Banner Health

Title: Administration of Tuberculosis Skin Testing and Screening	
Number 1404, **Version** 8	**Original Date:** 11/30/2001
Effective: 04/27/2019	**Last Review/Revision Date:** 04/26/2019
Next Review Date: 08/23/2021	**Author:** Nilsa Martinez
Approved by: BH System Practice Oversight Team, PolicyTech Administrators, Physician Occ Hlth, 04/26/2019	

Discrete Operating Unit/Facility:	
Banner Baywood Medical Center	Banner Behavioral Health Outpatient Services
Banner Behavioral Health Hospital	Banner Health Clinics
Banner Boswell Medical Center	Banner Imaging Services
Banner Casa Grande Medical Center	Banner MD Anderson Cancer Center
Banner Churchill Community Hospital	Banner Medical Group
Banner Del E Webb Medical Center	Banner Urgent Care Services
Banner Desert Medical Center	Banner--University Medical Group
Banner Estrella Medical Center	Banner--University Medical Group Phoenix
Banner Fort Collins Medical Center	Occupational Health/Employee Health Services
Banner Gateway Medical Center	Rural Health Clinics
Banner Goldfield Medical Center	University of Arizona Cancer Center
Banner Heart Hospital	
Banner Ironwood Medical Center	Home Health
Banner Lassen Medical Center	Home Infusion Therapy
Banner MD Anderson Cancer Center	Home Medical Equipment
Banner Ocotillo Medical Center	Home-Based Palliative Care
Banner Payson Medical Center	Hospice
Banner Thunderbird Medical Center	Olive Branch Senior Center
Banner--University Medical Center Phoenix	Telehealth
Banner--University Medical Center South	
Banner--University Medical Center Tucson	Inpatient Rehabilitation Therapy
Banner--University Medical Imaging Center	Skilled Nursing Facility
Banner--University Medical Tucson Cancer Center	
Cardon Children's Medical Center	
East Morgan County Hospital	
McKee Medical Center	
North Colorado Medical Center	
Ogallala Community Hospital	
Page Hospital	
Platte County Memorial Hospital	
Sterling Regional MedCenter	
Torrington Community Hospital	
Washakie Medical Center	

Introduction

Purpose / Population

1. **Purpose**: Banner Occupational Health/Employee Health Services (BOHS) will perform a reliable tuberculosis (TB) skin test that can help detect TB infection early and provide prophylactic treatment if indicated.

2. **Population**: All Employees, Students, Volunteers, and Contract Personnel

Definitions

ATBI: Active TB Infection means that the individual can spread TB bacteria to others (i.e., they are infectious).

BOHS: Includes all Banner Occupational Health and Employee Health clinics

DSR: trained designated reader in facility

Erythema: a reddening of the skin that can also have swelling

Health Care Workers (HCW): includes employees, medical staff members, allied health professionals and volunteers

IGRA: Interferon-Gamma Release Assays are whole-blood tests that can aid in diagnosing Mycobacterium tuberculosis infection. (i.e., Quantiferon or TSpot)
Induration: hard, dense, raised formation on the site of the Tuberculin Skin Test (TST)

LTBI: Latent TB Infection: means that the individual is infected with M. tuberculosis, but they do not have TB disease. Meaning, they cannot spread TB infection to others (i.e., non-infectious).

Medical Provider: physician, advanced nurse practitioner, or physician assistant

Policy

Policy statements

1. BOHS will provide mandatory TB screening as outlined by the Tuberculosis (TB) Prevention and Control Plan per risk assessment of each Banner Health facility. BOHS complies with OSHA and CDC skin testing standards in an effort to detect exposure to Mycobacterium Tuberculosis or Active Tuberculosis.

