

Subject:	AIRBORN INFECTIOUS DISEASE CONTROL PLAN
Section:	PPG# 4200.18
Chapter:	Operations
Effective Date:	7/1/98

1.0 POLICY

- 1.1** It has been recognized that Thurston County Fire Protection District No.5 & 9 personnel, in the normal course of their duties, may come into contact with airborne pathogens, specifically tuberculosis, increasing the chance of contracting this potentially harmful or fatal disease. In accordance with WAC 296-62-071, the Occupational Safety and Health Act of 1970, and the Center for Disease Control's "Guidelines for Preventing the Transmission of Tuberculosis in Health Care Settings" Thurston County Fire Protection District No.5 & 9 has established the following procedures for its employees. In addition, the Department will provide appropriate information and follow-up care if exposure should occur, and will educate Department personnel on the modes of transmission, etiology (the study of the cause of disease), and precaution methodologies against tuberculosis.

1.1.1 This document describes the Tuberculosis Surveillance Program and its administration. Yearly surveillance of employees will be done to detect any exposure to tuberculosis and treat any employee who becomes infected with the disease.

1.1.2 This document also describes the employee Respiratory Protection Program. Specific employees will be required to have training in the use of respirators to prevent the spread of tuberculosis.

1.2

Occupational Exposure Control

1.2.1 The County Health Officer will assess the overall risk of Tuberculosis in Thurston County on a yearly basis. This will include trend data on the number of active cases, trend data on the number of skin test conversions, and sociodemographic groups at highest risk.

1.2.2 Member Assessment. The following can reasonably anticipate occasional occupational exposure to tuberculosis:

- (a) Firefighter/EMT
- (b) Firefighter/Prevention
- (c) Firefighter/Officer
- (d) Firefighter/Paramedic

1.2.3 All members identified in PPG 4200.20 are required to wear respirators.

- 1.2.4** The following job classifications are not to have occupational risk of exposure to tuberculosis however, they will receive general tuberculosis training and offered annual skin tests. In the event of tuberculosis exposure they will receive the same after care provided to Emergency Responders/Patient Care Providers.
- (a) Chief Officers
 - (b) Secretaries
 - (c) Mechanics
- 1.3** Whenever possible, ventilation and enclosures, will be used to protect members from airborne contaminants. But when these controls are not feasible, respirators will be used to protect members/employees. This plan has been developed in accordance with good industrial hygiene practice and the requirement of WISHA programs.
- 1.4** The purpose of this policy is to establish procedures regarding use of respirators for personal protection against airborne contaminants and to provide for ongoing tuberculosis surveillance within Thurston County Fire Protection District No.5 & 9.
- 1.5** This program applies to respirators used for employee protection from airborne pathogens only, specifically tuberculosis. Surgical masks approved by the FDA for patient safety are not addressed by this program because surgical masks were developed for patient safety and have not been tested by the same protocols. Self-contained breathing apparatus are not addressed or covered in this document.
- 1.6** Only respirators approved by NIOSH/MSHA will be used. Current guidelines require a H.E.P.A. (high efficiency particulate air) or N95 respirator to be used.
- 1.7** No member will use a respirator for protection against an airborne contaminant without *first* undergoing medical screening, training, and fit testing. See policy 4200.20.
- 1.7.1** Members will be supplied respirators of appropriate size to all employees if they are required to use respirators, free of charge.
 - 1.7.2** Members required to wear a respirator are: identified in the Policy Section 1.2.3
- 1.8** Respirator Fit-Testing. Respirator must be fit tested, using the appropriate qualitative fit tests. The irritant smoke or saccharin mist test will be used to ensure proper fit of high-efficiency particulate respirators. (see Appendix A). The District will ensure a trained quality fit tester will perform the fit testing for members required to wear a respirator in the performance of their duties. The department will retain testing documentation for the duration required for member medical files.
- 1.9** All members will be Fire Department employees medically screened following the procedures detailed in Policy 4200.20. Members approved for self-contained breathing apparatus will be pre-approved for use of disposable respirators.
- 1.9.1** Respirator training will be given by a qualified Fit Tester for the particular respirator used

particular respirator used.

