

JAIL BULLETIN

NUMBER 111

AUGUST 1994

The Jail Bulletin is a monthly feature of the Crime Commission Update. The Bulletin may be used as a supplement to your jail in-service training program if officers study the material and complete the attached "open book" quiz. The Bulletin and quiz may be reproduced for use by your staff. We welcome any jail training material you would like to contribute to the Bulletin.

TUBERCULOSIS IN CORRECTIONAL FACILITIES PART III

TB CONTROL

Every correctional facility should appoint one staff member as TB Control Officer to oversee TB control and prevention efforts. An effective TB control program in a correctional facility should consist of surveillance, containment, and assessment activities. It is the TB Control Officer's duty to ensure inmates and staff get necessary TB screening and treatment services.

SURVEILLANCE

Surveillance is the close monitoring of all inmates and staff to identify TB infection and TB disease. Surveillance is carried out through screening, diagnosis, case reporting, and contact investigations. Comprehensive and regular surveillance activities are essential to detect and prevent the transmission of TB. Surveillance is the only way to determine the current status and trends of TB in the institution. Every new inmate or employee should be considered a potential

transmitter of TB infection until proven otherwise.

Screening for TB Infection

All employees and inmates should be screened upon employment or admission with the Mantoux tuberculin skin test. Multiple puncture tests are not recommended. After the initial screening, TB skin tests should be repeated at least annually for all inmates and for all staff who work with inmates. Results of skin testing should be compared with previous testing within the same facility, with testing done in other correctional facilities, and with infection rates locally in the general population. More frequent screening should take place in a facility if there is an increase in:

- # the incidence of either TB or HIV/AIDS; or
- # the incidence of TB infection (positive tuberculin skin test reactions).

TB Skin Testing - The Mantoux tuberculin skin test is given by intradermal injection of purified protein derivative (PPD) of killed tubercle bacilli, usually on the inner forearm. The site is examined by a trained health worker 48-72 hours later for a reaction. The diameter of induration is measured, disregarding erythema or bruising. Those with a positive TB skin test should receive a chest x-ray to rule out active disease and should be evaluated for preventive therapy.

False-negative reactions may occur in TB-infected persons when their immune system is weakened. This may be due to HIV infection or medications that suppress the immune system. Because immunosuppressed persons may have falsely-negative tuberculin reactions due to delayed type hypersensitivity (DTH) anergy, consideration should be given to evaluating such persons for anergy by companion testing with at least two DTH skin-test antigens, e.g., mumps, candida, and tetanus toxoid, administered by the Mantoux method.

All persons with, or at risk for, HIV infection should receive an x-ray as part of initial screening, regardless of skin test reaction.

A chest x-ray should always be done within 72 hours of a positive TB skin test reading. A chest x-ray and sputum smear and culture should always be done within 72 hours of identification of symptoms of TB, such as:

- # productive cough,

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- # coughing up blood,
- # weight loss,
- # loss of appetite,
- # lethargy/weakness,
- # night sweats, or
- # fever

Diagnosis of TB Cases

Inmates or staff with TB symptoms and/or chest x-ray indicative of TB will need further tests, such as sputum or other bacteriologic specimen for "acid fast bacilli" (AFB) smear and culture.

Initially, a series of three early morning sputum specimens should be collected on successive days and examined by smear and culture. Supervision should be used to ensure proper specimen collection. Coaching is often required so that the specimens are secretions brought up from the lungs (sputum), not from the nose or mouth (saliva). Patients may be told to inhale deeply and inhale three times and then inhale swiftly, cough deeply, and spit into the sputum container. Aerosol induction of sputum may be required. Sputum collection should be carried out in accordance with the isolation procedures described under the "Containment" section of this document.

Until culture results return, the symptomatic patient is a "suspect" case. The only way to confirm the diagnosis of TB is by identifying *Mycobacterium tuberculosis* through culture. Drug susceptibility studies should be done on all initial specimens and on culture bacilli from patients not responding to treatment.

