LEON COUNTY E.M.S.

Standard Operating Guideline

Title:	Mycobacterium Tuberculosis Control Guidelines
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Revision:	2
Pages:	7

I. PURPOSE:

The purpose of the Leon County Emergency Medical Service Mycobacterium Tuberculosis (TB) Control Program is to provide all LCEMS employees with the most current Center for Disease Control (CDC) information about TB control guidelines and procedures to avoid the contraction and spread of Tuberculosis.

II. GUIDELINE:

It is the policy of LCEMS to treat all suspected TB patients as infectious and take all necessary precautions to avoid contraction of the disease through the use of proper personal protective equipment and procedures to safeguard themselves while in the proximity of suspected TB patients. This guideline also provides for periodic pre and post exposure testing and medical surveillance should a documented exposure occur.

III. PROCEDURE:

It is the responsibility of the patient caregiver to familiarize themselves with the guidelines and uses of PPE provided and carefully evaluate each patient contact for signs and symptoms of respiratory compromise and the possibility of exposure, to determine the proper level of PPE in each situation and to use the appropriate PPE and techniques to minimize transmission possibilities.

Definitions

Exposure Incident: Any event during which an employee had unprotected contact with a person with active, contagious tuberculosis disease.

Fit Testing: An OSHA approved procedure used to determine the correct size and type of personal protective respirator an individual must use to achieve a proper seal.

TB: Mycobacterium Tuberculosis
Tuberculosis is a **highly contagious disease** that is transmitted during coughing and sneezing. Many people are exposed to tuberculosis, yet not everyone develops tuberculosis disease

Some people may carry tuberculosis infection for many, many years before developing tuberculosis disease. Others may have a tuberculosis infection, yet never develop tuberculosis disease. Those people who do develop tuberculosis disease, will experience signs and symptoms of tuberculosis.

It is believed that the strength of the immune system determines whether a tuberculosis infection develops into tuberculosis disease. People with weakened immune systems, such as those with HIV/AIDS, are more susceptible to developing tuberculosis disease.

Unlike tuberculosis infection, tuberculosis disease is contagious. This is because the Mycobacterium that causes the disease is active. People infected with tuberculosis disease may experience any of the following signs and symptoms:

- Nausea / weakness / fatigue
- Rapid weight loss
- Fever
- Night sweats
- Cough
- Chest pain
- Hemoptysis

TB Testing: Laboratory, Medical or Radiological procedure used to determine if an employee is infected with the TB bacteria. Methods may include blood testing using Quantiferon- TB gold test (QFT-G), Mantoux or PPD testing, Sputum culture or radiological exam.

Tuberculosis Disease: The active stage of tuberculosis where the bacteria is present in sufficient quantity to cause illness. A patient with active TB is contagious and will normally show signs and symptoms of the disease.

Tuberculosis Infection: An inactive stage of tuberculosis infection where the tuberculosis bacteria is present but not in sufficient quantity to cause disease. The patient will test positive but may not show signs and symptoms and is not

contagious. It is estimated that 10% of infections will develop into active TB disease.

Respirator: A respiratory personal protective device that meets OSHA and NIOSH standards for Fit and Filtration and is provided by LCEMS to all of its employees as part of the Personal Protective Equipment cache that is located on every licensed vehicle operated by LCEMS.

Universal Precautions: A method of infection control in which all human blood and body fluids are treated as if known to be infected with HIV or HBV. A corresponding level of personal protective equipment is used to mitigate the threat. PPE may include the use of impermeable gloves, goggles or face mask, respirators, safety glasses, gowns, caps and shoe covers

Responsibilities:

A. Employee Responsibilities
- Attend and participate in all related TB and respirator training and comply with training requirements
- Comply with established TB pre exposure and post exposure testing requirements
- Comply with procedures for respirator fit test requirements, usage, storage and inspection
- Report any known defect or difficulty in respirator usage to the Shift Supervisor.
- Report any known or suspected exposure incidents to his/her supervisor immediately and complete Incident Report as required
- Comply with medical follow up recommendations / treatments and reports progress to appropriate administrative contact regularly.

B. Supervisor Responsibilities
- Review incident report for completeness
- Determine need for First Report of Accident or Injury/Illness
- Notify Infection Control contact of possible exposure and employee involved
- Notify safety officer of possible exposure
- Determine employees suitability for continuing shift duties

C. Program Manager
- Coordinates TB testing and medical evaluation forms for new hires.
- Coordinates follow up TB testing for existing employees.
- Coordinates original Fit Testing and follow up fit testing as required.

- Ensures all new employees are oriented to the program and trained in the use and care of PPE issued equipment prior to deployment to the field.
- Collects and maintains TB Test Roster for all employees and maintains the most current date of TB testing or a waiver for each employee in the database.
- Collects and maintains fit test data and reviews fit test techniques for compliance.

D. Program Manager / Training Manager or Designee
- Fit Tests new employees upon presentation from Training Manager
- Maintains respirator and fit test kit supply inventory
- Reviews program annually and makes revisions as necessary

Risk Assessment:

Current risk stratification estimates based on data obtained from both hospital infection control directors and Leon County Health Department Officials of actual cases of reported active TB place LCEMS Employees are reviewed annually. Current practice is to conduct Quantiferon-TB Gold (QFT-G) testing at the time of employment, annually thereafter, and after a documented exposure event per OSHA and CDC standards. Employees are permitted to refuse testing subsequent to pre hire evaluation but must complete and sign a waiver; an employee may change their mind at any time and continue with annual or semi annual precautionary testing if initiated due to increased frequency of contact.

