Glossary

acid-fast bacilli (AFB): Microorganisms that are distinguished by their retention of specific stains even after being rinsed with an acid solution. An AFB examination involves microscopic examination of a stained smear of a patient specimen (usually sputum) to determine if mycobacteria are present. The relative concentration of AFB per unit area on a slide (the smear grade) is associated with infectiousness. A presumptive diagnosis of pulmonary tuberculosis (TB) can be made with a positive AFB sputum smear result. However, approximately 50% of patients with TB disease of the lungs have negative AFB sputum smear results. The majority of AFB in patient specimens are mycobacteria, including species other than *Mycobacterium tuberculosis* complex. A positive nucleic acid amplification or culture result is needed for confirmation of *M. tuberculosis* complex.

administrative controls: Managerial measures that reduce the risk for exposure to persons who might have TB disease. Examples include coordinating efforts with the local or state health department; conducting a TB risk assessment for the setting; developing and instituting a written TB infection control plan to ensure prompt detection, airborne infection isolation, and treatment of persons with suspected or confirmed TB disease; and screening and evaluating healthcare workers who are at risk for TB disease or who might be exposed to *M. tuberculosis.*

air change rate: Ratio of the airflow in volume units per hour to the volume of the space under consideration in identical volume units, usually expressed in air changes per hour (ACH).

air changes per hour (ACH): Air change rate expressed as the number of air exchange units per hour.

airborne infection isolation (AII) precautions: The isolation of patients infected with organisms spread through airborne droplet nuclei 1–5 μm in diameter. This isolation area receives substantial air changes per hour (ACH) (≥12 ACH for new construction since 2001 and ≥6 ACH for construction before 2001) and is under negative pressure (i.e., the direction of the air flow is from the outside adjacent space [e.g., the corridor] into the room). The air in an AII room is preferably exhausted to the outside, but can be recirculated if the return air is filtered through a high efficiency particulate respirator.

airborne infection isolation room (AII room): A room designed to maintain AII. Formerly called negative pressure isolation room, an AII room is a single-

occupancy patient-care room used to isolate persons with suspected or confirmed infectious TB disease. Environmental factors are controlled in AII rooms to minimize the transmission of infectious agents that are usually spread from person-to-person by droplet nuclei associated with coughing or aerosolization of contaminated fluids. AII rooms should provide negative pressure in the room (so that air flows under the door gap into the room), an air flow rate of 6–12 air changes per hour, and direct exhaust of air from the room to the outside of the building or recirculation of air through a high efficiency particulate respirator filter.

anergy: A condition in which a person has a diminished ability to exhibit delayed T-cell hypersensitivity to antigens because of a condition or situation resulting in altered immune function. Skin tests for anergy (i.e., control antigens) have poor predictive value and are not recommended.

asymptomatic: Neither causing nor exhibiting signs or symptoms of disease.

bacille Calmette-Guérin (BCG): Vaccines for tuberculosis named after the French scientists Calmette and Guérin. The vaccines are effective in preventing disseminated and meningeal TB disease in infants and young children. They might have approximately 50% efficacy for preventing smear diagnosed pulmonary TB in adults. They are used in multiple countries where TB disease is endemic.

baseline tuberculosis screening: Screening healthcare workers (HCWs) for latent TB infection and TB disease at the beginning of employment. TB screening includes a symptom screen for all HCWs, and tuberculin skin tests (TSTs) or blood assays for *M. tuberculosis* (BAMTs) for those with previous negative test results for *M. tuberculosis* infection. The TST or BAMT is administered at the beginning of employment to newly hired HCWs. If the TST method is used for HCWs who have not had a documented negative test result for *M. tuberculosis* during the preceding 12 months, the baseline TST result should be obtained by using the two-step method. BAMT baseline testing does not need the two-step method.

blood assay for Mycobacterium tuberculosis (BAMT): A general term to refer to recently developed in vitro diagnostic tests that assess for the presence of infection with *M. tuberculosis*. This term includes, but is not limited to, IFN-γ release assays (IGRA). In the U.S., the currently available test is QuantiFERON®-TB Gold test (QFT-G).

boosting: When nonspecific or remote sensitivity to tuberculin (purified protein derivative [PPD] in the skin test) wanes or disappears with time, subsequent tuberculin skin tests can restore the sensitivity. This is called boosting or the booster phenomenon. An initially limited reaction size is followed by a larger

reaction size on a later test, which can be confused with a conversion or a recent *M. tuberculosis* infection. Two-step testing is used to distinguish new infections from boosted reactions in infection-control surveillance programs, but this method is not recommended for testing contacts.