Extrapulmonary TB - Diagnosis of extrapulmonary TB can be difficult. Many sites other than the lungs can be affected, and symptoms will be different for each site. When extrapulmonary TB is suspected, other clinical specimens should be obtained (e.g., urine, pleural fluid, biopsy specimens, etc.). Extrapulmonary TB occurs more often in HIV-infected persons than in persons without HIV infection.

Case Reporting

All suspected or diagnosed cases of tuberculosis should be reported to the health department according to state laws and regulations. Do not wait for results of sputum smears and cultures before reporting a suspect TB case. The reporting of a TB case makes the resources of the health department available to assist in proper management of the case and in the evaluation of contacts. In addition, each facility should maintain an in-house reporting and record-keeping system.

Contact Investigation

Whenever pulmonary or laryngeal TB disease is suspected or diagnosed, all close contacts should be skin tested, unless there is a documented history of a positive skin test. Close contacts include any people who have shared air in an enclosed space with a potentially infectious TB case. Close contacts of inmates could include all cellmates, all inmates and staff on the same tier, or all inmate and staff in the building who share air. Visitors could also be close contacts of an infectious TB case. This depends on the ventilation system in the facility (air ducts, connecting hallways, windows, etc.), and on the infectiousness and behavior of the source case. Close contacts of staff or of recently admitted or released inmates could include friends, family members and co-workers.

It is important to maintain the confidentiality of the person with TB disease during contact investigations. Your state health department TB program can provide you with specific information on the rules and regulations regarding this for your state.

Contacts who 1) have a positive skin test (plus or minus 5mm), 2) have a history of a positive skin test, or 3) are HIV positive, regardless of skin test results, should receive a chest x-ray. If there is no evidence of disease, these contacts should receive preventive therapy, unless medically contraindicated. Contacts with an initially negative tuberculin skin test should be retested in 10 to 12 weeks.

The "concentric circle" approach can be used to determine the extent of contact investigation needed. First, identify those persons who were most likely to have been infected by the source case. Include in this first group: persons who shared breathing space for the longest time with the source case, persons who may have spent less time with the source case but who are immunosuppressed, and persons who have TB signs and/or symptoms. If positive TB skin test reactions are identified among persons in the first group or "circle" (with no previous history of TB infection), new infections have probably occurred. Expand the investigation in widening circles until skin testing identifies a group of persons among whom there is not evidence of new TB infection.

Information in this Jail Bulletin was taken from "Control of Tuberculosis in Correctional Facilities, A Guide for Health Care Workers," A publication of the U.S. Department of Health and Human Services.

QUIZ

Nebraska Jail Standards require that jail staff receive eighteen (18) hours of inservice training each year. The Jail Bulletin may be used to supplement inservice training if an officer studies the bulletin, completes the quiz, and this process is documented by the jail administrator for review during annual jail inspections.

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SUBJECT: Tuberculosis in Correctional Facilities - Part III **NAME:** _____
DATE _____

1. An effective TB control program in a correctional facility should consist of surveillance _____ and assessment activities.
2. Both new inmates and employees should be considered a potential transmitter of TB infection.
_____ True _____ False
3. List five symptoms of TB.
1) _____ 4) _____
2) _____ 5) _____
3) _____
4. The only way to confirm a TB diagnosis is by identifying mycobacterium tuberculosis through _____.

CREDIT: One half hour credit for jail inservice training requirement

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1. An effective TB control program in a correctional facility should consist of surveillance _____ **containment** _____ and assessment activities.
2. Both new inmates and employees should be considered a potential transmitter of TB infection.
 True False
3. List five symptoms of TB.
 - 1) Productive cough
 - 2) Coughing up blood
 - 3) Weight loss
 - 4) Loss of appetite
 - 5) Lethargy/weakness
 - 6) Night sweats
 - 7) Fever
4. The only way to confirm a TB diagnosis is by identifying mycobacterium tuberculosis through **culture** _____.

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ANSWER SHEET SHOULD BE RETAINED BY JAIL ADMINISTRATOR.