    - Per the TB Prevention and Control Plan, TB testing is required annually at all facilities classified as medium risk or greater, based on current CDC guidelines.
    - TB testing is required annually, regardless of CDC risk classification in California.
    - Unless the facility has enacted a site-specific TB testing plan,

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Policy, Continued

Policy statements, (continued)

- If a facility does annual TB testing, the annual due date for TB testing will correspond with the annual due date of the facility the HCW is assigned to. Employees will be given a 60-day window to complete TB Testing (i.e. if facility testing is due in March, TB testing can be done starting February 1st until the end of March to be considered compliant).
- If employee is employed by Banner Staffing, the annual due date for TB testing will correspond with employees hire date. Employees will be given a 60-day window prior to hire date to complete TB testing (i.e. if hire date is March 1st, TB testing can be done January 1st to March 1st).
- Testing for medical staff members and allied health professionals will correspond with their reappointment. Medical Staff Services assures compliance with TB requirements for medical staff members who are not employed by Banner.

2. TB screening is done upon hire or at the appointment of the medical staff/allied health professional staff and as indicated per risk assessment of each Banner Health facility on all Banner HCW.

3. HCWs may provide a copy of a TB test performed at a non-Banner facility to meet Banner's testing requirement. This documentation includes an IGRA lab test, if that is the method used for TB surveillance.

4. If utilizing Tuberculin Skin Testing (TST) for screening method, then a Two-step testing process is performed on all new HCW. New HCWs providing documentation of TST result during previous 12 months are only required to do one TST.

    - Two-step testing is useful for the initial skin testing of adults who are going to be retested periodically.
    - This Two-step approach can reduce the likelihood that a boosted reaction to a subsequent TST will be misinterpreted as a recent infection.

5. If a HCW is transferring from a department/facility that does not do annual TB testing to a department/facility that does annual TB testing, they need to be compliant with TB testing in the department/facility that they are transferring to before their transfer is final.

6. TST is contraindicated only for persons who have had a severe reaction (e.g., necrosis, blistering, anaphylactic shock, or ulcerations) to a previous TST. It is not contraindicated for any other persons, including

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Policy, Continued

Policy statements, (continued)

- pregnant women,
- persons who are HIV-infected or
- persons who have been vaccinated with BCG

7. If department/facility does TB testing utilizing TST and a note is provided from HCWs PCP that contraindicates receiving a TST, on a case-by-case basis, an IGRA may be used instead or at BOHS provider's discretion, an IGRA may be used instead of a TST.

8. HCWs who have history of positive TST test results, TST test conversions, or symptoms suggestive of TB will be identified, evaluated to rule out a diagnosis of active TB, and started on therapy or preventive therapy, if indicated.

    - BOHS providers will offer treatment to Banner HCWs who have been diagnosed with LTBI, if indicated. They may include new hires who are diagnosed with LTBI at their new hire screening.

        - If a new hire is not yet on the payroll, they need to refer to their PCP or local health department for treatment.

    - All HCWs with ATBI will be removed from duty and referred to their primary care physician and/or pulmonologist. They will need to report to BOHS to be cleared prior to returning to work.

Procedure

Precautions

1. Vaccination with live viruses may interfere with TST reactions. For persons scheduled to receive a TST, testing should be done as follows:

    - Simultaneously or on the same day as vaccination with live-virus vaccine
    - 4-6 weeks after the administration of live-virus vaccine
    - At least 1 month after small pox vaccine

2. Epinephrine Hydrochloride Solution (1:1000) should be readily available for use in case of an anaphylactic or acute hypersensitivity reaction occurs.

