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***Aerospace Medicine***

***THE TUBERCULOSIS DETECTION AND  
CONTROL PROGRAM***

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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(Lt Col Michael D. Parkinson)  
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This instruction provides guidelines for the Tuberculosis Detection and Control Program. Read this instruction with AFPD 48-1, *Aerospace Medical Program*, and AFI 44-108, *Infection Control Program*. This instruction requires that the Air Force collect and maintain information protected by the Privacy Act of 1974. The authority to do so is in Title 10, United States Code, Section 8013. Systems of Records Notice F168 AF SG C, *Medical Record System*, applies.

***SUMMARY OF CHANGES***

This is the initial publication of AFI 48-115, substantially revising AFR 161-29, *Tuberculosis Detection and Control Program*. It aligns the instruction with AFPD 48-1 and AFI 44-108.

**1. Responsibilities:**

**1.1. HQ USAF/SG.** The Surgeon General develops policies for tuberculosis testing and follow up on personnel who may have been exposed to tuberculosis infection.

**1.2. The Unit Commander.** Ensures that personnel report to the medical treatment facility for tuberculin tests, chest X-rays, and follow-up visits as required by this instruction.

**1.3. Chief, Military Personnel Flight (MPF), at Overseas Bases.** Adds tuberculin skin testing to the outprocessing checklist.

**1.4. The Medical Treatment Facility (MTF) Commander:**

- Ensures that the MTF personnel administer tuberculin skin tests (TSTs) to all individuals requiring tuberculosis testing (see paragraph 3.1).
- Investigates all active cases of tuberculosis promptly, including identification and skin testing of household and close contacts.
- Manages positive reactors and recent converters properly.

- Completes the Annual Tuberculosis Control Report.

### **1.5. Military Public Health (MPH):**

- Manages education and epidemiology for the Tuberculosis Detection and Control Program.
- Works with the Infection Control Committee to ensure compliance with relevant Occupational Safety and Health Administration (OSHA) guidelines for control of occupational exposure to tuberculosis.
- Conducts baseline histories and interviews for positive reactors.
- Notifies the appropriate medical and military public health authorities when patients requiring follow-up are transferred on a PCS assignment or leave the Air Force for other reasons.

### **1.6. Immunizations Clinic Personnel:**

- Perform and read TSTs on persons referred for testing.
- Refer positive reactors to MPH.

**1.7. The Epidemiologic Research Division, AL/AOE.** Monitors tuberculosis trends and prepares an annual Air Force report with recommendations.

## **2. Tuberculosis Detection and Control Program:**

**2.1. Objectives.** The program prevents and controls tuberculosis by:

- Identifying positive reactors, recent converters, active cases and inadequately treated inactive cases of tuberculosis at the stage most favorable for treatment.
- Seeing that identified personnel are appropriately treated.

## **3. Program Elements:**

**3.1. Scope of Testing.** Order tuberculosis skin tests for:

3.1.1. Each person who enters active duty for more than 30 days. Do this during reception processing at the recruit training center or at the first duty station.

3.1.2. All military personnel, Department of the Air Force civilian employees, and their dependents returning from an overseas PCS assignment or moving from one overseas PCS assignment to another. Test them after notification of PCS assignment. Evaluate all individuals found to be skin-test positive and start them on isoniazid (INH) therapy before they depart, if at all possible. Send relevant information to the gaining base.

3.1.3. Personnel working in medical treatment facilities annually and high-risk personnel (as defined by Centers for Disease Control (CDC) guidelines) every six months.

3.1.4. All individuals testing positive for human immunodeficiency virus (HIV). An energy battery is also recommended for these individuals.

3.1.5. People in close contact with active tuberculosis patients.

3.1.6. Occupationally exposed personnel, as determined by the MTF commander or designee.

**3.2. Recording of Results:**

3.2.1. Personnel reading TSTs record all tuberculosis skin-test results, whether positive or negative, on the Public Health Service Form 731, **International Certificates of Vaccination**, and positive skin-test results on the AF Form 2453, **Tuberculosis Detection and Control Data** (table 1). You can use computer databases for local management.

3.2.2. Providers record positive reactions on AF Form 1480, **Summary of Care**, in person's medical record.

### **3.3. Management of Positive Reactors and Recent Converters:**

3.3.1. Manage positive reactors and recent converters as outlined in table 2, following clinical evaluation by a health care provider. This evaluation includes chest radiographs, cultures when appropriate, and an HIV-risk evaluation.

