

Appendix A. Administrative, environmental, and respiratory-protection controls for selected health-care settings

| Setting | Administrative controls* | Environmental controls† | Respiratory-protection controls§ |
|---|---|---|--|
| Settings in Which Patients with Suspected or Confirmed Infectious Tuberculosis (TB) Disease are not Expected to be Encountered | | | |
| Triage only: Initial evaluation of patients who will transfer to another setting | <ul style="list-style-type: none"> Implement a written infection-control plan for triage of patients with suspected or confirmed TB disease. Update annually. Promptly recognize and transfer patients with suspected or confirmed TB disease to a facility that treats persons with TB disease. Before transferring the patient out of this setting, hold the patient in an area separate from health-care workers (HCWs) and other persons. | <ul style="list-style-type: none"> Settings in which patients with suspected or confirmed TB disease are rarely seen and not treated do not need an airborne infection isolation (All) room. Place any patient with suspected or confirmed TB disease in an All room if available or in a separate room with the door closed, away from others and not in a waiting area. Air-cleaning technologies (e.g., high efficiency particulate air [HEPA] filtration and ultraviolet germicidal irradiation [UVGI]) can be used to increase the number of equivalent air changes per hour [ACH]. (see Supplement, Environmental Controls). | <ul style="list-style-type: none"> Settings in which patients with suspected or confirmed TB disease are rarely seen and not treated do not need a respiratory-protection program. If the patient has signs or symptoms of infectious TB disease (positive acid-fast bacilli [AFB] sputum smear result), consider having the patient wear a surgical or procedure mask (if possible) during transport, in waiting areas, or when others are present. |
| Inpatient Settings in Which Patients with Suspected or Confirmed Infectious TB Disease are Expected to be Encountered | | | |
| | <ul style="list-style-type: none"> Perform an annual risk assessment for the setting. Implement a written infection-control plan for the setting and evaluate and update annually. Provide TB training, education, and screening for HCWs as part of the infection-control plan. Establish protocols for problem evaluation. When possible, postpone nonurgent procedures that might put HCWs at risk for possible exposure to <i>M. tuberculosis</i> until patients are determined to not have TB disease or are noninfectious. Collaborate with state or local health departments when appropriate. | <ul style="list-style-type: none"> In settings with a high volume of patients with suspected or confirmed TB disease, at least one room should meet requirements for an All room (see Supplement, Environmental Controls). Air-cleaning technologies (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls). | <ul style="list-style-type: none"> For HCWs, visitors,[¶] and others entering the All room of a patient with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. If the patient has signs or symptoms of infectious TB disease consider having the patient wear a surgical or procedure mask, if possible, (e.g., if patient is not using a breathing circuit) during transport, in waiting areas, or when others are present. |
| Patient rooms | <ul style="list-style-type: none"> Place patients with suspected or confirmed TB disease in an All room. | <ul style="list-style-type: none"> At least one inpatient room should meet requirements for an All room to be used for patients with suspected or confirmed infectious TB disease (see Supplement, Environmental Controls). Air-cleaning technologies (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls; Table 2). | <ul style="list-style-type: none"> For HCWs, visitors,[¶] and others entering the All room of a patient with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. Persons infected with human immunodeficiency virus (HIV) or who have other immunocompromising conditions should especially avoid exposure to persons with TB disease. If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, (e.g., if patient is not using a breathing circuit) during transport, in waiting areas, or when others are present. |

Appendix A. (Continued) Administrative, environmental, and respiratory-protection controls for selected health-care settings

| Setting | Administrative controls [*] | Environmental controls [†] | Respiratory-protection controls [§] |
|--|--|---|--|
| Inpatient Settings in Which Patients with Suspected or Confirmed Infectious TB Disease are Expected to be Encountered | | | |
| Emergency departments (EDs) | <ul style="list-style-type: none"> Implement a written infection-control plan for triage of patients with suspected or confirmed TB disease. Update annually. Patients with signs or symptoms of infectious TB disease should be moved to an All room as soon as possible. | <ul style="list-style-type: none"> In settings classified as medium risk or potential ongoing transmission, at least one room should meet requirements for an All room to be used for patients with suspected or confirmed infectious TB disease (see Supplement, Environmental Controls; Table 2). Air-cleaning technologies (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls). | <ul style="list-style-type: none"> For HCWs, visitors,[¶] and others entering the All room of a patient with suspected or confirmed TB disease, at least N95 disposable respirators should be worn. If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, (e.g., if patient is not using a breathing circuit) during transport, in waiting areas, or when others are present. |
| Intensive care units (ICUs) | <ul style="list-style-type: none"> Place patients with suspected or confirmed infectious TB disease in an All room, separate from HCWs and other patients, if possible. | <ul style="list-style-type: none"> In settings with a high volume of patients with suspected or confirmed TB disease, at least one room should meet requirements for an All room to be used for such patients (see Supplement, Environmental Controls; Table 2). Bacterial filters should be used routinely in breathing circuits of patients with suspected or confirmed TB disease and should filter particles 0.3 µm in size in unloaded and loaded situations with a filter efficiency of ≥95%. | <ul style="list-style-type: none"> For HCWs, visitors,[¶] and others entering the All room of a patient with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. If the patient has signs or symptoms of infectious TB disease and is suspected of being contagious (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible (e.g., if patient is not using a breathing circuit) during transport, in waiting areas, or when others are present. |
| Surgical suites | <ul style="list-style-type: none"> Schedule a patient with suspected or confirmed TB disease for surgery when a minimum number of HCWs and other patients are present, and as the last surgical case of the day to maximize the time available for removal of airborne contamination (see Supplement, Environmental Controls; Table 1). For postoperative recovery, place patients in a room that meets requirements for an All room. | <ul style="list-style-type: none"> If a surgical suite has an operating room (OR) with an anteroom, that room should be used for TB cases. If surgery is needed, use a room or suite of rooms that meet requirements for All rooms (see Supplement, Environmental Controls). If an All or comparable room is not available for surgery or postoperative recovery, air-cleaning technologies (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls). If the health-care setting has an anteroom, reversible flow rooms (OR or isolation) are not recommended by the American Institute of Architects or American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc. Bacterial filters should be used routinely in breathing circuits of patients with suspected or confirmed TB disease and should filter particles 0.3 µm in size in an unloaded and loaded situation with a filter efficiency of >95%. | <ul style="list-style-type: none"> For HCWs present during surgery of a patient with suspected or confirmed infectious TB disease, at least N95 disposable respirators, unvalved, should be worn. Standard surgical or procedure masks for HCWs might not have fitting or filtering capacity for adequate protection. If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, before and after the procedure. Valved or positive-pressure respirators should not be used because they do not protect the sterile surgical field. |