1.9.2 Each respirator user will be shown how to wear a respirator, and will be trained in the following:

- (a) Principles of respirator operation.
- (b) How to put on and take off the respirator.
- (c) How to perform positive and negative fit check.
- (d) The purpose of the qualitative fit tests.
- (e) How and when to detect a problem with a respirator, and to whom it should be reported.
- (f) When to dispose of the respirator.
- (g) Specific tasks for which a respirator is required.
- (h) Limitations of the respirator.
- (i) How to maintain, clean, and store the respirator.
- (j) In-class, hands-on opportunity to wear the respirator.

1.10 Although tuberculosis occurs in all segments of the population, tuberculosis risk is higher in the following national subpopulations:

- (a) Persons with HIV infection
- (b) Close prolonged contacts of infectious tuberculosis cases
- (c) Persons with medical conditions which increase the risk of tuberculosis
- (d) Foreign-born persons from high prevalence countries
- (e) Low-income populations, including high risk minorities
- (f) Alcoholics and intravenous drug users
- (g) Residents of long-term care facilities ie. healthcare settings, correctional institutions, homeless shelters, convalescent homes, and drug treatment centers.

1.11 Training shall be repeated annually.

1.12 Records of fit-testing will be kept in department's Personnel files for each member and retained in accordance with Policy 4200.20.

1.13 Respirator training. Respirator training will be conducted for all members whose job classifications have a risk of occupational exposure in confined spaces to Tuberculosis. The department has identified the patient compartment of transport vehicles to be a confined spaces

1.13.1 Annual training. The department will conduct annual refresher training with the aid of the Infection Control Officer or trained personnel within the department.

2.0 DEFINITIONS

- 2.1** ***Airborne Pathogens:*** Any disease-producing microorganism transmitted by airborne means. An example would be TI3 transmitted by a sneeze or a cough.
- 2.2** ***Confined Space:*** A work area with limited natural or mechanical ventilation that presents a hazard by accumulation of air contaminants. The patient compartment of a transport vehicle will be considered a confined space.
- 2.3** ***Confirmed tuberculosis:*** (infectious case) A confirmed/infectious case of tuberculosis will require that tuberculosis has been confirmed by a physician or the Health Department, after seeing a positive sputum culture (takes 2-3 weeks for the culture results).
- 2.4** ***Exposure:*** A significant exposure is defined as an unprotected exposure to a potentially infectious tuberculosis patient, who has been coughing and producing droplet nuclei into the air, in a confined space. (i.e. rooms, transport vehicles) or when exposed to a high hazard procedure to a confirmed tuberculosis patient (i.e. aerosolized medication treatment, auctioning procedures).
- 2.5** ***Particle Mask:*** Any nose and mouth cover used to keep exhaled pathogens from being spread around the surrounding area to prevent the inhalation of large particles. These masks will not prevent the inhalation of Tuberculosis bacterium.
- 2.6** ***Respirator:*** An approved respiratory device that prevents the inhalation of harmful airborne contaminants. A NIOSH approved, 95% efficient, particulate air respirator is considered the minimum level respiratory protection.
- 2.7** ***Suspected tuberculosis:*** A suspected case of tuberculosis will be any individual who displays 4 or more of the symptoms associated with tuberculosis. These cases will be *considered and treated as if it is a confirmed case.*
- 2.7.1** Symptoms of tuberculosis: The following are the classic symptoms of tuberculosis: Any four of these symptoms shall constitute a need for donning a HEPA or N95 mask
- (a) productive cough of greater than 3 weeks duration;
 - (b) coughing up blood;
 - (c) weight loss;
 - (d) loss of appetite;
 - (e) lethargy;
 - (f) night sweats;
 - (g) fever
- 2.8** ***Tuberculosis:*** (general) Tuberculosis is a systemic disease most commonly affecting the lungs. However, tuberculosis may also occur in any other body organ or tissue. Only pulmonary tuberculosis is infectious. The etiological agent of tuberculosis, Mycobacterium Tuberculum, is carried through the air in infectious droplets, which are produced when a person with infectious tuberculosis sneezes, coughs, speaks or sings. When people breathe the air contaminated by an infectious patient, they may become infected with the tuberculosis bacillus. Ventilation is important in the reduction of viable organisms in a given space. Covering the patient's mouth will reduce the number of

organisms in a given space. Covering the patient's mouth will reduce the number of organisms excreted into the air. Respirators may prevent inhalation of any airborne organisms. Effective anti-tuberculosis therapy quickly eliminates a large number of a patient's bacilli and renders most patients non-infectious after up to three weeks of medication. Tuberculosis bacilli enter the lungs and establish an infection. The tuberculin skin test is used to identify persons who have been infected. The skin test will show positive within 2-10 weeks after exposure. Individuals who are infected but show no clinical signs or symptoms are not considered contagious. An average of 1 in 10 infected persons will develop the active state of the disease in their lifetime if not treated.