bronchoscopy: A procedure for examining the lower respiratory tract in which the end of the endoscopic instrument is inserted through the mouth or nose (or tracheostomy) and into the respiratory tree. Bronchoscopy can be used to obtain diagnostic specimens. Bronchoscopy also creates a high risk for *M. tuberculosis* transmission to healthcare workers (HCWs) if it is performed on an untreated patient who has TB disease (even if the patient has negative acid-fast bacilli smear results) because it is a cough-inducing procedure.

case: A particular instance of a disease (e.g., TB), referring only to the disease, not to the person with the disease. A case is detected, documented, and reported.

cavity (pulmonary) : A hole in the lung parenchyma, usually not involving the pleural space. Although a lung cavity can develop from multiple causes, and its appearance is similar regardless of its cause, in pulmonary TB disease, cavitation results from the destruction of pulmonary tissue by direct bacterial invasion and an immune interaction triggered by *M. tuberculosis*. A TB cavity substantial enough to see with a normal chest radiograph predicts infectiousness.

chest x-ray: See **radiography**.

clinical examination: A physical evaluation of the clinical status of a patient by a physician or equivalent practitioner.

cluster (TB): A group of patients with latent TB infection or TB disease that are linked by epidemiologic, location, or genotyping data. Two or more tuberculin skin test conversions within a short period can be a cluster of TB and might suggest transmission within the setting. A genotyping cluster is two or more cases with isolates that have an identical genotyping pattern.

confirmed TB: A diagnosis of TB disease based on positive cultures for *M. tuberculosis.* However, TB may also be diagnosed on the basis of clinical signs and symptoms in the absence of a positive culture. Positive cultures for *M. tuberculosis* confirm the diagnosis of TB; however, TB may also be diagnosed on the basis of clinical signs and symptoms in the absence of a positive culture. Culture examinations should be done on all specimens, regardless of acid-fast bacilli smear results.

contact. A person who has been exposed to *M. tuberculosis* infection by sharing air space with a person with infectious TB.

contact investigation: Procedures that occur when a case of infectious TB is identified, including finding persons (contacts) exposed to the case, testing and evaluation of contacts to identify latent TB infection or TB disease, and treatment of these persons, as indicated.

contagious: See **infectious**.

conversion. A change in the result of a test for *M. tuberculosis* infection that is interpreted to indicate a change from being uninfected to infected. With the tuberculin skin test, an increase of more than 10 mm in induration size during a maximum of two years is defined as a conversion. If blood assay for *M. tuberculosis* (BAMT) is used for testing, a conversion is a change from a negative to a positive BAMT result over a two-year period. A conversion is presumptive evidence of new *M. tuberculosis* infection and poses an increased risk for progression to TB disease. The term is applied to contacts only when previous test results are available. A change in tuberculin status during the window period is not necessarily consistent with this definition.

conversion rate: The percentage of a population with a converted test result (tuberculin skin test or blood assay for *M. tuberculosis*) for *M. tuberculosis* within a specified period. This is calculated by dividing the number of conversions among eligible healthcare workers (HCWs) in the setting in a specified period (numerator) by the number of HCWs who received tests in the setting over the same period (denominator) multiplied by 100.

culture: Growth of microorganisms in the laboratory performed for detection and identification in sputum or other body fluids and tissues. This test usually takes two to four weeks for mycobacteria to grow (two to four days for most other bacteria).

delayed-type hypersensitivity (DTH): Cell-mediated inflammatory reaction to an antigen, which is recognized by the immune system usually because of previous exposure to the same antigen or similar ones. Cell-mediated reactions are contrasted with an antibody (or humoral) response. DTH typically peaks at 48–72 hours after exposure to the antigen.

deoxyribonucleic acid (DNA) genotyping: A clinical laboratory technique used to distinguish between different strains *of M. tuberculosis* and to help assess the likelihood of TB transmission.

directly observed therapy (DOT): An adherence-enhancing strategy in which a healthcare worker or other trained person watches a patient swallow each dose of medication and is accountable to the public health system. DOT is the standard of care for all patients with TB disease and is a preferred option for patients treated for latent TB infection.

disseminated TB: See **miliary TB**.

