UNIVERSITY OF SOUTH ALABAMA
College of Allied Health Professions (CAHP)
Tuberculosis (TB) Surveillance & Training Program

Introduction:

This document outlines the minimum TB training and screening requirements for CAHP faculty/staff, hereafter referred to as Employees and students at-risk for occupational exposure to *Mycobacterium tuberculosis*, the causative agent of TB. Program requirements are based upon U.S. Department of Labor, Occupational Safety & Health Administration (OSHA) standards and Centers for Disease Control & Prevention (CDC) guidelines. Program participation may differ for either Employees or students. CAHP department chairpersons are charged to implement and maintain all specified program elements. This program is organized into TB Exposure Risk, TB Training and TB Screening sections.

TB Exposure Risk:

CDC recommends that a TB surveillance program that includes healthcare workers (HCW) "working in healthcare settings who have the potential for exposure to *M. tuberculosis* through air space shared with persons with infectious TB disease". TB exposure risk is now defined by health-care setting (Table 1). An at-risk setting includes any area where "HCWs might share air space with persons with TB disease or in which HCWs might be in contact with clinical specimens" [1]. It is no longer characterized by facility type since multiple settings may be present in a single facility. Traditional and nontraditional settings are similarly addressed.

Table 1. HCW settings where infectious TB patients may be encountered.

Healthcare Setting	Examples*
Traditional	***Inpatient*** - patient rooms, emergency, departments (EDs), intensive care units (ICUs), surgical suites, laboratories, laboratory procedure areas, bronchoscopy suites, sputum induction or inhalation therapy rooms, autopsy suites, and embalming rooms. ***Outpatient*** - TB treatment facilities, medical offices, ambulatory-care settings, dialysis units, and dental-care settings.
Nontraditional	Emergency medical service (EMS), medical settings in correctional facilities (e.g., prisons, jails, and detention centers), homebased health-care and outreach settings, long-term-care settings (e.g., hospice-skilled nursing facilities), and homeless shelters. Other settings in which suspected and confirmed TB patients might be encountered include cafeterias, general stores, kitchens, laundry areas, maintenance shops, pharmacies, and law enforcement settings.

* Extracted from 2005 CDC guidelines [1].

At-risk healthcare settings are generally classified as low (<3 TB patients/year), medium (>3 TB patients/year), or high risk (potential ongoing TB transmission regardless of setting). Low and medium risk categories for inpatient settings with >200 beds are adjusted upwards to <6 TB

patients/year and >6 TB patients/year, respectively. High-risk category is only a temporary designation and is usually reduced to medium risk upon appropriate corrective action.

CAHP personnel shall be initially classified into two exposure risk categories (Table 2.), which will be documented on applicable **Risk Classification, TB Skin Test, & Training** form (Attachment A or B) or a similar department-derived document. TB risk categorization needs only to be accomplished once during employment or student training unless an individual's exposure-risk changes. For example, a risk Category II student is later reclassified as Category I.

Table 2. TB exposure risk categories.

Category	Description
I	Personnel involved in direct face-to-face patient contact or handling clinical samples from those patients with suspect or confirmed TB.*
II	Personnel who do not enter an at-risk TB healthcare setting as part of their student training or employment duties.

* Applies equally to both traditional and nontraditional at-risk TB healthcare settings.

Patient (client) treatment in a CAHP academic department does not constitute an at-risk setting. Program participation is not required for Category II personnel. Here, the risk of coming into close contact with a TB-infected individual is no greater than that of encountering one in the general population (e.g., supermarket, restaurant, etc). Each chairperson should consult with their department Biosafety Committee member or college Biosafety Officer for specific guidance on unique concerns not priory addressed.

TB Screening:

All new Category I employees/students must receive an initial Mantoux tuberculin skin test (TST) unless they can provide documentation for their most recent TST (usually within the last year). The TST must be repeated on annual TST or for those individuals who have been in regular testing programs. An Interferon-Gamma Release Assays (IGRAs) whole-blood test can be performed in lieu of a TST.

Screening frequency may be increased as specified by the individual clinical training site (e.g., 6-month intervals). Category II students reclassified as Category I must receive TST before entering any at-risk clinical site. Use Attachment A to document initial and/or annual Employee TST and Attachment B to document student testing. TST documentation shall be retained during the entire employment period or student training program.

All positive TST results require follow-up by a licensed healthcare provider before an individual can enter an at-risk healthcare setting. See Appendix 1 for follow-up testing requirements [2].

TST is available from USA Student Health Services, county public health departments, or personal healthcare provider's office. Initial TST is provided at no cost for only Category I

Employees. Students shall provide proof of an initial baseline TST or IGRA in accordance with CAHP immunization requirements. Costs associated with a student's TST shall be borne by the student. An Interferon-Gamma Release Assay (IGRA) whole blood test is also available and is used when a chest X-ray is contraindicated (e.g., potential pregnancy).

TB Exposure:

The following protocol shall be used in all cases of a potential exposure:

1. Follow local facility employee health/infection control office TB post-exposure policy or contact county public health office if neither of the former entities is readily available.