- 2.9** ***Tuberculin Skin Test:*** A test for the existence of TB administered subcutaneously. In healthy persons, it produces no appreciable effect, but in persons who have had exposure to TB, it can produce moderate fever and also some swelling and redness at the injection site. This test is also referred to as a Mantoux test or a PPD test.

- 2.10** ***Undetermined tuberculosis:*** An undetermined case of tuberculosis will require a patient to state they have tuberculosis or have had a positive PPD skin test but are unable to show any documentation of diagnosis such as medications or discharge instructions. An undetermined case will also include any individual that has less than 4 of the symptoms of tuberculosis.

3.0 RESPONSIBILITIES

- 3.1** The Infection Control Officer is responsible for overall administration of the programs, and will approve the use and selection of respirators.
- 3.2** An assigned Firefighter/Paramedic will monitor the Tuberculosis Surveillance Program, and will ensure that all members/employees are tested and provided with follow up care as needed.
- 3.3** The Respiratory Protection Program Administrator is responsible for ensuring that appropriate respirators are provided, and that they are properly used and maintained.
- 3.4** The Assistant Chief of Operations will review the effectiveness of the airborne pathogen program yearly prior to the annual training. This evaluation shall be documented and reviewed by the department's safety committee.

4.0 GUIDELINES

- 4.1** Emergency responders/patient care personnel, including respirator users, will be offered annual skin testing. All patient care members are subject to the Tuberculosis Surveillance Program upon employment. Results of the skin testing will not effect the persons employment.
- 4.1.1** Initial Skin Testing: Upon employment, all individuals involved in emergency response/patient care positions are subject to the Tuberculosis Surveillance Program. Initial skin testing will be done during Recruit school. Members will be required to participate in the Tuberculosis Surveillance Program.
 - 4.1.2** Any member that has documented positive reaction to the Mantoux skin test, will not be required to take further skin tests. At the scheduled time for the annual skin test the member should review the signs and symptoms of TB and if present, further medical treatment should be considered.
 - 4.1.3** Subsequent Annual Skin Testing: Members in emergency response/patient care positions will be offered annual skin tests. Annual skin testing will be done on or near the Members/employees anniversary date.
 - 4.1.4** Initial skin testing will be required of all employees, subsequent testing will be offered to each employee. If an employee does not wish to participate in annual screening they will need to submit a written request to be exempt for that year and the letter will be placed into the employee's medical file. Skin testing after a documented exposure will be mandatory for the health and safety of the member/employee and co-workers.
- 4.2** Immunizations and history. The Infection Control Officer will oversee the Tuberculosis Surveillance Program:
- 4.2.1** The Mantoux method skin test will be used. Tests must be read 48-72 hours after administration.
 - 4.2.2** Members will report any history of tuberculosis infection or treatment to the health department at time of skin test.
 - 4.2.3** Members may present documentation of previous negative skin test(s) if they were administered within the previous three months in lieu of skin test upon employment.
 - 4.2.4** New members 35 years of age and older will have a second test 1-3 weeks after the first test.
 - 4.2.5** Induration less than 10 mm is non-significant reaction unless the person tested is a close contact of an infectious patient, a recent converter, a person with chest radiographs showing fibrotic lesions likely to represent old healed tuberculosis, or a person with known or suspected HIV infection.

infection.

4.2.6 Written documentation of administered skin test results will be provided to each new employee.

4.3 Significant (Positive) Skin Test Reactions: Members with significant reactions to skin test must take a chest x-ray within 30 days.

4.4 Records of TB testing will be maintained on each member by Thurston County Fire Protection District No.5 & 9 in the members Medical File for at least 30 years. WAC section 296-62-052

5.0 GUIDELINES

WAC 296-305-01501
WAC 296-62-071
Policy Number 4200.20