

General Safety & Health Standards
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Tuberculosis 331

331. TUBERCULOSIS

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331. TUBERCULOSIS (7-1-03)

01. Scope: (7-1-03)

a. Tuberculosis exposure shall conform to all other applicable requirements of this standard, as well as the following provisions. Nothing in this standard shall be construed to prohibit better or otherwise safer conditions than specified herein. (7-1-03)

b. This section applies to all occupational exposure to Tuberculosis. (7-1-03)

02. Definitions: For definitions of other terms used in this section, see sub-section 010 of this standard. (7-1-03)

a. Acid-Fast Bacilli (AFB) is bacteria that retain certain dyes after being washed in an acid solution. Most acid-fast organisms are mycobacteria. (7-1-03)

b. Accredited Laboratory is a laboratory that has participated in a quality assurance program leading to a certification of competence administered by a governmental or private organization that tests and certifies laboratories. (7-1-03)

c. Air-Purifying Respirator is a respirator that is designed to remove air contaminants from the ambient air or air surrounding the respirator. (7-1-03)

d. AFB Isolation Room or Area includes, but is not limited to, rooms, areas, booths, tents, or other enclosures that are maintained at negative pressure to adjacent areas in order to control the spread of aerosolized M.tuberculosis. (7-1-03)

e. Anergy is the inability of a person to react to skin test antigens (even if the person is infected with the organisms tested) because of immunosuppression. (7-1-03)

f. BCG (bacille Calmette-Guerin) vaccine is a tuberculosis vaccine. (7-1-03)

- g.** Canister or Cartridge is a container with a filter, sorbent, or catalyst, or a combination of these items that removes specific air contaminants from the air drawn through the container. (7-1-03)
- h.** Clinical Laboratory is a laboratory or area of a facility that contains routine and repetitive operations for the diagnosis of tuberculosis such as preparing acid-fast smears and culturing sputa or other clinical specimens for identification, typing, or susceptibility testing. (7-1-03)
- i.** Confirmed Infectious Tuberculosis is a disease state that has been diagnosed by positive identification of *M. tuberculosis* from body fluid or tissue through positive culture, positive gene probe, or positive polymerase chain reaction (PCR). The disease state must be capable of being transmitted to another individual (e.g., pulmonary or laryngeal TB or extrapulmonary TB where the infected tissue is exposed and could generate droplet nuclei). (7-1-03)
- j.** Conversion is a change in tuberculin skin test results from negative to positive, based upon current Centers for Disease Control and Prevention (CDC) guidelines. (7-1-03)
- k.** Disposable Respirator is a respiratory protective device that cannot be resupplied with an unused filter or cartridge and that is to be discarded in its entirety after its useful service life has been reached. (7-1-03)
- l.** Exposure Incident is an event in which an employee has been exposed to an individual with confirmed infectious TB or to air containing aerosolized *M. tuberculosis* without benefit of applicable exposure control measures required by this section. (7-1-03)
- m.** Filter is a component used in respirators to remove solid or liquid aerosols from the inspired air. (7-1-03)
- n.** Fit Factor is a quantitative measure of the fit of a particular respirator on a particular individual. (7-1-03)
- o.** High Efficiency Particulate Air (HEPA) Filter is a specialized filter that is capable of removing ninety-nine and ninety-seven hundredths (99.97) percent of particles greater or equal to three tenths (0.3) micrometer in diameter. (7-1-03)
- p.** High Hazard Procedures are procedures performed on an individual with suspected or confirmed infectious tuberculosis in which the potential for being exposed to *M. tuberculosis* is increased due to the reasonably anticipated generation of aerosolized *M. tuberculosis*. Such procedures include, but are not limited to, sputum induction, bronchoscopy, endotracheal intubation or suctioning, aerosolized administration of pentamidine or other medications, and pulmonary function testing. They also include autopsy, clinical, surgical, and laboratory procedures that may aerosolize *M. tuberculosis*. (7-1-03)
- q.** *M. tuberculosis* means *Mycobacterium tuberculosis*, the scientific name of the bacillus that causes tuberculosis. (7-1-03)
- r.** Negative Pressure is the relative air pressure difference between two areas. A room that is under negative pressure has lower pressure than adjacent areas, which keeps air from flowing out of the room and into the adjacent rooms or areas. (7-1-03)