droplet nuclei: Microscopic particles produced when a person coughs, sneezes, shouts, or sings. These particles can remain suspended in the air for prolonged periods and can be carried on normal air currents in a room and beyond to adjacent spaces or areas receiving exhaust air.

drug susceptibility test: A laboratory determination to assess whether an *M. tuberculosis* complex isolate is susceptible or resistant to anti-TB drugs that are added to mycobacterial growth medium or are detected genetically. The results predict whether a specific drug is likely to be effective in treating TB disease caused by that isolate.

enabler: A practical item given to a patient for making adherence (e.g., to treatment or to clinic appointments) easier.

environmental controls: Physical or mechanical measures (as opposed to administrative control measures) used to reduce the risk for transmission of *M. tuberculosis* by preventing the spread and reducing the concentration of infectious droplet nuclei in ambient air. Examples include ventilation, filtration, ultraviolet lamps, airborne infection isolation rooms, and local exhaust ventilation devices.

epidemiologic cluster: A closely grouped series of cases in time or place.

erythema: Abnormal redness of the skin. Erythema may develop around a tuberculin skin test (TST) site, but should not be read as part of the TST result.

exposure: The condition of being subjected to something (e.g., an infectious agent) that could have a harmful effect. A person exposed to *M. tuberculosis* does not necessarily become infected. Much of the work in a TB contact investigation is dedicated to learning who was exposed and, of these, who became infected.

exposure incident: A situation in which persons (e.g., healthcare workers, visitors, and inmates) have been exposed to a person with suspected or confirmed infectious TB disease (or to air containing *M. tuberculosis*), without the benefit of effective infection control measures.

exposure period. The coincident period when a contact shared the same air space as a person with TB during the infectious period.

exposure site: A location that the index patient visited during the infectious period (e.g., school, bar, bus, or residence).

extrapulmonary TB: TB disease in any part of the body other than the lungs (e.g., the kidney, spine, or lymph nodes). The presence of extrapulmonary disease does not exclude pulmonary TB disease.

false negative tuberculin skin test (TST) or blood assay for M. tuberculosis (BAMT) result: A TST or BAMT result that is interpreted as negative in a person who is actually infected with *M. tuberculosis*.

false positive tuberculin skin test (TST) or blood assay for M. tuberculosis (BAMT) result: A TST or BAMT result that is interpreted as positive in a person who is not actually infected with *M. tuberculosis*. A false-positive TST result is more likely to occur in persons who have been vaccinated with bacille Calmette-Guérin or who are infected with nontuberculous mycobacteria.

fit check: A procedure performed after every respirator is donned to check for proper seal of the respirator. Also called "user-seal check."

fit test: The use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on a person.

genotype: The deoxyribonucleic acid (DNA) pattern of *M. tuberculosis* used to discriminate among different strains.

healthcare workers (HCWs): All paid and unpaid persons working in healthcare settings.

hemoptysis: The expectoration or coughing up of blood or blood-tinged sputum—one of the symptoms of pulmonary TB disease. Hemoptysis can also be observed in other pulmonary conditions (e.g., lung cancer).

high efficiency particulate air (HEPA) filter: A portable or stationary filter that is certified to remove more than 99.97% of particles 0.3 μm in size, including *M. tuberculosis*–containing droplet nuclei. Use of HEPA filters in building ventilation systems requires expertise in installation and maintenance.

human immunodeficiency virus (**HIV) infection:** Infection with the virus that causes acquired immunodeficiency syndrome (AIDS). A person with both latent TB infection and HIV infection is at high risk for developing TB disease.

hypersensitivity: A state in which the body reacts with an exaggerated immune response to a foreign substance. Hypersensitivity reactions are classified as immediate or delayed, types I and IV, respectively. See **delayed-type hypersensitivity**.

immunocompromised and immunosuppressed: Conditions in which at least part of the immune system is functioning at less than normal capacity. According to some style experts, “immunocompromised” is the broader term, and “immunosuppressed” is restricted to conditions with iatrogenic causes, including treatments for another condition. Some immunocompromised conditions increase the likelihood that *M. tuberculosis* infection will progress to TB disease. Certain conditions also make TB disease or infection from *M. tuberculosis* more difficult to diagnose because manifestations of TB disease differ and tests for infection rely on an intact immune system.

incentive: A gift given to patients to encourage or acknowledge their adherence to treatment.

incidence: The number of new events or cases of disease that develop during a specified period.