Appendix A. (Continued) Administrative, environmental, and respiratory-protection controls for selected health-care settings

| Setting | Administrative controls [*] | Environmental controls [†] | Respiratory-protection controls [§] |
|--|---|--|---|
| Inpatient Settings in Which Patients with Suspected or Confirmed Infectious TB Disease are Expected to be Encountered | | | |
| Laboratories** | <ul style="list-style-type: none"> • Conduct a laboratory-specific risk assessment. • In general, biosafety level (BSL)-2 practices, procedures, containment equipment, and facilities are required for nonaerosol-producing manipulations of clinical specimens. BSL-3 practices, procedures, and containment equipment might be necessary for certain aerosol-generating or aerosol-producing manipulations. | <ul style="list-style-type: none"> • Environmental controls should meet requirements for clinical microbiology laboratories in accordance with guidelines by Biosafety in Microbiological and Biomedical Laboratories (BMBL) and the AIA. • Perform all manipulation of clinical specimens that could result in aerosolization in a certified class I or II biosafety cabinet (BSC). | <ul style="list-style-type: none"> • For laboratory workers who manipulate clinical specimens (from patients with suspected or confirmed infectious TB disease) outside of a BSC, at least N95 disposable respirators should be worn. |
| Bronchoscopy suites†† | <ul style="list-style-type: none"> • Use a dedicated room to perform bronchoscopy procedures. • If a patient with suspected or confirmed infectious TB disease must undergo bronchoscopy, schedule the procedure when a minimum number of HCWs and other patients are present, and schedule the patient at the end of the day. • Do not allow another procedure to be performed in the bronchoscopy suite until sufficient time has elapsed for adequate removal of <i>M. tuberculosis</i>-contaminated air (see Supplement, Environmental Controls; Table 1). | <ul style="list-style-type: none"> • Bronchoscopy suites should meet requirements for an All room to be used for patients with suspected or confirmed infectious TB disease (see Supplement, Environmental Controls; Table 2). • Air-cleaning technologies (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls). • Closing ventilatory circuitry and minimizing opening of such circuitry of intubated and mechanically ventilated patients might minimize exposure. • Keep patients with suspected or confirmed infectious TB disease in the bronchoscopy suite until coughing subsides. | <ul style="list-style-type: none"> • For HCWs present during bronchoscopic procedures of a patient with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. Protection greater than an N95 (e.g., a full-facepiece elastomeric respirator or powered air-purifying respirator (PAPR) should be considered. • If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, before and after the procedure. |
| Sputum induction and inhalation therapy rooms | <ul style="list-style-type: none"> • Implement a written infection-control plan in the setting. Update annually. • Use a dedicated room to perform sputum induction and inhalation therapy. • Schedule sputum induction and inhalation therapy when a minimum number of HCWs and other patients are present, and schedule the patient at the end of the day. • Do not perform another procedure in a booth or room where sputum induction or inhalation therapy on a patient with suspected or confirmed infectious TB disease was performed until sufficient time has elapsed for adequate removal of <i>M. tuberculosis</i>-contaminated air (see Supplement, Environmental Controls; Table 1). | <ul style="list-style-type: none"> • Perform sputum induction and inhalation therapy in booths with special ventilation, if possible. If booths are not available, sputum induction or inhalation therapy rooms should meet requirements for an All room to be used for patients with suspected or confirmed infectious TB disease (see Supplement, Environmental Controls; Table 2). • Air-cleaning technologies (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls). • Keep patients with suspected or confirmed infectious TB disease in the sputum induction or inhalation therapy room after sputum collection or inhalation therapy until coughing subsides. | <ul style="list-style-type: none"> • For HCWs present during sputum induction and inhalation therapy of a patient with suspected or confirmed infectious TB disease, a respirator with a level of protection of at least N95 disposable respirators should be worn. Respiratory protection greater than an N95 (e.g., a full-facepiece elastomeric respirator or PAPR) should be considered (see Supplement, Respiratory Protection). • If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, before and after the procedure. |

Appendix A. (Continued) Administrative, environmental, and respiratory-protection controls for selected health-care settings

| Setting | Administrative controls [*] | Environmental controls [†] | Respiratory-protection controls [§] |
|--|---|---|---|
| Inpatient Settings in Which Patients with Suspected or Confirmed Infectious TB Disease are Expected to be Encountered | | | |
| Autopsy suites | <ul style="list-style-type: none"> • Ensure proper coordination between attending physician(s) and pathologist(s) for proper infection control and specimen collection during autopsies performed on bodies with suspected or confirmed infectious TB disease. • Allow sufficient time to elapse for adequate removal of <i>M. tuberculosis</i>-contaminated air (see Supplement, Environmental Controls; Table 1) before performing another procedure. | <ul style="list-style-type: none"> • Autopsy suites should meet ACH requirements for an All room to be used for bodies with suspected or confirmed TB disease (see Supplement, Environmental Controls; Table 2). • Air-cleaning technologies (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls). • Consider using local exhaust ventilation to reduce exposures to infectious aerosols and vapors from embalming fluids. | <ul style="list-style-type: none"> • For HCWs present during autopsy on bodies with suspected or confirmed infectious TB disease, a respirator with a level of protection of at least an N95 disposable respirator should be worn. Protection greater than an N95 (e.g., a full-facepiece elastomeric respirator or PAPR) should be considered (see Supplement, Respiratory Protection), especially if aerosol generation is likely. • If another procedure cannot be delayed until sufficient time has elapsed for adequate removal of <i>M. tuberculosis</i>-contaminated air, staff should continue wearing respiratory protection while in the room (see Supplement, Environmental Controls; Table 1). |
| Embalming rooms | <ul style="list-style-type: none"> • Implement a written infection-control plan in the setting. Update annually. | <ul style="list-style-type: none"> • Embalming rooms should meet ACH requirements for an All room to be used for bodies with suspected or confirmed TB disease (see Supplement, Environmental Controls; Table 2). • Air-cleaning technologies (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls). | <ul style="list-style-type: none"> • For staff present during embalming procedures on bodies with suspected or confirmed infectious TB disease, a respirator with a level of protection of at least N95 disposable respirators should be worn. Protection greater than an N95 (e.g., a full-facepiece elastomeric respirator or PAPR) should be considered (see Supplement, Respiratory Protection), especially if aerosol generation is likely. • If another procedure cannot be delayed until sufficient time has elapsed for adequate removal of <i>M. tuberculosis</i>-contaminated air, staff should continue wearing respiratory protection while in the room. |
| Outpatient Settings^{§§} in Which Patients with Suspected or Confirmed Infectious TB Disease are Expected to be Encountered | | | |
| | <ul style="list-style-type: none"> • Perform an annual risk assessment for the setting. • Develop and implement a written infection-control plan for the setting and evaluate and update annually. • Provide TB training, education, and screening for HCWs as part of the infection-control plan. • Establish protocols for problem evaluation. • Collaborate with state or local health departments when appropriate. | <ul style="list-style-type: none"> • Environmental controls should be implemented based on the types of activities that are performed. • Patients with suspected or confirmed infectious TB disease requiring transport should be transported as discussed below under Emergency Medical Services (EMS). | <ul style="list-style-type: none"> • For HCWs, visitors,[¶] and others entering an All room of a patient with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. • If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible (e.g., if patient is not using a breathing circuit), during transport, in waiting areas, or when others are present. • If risk assessment indicates that respiratory protection is needed, drivers or HCWs who are transporting patients with suspected or confirmed infectious TB disease in an enclosed vehicle should wear at least an N95 disposable respirator. The risk assessment should consider the potential for shared air. |