s. Negative Pressure Respirator is a respirator in which the air pressure inside the face-piece is negative during inhalation with respect to the ambient air pressure outside the face-piece of the respirator. (7-1-03)

t. Occupational Exposure is the reasonably anticipated contact, that results from the performance of an employee's duties, with an individual with suspected or confirmed infectious TB or air that may contain aerosolized M. tuberculosis. (7-1-03)

u. Physician or Other Licensed Health Care Professional is an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide or be delegated the responsibility to provide some or all of the health care services required by this section. (7-1-03)

v. Powered Air-Purifying Respirator is an air-purifying respirator that uses a blower to deliver air through the air-purifying element to the wearer's breathing zone. (7-1-03)

w. Qualitative Fit Test is a pass/fail fit test to assess the adequacy of a respirator fit that relies on the respirator wearer's response to a challenge agent. (7-1-03)

x. Quantitative Fit Test is an assessment of the adequacy of a respirator fit by numerically measuring the amount of leakage into the respirator. (7-1-03)

y. Research Laboratory is a laboratory that propagates and manipulates cultures of M. tuberculosis in large volumes or high concentrations that in access of those used for identification and typing activities common to clinical laboratories. (7-1-03)

z. Respirator is a device worn by an individual and is intended to provide the wearer with respiratory protection against the inhalation of airborne contaminants. (7-1-03)

aa. Risk Groups are those individuals that are at risk of occupational exposure to TB occurring in, during, or through the provision of services by: (7-1-03)

i. Hospitals (7-1-03)

ii. Nursing homes (7-1-03)

iii. Correctional facilities (7-1-03)

iv. Law enforcement facilities (7-1-03)

v. Hospices (7-1-03)

vi. Substance abuse treatment centers (7-1-03)

vii. Medical examiners' offices (7-1-03)

viii. Emergency medical services (7-1-03)

ix. Research and clinical laboratories handling TB (7-1-03)

x. Contractors working on ventilation systems or areas of buildings that may contain aerosolized M. tuberculosis. (7-1-03)

xi. Social service workers providing services to individuals identified as having suspected or confirmed infectious TB (7-1-03)

xii. Personnel/Temporary service agencies when providing workers to covered facilities (7-1-03)

xiii. Attorneys visiting known or suspected infectious TB individuals (7-1-03)

bb. Suspected Infectious Tuberculosis is a potential disease state in which an individual is known, or with reasonable diligence should be known, by the employer to have one or more of the following conditions, unless the individual's condition has been medically determined to result from a cause other than TB. To be infected with M. tuberculosis and have the signs or symptoms of TB: (7-1-03)

i. Have a positive acid-fast bacilli (AFB) smear, or (7-1-03)

ii. To have a persistent cough lasting three (3) or more weeks and two or more symptoms of active TB (e.g., bloody sputum, night sweats, weight loss, fever, anorexia). (7-1-03)

An individual with suspected infectious TB has neither confirmed infectious TB nor has he or she been medically determined to be noninfectious. (7-1-03)

cc. Tight-Fitting Face-piece is the part of the respirator that is designed to form a complete seal with the face. A half-face-piece covers the nose and mouth; a full face-piece covers the nose, mouth, and eyes. (7-1-03)

dd. Tuberculosis Infection is a condition in which living M. tuberculosis bacilli are present in the body without producing a clinically active disease. Although the infected individual has a positive tuberculin skin test reaction, he or she may have no symptoms related to the infection and may not be capable of transmitting the disease. (7-1-03)

ee. Tuberculosis Disease is a condition in which living M. tuberculosis bacilli are present in the body, producing clinical illness. The individual may not be infectious. (7-1-03)

ff. Tuberculin Skin Test is a method used to evaluate the likelihood that a person is infected with M. tuberculosis. The method utilizes an intradermal injection of tuberculin antigen with subsequent measurement of the reaction induration. It is also referred to as a PPD skin test. (7-1-03)

gg. Two-Step Testing is a baseline test procedure used to identify a boosted skin test reaction from that of a new infection. The procedure involves placing a second skin test one (1) to three (3) weeks after an initial negative test. A positive reaction on the second test indicates a boosted reaction. (7-1-03)