LCEMS Employees who are determined to be at increased risk of exposure to TB include those employees in direct care settings and initiating high risk procedures, those employees include:

- Emergency Medical Technicians
- Paramedics
- Controllers
- Supervisors
- Licensed Administrators

Some examples of high risk procedures are:

- Transporting patients in an enclosed patient care area of an ambulance
- Oropharyngeal Suctioning
- Stoma Suctioning
- Intubation
- BIAD Initiation and placement
- Procedures that induce a cough

Non licensed LCEMS employees who do not work in patient care areas and do not perform any direct patient care are not considered at risk. Examples of these employees are:

- Office clerical staff
- Logistics technicians

Control Procedures and practices:

A. Immediately available universal precautions, respirators and other OSHA/NIOSH approved PPE barrier devices designed to physically shield the wearer from contact with contaminated surfaces or environments.

B. Environmental filtration devices and precautions that function to eliminate airborne particulates from recirculation throughout a closed environment.

C. Decontamination of work surfaces with OSHA approved cleaners specifically formulated and tested then supplied for use in the patient care arena.

D. Training in the specific use of personal protective equipment. How, when and where personal protective practices must be employed so as to provide a maximum level of effectiveness and safety for the user.

E. Continuing education in TB treatment modalities and evolving trends in healthcare for patients with TB.

E. Interactive Quality Management and direct medical oversight of suspected exposures and oversight of the clinical management of patients.

G. Effective and timely infection control feedback from receiving hospital staff if a documented exposure occurs, clinical follow up from health care provider for evaluation of employee exposures for treatment recommendations.

H. Pre-employment employee exposure testing by providing either a blood assay for mycobacterium tuberculosis (BAMT) or two step tuberculin skin test (TST) for baseline and post exposure follow up testing as part of a monitoring program.

I. Initial and continued fit testing of employees for respiratory personal protective equipment using OSHA/NIOSH standards and practices to correctly train and fit employees prior to deployment to the field and after any significant perceptible change in employee facial symmetry or significant weight gain or loss of more than 20 # while in continued employment.

LCEMS maintains an aggressive, comprehensive, respiratory protection standard that involves training in the use, cleaning, care and fit testing of respiratory equipment for its employees against respiratory threats occurring in the environment from both natural and manmade threats. Specific guidelines of this program can be found in the Respiratory Protection Guidelines located in the services general operating guidelines.

Control Technique: (Ground Ambulance Transport)

A. Upon presentation of a patient that exhibits signs and symptoms of TB immediately move upwind of the patient and increase distance; if practical initiate universal precautions.
B. Ask patient if they have TB or have ever had or been treated for TB.
C. Immediately retrieve and don the appropriately sized N-95 respirator mask and verify correct fit.
D. Place surgical mask over patients mouth and nose and consider the use of oxygen via non rebreather mask at sufficient flow
E. Place ambulance ventilation system in non recirculation mode or turn off and open windows to maximize outdoor air intake.
F. Turn on exhaust fan.
G. If vehicle uses HEPA filtration system filters, maximize airflow through filter elements by increasing fan speed.
H. Airflow should ideally flow from the front of the vehicle past you then over the patient then either out the back windows, or out of the rear vent or through the HEPA filter before recycling back into the patient care compartment. If possible physically separate the front compartment from the patient care area by closing the door or window between the two areas.
I. Notify the receiving facility of a possible TB patient and follow the directions from staff about transfer inside of the facility.

Control Technique: (Transfer to another service)

A. Upon presentation of a patient that exhibits signs and symptoms of TB as above, that will be packaged by LCEMS for transfer by a secondary service to their ultimate destination. Initiate the above guidelines and inform the receiving service of the possibility of TB. Mask the patient as above and provide full patient care summary.

Training:

A. Continuing TB education is provided to employees during yearly annual training and includes the most current Center for Disease Control data

available at the time of training. TB fact sheets are distributed and guidelines for care are reviewed for consistency. Face mask donning guidelines are reviewed

and hands on practices are held by applying N-95 respirators and tight fitting respirators according to manufacturer's instructions. Guidelines for environmental control of patient care compartment and HEPA air filtration techniques. Education in the proper cleaning of environmental areas and the use of appropriate disinfectants.

Exposure Incident Reporting:

Exposure incident reporting is outlined in the LCEMS policy and procedure manual and exposures must be reported even in cases where full protection was used in order to determine exposure frequency. This information is used to determine risk stratification and the need for possible increases in group TB testing frequency. If a shift supervisor, acting shift supervisor or program manager is notified of a bona fide exposure incident by hospital infection control after a patient transport has been completed, the supervisor will immediately notify involved employees and send them to the appropriate facility for medical evaluation and follow up TB testing if indicated.

Medical Surveillance:

Medical surveillance by the county's authorized workers comp medical provider will be initiated and provided for all employees who have occupational exposure to TB. This surveillance will include appropriate medical interview, documentation and baseline evaluation for risk of exposure. This medical surveillance may also include:

- Baseline TST or BAMT testing
- Annual or semi annual TST or BAMT retesting
- Medical evaluation and follow up for employees when an employee has documented unprotected contact with a known active TB case where contact has been determined by a medical practitioner to suggest infection.
- Medical Evaluation when an employee has a skin test conversion or positive BAMT finding.
- Medical treatment and monitoring for an employee if he or she develops LTBI or Active TB disease as a result of an occupational exposure.

Written Program

This document is part of LCEMS's SOG manual which is readily available to all employees on all shifts. It will be reviewed and revised annually and as necessary by the Program Manager and the Deputy Chief of Administration. It will be made available upon request to designated employee representatives, OSHA and NIOSH officials.