index (TB): The first case or patient with TB disease that comes to attention as an indicator of a potential public health problem.

induration: The firmness in the skin test reaction; produced by immune-cell infiltration in response to the tuberculin antigen that was introduced into the skin during a tuberculin skin test. Induration is measured transversely by palpation, and the result is recorded in millimeters. The measurement is compared with guidelines to determine whether the test result is classified as positive or negative.

infection control program (TB): A program designed to control transmission of *M. tuberculosis* through early detection, isolation, and treatment of persons with infectious TB. A hierarchy of control measures are used, including 1) administrative controls to reduce the risk for exposure to persons with infectious TB disease and screening for healthcare workers (HCWs) for latent TB infection and TB disease, 2) environmental controls to prevent the spread and reduce the concentration of infectious droplet nuclei in the air, and 3) respiratory protection in areas where the risk for exposure to *M. tuberculosis* is high (e.g., airborne infection isolation rooms). A TB infection control plan should include surveillance of HCWs who have unprotected high-risk exposure to TB patients or their environment of care.

infection: A condition in which microorganisms have entered the body and typically have elicited immune responses. *M. tuberculosis* infection might progress to TB disease. The expression *M. tuberculosis* infection includes both latent infection and TB disease. Latent *M. tuberculosis* infection or latent tuberculosis infection (LTBI) is an asymptomatic condition that follows the initial infection; the infection is still present but is dormant (and believed not to be currently progressive or invasive). TB disease is determined by finding anatomic changes caused by

advancing infection (e.g., shadows from infiltrates on a chest radiograph) or by noting symptoms (e.g., malaise, feverishness, or cough), and typically by both. Positive culture results for *M. tuberculosis* complex typically are interpreted as both an indication of TB disease and its confirmation, but infecting organisms can be obtained from patients who have no other evidence of disease.

infectious: Refers either to TB disease of the lungs or throat which has the potential to cause transmission to other persons, or to the patient who has TB disease.

infectious droplet nuclei: Droplet nuclei produced by an infectious TB patient that can carry tubercle bacteria and be inhaled by others. Although usually produced from patients with pulmonary TB through coughing, aerosol-generating procedures can also generate infectious droplet nuclei.

infectious period: The period during which a person with TB disease might have transmitted *M. tuberculosis* organisms to others. For patients with positive acid-fact bacilli (AFB) sputum smear results, the infectious period begins three months before the collection date of the first positive smear result or the symptom onset date (whichever is earlier) and ends when the patient is placed into airborne infection isolation (AII) or the date of collection for the first of consistently negative smear results. For patients with negative AFB sputum smear results, the infectious period extends from one month before the symptom onset date and ends when the patient is placed into AII (whichever was earlier).

interferon-γ release assay (IGRA): A type of an *ex vivo* test that detects cell-mediated immune response to this cytokine. In the U.S., QuantiFERON®-TB Gold test (QFT-G) is a currently available IGRA.

laryngeal TB: A form of TB disease that involves the larynx and can be highly infectious.

latent TB infection (LTBI): See **infection**.

Mantoux method: A skin test performed by intradermally injecting 0.1 mL of purified protein derivative tuberculin solution into the volar or dorsal surface of the forearm. This method is the recommended method for tuberculin skin testing.

mask: A device worn over the nose and mouth of a person with suspected or confirmed infectious TB disease to prevent infectious particles from being released into room air.

medical evaluation: An examination to diagnose TB disease or latent TB infection, to select treatment, and to assess response to therapy. A medical evaluation can include medical history and TB symptom screen, clinical or physical examination, screening and diagnostic tests (e.g., tuberculin skin tests, chest radiographs,

bacteriologic examination, and human immunodeficiency virus testing), counseling, and treatment referrals.

meningeal TB: A highly dangerous and difficult-to-diagnose form of TB disease with infectious invasion of the tissues covering the brain. Often indolent but uniformly fatal if untreated, at times it is diagnosed too late to save the patient's life or prevent permanent disability.

miliary TB: A dangerous, and difficult to diagnose, form of rapidly progressing TB disease that extends throughout the body. Uniformly fatal if untreated, sometimes it is diagnosed too late to save the patient's life. Derives its names from a pathognomonic chest radiograph, but certain patients with this condition have normal findings or ordinary infiltrates on the chest radiograph. Sometimes referred to as disseminated TB.

multidrug-resistant TB (MDR TB): TB disease caused by an *M. tuberculosis* strain that is resistant to at least isoniazid and rifampin. Treatment regimens for curing MDR TB are long, expensive, and difficult to tolerate. The cure rate depends on the susceptibility of *M. tuberculosis* to alternative chemotherapy.

mycobacteria other than tuberculosis (MOTT): See **nontuberculous mycobacteria**.