03. General Requirements: (7-1-03)

a. The employer shall take all steps necessary to control the spread of TB. (7-1-03)

b. Universal precautions shall be observed to prevent unprotected contact with infectious tuberculosis or aerosolized *M. tuberculosis*. (7-1-03)

c. Engineering and work practice controls shall be used to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment shall also be used. (7-1-03)

d. Engineering controls shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness. (7-1-03)

e. Eating, drinking, smoking, applying cosmetics or lip balm, handling contact lenses are prohibited in areas where there is a reasonable likelihood of occupational exposure. (7-1-03)

f. Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets, or on counter-tops or bench-tops where infectious or potentially infectious materials are present. (7-1-03)

04. Exposure Control: (7-1-03)

a. The employer shall have a written exposure control plan with the following elements as a minimum: (7-1-03)

i. The exposure determination; (7-1-03)

ii. Procedures for providing information to employees about individuals identified with suspected or confirmed infectious TB or air that may reasonably be anticipated to contain *M. tuberculosis*; (7-1-03)

iii. Procedures for reporting an exposure incident; (7-1-03)

iv. Procedures for identifying, masking or segregating, and transferring individuals with suspected or confirmed infectious TB (7-1-03)

v. Work practices, procedures, and engineering controls that are in use; (7-1-03)

vi. Required personal protective equipment and when it is to be used. (7-1-03)

b. The exposure control plan shall be reviewed annually and updated as and when necessary. (7-1-03)

c. The exposure control plan shall be available to all effected employees, their representatives, and the Department. (7-1-03)

05. Methods of Compliance: (7-1-03)

a. Develop and use engineering controls to eliminate or minimize employee exposure. (7-1-03)

b. Develop and use work practices to eliminate or minimize employee exposure. (7-1-03)

c. A pre-identified temporary isolation area will be established for individuals that cannot be transferred within five (5) hours. (7-1-03)

d. Develop procedures for the identification and masking or segregation of individuals with suspected or confirmed infectious TB. (7-1-03)

e. Develop procedures for the use of personal protective equipment. (7-1-03)

f. Provide information about TB hazards to temporary personnel or contractors who may incur occupational exposure. (7-1-03)

06. Medical Surveillance Program: (7-1-03)

a. A medical surveillance program for each employee with an occupational exposure or who has an exposure incident shall be established at no cost to the employee, at a reasonable time, by a physician or other licensed health care professional, according to current recommendations of the Centers for Disease Control (CDC) and with laboratory tests conducted by an accredited laboratory. (7-1-03)

b. The employer shall provide initial TB skin testing and medical history. (7-1-03)

c. The employer shall provide TB skin testing and follow-up for employees who develop signs or symptoms of TB. (7-1-03)

d. The employer shall provide TB skin testing and medical management and follow-up of employees after an exposure incident. (7-1-03)

e. The employee and employer shall be notified as soon as feasible about infectious TB disease status of the employee. (7-1-03)

f. The employer shall notify employees about previously unidentified individuals with infectious TB. (7-1-03)

g. The employer shall conduct investigations of TB exposure incidents and TB skin test conversions. (7-1-03)