2. Inform CAHP department clinical preceptor/clinical site coordinator of the exposure.

3. Perform recommended post-exposure testing (chest X-ray or IGRA testing).

4. Follow-up testing is performed at 8-weeks post-exposure.

5. Document actions taken on *an* ***Evaluation of Circumstances Surrounding an Exposure Incident Form***** (ECP - Appendix G).

* The original report form shall be retained in the faculty/staff or student's permanent record.

TB Training:

Training is mandatory for all Category I personnel whether an Employee or Student. New employee training shall be accomplished and documented prior to performance of duties involving potential TB exposure. In most cases, this will be upon hire. In addition, Category I employees shall perform annual refresher training. Students will complete initial TB training just prior to entry into an at-risk setting, which is usually their first clinical rotation. Annual refresher training is similarly required for any student either initially designated as or is later reclassified as a Category I risk level. It shall not be assumed that an affiliated clinical site provides this training. Clinical training sites shall provide additional occupation-specific education, as required. For example, fitting and wear training of an N95 or similar OSHA-approved respiratory-protection mask.

Personnel training shall consist of reviewing CAHP web-based training information and achieving a minimum of 70% (14/20) on accompanying post-test. Training documentation shall be maintained as part of appropriate personnel record for duration of employment or academic enrollment. Initial training topics covered shall include, but are not limited to:

- Clinical information (transmission, signs & symptoms, prevention)
- Disease epidemiology (incidence)
- Infection-control practices (health care provider role)
- Screening program (initial/annual)
- Immunocompromised patients & TB (relationship)
- Public Health roles (CDC, OSHA, public health organizations)

Personnel shall also comply with any additional facility-based training & education requirements (e.g., mask fit testing). TB training accomplished at an affiliated clinical facility may be accepted to satisfy CAHP annual refresher training requirements. At a minimum, training topics must include facility infection-control policies, TB screening program, and TB exposure reporting. A brief description of the training preformed and when it was accomplished must be submitted to the department biosafety committee member for his or her review and/or approval.

Remedial train is required for any documented post-test failure of less than an 70% score. It shall consist of reviewing the entire training module and retaking the post- test assessment (quiz). A total of three attempts are allowed during each training cycle.

References:

[1] Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings, 2005. Morbidity and Mortality Weekly Report, Vol.54; No. RR17, 30 December 2005. Department of Health & Human Services Centers for Disease Control and Prevention (CDC).

[2] TB Screening and Testing of Health Care Personnel. Centers for Disease Control & Prevention. Available at: https://www.cdc.gov/tb/topic/testing/healthcareworkers.htm. Accessed 19 December, 2019.

[3] State of Alabama Department of Public Health, Recommendations for Tuberculosis Screening in Students Attending Alabama Four-Year Colleges and Universities in letter *Recommendations to Evaluate Matriculating Students for Tuberculosis*, March 23, 2009.

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Employee Form - Risk Classification, TB Skin Test, & Training

Name: _____ Position: _____ Department: _____

A. TB Exposure Risk Category ___ Initial (I or II) Date Performed _____ Classifier's Initials _____
___ Reclassification (I or II) Date Performed _____ Classifier's Initials _____

B. Initial/Annual TST **C. Initial/Annual Training**

Date Performed	Testing Source*	Verifier's Initials	Date Performed	Testing Source*	Verifier's Initials	Date Performed	Trainer's Initials	Training Source**	Date Performed	Trainer's Initials	Training Source**

***Testing Source:**
D = Doctor's office
E= External employer
P = Public health department
U = USA healthcare facility

****Training Source:**
D = Department
E= External

Comments (indicate date noted):

Appendix B

Student Form - Risk Classification, TB Skin Test, & Training

Name: _____ **Undergraduate or Graduate** *(circle one)* **Department: _____**

A. TB Exposure Risk Category ___ Initial (I or II) Date Performed _____ Classifier's Initials _____
___ Reclassification (I or II) Date Performed _____ Classifier's Initials _____

B. Initial/Annual TST^ **C. Initial/Annual Training**

Date Performed	Testing Source*	Verifier's Initials	Date Performed	Testing Source*	Verifier's Initials	Date Performed	Trainer's Initials	Training Source**	Date Performed	Trainer's Initials	Training Source**

^ Optional to record this information on this form but results must be documented on permanent student file immunization form.

Comments (indicate date noted):

Recommendations for Tuberculosis Screening in Students Attending Alabama Four-Year Colleges and Universities

Purpose: To identify tuberculosis (TB) disease (active TB) or latent TB infection (LTBI) in students matriculating at colleges and universities in Alabama. Individuals with active TB are required by Alabama law to be treated for TB or to remain isolated to protect others from the disease. Individuals with LTBI are advised to be treated to reduce their risk of developing active TB in the future.

International students from countries with a high burden of TB (as determined by the World Health Organization) are at considerably higher risk and should be screened before being allowed to matriculate. Extended travel or residency in a high burden area may also warrant screening, regardless of the student's country of birth.