Mycobacterium tuberculosis: The namesake member organism of *M. tuberculosis* complex and the most common causative infectious agent of TB disease in humans. In certain instances, the species name refers to the entire *M. tuberculosis* complex, which includes *M. bovis* and *M. african, M. microti, M. canetii, M. caprae,* and *M. pinnipedii*.

N95 disposable respirator: An air-purifying, filtering-facepiece respirator that is more than 95% efficient at removing 0.3 μm particles and is not resistant to oil. See also **respirator**.

negative pressure: The difference in air-pressure between two areas. A room that is under negative pressure has a lower pressure than adjacent areas, which keeps air from flowing out of the room and into adjacent rooms or areas. Also used to describe a nonpowered respirator. See also **airborne infection isolation** and **airborne infection isolation room**.

nontuberculous mycobacteria (NTM): Refers to mycobacterium species other than those included as part of *M. tuberculosis* complex. Although valid from a laboratory perspective, the term can be misleading because certain types of NTM cause disease with pathologic and clinical manifestations similar to TB disease. Another term for NTM is mycobacterium other than tuberculosis. NTM are environmental mycobacteria.

nucleic acid amplification (NAA): A laboratory method used to target and amplify a single DNA or RNA sequence for detecting and identifying (typically) a microorganism. NAA tests for *M. tuberculosis* complex are sensitive and specific; they can accelerate confirmation of pulmonary TB disease.

outbreak (TB): Relative to the local context. Outbreak cases can be distinguished from other cases only when certain associations in time, location, patient characteristics, or *M. tuberculosis* attributes (e.g., drug resistance or genotype) become apparent. In low-incidence jurisdictions, any temporal cluster is suspicious for an outbreak. A working definition of a potential "TB outbreak" is helpful for planning and response and may include any of the following 6 criteria:

Criteria based on surveillance and epidemiology:

- An increase has occurred above the expected number of TB cases.
- During and because of a contact investigation, 2 or more contacts are identified as having TB disease, regardless of their assigned priority, (i.e., high- , medium-, or low-priority).
- Any 2 or more cases occurring within 1 year of each other are discovered to be linked, and the linkage is established outside of a contact investigation (e.g., 2 patients who received a diagnosis of TB disease outside of a contact investigation are found to work in the same office and only 1 or neither of the persons was listed as a contact to the other).
- A genotype cluster leads to discovery of 1 or more verified transmission links which were missed during a contact investigation within the prior 2 years.

Criteria based on program resources:

- Transmission is continuing despite adequate control efforts by the TB control program.
- Contact investigation associated with increased cases requires additional outside help.

periodic fit testing: Repetition of fit testing performed in accordance with federal, state, and local regulations. Additional fit testing should be used when 1) a new model of respirator is used, 2) a physical characteristic of the user changes, or 3) when the user or respiratory program administrator is uncertain that the healthcare worker is obtaining an adequate fit.

potential ongoing transmission: A risk classification for TB screening, including testing for *M. tuberculosis* infection when evidence of ongoing transmission of *M. tuberculosis* is apparent in the setting. Testing might need to be performed every 8–10 weeks until lapses in infection controls have been corrected, and no further evidence of ongoing transmission is apparent. Use potential ongoing transmission as a temporary risk classification only. After corrective steps are

taken, reclassify the setting as medium risk. Maintaining the classification of medium risk for at least 1 year is recommended.

powered air-purifying respirator (PAPR): A respirator equipped with a tight-fitting facepiece (rubber facepiece) or loose-fitting facepiece (hood or helmet), breathing tube, air-purifying filter, cartridge or canister, and a fan. Air is drawn through the air-purifying element and pushed through the breathing tube and into the facepiece, hood, or helmet by the fan. Loose-fitting PAPRs (e.g., hoods or helmets) might be useful for persons with facial hair because they do not require a tight seal with the face.

prevalence: The proportion of persons in a population who have a disease at a specific time.

pulmonary TB: TB disease that occurs in the lung parenchyma, usually producing a cough that lasts 2 to 3 weeks.

purified protein derivative (PPD) tuberculin: A material used in diagnostic tests for *M. tuberculosis* infection. In the U.S., PPD solution (5 tuberculin units per 0.1 mL) is approved for administration as an intradermal injection as a diagnostic aid for *M. tuberculosis* infection (latent infection or TB disease).