Appendix A. (Continued) Administrative, environmental, and respiratory-protection controls for selected health-care settings

| Setting | Administrative controls* | Environmental controls† | Respiratory-protection controls§ |
|---|---|--|--|
| Outpatient Settings in Which Patients with Suspected or Confirmed Infectious TB Disease are Expected to be Encountered | | | |
| TB treatment facilities¶ | <ul style="list-style-type: none"> Physically separate immunosuppressed patients from those with suspected or confirmed infectious TB. Schedule appointments to avoid exposing HIV-infected or other severely immunocompromised persons to <i>M. tuberculosis</i>. | <ul style="list-style-type: none"> If patients with TB disease are treated in the clinic, at least one room should meet requirements for an All room (see Supplement, Environmental Controls; Table 2). Air-cleaning technologies (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls). Perform all cough-inducing or aerosol-generating procedures by using environmental controls (e.g., booth) or in an All room. Keep patients in the booth or All room until coughing subsides. Do not allow another patient to enter the booth or All room until sufficient time has elapsed for adequate removal of <i>M. tuberculosis</i>-contaminated air (see Supplement, Environmental Controls; Table 1). | <ul style="list-style-type: none"> For HCWs, visitors,[¶] and others entering the All room of a patient with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, during transport, in waiting areas, or when others are present. |
| Medical offices and ambulatory-care settings | <ul style="list-style-type: none"> Implement a written infection-control plan in the setting. Update annually. | <ul style="list-style-type: none"> In medical offices or ambulatory-care settings where patients with TB disease are treated, at least one room should meet requirements for an All room to be used for patients with suspected or confirmed infectious TB disease (see Supplement, Environmental Controls; Table 2). | <ul style="list-style-type: none"> For HCWs in medical offices or ambulatory care settings with patients with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, during transport, in waiting areas, or when others are present. |
| Dialysis units | <ul style="list-style-type: none"> Schedule dialysis for patients with TB disease when a minimum number of HCWs and other patients are present and at the end of the day to maximize the time available for removal of airborne contamination (see Supplement, Environmental Controls; Table 1). | <ul style="list-style-type: none"> Perform dialysis for patients with suspected or confirmed infectious TB disease in a room that meets requirements for an All room (see Supplement, Environmental Controls; Table 2). Air-cleaning technologies (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls). | <ul style="list-style-type: none"> For HCWs, visitors,[¶] and others entering the All room of a patient with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, during transport, in waiting areas, or when others are present. If risk assessment indicates the need for respiratory protection, drivers or HCWs who are transporting patients with suspected or confirmed infectious TB disease in an enclosed vehicle should wear at least an N95 disposable respirator. The risk assessment should consider the potential for shared air. |

Appendix A. (Continued) Administrative, environmental, and respiratory-protection controls for selected health-care settings

| Setting | Administrative controls [*] | Environmental controls [†] | Respiratory-protection controls [§] |
|---|--|--|--|
| Outpatient Settings in Which Patients with Suspected or Confirmed Infectious TB Disease are Expected to be Encountered | | | |
| Dental-care settings | <ul style="list-style-type: none"> If possible, postpone dental procedures of patients with suspected or confirmed infectious TB disease until the patient is determined not to have TB disease or to be noninfectious. | <ul style="list-style-type: none"> Treat patients with suspected or confirmed infectious TB disease in a room that meets requirements for an All room (see Supplement, Environmental Controls; Table 2). Air-cleaning technologies such as HEPA filtration and (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls). | <ul style="list-style-type: none"> For dental staff performing procedures on a patient with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. |
| Nontraditional Facility-Based Settings | | | |
| | <ul style="list-style-type: none"> Perform an annual risk assessment for the setting. Develop and implement a written infection-control plan for the setting and evaluate and update annually. Provide TB training, education, and screening for HCWs as part of the infection-control plan. Establish protocols for problem evaluation. Collaborate with state or local health departments when appropriate. | <ul style="list-style-type: none"> Environmental controls should be implemented based on the types of activities that are performed (see Supplement, Environmental Controls). Patients with suspected or confirmed infectious TB disease requiring transport should be transported as discussed in the EMS section. | <ul style="list-style-type: none"> For HCWs, visitors,[¶] and others entering the All room of a patient with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible (e.g., if patient is not using a breathing circuit), during transport, in waiting areas, or when others are present. |
| EMS | <ul style="list-style-type: none"> Include exposed emergency medical HCWs in the contact investigation of patients with TB disease if administrative, environmental, and respiratory-protection controls for TB infection control were not followed. | <ul style="list-style-type: none"> Patients with suspected or confirmed infectious TB disease requiring transport should be transported in an ambulance whenever possible. The ambulance ventilation system should be operated in the non-recirculating mode, and the maximum amount of outdoor air should be provided to facilitate dilution. If the vehicle has a rear exhaust fan, use this fan during transport. Airflow should be from the cab (front of vehicle), over the patient, and out the rear exhaust fan. If an ambulance is not used, the ventilation system for the vehicle should bring in as much outdoor air as possible, and the system should be set to non-recirculating. If possible, physically isolate the cab from the rest of the vehicle and have the patient sit in the back. | <ul style="list-style-type: none"> If risk assessment indicates the need for respiratory protection, drivers or HCWs who are transporting patients with suspected or confirmed infectious TB disease in an enclosed vehicle should wear at least an N95 disposable respirator. The risk assessment should consider the potential for shared air. If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, during transport, in waiting areas, or when others are present. |