Recommendations: The Alabama Department of Public Health (ADPH) and the Alabama Tuberculosis Medical Advisory Council recommend that all colleges and universities devise policies and procedures to assure that all first-time students (undergraduates, graduate, transfer, English-language program) are evaluated for TB prior to attending classes. Each student who is determined to be part of an at-risk population for developing TB must present the results of a TB skin test (Mantoux PPD) or blood assay for *Mycobacterium tuberculosis* (i.e., Quantiferon Gold or T-Spot) within two months prior to matriculation. It is the right and responsibility of each institution to determine whether they will accept skin test results from an outside facility or require testing at an affiliated clinic.

Recommended Guidelines to Screen for Tuberculosis in Students in Alabama Colleges and Universities:

1. Screening will begin with an evaluation using a TB risk assessment questionnaire (Appendix A).

2. Students with TB risk factors identified on the TB risk assessment form will undergo a TB screening interview to evaluate for signs and symptoms of active disease. Relevant symptoms include, but are not limited to:
    - A persistent cough (3 weeks or more in duration)
    - Bloody sputum
    - Fever
    - Night sweats
    - Weight loss or loss of appetite

3. Students deemed to be at high risk for TB after using the risk assessment form and interview will have a TB skin test (TST) placed. The college or university may accept documentation of skin tests placed at outside facilities if they are placed and results documented in the student's medical record within two months of matriculation.
    - The Mantoux test is the only acceptable TB skin test. Inject 0.1 ml of purified protein derivative (PPD) tuberculin containing 5 tuberculin units (TU) intradermally into the volar (inner) surface of the forearm. The TB skin test must be interpreted 48-72 hours after injection.

- The test is interpreted by measuring the transverse diameter of induration across the forearm (perpendicular to the long axis).
- TB skin test results are measured and recorded in millimeters of induration. If no induration is present, "0 mm" should be recorded. Only induration is measured; redness or bruising does not indicate infection. A positive test is indicated by the degree of induration in conjunction with an individual's risk factors for TB.
- TB skin test results will be interpreted according to the following criteria:

  5 mm or greater is positive in:
  - Persons with HIV infection
  - Persons with recent close contact with a person who has infectious TB
  - Persons who have a prior chest x-ray suggestive of previous TB
  - Persons with organ transplants and other immunosuppressed persons (receiving the equivalent of 15 mg/d of prednisone for 1 month or longer)

  10 mm or greater is positive in:
  - Recent arrivals (i.e., within the last 5 years) from high-burden countries
  - Injection drug users
  - Mycobacteriology laboratory personnel
  - Residents, volunteers or employees of high-risk congregate settings
  - Healthcare workers
  - Persons with the following clinical conditions that place them at high risk: silicosis, diabetes mellitus, chronic renal failure, some hematological disorders (e.g., leukemias and lymphomas), other specific malignancies (e.g., carcinoma of the head or neck and lung), low body weight (10 % below the ideal), gastrectomy or jejunoileal bypass, and chronic malabsorption syndromes

  15 mm or greater is positive in:
  - All persons with no known risk factors for TB

4. Certain FDA-approved serological tests may be substituted for Mantoux TSTs. Consult with ADPH Tuberculosis Control Program for approved tests.

5. The student health facility and/or clinician must notify the ADPH Tuberculosis Program Manager promptly of individuals with signs or symptoms of active disease regardless of skin test status. Those individuals should be referred to appropriate healthcare providers for further evaluation and management.

6. A history of BCG vaccination does not preclude TB skin testing and has no bearing on skin test interpretation.

7. Individuals with a documented previous positive TB skin test should not receive another skin test. These individuals are required to have a chest X-ray to rule out active disease. If the chest X-ray is abnormal and indicative of tuberculosis, a readable copy of the film and an official radiology report must be provided to the local health department. If there is no documentation of the previous positive skin test, the skin test may be repeated.

8. Students from the United States or other low risk areas for TB infection need not be screened routinely with TB skin testing. However, low risk students entering the health professions or working in facilities which place them at risk for developing TB infection or disease should be screened with TB skin testing before potential exposure as well as periodically thereafter.

9. Students with positive TB skin tests must have a chest X-ray performed to evaluate for active TB disease.

10. Required chest X-rays may be performed by student health services, the local health department, or at an outside facility. If a chest X-ray is abnormal and indicative of tuberculosis, a readable copy of the film and an official radiology report must be provided to the local health department. Active TB disease **must** be excluded. The local health department will perform additional testing for individuals with a chest X-ray that is suspicious for TB.

    Any person with a positive skin test <u>and</u> signs of active TB <u>must not</u> attend class or work until cleared by the Alabama Department of Public Health.

11. School authorities should establish a mechanism to provide medication for latent TB infection and encourage individuals with a positive TB skin test and negative chest X-ray to take medication for latent TB infection if no contraindications exist. There are no restrictions on attending class, work, or campus activities for persons with latent TB infection.