure MD physical exam
 - Assure that face-to-face initial encounters and skin testing or IGRA are conducted among high and medium priority contacts within 7 business days after their being listed in the investigation
- Submit the “TB Contact Investigation Form” to WA State TB Services within 2 weeks

GUIDELINES FOR THE EVALUATION OF PULMONARY TUBERCULOSIS IN ADULTS IN FIVE CLINICAL SCENARIOS

Patient and Setting	Recommended Evaluation
Any patient with a cough of $\geq 2-3$ weeks' duration	Chest radiograph: if suggestive of tuberculosis (TB)*, collect 3 sputum specimens for acid-fast bacilli (AFB) smear microscopy, culture, and nucleic acid amplification (NAA). NAA testing is available at DOH Public Health Lab (PHL).
Any patient at high risk for TB with an unexplained illness, including respiratory symptoms of $\geq 2-3$ weeks' duration	Chest radiograph: if suggestive of TB, collect 3 sputum specimens for AFB smear microscopy, culture, and NAA (available at PHL).
Any patient with human immunodeficiency virus (HIV) infection and unexplained cough or fever OR any patient at high risk for TB with a diagnosis of community-acquired pneumonia who has not improved after 7 days of treatment	Chest radiograph; and collect 3 sputum specimens for AFB smear microscopy, culture, and NAA (available at PHL).
Any patient at high risk for TB with incidental findings on chest radiograph suggestive of TB even if symptoms are minimal or absent ^{†§}	Review of previous chest radiographs, if available, 3 sputum specimens for AFB smear microscopy, NAA (available at PHL), and culture.
<p>* Opacities with or without cavitation in the upper lobes or the superior segments of the lower lobes.ⁱ</p> <p>§ Chest radiograph performed for any reason, including targeted testing for latent TB infection and screening for TB disease.</p>	

Source: Adapted from: ATS, CDC, IDSA. Controlling tuberculosis in the United States: recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. *MMWR* 2005;54(No. RR-12):33.

B. Identify Potentially Exposed Persons and Potential Sites of Transmission

Determine if a contact investigation is needed. Contact investigations are conducted for persons with suspected or confirmed pulmonary, laryngeal, or pleuropulmonary tuberculosis (TB) disease with the following:

- Pulmonary cavities and/or

- Respiratory specimens positive for acid-fast bacilli (AFB) in the sputum smear

If an investigation is indicated, start the contact investigation within ≤ 1 business day of the case report

- Determine the start of the index patient's infectious period
<http://www.doh.wa.gov/cfh/TB/Manual/Sections/Section9.pdf>
- Interview the patient to identify contacts exposed during this period
- Determine places where the patient spent time during the infection period and where transmission may have occurred

C. Environmental Evaluation

A field investigation includes visiting the patient's home or shelter, workplace/school (if any), and the other places where the patient said he or she spent time while infectious. The field investigation is important and should be done even if the patient interview has already been conducted. The purpose of the field investigation is to evaluate the environmental characteristics of the place or places in which exposure may have occurred. The field investigation may provide additional information for use in the risk assessment and identify additional contacts.

During field visits, the healthcare worker should do the following:

- **Observe environmental characteristics**, such as room size, crowding, and ventilation, to estimate the risk of tuberculosis (TB) transmission.
- **Identify additional contacts** (especially children) and their locating information, such as phone numbers and addresses.
- **Look for evidence of other contacts** who may not be present at the time of the visit (for example, pictures of others who may live in or visit the house, shoes of others who may live in the house, or toys left by children).
- **Interview and apply skin tests (TST's) or draw blood for IGRA testing on high- and medium-priority contacts** who are present and arrange for reading the results of the TST's.
 - <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5415a1.htm>, Figure 2
- **Educate the contacts** about the purpose of the contact investigation, the basics of transmission, the risk of transmitting *Mycobacterium tuberculosis* to others, and the importance of testing, treatment, and follow-up for TB infection and disease.
- **Refer contacts who have TB symptoms** to the local health jurisdiction or a community based healthcare provider for a medical evaluation, including radiography and sputum collection.

6. CONTROLLING FURTHER SPREAD

Background

There are three types of infection control measures. The first are administrative controls, which are primarily aimed at early identification, isolation, and appropriate treatment of infectious patients. The second are environmental controls, which focus on preventing the spread and reducing the concentration of infectious droplet nuclei in the air. The third

is personal respiratory protection, which may provide additional protection for healthcare workers in high-risk settings such as isolation rooms and cough-inducing or aerosol-generating procedures.

Personal Respiratory Protection:

Although administrative controls and environmental controls are most effective in controlling the spread of TB, they do not eliminate the risk of transmission entirely. Personal respiratory protection, the third level of infection control, is also used in higher-risk settings.

- http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm?s_cid=rr5417a1_e, Appendix C

The purpose of a respirator is to reduce exposure by filtering out TB bacilli from room air before the air is breathed into a person's lungs. Respirators used for TB control should be approved for use by the National Institute for Occupational Safety and Health (NIOSH).