Appendix A. (Continued) Administrative, environmental, and respiratory-protection controls for selected health-care settings

| Setting | Administrative controls [*] | Environmental controls [†] | Respiratory-protection controls [§] |
|---|---|---|---|
| Nontraditional Facility-Based Settings | | | |
| Medical settings in correctional facilities | <ul style="list-style-type: none"> Follow recommendations for inpatient and outpatient settings as appropriate. In waiting rooms or areas, follow recommendations for TB treatment facilities. If possible, postpone transporting patients with suspected or confirmed infectious TB disease until they are determined not to have TB disease or to be noninfectious. | <ul style="list-style-type: none"> At least one room should meet requirements for an All room (see Supplement, Environmental Controls; Table 2). Air-cleaning technologies (e.g., HEPA filtration and UVGI) can be used to increase the number of equivalent ACH (see Supplement, Environmental Controls). When transporting patients with suspected or confirmed infectious TB disease in a vehicle (ideally an ambulance), if possible, physically isolate the cab (the front seat) from rest of the vehicle, have the patient sit in the back seat, and open the windows. | <ul style="list-style-type: none"> For HCWs or others entering the All room of a patient with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, during transport, in waiting areas, or when others are present. |
| Home-based health-care and outreach settings | <ul style="list-style-type: none"> Patients and household members should be educated regarding the importance of taking medications, respiratory hygiene and cough etiquette procedures, and proper medical evaluation. If possible, postpone transporting patients with suspected or confirmed infectious TB disease until they are determined not to have TB disease or to be noninfectious. Certain patients can be instructed to remain at home until they are determined not to have TB disease or to be noninfectious. | <ul style="list-style-type: none"> Do not perform cough-inducing or aerosol-generating procedures unless appropriate environmental controls are in place (see Supplement, Environmental Controls), or perform those procedures outside, if possible. | <ul style="list-style-type: none"> For HCWs entering the homes of patients with suspected or confirmed infectious TB disease, at least N95 disposable respirators should be worn. For HCWs transporting patients with suspected or confirmed infectious TB disease in a vehicle, consider at least an N95 disposable respirator. If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, during transport, in waiting areas, or when others are present. |
| Long-term-care settings (e.g., hospices and skilled nursing facilities) | <ul style="list-style-type: none"> Patients with suspected or confirmed infectious TB disease should not be treated in a long-term-care setting, unless proper administrative and environmental controls and a respiratory-protection program are in place. | <ul style="list-style-type: none"> Do not perform cough-inducing or aerosol-generating procedures unless appropriate infection controls are in place (see Supplement, Environmental Controls), or perform those procedures outside, if possible. | <ul style="list-style-type: none"> If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, during transport, in waiting areas, or when others are present. |

^{*} Administrative controls must be implemented to ensure the effectiveness of environmental controls and respiratory-protection programs, and should be in place for all settings where patients with suspected or confirmed TB disease are expected to be encountered. Administrative controls include a written TB infection-control plan (which should be reassessed at least annually), assignment of responsibility for the plan, setting risk assessment, HCW risk classification, HCW training and education, and a TB screening program to test HCWs for infection with *M. tuberculosis*.

[†] Environmental controls include local exhaust and general ventilation (i.e., achieving negative pressure), using All rooms, and air-cleaning methods (i.e., HEPA filtration and UVGI).

[§] All settings where patients with suspected or confirmed TB disease will be encountered need to have a respiratory-protection program. A respiratory-protection program might not be necessary for settings where patients with TB disease are not encountered or where a procedure exists for the prompt transfer of patients with suspected or confirmed TB disease to a setting where they can be evaluated.

[¶] Visitors with suspected or confirmed TB disease should not have contact with patients, including contact with those who have suspected or confirmed TB disease.

^{**} Laboratories that are not based in inpatient settings should observe the same TB infection-control measures as laboratories in inpatient settings.

^{††} Certain bronchoscopy suites are built to have positive pressure.

^{§§} Although the majority of these settings are routinely considered “outpatient,” they might be part of inpatient services in certain settings. If so, follow the recommendations for inpatient settings for patient rooms.

^{¶¶} TB treatment facilities can include TB clinics, infectious disease clinics, or pulmonary clinics.

Appendix B. Tuberculosis (TB) risk assessment worksheet

This model worksheet should be considered for use in performing TB risk assessments for health-care settings and nontraditional facility-based settings. Facilities with more than one type of setting will need to apply this table to each setting.

Scoring: ✓ or Y = Yes X or N = No NA = Not Applicable

_____ **1. Incidence of TB**

- a. What is the incidence of TB in your community (county or region served by the health-care setting), and how does it compare with the state and national average?
- b. What is the incidence of TB in your facility and specific settings, and how do those rates compare? (Incidence is the number of TB cases in your community during the previous year. A rate of TB cases per 100,000 persons should be obtained for comparison.)* This information can be obtained from the state or local health department.

Rate

Community _____

State _____

National _____

Facility _____

Department 1 _____

Department 2 _____

Department 3 _____

- _____ c. Are patients with suspected or confirmed TB disease encountered in your setting (inpatient and outpatient)?

- 1) If yes, how many are treated in your health-care setting in 1 year? (Review laboratory data, infection-control records, and databases containing discharge diagnoses for this information.)
- 2) If no, does your health-care setting have a plan for the triage of patients with suspected or confirmed TB disease?
- d. Currently, does your health-care setting have a cluster of persons with confirmed TB disease that might be a result of ongoing transmission of *Mycobacterium tuberculosis*?

| Year | No. patients | |
|-------------|--------------|-----------|
| | Suspected | Confirmed |
| 1 year ago | _____ | _____ |
| 2 years ago | _____ | _____ |
| 5 years ago | _____ | _____ |

2. Risk Classification

a. Inpatient settings

- 1) How many inpatient beds are in your inpatient setting?
- 2) How many patients with TB disease are encountered in the inpatient setting in 1 year? (Review laboratory data, infection-control records, and databases containing discharge diagnoses.)
- 3) Depending on the number of beds and TB patients encountered in 1 year, what is the risk classification for your inpatient setting?

