SPOKANE COUNTY FIRE DISTRICT 8

Standard Operating Procedures

40.03.10 OCCUPATIONAL EXPOSURE TO TUBERCULOSIS		Adopted: 12/20/16 Reviewed: 11/01/18 Revised: 00/00/00 Approved:

Purpose: To protect members in the pre-hospital setting and for the prevention of tuberculosis transmission.

References: February 9, 1996 OSHA Directive CPL 2.106

Procedure:

1. Personnel affected.
    a) All District EMS personnel including:
        i. Paramedics.
        ii. Emergency Medical Technicians.
        iii. Advanced Emergency Medical Technicians-A.
        iv. First Responders.
        v. Nurses.
        vi. Physicians.
        vii. Any other personnel who contact patients in the pre-hospital setting.

2. Definitions.
    a) AFB: Acid-fast bacilli-organisms that retain certain stains, even after being washed with acid alcohol; most are mycobacteria. When seen on a stained smear of sputum or other clinical specimen, a diagnosis of tuberculosis should be considered.
    b) AP: Aerosolized pentamidine-drug treatment given to patients with HIV infection to treat or to treat or to prevent Pneumocystis Carinii Pneumonia. The drug is put into solution, the solution is aerosolized, and the patient inhales the aerosol.
    c) ASHRAE: American Society of Heating, Refrigeration, and Air Conditioning Engineers, Incorporated.
    d) HEPA: High-efficiency particulate air filter.
    e) HIV: Human Immunodeficiency Virus - the virus that causes AIDS.
    f) HRSA: Health Resources and Services Administration.
    g) PCP: Pneumocystis Carinii Pneumonia - this organism does not cause disease among persons with a normal immune system.
    h) PR: A disposable, particulate respirator (respiratory protective device)/facemask that is designed to filter out particles 1-5 microns in diameter.

3. Suspected case of TB.

a) A suspected case is one in which the EMS agency(s) has identified an individual as having symptoms consistent with TB.
b) The Center for Disease Control (CDC) has identified the symptoms to be:
    i. Productive cough.
    ii. Coughing up blood.
    iii. Weight loss.
    iv. Loss of appetite.
    v. Lethargy/weakness.
    vi. Night sweats or fever.

4. Tuberculosis infection.
    a) A condition in which tuberculosis organisms (Mycobacterium Tuberculosis, Mycobacterium Bovis, or Mycobacterium Africanum) are present in the body, but no active disease is evident.

5. Tuberculosis transmission.
    a) Spread of tuberculosis organisms from one person to another, usually through the air.

6. General principles of tuberculosis control in the pre-hospital setting.
    a) Preventing spread of infectious droplet nuclei via source-control methods.
    b) In high-risk settings, certain techniques can be applied to prevent or to reduce the spread of infectious droplet nuclei into the general air circulation.
    c) The application of these techniques, which are called source control methods because they entrap infectious droplet nuclei as they are emitted by the patient, or "source," is especially important during performance of medical procedures likely to generate aerosols containing infectious particles.
    d) Ventilation of patient care areas.
        i. When emergency medical personnel or others must assist in transport of patients with confirmed or suspected active tuberculosis, the personnel should make every effort to limit aerosolization of the droplet nuclei.
        ii. If feasible, the rear window of the ambulance should be kept open.
        iii. The ambulance heating and air conditioning system should be set on a nonrecirculating cycle.
    e) EMS provider use of particulate respirators.

i. When emergency medical personnel or others must transport patients with confirmed or suspected active tuberculosis, the personnel shall immediately don a PR with the ability to filter objects 1-5 microns in size.

ii. EMS personnel use of PR's is expected in the following situations:

a. When appropriate ventilation of the patient care area is not available and the patient's signs and symptoms suggest a high potential for infectiousness.

b. When the patient is potentially infectious and is undergoing a procedure that is likely to produce bursts of aerosolized infectious particles or to result in copious coughing or sputum production, regardless of whether appropriate ventilation is in place.

c. When the patient is potentially infectious, has a productive cough, and is unable or unwilling to cover coughs.

f) Patient use of particulate respirators (PR).

i. Whenever it is feasible (when airway management is not compromised) patients with suspected or confirmed tuberculosis should have a mask or PR placed to reduce the occurrence of particulate aerosolization.

ii. PR's used by patients should be valveless.

iii. Some PR's have valves to release expired air, and these would not be appropriate for use.

iv. It must be stressed that application of the PR should not obstruct or interfere with management of the patient's airway or in the delivery of oxygen to a patient with a compromised respiratory system.

7. Procedure specific precautions.

a) There are several procedures that will expose the EMS provider to increased aerosolization of particulate.

b) Provider use of PR's is expected during these procedures.

c) These procedures include but may not be limited to:

i. Endotracheal Intubation.

1. Patient treatment areas and patient treatment compartments occupied by intubated patients who may have active tuberculosis should be provided with ventilation as described above.

2. Persons performing endotracheal intubation or endotracheal suctioning on patients who have suspected or confirmed active tuberculosis should wear PR's.

ii. Nebulizer Administration of Medications. When administering medications via a nebulizer (i.e., Proventil) the EMS provider should:

1. Evaluate patient for signs and symptoms highly suggestive of tuberculosis, such as the development of a productive cough or cough and fever.
2. If such symptoms are elicited, provider protection should be implemented.
3. EMS providers should wear PR's whenever they must be in the patient treatment area during the administration of such medications to patients who have, or are at high risk of having tuberculosis.
4. The patient treatment area/compartment should be completely decontaminated prior to another patient being placed in the ambulance.
5. Decontamination of patient treatment compartments should involve use of EPA approved disinfectants.