QuantiFERON®-TB test (QFT) and QuantiFERON®-TB Gold test (QFT-G): Types of blood assays for *M. tuberculosis* that are in vitro cytokine assays that detects cell-mediated immune response to *M. tuberculosis* in heparinized whole blood from venipuncture. This test requires only a single patient encounter, and the result can be ready within one day. In 2005, QFT was replaced by QFT-G, which has greater specificity because of antigen selection. QFT-G appears to be capable of distinguishing between the sensitization caused by *M. tuberculosis* infection and that caused by bacille Calmette-Guérin vaccination.

radiography: The diagnostic imaging techniques (including plain-film chest radiographs and computerized tomography) that rely on degrees of X-radiation transmission related to differences in tissue densities.

reinfection: A second infection that follows from a previous infection by the same causative agent. Frequently used when referring to an episode of TB disease resulting from a subsequent infection with *M. tuberculosis* and a different genotype.

resistance: The ability of certain strains of mycobacteria, including *M. tuberculosis*, to grow and multiply in the presence of certain drugs that ordinarily kill or suppress them. Such strains are referred to as drug-resistant strains and cause drug-resistant TB disease. See also **multidrug-resistant TB**.

respirator: A Centers for Disease Control and Prevention (CDC)/ National Institute for Occupational Safety and Health (NIOSH)-approved device worn to prevent inhalation of airborne contaminants.

respiratory hygiene and cough etiquette: Procedures by which patients with suspected or confirmed infectious TB disease can minimize the spread of infectious droplet nuclei by decreasing the number of infectious particles that are released into the environment. Patients with a cough should be instructed to turn their heads away from persons and to cover their mouth and nose with their hands or preferably a cloth or tissue when coughing or sneezing.

respiratory protection: The third level in the hierarchy of TB infection control measures (after administrative and environmental controls) is the use of respiratory protective equipment in situations in which the administrative and environmental controls do not eliminate the risk that exposures can still occur (e.g., AII rooms and rooms where cough-inducing or aerosol-generating procedures are performed).

risk assessment (TB): An initial and ongoing evaluation of the risk for transmission of *M. tuberculosis* in a particular healthcare setting. To perform a risk assessment, the following factors should be considered: the community rate of TB, number of TB patients encountered in the setting, and the speed with which patients with TB disease are suspected, isolated, and evaluated. The TB risk assessment determines the types of administrative and environmental controls and respiratory protection needed for a setting.

screening (TB): An administrative control measure in which evaluation for latent TB infection and TB disease are performed through initial and serial screening of healthcare workers, as indicated. Evaluation might comprise tuberculin skin test, blood assay for *Mycobacterium tuberculosis*, chest radiograph, and symptom screening. See also **symptom screen**.

secondary (TB) case: A new case of TB disease that is attributed to recent transmission as part of the scenario under investigation. The period for “recent” is not defined but usually will be briefer than two years. Technically, all cases are secondary, in that they originate from other contagious cases.

smear: A laboratory technique for preparing a specimen so bacteria can be visualized microscopically. Material from the specimen is spread onto a glass slide (and typically dried and stained). Smear, stain, and microscopy methods for mycobacteria are specific to this genus. The slide can be scanned by light or fluorescent high-power microscopy. These methods require ongoing quality assurance for prompt and reliable results. The results for sputum acid-fast bacilli (AFB) smears typically are reported as numbers of AFB per high-powered

microscopy field, or else as a graded result, from no AFB to 4+ AFB. The quantity of stained organisms is associated with degree of infectiousness. See **acid-fast bacilli.**

source: The person or case that was the original source of infection for secondary cases or contacts. The source case can be, but is not necessarily, the index case.

source case investigation: An investigation to determine the source case could be conducted in at least two circumstances: 1) when a healthcare setting detects an unexplained cluster of tuberculin skin test conversions among healthcare workers or 2) when TB infection or disease is diagnosed in a young child. The purposes of a source case investigation are to ascertain that the source case has been diagnosed and treated, to prevent further *M. tuberculosis* transmission, and to ensure that other contacts of that source case are also evaluated, and if indicated, provided treatment.