Quantity _____

Previous year _____

5 years ago _____

___ Low risk

___ Medium risk

___ Potential ongoing transmission

- _____ 4) Does your health-care setting have a plan for triaging patients with suspected or confirmed TB disease?

b. Outpatient settings

- 1) How many TB patients are evaluated at your outpatient setting in 1 year? (Review laboratory data, infection-control records, and databases containing discharge diagnoses for this information.)
- 2) Is your health-care setting a TB clinic? (If yes, a classification of at least medium risk is recommended.)
- 3) Does evidence exist that a high incidence of TB disease has been observed in the community that the health-care setting serves?
- 4) Does evidence exist of person-to-person transmission in the health-care setting? (Use information from case reports. Determine if any TST or blood assay for *M. tuberculosis* [BAMT] conversions have occurred among health-care workers [HCWs].)
- 5) Does evidence exist that ongoing or unresolved health-care-associated transmission has occurred in the health-care setting (based on case reports)?
- 6) Does a high incidence of immunocompromised patients or HCWs in the health-care setting exist?
- 7) Have patients with drug-resistant TB disease been encountered in your health-care setting within the previous 5 years?
- 8) When was the first time a risk classification was done for your health-care setting?
- 9) Considering the items above, would your health-care setting need a higher risk classification?

Previous year _____

5 years ago _____

Year encountered _____

Date of classification _____

Appendix B. (Continued) Tuberculosis (TB) risk assessment worksheet

- _____ 10) Depending on the number of TB patients evaluated in 1 year, what is the risk classification for your outpatient setting (see Appendix C)? ___ Low risk
___ Medium risk
___ Potential ongoing transmission
- _____ 11) Does your health-care setting have a plan for the triage of patients with suspected or confirmed TB disease?
- c. Nontraditional facility-based settings
- _____ 1) How many TB patients are encountered at your setting in 1 year? Previous year _____
5 years ago _____
- _____ 2) Does evidence exist that a high incidence of TB disease has been observed in the community that the setting serves?
- _____ 3) Does evidence exist of person-to-person transmission in the setting?
- _____ 4) Have any recent TST or BAMT conversions occurred among staff or clients?
- _____ 5) Is there a high incidence or prevalence of immunocompromised patients or HCWs in the setting?
- _____ 6) Have patients with drug-resistant TB disease been encountered in your health-care setting within the previous 5 years? Year encountered _____
- _____ 7) When was the first time a risk classification was done for your setting? Date of classification _____
- _____ 8) Considering the items above, would your setting require a higher risk classification?
- _____ 9) Does your setting have a plan for the triage of patients with suspected or confirmed TB disease?
- _____ 10) Depending on the number of patients with TB disease who are encountered in a nontraditional setting in 1 year, what is the risk classification for your setting (see Appendix C)? ___ Low risk
___ Medium risk
___ Potential ongoing transmission

3. Screening of HCWs for *M. tuberculosis* Infection

- _____ a. Does the health-care setting have a TB screening program for HCWs?
If yes, which HCWs are included in the TB screening program? (check all that apply)
- | | |
|---|--|
| ___ Physicians ___ Mid-level practitioners (nurse practitioners [NP] and physician's assistants [PA]) ___ Nurses ___ Administrators ___ Laboratory workers ___ Respiratory therapists ___ Physical therapists ___ Contract staff ___ Construction or renovation workers | ___ Service workers ___ Janitorial staff ___ Maintenance or engineering staff ___ Transportation staff ___ Dietary staff ___ Receptionists ___ Trainees and students ___ Volunteers ___ Others _____ |
|---|--|
- _____ b. Is baseline skin testing performed with two-step TST for HCWs?
- _____ c. Is baseline testing performed with QuantiFERON®-TB or other BAMT for HCWs?
- _____ d. How frequently are HCWs tested for *M. tuberculosis* infection? Frequency _____
- _____ e. Are *M. tuberculosis* infection test records maintained for HCWs?
- _____ f. Where are test records for HCWs maintained? Location _____
- _____ g. Who maintains the records? Name _____
- _____ h. If the setting has a serial TB screening program for HCWs to test for *M. tuberculosis* infection, what are the conversion rates for the previous years?†
- | | |
|--|-------------------|
| | 1 year ago _____ |
| | 2 years ago _____ |
| | 3 years ago _____ |
| | 4 years ago _____ |
| | 5 years ago _____ |
- _____ i. Has the test conversion rate for *M. tuberculosis* infection been increasing or decreasing, or has it remained the same over the previous 5 years? (check one) ___ Increasing
___ Decreasing
___ No change in previous 5 years

Appendix B. (Continued) Tuberculosis (TB) risk assessment worksheet

_____ j. Do any areas of the health-care setting (e.g., waiting rooms or clinics) or any group of HCWs (e.g., laboratory workers, emergency department staff, respiratory therapists, and HCWs who attend bronchoscopies) have a test conversion rate for *M. tuberculosis* infection that exceeds the health-care setting's annual average? If yes, list. Rate _____

_____ k. For HCWs who have positive test results for *M. tuberculosis* infection and who leave employment at the health setting, are efforts made to communicate test results and recommend follow-up of latent TB infection treatment with the local health department or their primary physician? ___ Not applicable

4. TB Infection-Control Program

_____ a. Does the health-care setting have a written TB infection-control plan? Name _____
 _____ b. Who is responsible for the infection-control program? Date _____
 _____ c. When was the TB infection-control plan first written? Date _____
 _____ d. When was the TB infection-control plan last reviewed or updated?

_____ e. Does the written infection-control plan need to be updated based on the timing of the previous update (i.e., >1 year, changing TB epidemiology of the community or setting, the occurrence of a TB outbreak, change in state or local TB policy, or other factors related to a change in risk for transmission of *M. tuberculosis*)?

_____ f. Does the health-care setting have an infection-control committee (or another committee with infection-control responsibilities)?
 1) If yes, which groups are represented on the infection-control committee? (check all that apply)
 ___ Physicians ___ Health and safety staff
 ___ Nurses ___ Administrator
 ___ Epidemiologists ___ Risk assessment
 ___ Engineers ___ Quality control
 ___ Pharmacists ___ Others (specify)
 ___ Laboratory personnel

2) If no, what committee is responsible for infection control in the setting? Committee _____

5. Implementation of TB Infection-Control Plan Based on Review by Infection-Control Committee

_____ a. Has a person been designated to be responsible for implementing an infection-control plan in your health-care setting? If yes, list the name. Name _____

- b. Based on a review of the medical records, what is the average number of days for the following:
- ___ Presentation of patient until collection of specimen.
 - ___ Specimen collection until receipt by laboratory.
 - ___ Receipt of specimen by laboratory until smear results are provided to health-care provider.
 - ___ Diagnosis until initiation of standard antituberculosis treatment.
 - ___ Receipt of specimen by laboratory until culture results are provided to health-care provider.
 - ___ Receipt of specimen by laboratory until drug-susceptibility results are provided to health-care provider.
 - ___ Receipt of drug-susceptibility results until adjustment of antituberculosis treatment, if indicated.
 - ___ Admission of patient to hospital until placement in airborne infection isolation (AII).