**3.4. Preventive Treatment.** The Air Force strongly recommends preventive treatment with INH for the following five groups:

3.4.1. Household members or other close contacts of an active case of tuberculosis. Administer skin tests and treat as follows:

- Put adults with positive skin tests on INH prophylaxis.
- Retest adult contacts with negative skin tests at 3 months and put them on INH if they convert.
- Start children and adolescents on INH therapy even if their initial skin tests are negative. If the skin test remains negative (less than 5mm) when you retest them at three months and if they have clearly broken contact with the active case, discontinue the chemoprophylaxis.

3.4.2. Recent converters.

3.4.3. Inadequately treated, inactive tuberculosis patients who have received inadequate treatment and have abnormal chest X rays.

3.4.4. TST-positive persons with serious underlying disease, such as:

- Brittle diabetes mellitus.
- Silicosis.
- Immune deficiency diseases (including human immunodeficiency virus HIV infection).
- Post gastrectomy.
- End stage renal disease.
- Hematologic and reticuloendothelial malignancies.
- Persons receiving immunosuppressive drugs or prolonged, high-dose corticosteroids.

3.4.5. All positive reactors under 35 years old.

### **3.5. Treatment and Monitoring:**

3.5.1. The chemoprophylactic treatment dose of INH for adults and children over 12 years old is a single daily dose of 300 milligrams (mg) given for 6 months. For children aged 12 and under,

the dosage is 10 mg per kilogram (kg) not to exceed 300 mg per day for 9 months, according to current American Academy of Pediatrics guidelines.

3.5.2. Individuals with special clinical conditions or radiographic evidence of previously active tuberculosis that was inadequately treated should receive 12 months of INH chemoprophylaxis.

3.5.3. If INH is discontinued for reasons other than INH-associated hepatitis or adverse reaction to INH, such as pregnancy, restart the patient on a continuous course of therapy. Give all patients at least six months of continuous INH therapy. However, the total duration of therapy should not exceed 12 months.

3.5.4. Health care providers monitor all patients for adverse reactions to INH therapy. Monitor the aspartate aminotransferase (AST) level monthly for individuals over 35 years old and consider doing so for younger patients with underlying medical conditions.

3.5.5. Personnel on flying status are grounded for the first 7 days of INH prophylactic treatment in order to rule out hypersensitivity reactions to the medication. At the end of seven days, the local flight surgeon may return the flyer to flying duties with monitoring for adverse reactions. If the services of the flyer are critical in a combat zone or for alert force manning, monitor the flyer closely with chest X-rays every three months until the beginning of INH therapy, preferably within 24 months of conversion.

**Table 1. How To Interpret Tuberculin Skin Tests.**

Test Type	When Test Can Be Read	How to Interpret Results
Tuberculin Tine Test*	48 - 72 hours	Ignore erythema. (TTT)
If induration present, perform PPD to confirm.		
Tuberculin Multiple*	Vesiculation is a Puncture (TMP) positive reaction.	
Mantoux intermediate PPD (5TU)	48 - 72 hours	10 mm induration strength **
** 5 mm induration in intradermal close contact of an active case is a positive reaction		
For TTT Record: Date; millimeters of induration (measured transversely along the long axis of the forearm).		
For TMP Record: Date; type of test; presence or absence of vesiculation; millimeters of induration, if present (measured transversely along the long axis of the forearm).		
*Tine test and multiple puncture TST are not recommended for health care workers since results can vary over time.		

**Table 2. Recommended Treatment And Follow-Up of Tuberculin Skin.**

Classification	Treatment	Follow-up
Positive Reactor -Under age 35	INH for 6 months**	Monthly evaluation by health care provider
Positive Reactor -35 or older	Educate concerning signs, symptoms of active disease	
Recent Converter -Under age 35	INH for 6 months**	Monthly evaluation by health care provider
Recent Converter -35 or older	INH for 6 months** + AST (SGOT)	Monthly evaluation
Household Contacts of Active TB Case (Positive PPD = 5mm)	Consider starting INH therapy, even in 3 months if negative PPD.	Re-test negatives
Positive Reactors or Ignore bacille Calmette Guerin (bCG) history		Follow testing treatment and follow-up guidelines above.
Recent Converters with History of bCG vaccination		
** For infants and children under 12 years old, 9 months of INH; for individuals with special clinical conditions at high risk of active disease (paragraph 3.4.4.), 12 months of INH are indicated.		

**NOTE:**

INH is the normal drug used for prophylaxis. If you encounter multiple drug-resistant tuberculosis, refer to current CDC recommendations for prophylaxis.