specimen: Any bodily fluid, secretion, or tissue sent to a laboratory for testing.

sputum: Mucus-containing secretions coughed up from inside the lungs. Tests of sputum (e.g., smear and culture) can confirm pulmonary TB disease. Sputum is different from saliva or nasal secretions, which are unsatisfactory specimens for detecting TB disease. However, specimens suspected to be inadequate should still be processed because positive culture results can still be obtained and might be the only bacteriologic indication of disease.

sputum induction: A method used to obtain sputum from a patient who is unable to cough up a specimen spontaneously. The patient inhales a saline mist, which stimulates coughing from deep inside the lungs.

susceptibility: See **drug susceptibility test**.

suspected TB: A tentative diagnosis of TB that will be confirmed or excluded by subsequent testing. Cases should not remain in this category for longer than three months.

symptom screen: A clinical evaluation procedure in which patients are asked if they have experienced any departure from normal in function, appearance, or sensation related to TB disease (e.g., cough).

symptomatic: A term applied to a patient with health-related complaints (i.e., symptoms) that might indicate the presence of disease. In certain instances, the term is applied to a medical condition (e.g., symptomatic pulmonary TB).

targeted testing: A strategy to focus testing for infection with *M. tuberculosis* in persons at high risk for latent TB infection and for those at high risk for progression to TB disease if infected.

transmission: Any mode or mechanism by which an infectious agent is spread from a source through the environment or to a person (or other living organism). In the context of healthcare–associated TB infection control, transmission is the airborne conveyance of aerosolized *M. tuberculosis* contained in droplet nuclei from a person with TB disease, usually from the respiratory tract, to another person, resulting in infection.

tubercle bacilli: *M. tuberculosis* organisms.

tuberculin: A precipitate made from a sterile filtrate of *M. tuberculosis* culture medium.

tuberculin skin test (TST): A diagnostic aid for finding *M. tuberculosis* infection. A small dose of tuberculin is injected just beneath the surface of the skin (in the U.S. by the Mantoux method), and the area is examined for induration by palpation 48–72 hours after the injection. The indurated margins should be read transverse (perpendicular) to the long axis of the forearm. See also **Mantoux method** and **purified protein derivative (PPD) tuberculin**.

tuberculosis (TB) disease: Condition caused by infection with a member of the *M. tuberculosis* complex that has progressed to causing clinical (manifesting symptoms or signs) or subclinical (early stage of disease in which signs or symptoms are not present, but other indications of disease activity are present [see below]) illness. The bacteria can attack any part of the body, but disease is most commonly found in the lungs (pulmonary TB). Pulmonary TB disease can be infectious, whereas extrapulmonary disease (occurring at a body site outside the lungs) is not infectious, except in rare circumstances. When the only clinical finding is specific chest radiographic abnormalities, the condition is termed "inactive TB" and can be differentiated from active TB disease, which is accompanied by symptoms or other indications of disease activity (e.g., the ability to culture reproducing TB organisms from respiratory secretions or specific chest radiographic finding). See also **infection**.

tuberculosis (TB) infection: See **infection**.

two-step (tuberculin) skin test: A procedure used for baseline skin testing of persons who will periodically receive tuberculin skin tests (TSTs) (e.g., health-care workers or residents of long-term–care facilities). Two-step TSTs are used to reduce the likelihood of mistaking a boosted reaction for a new infection. If an initial TST result is classified as negative, a second test is repeated one to three weeks later. If the reaction to the second TST is positive, it should be interpreted as evidence of infection with *M. tuberculosis* and indicates that the infection was

most likely in the past and not recent. If the second TST is also negative, the person is classified as not being infected. Two-step skin testing has no place in contact investigations or in other circumstances in which ongoing transmission of *M. tuberculosis* is suspected.

ultraviolet germicidal radiation (UVGI): An air-cleaning technology that can be used in a room or corridor to irradiate the air in the upper portion of the room (upper-air irradiation) and is installed in a duct to irradiate air passing through the duct (duct irradiation) or incorporated into room air-recirculation units. UVGI uses ultraviolet germicidal irradiation to kill or inactivate microorganisms.

wheal: A small bump that is produced when a tuberculin skin test (TST) is administered. The wheal disappears in approximately 10 minutes after TST placement.

window period: The interval between infection and detectable skin test reactivity is referred to as the window period and is estimated to be 2–12 weeks.