c. Through what means (e.g., review of TST or BAMT conversion rates, patient medical records, and time analysis) are lapses in infection control recognized? Means _____

d. What mechanisms are in place to correct lapses in infection control? Mechanisms _____

_____ e. Based on measurement in routine QC exercises, is the infection-control plan being properly implemented?

_____ f. Is ongoing training and education regarding TB infection-control practices provided for HCWs?

Appendix B. (Continued) Tuberculosis (TB) risk assessment worksheet

6. Laboratory Processing of TB-Related Specimens, Tests, and Results Based on Laboratory Review

a. Which of the following tests are either conducted in-house at your health-care setting's laboratory or sent out to a reference laboratory? (check all that apply)

| <u>In-house</u> | <u>Sent out</u> | |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | Acid-fast bacilli (AFB) smears |
| <input type="checkbox"/> | <input type="checkbox"/> | Culture using liquid media (e.g., Bactec and MB-BacT) |
| <input type="checkbox"/> | <input type="checkbox"/> | Culture using solid media |
| <input type="checkbox"/> | <input type="checkbox"/> | Drug-susceptibility testing |
| <input type="checkbox"/> | <input type="checkbox"/> | Nucleic acid amplification testing |

b. What is the usual transport time for specimens to reach the laboratory for the following tests?

- AFB smears _____
- Culture using liquid media (e.g., Bactec, MB-BacT) _____
- Culture using solid media _____
- Drug-susceptibility testing _____
- Nucleic acid amplification testing _____
- Other (specify) _____

c. Does the laboratory at your health-care setting or the reference laboratory used by your health-care setting report AFB smear results for all patients within 24 hours of receipt of specimen? What is the procedure for weekends?

7. Environmental Controls

a. Which environmental controls are in place in your health-care setting? (check all that apply and describe)

| <u>Environmental control</u> | <u>Description</u> |
|---|--------------------|
| <input type="checkbox"/> All rooms | _____ |
| <input type="checkbox"/> Local exhaust ventilation (enclosing devices and exterior devices) | _____ |
| <input type="checkbox"/> General ventilation (e.g., single-pass system, recirculation system) | _____ |
| <input type="checkbox"/> Air-cleaning methods (e.g., high efficiency particulate air [HEPA] filtration and ultraviolet germicidal irradiation [UVGI]) | _____ |

b. What are the actual air changes per hour (ACH) and design for various rooms in the setting?

| <u>Room</u> | <u>ACH</u> | <u>Design</u> |
|-------------|------------|---------------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

c. Which of the following local exterior or enclosing devices such as exhaust ventilation devices are used in your health-care setting? (check all that apply)

- Laboratory hoods
- Booths for sputum induction
- Tents or hoods for enclosing patient or procedure

d. What general ventilation systems are used in your health-care setting? (check all that apply)

- Single-pass system
- Variable air volume
- Constant air volume
- Recirculation system
- Other _____

e. What air-cleaning methods are used in your health-care setting? (check all that apply)

| <u>HEPA filtration</u> | <u>UVGI</u> |
|--|---|
| <input type="checkbox"/> Fixed room-air recirculation systems | <input type="checkbox"/> Duct irradiation |
| <input type="checkbox"/> Portable room-air recirculation systems | <input type="checkbox"/> Upper-air irradiation |
| | <input type="checkbox"/> Portable room-air cleaners |

Appendix B. (Continued) Tuberculosis (TB) risk assessment worksheet

f. How many All rooms are in the health-care setting? Quantity _____

g. What ventilation methods are used for All rooms? (check all that apply)

Primary: (general ventilation)

Single-pass heating, ventilating, and air conditioning (HVAC)

Recirculating HVAC systems

Secondary (methods to increase equivalent ACH):

Fixed room recirculating units

HEPA filtration

UVGI

Other

(specify) _____

_____ h. Does your health-care setting employ, have access to, or collaborate with an environmental engineer (e.g., professional engineer) or other professional with appropriate expertise (e.g., certified industrial hygienist) for consultation on design specifications, installation, maintenance, and evaluation of environmental controls?

_____ i. Are environmental controls regularly checked and maintained with results recorded in maintenance logs?

_____ j. Is the directional airflow in All rooms checked daily when in use with smoke tubes or visual checks?

_____ k. Are these results readily available?

l. What procedures are in place if the All room pressure is not negative?

_____ m. Do All rooms meet the recommended pressure differential of 0.01-inch water column negative to surrounding structures?

8. Respiratory-Protection Program

_____ a. Does your health-care setting have a written respiratory-protection program?

b. Which HCWs are included in the respiratory-protection program? (check all that apply)

Physicians

Mid-level practitioners (NPs and PAs)

Nurses

Administrators

Laboratory personnel

Contract staff

Construction or renovation staff

Service personnel

Janitorial staff

Maintenance or engineering staff

Transportation staff

Dietary staff

Students

Others (specify) _____

c. Are respirators used in this setting for HCWs working with TB patients? If yes, include manufacturer, model, and specific application (e.g., ABC model 1234 for bronchoscopy and DEF model 5678 for routine contact with infectious TB patients).

| <u>Manufacturer</u> | <u>Model</u> | <u>Specific application</u> |
|---------------------|--------------|-----------------------------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

_____ d. Is annual respiratory-protection training for HCWs performed by a person with advanced training in respiratory protection?

_____ e. Does your health-care setting provide initial fit testing for HCWs? If yes, when is it conducted?

Date _____

_____ f. Does your health-care setting provide periodic fit testing for HCWs? If yes, when and how frequently is it conducted?

Date _____

Frequency _____

g. What method of fit testing is used?

Method _____

_____ h. Is qualitative fit testing used?

_____ i. Is quantitative fit testing used?

Appendix B. (Continued) Tuberculosis (TB) risk assessment worksheet

9. Reassessment of TB Risk

a. How frequently is the TB risk assessment conducted or updated in the health-care setting?

b. When was the last TB risk assessment conducted?

Frequency _____

c. What problems were identified during the previous TB risk assessment?

Date _____

1) _____

2) _____

3) _____

4) _____

5) _____

d. What actions were taken to address the problems identified during the previous TB risk assessment?

1) _____

2) _____

3) _____

4) _____

5) _____

e. Did the risk classification need to be revised as a result of the last TB risk assessment?

* If the population served by the health-care facility is not representative of the community in which the facility is located, an alternate comparison population might be appropriate.

† Test conversion rate is calculated by dividing the number of conversions among HCWs by the number of HCWs who had previous negative results during a certain period (see Supplement, Surveillance and Detection of *M. tuberculosis* infections in Health-Care Settings).