8. Employee training.
   a) All Fire District 8 EMS personnel shall receive specific training, which assures the provider has knowledge of:
      i. Methods of TB transmission.
      ii. TB signs and symptoms.
      iii. Medical surveillance required in cases of employee exposure, positive test results, infection or establishment of presence of the disease.
      iv. Therapy required.
      v. This procedure as well as the use of PR's.

9. Employee screening.
   a) Prior to receiving their first duty assignment, all Fire District 8 personnel shall:
      i. Receive a Mantoux tuberculin skin test.
      ii. This includes those with a history of Bacillus of Calmette and Guerin vaccination.

iii. This does not apply to those people who have had a previously positive reaction that is documented.
iv. Additionally, if the provider has documentation of completed adequate preventive therapy or adequate therapy for active disease they do not need the Mantoux tuberculin skin test.
v. A TB test will be provided annually to all members in good standing.
vi. The member may choose to deny the test but must sign Tuberculin (TB) Skin Testing Declination.

10. Evaluation of EMS personnel following unprotected exposure to tuberculosis.
    a) In addition to periodic screening, personnel should be evaluated if they have been exposed to a potentially infectious tuberculosis patient for whom the infection-control procedures outline in this document have not been taken.
    b) Unless a negative skin test has been documented within the preceding three months, each exposed EMS provider should receive a Mantoux tuberculin skin test as soon as possible after exposure and should be managed in the same way as other contacts.
    c) If the initial skin test is negative, the test should be repeated 12 weeks after the exposure ended.
    d) Exposed persons with skin test reactions greater than or equal to 5mm or with symptoms suggestive of tuberculosis should receive chest radiographs.
    e) Persons with previously known positive skin test reactions who have been exposed to an infectious patient do not require a skin test or a chest radiograph unless they have symptoms suggestive of tuberculosis.

11. Evaluations and management of EMS personnel with positive skin test or symptoms that maybe due to tuberculosis.
    a) EMS personnel with positive tuberculin skin tests or with skin test conversions on repeat testing or after exposure should be clinically evaluated for active tuberculosis.
    b) Persons with symptoms suggestive of tuberculosis should be evaluated regardless of skin test results.
    c) If tuberculosis is diagnosed, appropriate therapy should be instituted according to published guidelines.
    d) Personnel diagnosed with active tuberculosis should be offered counseling and HIV antibody testing.

e) EMS personnel who have positive tuberculin skin tests or skin test conversions but do not have clinical tuberculosis should be evaluated for preventive therapy according to published guidelines.
f) Personnel with positive skin tests should be evaluated for risk of HIV infection.
g) If HIV infection is considered a possibility, counseling and HIV antibody testing should be strongly encouraged.
h) All persons with a history of tuberculosis or positive tuberculin tests are at risk for contracting tuberculosis in the future.
i) These persons should be reminded periodically that they should promptly report any pulmonary symptoms.
j) If symptoms of tuberculosis should develop, the person should be evaluated immediately.
k) Work Restrictions.
    i. EMS personnel with current pulmonary or laryngeal tuberculosis pose a risk to patients and other personnel while they are infectious; therefore, stringent work restrictions for these people are necessary.
    ii. They should be excluded from work until adequate treatment is instituted, cough is resolved, and sputum is free of bacilli on three consecutive smears.
    iii. EMS personnel with current tuberculosis at sites other than the lung or larynx usually do not need to be excluded from work if concurrent pulmonary tuberculosis has been ruled out.
    iv. Personnel who discontinue treatment before the recommended course of therapy has been completed should not be allowed to work until treatment is resumed, an adequate response to therapy is documented, and they have negative sputum smears on three consecutive days.
    v. EMS personnel who are otherwise healthy and receiving preventive treatment for tuberculosis infection should be allowed to continue usual work activities.
    vi. EMS personnel who cannot take or do not accept or complete a full course of preventive therapy will have their work situations evaluated to determine whether reassignment is indicated.
    vii. Work restrictions may not be necessary for otherwise healthy persons who do not accept or complete preventive therapy.
    viii. These persons should be counseled about the risk of contracting disease and should be instructed to seek evaluation promptly if

symptoms develop that may be due to tuberculosis, especially if they have contact with high risk patients.

12. Record keeping.
    a) Records regarding personnel exposures shall be maintained by the District and each employee shall have a confidential file including the following information:
        i. Employee exposure incident reports.
        ii. Skin test results.
        iii. Medical evaluations.
        iv. Medical treatments.
        v. A confidential log, additionally, of positive test results, infections and determinations of presence of the disease shall be maintained by the Fire District.
        vi. Tuberculin (TB) Skin Testing Declination form.

13. Cost.
    a) All costs associated with the provision of protective equipment, initial screening tests, re-testing, and follow-up shall be at the sole expense of the District.

FORM 40.03.12

Spokane County Fire District 8

Tuberculin (TB) Skin Testing Declination (Refusal)

I have refused the administration of a tuberculin skin test. I have been given the opportunity to be tested for tuberculosis at no charge to myself. However, I decline the testing at this time. I understand that by refusing this test, there is no way to determine whether or not I am infected with the bacteria that causes tuberculosis. If in the future I would like a tuberculin skin test, I can receive one at no charge as long as I am a member in good standing with Spokane County Fire District 8.

Signature:_____ Date:_____

Printed Name: _____ PIN: _____

Witness Signature:_____ Date:_____

Printed Name: _____