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Procedure, continued

Administering TST

To administer TST, perform the following steps

Step	Action
1	Wash your hands with soap and water and/or alcohol based sanitizer and gather equipment: • Gloves (non-latex) • Alcohol pad or other preferred antiseptic skin prep pad • Clean gauze pads • Vial of TST solution (5 units/0.1 ml) • 1-ml tuberculin safe needle device with a 27-gauge, 1/4 inch to 1/2-inch needle.
2	Rest individual's forearm on a firm, well-lit surface and choose an injection site that is • Injection site should be free of lesions, hair, and tattoos on the flexor surface of the forearm. • The site should not be over a vein or within 2 inches (5 cm) of another injection site. • Lastly, the site should be 2-4 inches below the antecubital space.
3	Clean the site with an alcohol swab and allow to dry.
4	Draw up 0.1 ml of tuberculin. • Do not fill the syringe any longer than ½ hour before administering. • Be sure the complete dose remains in the syringe after expelling the air. • If the dose is reduced, the individual may get a false-negative test result.
5	Don the gloves then stretch the subject's skin taut. • Place the bevel of the needle up and hold the needle and syringe parallel to the skin. • Insert slowly at a 5 to 15-degree angle, just beneath the skin surface until the bevel is fully inserted. • Needle tip should be visible under the skin – if it isn't the needle has been inserted too deeply – withdraw and begin again with new needle.

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Procedure, continued, Continued

Administering TST, (continued)

Step	Action
6	Slowly inject the TST solution into the dermis. • A slight resistance should be felt while performing this step. • As the solution collects under the skin a “bleb” or “wheal” about 5 to 10 mm in diameter will form. • If “no wheal” forms, repeat procedure at another site at least 5 cm (at least 2 inches) away and document change of site and why. • A small amount of solution or blood may leak from the site. • Withdraw needle and apply antiseptic swab or gauze gently over site.
7	Instruct subject to avoid massaging or applying pressure on this site. Even gentle pressure can displace medication
8	Discard TB syringe with uncapped needle or needle with safety shield applied in sharps container.
9	Complete documentation of the procedure and give copy of form to the HCW.
10	Instruct the HCW to return to the Occupational Health/Employee Health Services clinic or designated reader to have the skin test read within 48 to 72 hours. • For new HCWs, if TSTs were administered by BOHS, they must be read at the clinic, by BOHS. o To note again, New HCWs providing documentation of one TST result during the previous 12 months are only required to have one TST placed a read by BOHS. o New hires will not be authorized to begin employment until initial TST skin test has been read and/or appropriate evaluation has been conducted that demonstrates that the individual is free from active TB. • Annual TSTs may be read by the mobile team or a qualified Designated Reader who has completed the in-service to read TSTs. • The TST form is required to be signed by a designated reader, and the HCW is responsible for getting the form back to BOHS.

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Procedure, continued, Continued

Reading and interpreting TST results

Read and interpret results as follows:

Step	Action
1	TST should be read between 48 and 72 hours after administration. • TSTs not read within 48-72 hours after administration will need to be repeated. • Any Questionable TST reading at 48 hours will be read again at 72 hours for documentation of most accurate measurement
2	Readings should be made in good light, with the forearm slightly flexed and measured in millimeters (mm). The presence of Induration should be determined by inspection from side to side against the light as well as by direct light.
3	The basis of reading the skin test is the presence or absence of Induration. This is the area that is measured.
4	Sometimes the site has Erythema, however only the margins of Induration are significant; any redness and swelling should not be mistakenly measured.
5	Lightly palpate the area with fingertips over the surface of the forearm in a 2-inch diameter in all four directions to locate the margins of Induration. • If a raised area is felt, take a ballpoint pen and very lightly draw a line into the indurate area from each side of the arm. When resistance is felt, o stop; then o measure the space in millimeters between the two lines. The diameter of Induration should be measured, at its widest width, transversely to the long axis of the forearm and recorded in millimeters (mm). o Record result in mm on chart.

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Procedure, continued, Continued

Positive TST Reaction

1. The appropriate cutoff for defining a positive reaction depends on:

    - The HCW's individual risk factors for TB, including recent exposure.
    - The prevalence of TB in the facility (refer to individual facility risk assessment)

    - In facilities where the risk of exposure is very low, ≥15 mm may be an appropriate cutoff for HCWs with no risk factors.
    - In Banner Health facilities where patients receive care, ≥10 mm is the cutoff for HCWs with no other risk factors.
    - HCWs generally are considered to be in the ≥10 mm category.
    - Reactions below the cutoff point for a positive test result are considered to be negative.