A. Infection Control Recommendations / Case Management

1. Hospitalized patient: Isolate the patient, if necessary (if the patient has positive acid-fast bacilli [AFB] sputum smear results and/or cavitory disease) or high suspicion for active TB even if smear negative. Advise staff to take personal respiratory precautions, if necessary
2. Non-hospitalized patients with sputum smear positive TB should not attend school, go to work, fly on commercial airlines, etc. For additional information, regarding infection control: <http://www.doh.wa.gov/cfh/TB/Manual/Sections/Section11.pdf>
3. Confirm the completion of treatment
 - Verify completion of treatment after treatment was started based on:
 - Regimen
 - Interruptions
 - Response to treatment
 - Number of weeks on DOT
 - Number of doses taken (weekly and twice, thrice, and once weekly)
 - Complete "Cohort Review Form"
 - Submit patient update to DOH using PHIMS and hardcopy records of ongoing contact investigations

B. Contact Management

During the initial contact encounter, which should be accomplished within 3 working days of the contact having been listed the investigation; the investigator gathers background health information and makes a face-to-face assessment of the person's health. Administering a skin test at this time accelerates the diagnostic evaluation.

The health department record should include:

- previous *M. tuberculosis* infection or disease and related treatment;

- contact's verbal report and documentation of previous TST results;
- current symptoms of TB illness (e.g., cough, chest pain, hemoptysis, fever, chills, night sweats, appetite loss, weight loss, malaise, or easy fatigability);
- medical conditions or risk factors making TB disease more likely (e.g., HIV infection, intravenous drug use, diabetes mellitus, silicosis, prolonged corticosteroid therapy, other immunosuppressive therapy, head or neck cancer, hematological and reticuloendothelial diseases, end-stage renal disease, intestinal bypass or gastrectomy, chronic malabsorption syndrome, or low body weight);
- mental health disorders (e.g., psychiatric illnesses and substance abuse disorders);
- type, duration, and intensity of TB exposure; and
- sociodemographic factors (e.g., age, race or ethnicity, residence, and country of birth) (see Data Management and Evaluation of Contact Investigations).

For more information: <http://www.doh.wa.gov/cfh/TB/Manual/Sections/Section9.pdf>

C. Environmental Measures

See Environmental Evaluation above.

7. MANAGING SPECIAL SITUATIONS

A. TB Outbreaks

A TB outbreak indicates potential extensive transmission. 1) a TB patient was contagious, 2) contacts were exposed for a substantial period, and 3) the interval since exposure has been sufficient for infection to progress to disease. An outbreak investigation involves several overlapping contact investigations, with a surge in the need for public health resources. More emphasis on active case finding is recommended, which can result in more contacts than usual having chest radiographs and specimen collection for mycobacteriologic assessment.

B. Congregate Settings:

Overall concerns associated with congregate settings (e.g. correctional facilities; workplaces; hospitals and health-care settings; schools; homeless shelters; drug or alcohol usage sites) include 1) the substantial numbers of contacts, 2) incomplete information regarding contact names and locations, 3) incomplete data for determining priorities, 4) difficulty in maintaining confidentiality, 5) collaboration with officials and administrators who are unfamiliar with TB, 6) legal implications, and 7) media coverage. Certain settings require intensified onsite approaches for ensuring that contacts are completely evaluated and for meeting objectives of testing for Latent TB Infection.

C. Transportation Modes:

Transmissions of *M.tuberculosis* have been confirmed on vessels at sea, commercial aircraft, passenger trains and buses. Investigations should be made when single flight exposure time is >8 hours as currently recommended for commercial airline travel.

D. Multiple Drug Resistant (MDR) and Extreme Drug Resistant (XDR) TB:

The occurrence of drug resistance does not change recommendations for assigning contact priorities. Special consideration should be given to instances when resistance is

acquired during treatment or when drug resistance was detected late during the treatment course, because these patients might have had prolonged periods of infectiousness. Treatment regimens for infected contacts require expert consultation.

8. ROUTINE PREVENTION

A. Vaccine Recommendations

None.

B. Prevention Recommendations

State and local health departments have the primary responsibility for preventing and controlling TB. However, other health care providers who provide TB services also have responsibility for preventing and controlling TB in their communities. Prevention and control efforts should include three priority strategies: (1) identifying and treating all persons who have TB disease, (2) finding and evaluating persons who have been in contact with TB patients to determine whether they have TB infection or disease, and treating them appropriately, and (3) testing high-risk groups for TB infection to identify candidates for treatment of latent infection and to ensure the completion of treatment.

<http://www.doh.wa.gov/cfh/TB/Manual/Sections/Section6.pdf>

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UPDATES

April 2009

ⁱ Daley CL, Gotway MB, Jasmer RM. *Radiographic manifestations of tuberculosis: a primer for clinicians*. San Francisco, CA: Francis J. Curry National Tuberculosis Center; 2003:1–30.