**4. Program Evaluation**

**4.1. Annual Report.** The Annual Report of the Tuberculosis Detection and Control Program, RCS: HAFSGP(A) 7204 measures the effectiveness of this program.

4.1.1. MPH at each installation completes and sends the annual report (Attachment 2) to the Major Command (MAJCOM) by the 10th workday following the last day of December.

4.1.2. The MAJCOM/SGPM compiles and sends a consolidated report and copies of reports from individual medical treatment facilities to AL/AOE, Brooks AFB TX 78235, within 30 workdays after the last day of December.

**4.2. Analysis.** AL/AOE analyzes reports and compiles an annual consolidated Air Force report by 30 March of each year and sends the report to HQ AFMOA/SGPA.

ALEXANDER M. SLOAN, Lt General, USAF, MC  
Surgeon General

## Attachment 1

### GLOSSARY OF REFERENCES, ABBREVIATIONS, ACRONYMS, AND TERMS

#### *References*

AFPD 48-1, *Aerospace Medical Program*

AFI 44-108, *Infection Control Program*

Title 10, United States Code, Section 8013, *Medical Records System*, current edition

#### *Abbreviations and Acronyms*

**AFI**—Air Force Instruction

**AFMOA**—Air Force Medical Operations Agency

**AFPD**—Air Force Policy Directive

**AFR**—Air Force Regulation

**AL**—Armstrong Laboratory

**CDC**—Centers for Disease Control

**DAF**—Department of the Air Force

**INH**—Isoniazid

**HIV**—Human Immunodeficiency Virus

**KG**—Kilogram

**MAJCOM**—Major Command

**MG**—Milligram

**MPF**—Military Personnel Flight

**MPH**—Military Public Health

**MTF**—Medical Treatment Facility

**PCS**—Permanent Change of Station

**PPD**—Purified Protein Derivative

**TMP**—Tuberculin Multiple Puncture

**TST**—Tuberculin Skin Test

**TTT**—Tuberculin Tine Test

#### *Terms*

**Active Case of Tuberculosis**—A person who has clinical disease demonstrated by X-ray or culture.

**Inadequately Treated, Inactive Case of Tuberculosis**—An individual with a positive skin test and abnormal chest X-ray who previously had active disease and who either received inappropriate therapy or did not complete an entire course of appropriate therapy.

**Negative Reaction**—Reactions below cut-off levels recommended by CDC are considered negative. Erythema without induration does not constitute a positive reaction. Vesiculation with either the tuberculin multiple puncture (TMP) test or the tuberculin tine test (TTT) is considered positive and confirmation with PPD tuberculin is not necessary. Evaluate induration (without vesiculation) to the TMP or TTT skin tests further and confirm by the purified protein derivative (PPD) skin test.

**Positive Reaction**—The amount of induration required for a positive reaction varies depending on the category of persons tested. Use the most current Centers for Disease Control definition of positive reaction.

**Positive Reactor**—A person who reacts positively to a tuberculin skin test (TST) under current Centers for Disease Control recommendations.

**Recent Converter**—Persons are considered recent converters if they show a 10 mm or greater increase in induration response to the PPD tuberculin test within a two-year period for those under 35 years of age or a 15 mm or greater increase in induration for those over the age of 35. Similarly, any person whose TMP or TTT skin test has changed from no induration to vesiculation within two years or from no induration to induration (confirmed by a positive reaction to a PPD skin test) within two years is also a recent converter.



**Attachment 2**

**ANNUAL REPORT OF TUBERCULOSIS DETECTION AND CONTROL PROGRAM**

	Active Duty	Other
Number of newly diagnosed positive reactors under age 35 identified at your base	_____	_____
Number of above placed on INH	_____	_____
Percentage of above placed on INH	_____	_____
Number of newly diagnosed positive reactors under age 35 identified at previous base but not placed on INH	_____	_____
Number of above placed on INH	_____	_____
Percentage of above placed on INH	_____	_____
Number of recent converters identified at your base	_____	_____
Number of above placed on INH	_____	_____
Number of recent converters identified at previous base but not placed on INH	_____	_____
Number of above placed on INH	_____	_____
Percentage of above placed on INH	_____	_____
Number of total TB skin tests administered and read	_____	_____
Number of active TB cases	_____	_____
Number of patients placed on prophylaxis for exposure to multiple drug-resistant TB		_____
Number of patients not placed on INH due to the following reasons:		
Pregnancy		_____
Liver Disease		_____
Patient Refusal		_____
PCS		_____
Other Medical		_____