Appendix C. Risk classifications for health-care settings that serve communities with high incidence of tuberculosis (TB) and recommended frequency of screening for *Mycobacterium tuberculosis* infection among health-care workers (HCWs)*

| Setting | Risk classification [†] | | Potential ongoing transmission [§] |
|---|---|---|--|
| | Low risk | Medium risk | |
| Inpatient <200 beds | <3 TB patients/year | ≥3 TB patients/year | Evidence of ongoing <i>M. tuberculosis</i> transmission, regardless of setting |
| Inpatient ≥200 beds | <6 TB patients/year | ≥6 TB patients/year | |
| Outpatient; and nontraditional facility-based | <3 TB patients/year | ≥3 TB patients/year | |
| TB treatment facilities | Settings in which <ul style="list-style-type: none"> • persons who will be treated have been demonstrated to have latent TB infection (LTBI) and not TB disease • a system is in place to promptly detect and triage persons who have signs or symptoms of TB disease to a setting in which persons with TB disease are treated • no cough-inducing or aerosol-generating procedures are performed | Settings in which <ul style="list-style-type: none"> • persons with TB disease are encountered • criteria for low risk is not otherwise met | |
| Laboratories | Laboratories in which clinical specimens that might contain <i>M. tuberculosis</i> are not manipulated | Laboratories in which clinical specimens that might contain <i>M. tuberculosis</i> are manipulated | |

Recommendations for Screening Frequency

| | | | |
|--|---|-------------------------------|--|
| Baseline two-step TST or one BAMT [¶] | Yes, for all HCWs upon hire | Yes, for all HCWs upon hire | Yes, for all HCWs upon hire |
| Serial TST or BAMT screening of HCWs | No** | Every 12 months ^{††} | As needed in the investigation of potential ongoing transmission ^{§§} |
| TST or BAMT for HCWs upon unprotected exposure to <i>M. tuberculosis</i> | Perform a contact investigation (i.e., administer one TST as soon as possible at the time of exposure, and, if the TST result is negative, place another TST 8–10 weeks after the end of exposure to <i>M. tuberculosis</i>) ^{¶¶} | | |

* Health-care workers (HCWs) refers to all paid and unpaid persons working in health-care settings who have the potential for exposure to *M. tuberculosis* through air space shared with persons with TB disease.

† Settings that serve communities with a high incidence of TB disease or that treat populations at high risk (e.g., those with human immunodeficiency virus infection or other immunocompromising conditions) or that treat patients with drug-resistant TB disease might need to be classified as medium risk, even if they meet the low-risk criteria.

§ A classification of potential ongoing transmission should be applied to a specific group of HCWs or to a specific area of the health-care setting in which evidence of ongoing transmission is apparent, if such a group or area can be identified. Otherwise, a classification of potential ongoing transmission should be applied to the entire setting. This classification should be temporary and warrants immediate investigation and corrective steps after a determination has been made that ongoing transmission has ceased. The setting should be reclassified as medium risk, and the recommended timeframe for this medium risk classification is at least 1 year.

¶ All HCWs should have a baseline two-step tuberculin skin test (TST) or one blood assay for *M. tuberculosis* (BAMT) result at each new health-care setting, even if the setting is determined to be low risk. In certain settings, a choice might be made to not perform baseline TB screening or serial TB screening for HCWs who 1) will never be in contact with or have shared air space with patients who have TB disease (e.g., telephone operators who work in a separate building from patients) or 2) will never be in contact with clinical specimens that might contain *M. tuberculosis*. Establishment of a reliable baseline result can be beneficial if subsequent screening is needed after an unexpected exposure to *M. tuberculosis*.

** HCWs whose duties do not include contact with patients or TB specimens do not need to be included in the serial TB screening program.

†† The frequency of testing for infection with *M. tuberculosis* will be determined by the risk assessment for the setting.

§§ During an investigation of potential ongoing transmission of *M. tuberculosis*, testing for *M. tuberculosis* infection should be performed every 8–10 weeks until lapses in infection controls have been corrected and no further evidence of ongoing transmission is apparent.

¶¶ Procedures for contact investigations should not be confused with two-step TST, which is used for newly hired HCWs.

Appendix D. Environmental controls record and evaluation*

| Type of environmental control† | No.§ | Location in the health-care setting¶ | How often maintained** | How often evaluated** | Last evaluation date | Next evaluation due date |
|--------------------------------|------|--------------------------------------|------------------------|-----------------------|----------------------|--------------------------|
| | | | | | | |
| | | | | | | |
| | | | | | | |
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| | | | | | | |
| | | | | | | |

* Some settings will not be able to complete all parts of the table. List environmental controls in order of effectiveness.
 † For example, ultraviolet germicidal irradiation (UVGI), high-efficiency particulate air (HEPA) filters, or airborne infection isolation (All) room.
 § Number of UVGI units, HEPA filters, and All rooms in each location of the health-care setting.
 ¶ For example, inpatient rooms, emergency departments, bronchoscopy suites, sputum induction rooms, outpatient areas, and waiting areas.
 ** Daily, weekly, monthly, annually, or other frequency (describe).



Appendix E. Tuberculosis (TB) Internet addresses

CDC Websites

| | |
|---|---|
| CDC | http://www.cdc.gov |
| Division of Tuberculosis Elimination (DTBE) | http://www.cdc.gov/tb |
| Major TB Guidelines | http://www.cdc.gov/nchstp/tb/pubs/mmwhtml/maj_guide.htm |
| State TB Program Contact Information | http://www.cdc.gov/nchstp/tb/pubs/tboffices.htm |
| TB Education and Training Resources | http://www.findtbresources.org |
| TB Program | http://www.cdc.gov/nchstp/tb/tbwebsites.htm |
| Division of AIDS, STD, and TB Laboratory Research | http://www.cdc.gov/ncidid/dastlr/TB/default.htm |
| National Center for Infectious Diseases (NCID) | http://www.cdc.gov/ncid |
| National Institute for Occupational Safety and Health (NIOSH) | http://www.cdc.gov/niosh/homepage.html |
| Respirator Information | http://www.cdc.gov/niosh/npptl/topics/respirators |
| CDC/NIOSH Certified Equipment List (CEL) | http://www.cdc.gov/niosh/npptl/topics/respirators/cel |
| CDC/NIOSH-Approved Disposable Particulate Respirators (Filtering Facepieces) | http://www.cdc.gov/niosh/npptl/respirators/disp_part/particlist.html |
| Division of Healthcare Quality Promotion | http://www.cdc.gov/ncidod/hip/enviro/guide.htm |
| Emergency Preparedness and Response | http://www.bt.cdc.gov |