07. Communication of Hazards: (7-1-03)

a. Post with signs to those areas or rooms where individuals with infectious TB are being isolated. (7-1-03)

b. The sign(s) must include a picture of a stop sign, have a red background with white lettering and say: “No Admittance Without Wearing a N95 or More Protective Respirator.” The employer may include additional language provided the major message on the sign remains clear. (7-1-03)

c. After the area or room is vacated, the sign(s) must remain posted at the entrance(s) until the area or room is ventilated, according to current CDC recommendations for a removal efficiency of ninety-nine point nine (99.9) percent before permitting employees to enter without respiratory protection. (7-1-03)

d. An area or room does not need to be ventilated and the sign may be removed immediately if both of the following criteria are met: (7-1-03)

i. The room was occupied by an individual with suspected infectious tuberculosis and; (7-1-03)

ii. That individual is medically determined to be non-infectious. (7-1-03)

e. Where engineering controls used, those controls shall be labeled appropriately and labeling procedures shall be noted in the exposure control plan. (7-1-03)

f. The type of HVAC system in the building or facility will determine where ducts are labeled. (7-1-03)

i. Ducts that have HEPA filtration must be labeled at all duct access points located prior to the HEPA filter. (7-1-03)

ii. HVAC systems that exhaust air directly to the outside must be labeled at all access points, fans, and exhaust outlets. (7-1-03)

g. The entrances to clinical or research laboratories and autopsy suits shall include the biohazard symbol, name of the laboratory director or other designated responsible person, M. tuberculosis, and any special requirements for entering the laboratory or autopsy room. (7-1-03)

h. Contaminated laboratory wastes must be labeled with the biohazard symbol or be placed in a red container. (7-1-03)

08. Information and Training: (7-1-03)

- a.** Employers shall ensure that all employees with a potential occupational exposure participate in a training program, which must be provided at no cost to the employee and conducted during working hours. (7-1-03)
- b.** Training shall be provided at the time of initial assignment to tasks where potential occupational exposure may take place and at least annually thereafter. (7-1-03)
- c.** Annual training for all effected employees shall be provided within one year of their previous training. (7-1-03)
- d.** Employers shall provide additional training when changes such as modifications of tasks, procedures, or institution of new tasks or procedures affect the employee's potential occupational exposure. The additional training may be limited to addressing the new exposures created. (7-1-03)
- e.** Temporary employees and contractor personnel shall be provided training if there is a potential for occupational exposure prior to working in areas where exposure may occur. (7-1-03)
- f.** Training materials and presentations shall be appropriate in content and vocabulary to the educational level, literacy, and language of the employees receiving the instruction shall be used. (7-1-03)
- g.** The training program shall contain as a minimum the following elements: (7-1-03)
 - i.** An accessible copy of this section and an explanation of its contents; (7-1-03)
 - ii.** A general explanation of the epidemiology and symptoms of tuberculosis; (7-1-03)
 - iii.** An explanation of the modes of transmission of tuberculosis; (7-1-03)
 - iv.** An explanation of the employer's exposure control plan and the means by which the employee can obtain a copy of the written plan; an explanation of the appropriate methods for recognizing tasks and other activities that may involve occupational exposure to infectious tuberculosis and aerosolized M. tuberculosis; (7-1-03)
 - v.** An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and personal protective equipment; (7-1-03)
 - vi.** Information on the types, proper use, location, removal, handling, decontamination, and disposal of personal protective equipment; (7-1-03)
 - vii.** An explanation of the basis for selection of personal protective equipment; (7-1-03)
 - viii.** Information on the BCG (bacille Calmette-Guerin) tuberculosis vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge; (7-1-03)

ix. Information on the Tuberculin Skin Test also referred to as a PPD skin test including information on its use, efficacy, safety, method of administration, and that the test is offered free of charge; (7-1-03)

ix. Information on the appropriate actions to take and persons to contact in an emergency involving potentially infectious individuals or materials; (7-1-03)

x. An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and medical follow-up that will be made available; (7-1-03)

xi. Information on the post exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident; (7-1-03)

xii. An explanation of the signs and labels and/or color coding; (7-1-03)

xiii. An opportunity for interactive questions and answers with the person conducting the training session. (7-1-03)

h. The person conducting the training shall be knowledgeable in the subject matter covered by the elements in the training program as it relates to the workplace that the training will address.(7-1-03)

332—339 (RESERVED)