2. CDC Classification of the Tuberculin Reaction:

    - A tuberculin reaction of ≥ 5 mm of Induration is classified as positive in the following groups:

        - HIV-positive persons
        - Recent contacts of documented TB case
        - Persons with fibrotic changes or chest radiograph consistent with old healed TB
        - Patients with organ transplants and other immunosuppressed patients (receiving the equivalent of > 15 mg/day of prednisone for > 1 month)

    - A tuberculin reaction of ≥ 10 mm of Induration is classified as positive in persons who do not meet the preceding criteria, but who have other risk factors for TB. These include:

        - Recent arrivals (< 5 years) from high-prevalence countries
        - Injection drug users
        - Residents and HCWs of high-risk congregate settings:

            - prisons and jails,
            - nursing homes and other long-term facilities for the elderly,
            - hospitals and other health-care facilities,
            - residential facilities for AIDS patients, and
            - homeless shelters

        - Mycobacteriology laboratory personnel
        - Persons with clinical conditions that place them at high risk
        - Children < 4 years of age, or children and adolescents exposed to adults in high-risk categories.

    - A tuberculin reaction of ≥ 15 mm of Induration is classified as positive in persons with no known risk factors for TB.

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Procedure, continued, Continued

History of Positive TST

1. Complete TB Questionnaire and assess for signs and symptoms of active TB.

2. A chest x-ray (CXR) is indicated for all persons being considered for treatment of Latent Tuberculosis Infection (LTBI) to exclude pulmonary TB. Documentation of CXR done after positive conversion and in the last 12 months will be accepted. CSR is one view posteroanterior (PA).

3. If CXR is normal and no symptoms consistent with active TB are present, tuberculin-positive persons may be candidates for treatment of LTBI.

4. If radiographic or clinical findings are consistent with pulmonary or extrapulmonary TB, further studies should be done to determine if treatment for active TB is indicated. Studies include, but not limited to:

    - medical evaluation,
    - bacteriologic examinations of sputum, and
    - a comparison of the current and old chest radiographs

5. If CXR is medically contraindicated, a release from the individual's physician stating he/she is free from active TB is required.

6. The worker may be cleared for employment when evidence demonstrates that he/she is free from active TB and when all other employment requirements are met.

7. TB questionnaire assessing for signs and symptoms of TB is required to be completed for TB compliance:

    - Frequency of TB evaluation at each facility is based on the annual risk assessment of the facility. This annual risk assessment is completed by infection prevention
    - Upon occupational exposure as a baseline and three months thereafter.

8. All TB questionnaire findings will be reviewed and signed by a Medical Provider indicating freedom from tuberculosis.

Other Information

Documentation of TST

1. TST administration form to include:

    - Patient Name,
    - DOB,
    - site of injection,
    - method,
    - manufacturer, lot #, and expiration date of tuberculin,
    - date and time given, date and time read,
    - result,
    - Induration in mm,
    - signature of administrator,
    - signature of reader, and
    - Lawson # of reader, if DSR

2. TB Questionnaire to include:

    - Patient name,
    - DOB,
    - CXR documentation,
    - signs and symptom review,
    - patient signature,
    - staff signature,
    - provider review and signature

Risk assessment

1. Based on the annual TB risk assessment at each facility:

    - Determination of annual TB testing is based on the annual risk assessment of TB transmission. A risk assessment is completed for each Banner site by infection prevention. Therefore, not all sites require annual TB testing.

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Other Information, Continued

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Related Policies

Management of Infection and Exposure to Mycobacterioum Tuberculosis
Tuberculosis (TB) Prevention and Control Plan
Reporting and Prevention of Infection in Health Care Workers

Keywords

Annual TB
ATBI
IGRA
LTBI
PPD
Quantiferon
TB
TB skin testing
TSpot
TST
Tuberculosis