Other U.S. Federal Government Agencies

| | |
|--|---|
| National Institutes of Health (NIH) | http://www.nih.gov |
| National Heart, Lung, and Blood Institute | http://www.nhlbi.nih.gov/funding/training/tbaa/index.htm |
| National Institute of Allergy and Infectious Diseases (NIAID) | http://www.niaid.nih.gov/dmid/tuberculosis |
| AIDSinfo | http://www.aidsinfo.nih.gov/guidelines |
| Occupational Safety and Health Administration (OSHA) | http://www.osha.gov ; www.osha.gov/qna.pdf |
| Tuberculosis (OSHA) | http://www.osha.gov/SLTC/tuberculosis/index.html |
| Recordkeeping (OSHA) | http://www.osha.gov/SLTC/respiratoryprotection/index.html |
| Respiratory Protection (OSHA) | http://www.osha.gov/recordkeeping |
| Ryan White Care Act/Wisconsin HIV/AIDS Program | http://www.dhfs.state.wi.us/AIDS-HIV/Resources/Overviews/AIDS_HIV.htm |
| Food and Drug Administration (FDA) | http://www.fda.gov |
| Safety Information and Adverse Event Reporting System (FDA-AERS) | http://www.fda.gov/medwatch |
| FDA and CDC Public Health Advisory: Infections from Endoscopes Inadequately Reprocessed by an Automated Endoscope Reprocessing System | http://www.fda.gov/cdrh/safety/endoreprocess.html |

Regional Training and Medical Consultation Centers

| | |
|---|---|
| Francis J. Curry National Tuberculosis Center, San Francisco, California | http://www.nationaltbcenter.edu |
| Heartland Regional Training Center, San Antonio, Texas | http://www.dshs.state.tx.us/tcid/educationctr.shtml |
| New Jersey Medical School National Tuberculosis Center Newark, New Jersey | http://www.umdnj.edu/ntbcweb |
| Southeast Regional Training Center, Gainesville, Florida | http://sntc.medicine.ufl.edu/index.htm |

Domestic Organizations

| | |
|---|---|
| American Lung Association (ALA) | http://www.lungusa.org/diseases/lungtb.html |
| American Thoracic Society (ATS) | http://www.thoracic.org |
| Association for Professionals in Infection Control and Epidemiology, Inc. (APIC) | http://www.apic.org |
| HIV Drug Interactions Organization | http://www.hiv-druginteractions.org |
| Infectious Disease Society of America/Bioterrorism and Information Resources (IDSA) | http://www.idsociety.org/bt/toc/htm |
| National Prevention Information Network (NPIN) | http://www.cdcnpin.org/scripts/index.asp |
| National Tuberculosis Controllers Association (NTCA) | http://www.ntca-tb.org |
| PharmWeb: Rapid Screening of Tuberculosis Pharmaceuticals | http://www.pharmweb.net/pwmirror/library/pharmwebvlib.html |

International Organizations

| | |
|--|---|
| International Union Against Tuberculosis and Lung Disease (IUATLD) | http://www.iuatld.org/full_picture/en/frameset/frameset.phtml |
| Stop TB Initiative | http://www.stoptb.org |
| Tuberculosis Research Center, India | http://www.trc-chennai.org |
| World Health Organization (WHO) Global TB Program | http://www.who.int/gtb |

Appendix E. (Continued) Tuberculosis (TB) Internet addresses

State/Area TB and HIV Websites

| | |
|----------------------|---|
| Alabama | http://www.adph.org |
| Arkansas | http://www.epi.alaska.gov |
| Arizona | http://www.hs.state.az.us/phs/oids/tuberculosis/index.htm |
| California | http://www.dhs.ca.gov/ps/dcdc/TBCB/tubindex.htm |
| Colorado | http://www.cdph.state.co.us/dc/tb/tbhome.asp |
| Connecticut | http://www.dph.state.ct.us |
| Delaware | http://www.state.de.us/dhss/dph/dpc/tuberculosis.html |
| Florida | http://www.doh.state.fl.us/disease_ctrl/tb/WorldTBDay/2004/WTD2004main.html |
| Georgia | http://www.health.state.ga.us/epi |
| Hawaii | http://www.hawaii.gov/doh/resource/comm_dis/tb/index.htm |
| Iowa | http://www.idph.state.ia.us/ch/tb_control.asp |
| Indiana | http://www.in.gov/isdh/programs/tb |
| Kansas | http://www.kdhe.state.ks.us/tb/index.html |
| Kentucky | http://www.chs.state.ky.us/publichealth/TB.htm |
| Louisiana | http://www.oph.dhh.state.la.us/tuberculosis/index.html |
| Massachusetts | http://www.state.ma.us/dph/cdc/tb |
| Maryland | http://www.edcp.org/tb/index.html |
| Maine | http://www.maine.gov/dhs/boh/ddc/tuberculosis.htm |
| Michigan | http://www.michigantb.org |
| Minnesota | http://www.health.state.mn.us/tb |
| Montana | http://www.dphhs.state.mt.us |
| North Carolina | http://www.schs.state.nc.us/epi/tb |
| North Dakota | http://www.ndmtb.com |
| Nebraska | http://www.hhs.state.ne.us/cod/Tuberculosis/tbindex.htm |
| New Hampshire | http://www.dhhs.state.nh.us/DHHS/DHHS_SITE/default.htm |
| Nevada | http://www.health2k.state.nv.us |
| New York City | http://www.nyc.gov/html/doh/html/tb/tb.html |
| Ohio | http://www.odh.state.oh.us |
| Oklahoma | http://www.health.state.ok.us |
| Oregon | http://www.dhs.state.or.us/publichealth/tb |
| Pennsylvania | http://www.dsf.health.state.pa.us |
| Puerto Rico | http://www.salud.gov.pr |
| Rhode Island | http://www.health.ri.gov/disease/communicable/tb_data.htm |
| South Carolina | http://www.scdhec.net/hs/diseasecont/tb/html |
| South Dakota | http://www.state.sd.us/doh/tb |
| Tennessee | http://www2.state.tn.us/health/CEDS/index.htm |
| Texas | http://www.dshs.state.tx.us/idcu/disease/tb |
| Utah | http://health.utah.gov/els/hiv aids/tb/tbrefugee.html |
| Virginia | http://www.vdh.virginia.gov/epi/tb |
| Washington | http://www.doh.wa.gov/cfh/tb |
| Wisconsin | http://dhfs.wisconsin.gov/tb |
| Wyoming | http://www.wdh.state.wy.us/tb |
