

HISTOLOGY LABORATORY

**TUBERCULOSIS
PREVENTION PLAN**

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1 Infection and treatment

1.1 Infection

Tuberculosis disease is characterized by cough, fever, weight loss, night sweats, anorexia, or chest x-ray changes. Tuberculosis, often known as active or infectious tuberculosis, is capable of being transmitted to other individuals.

Mycobacterium tuberculosis (TB) is introduced into the body through inhalation of tiny droplets (droplet nuclei), 1-5 μ in size, from the respiratory secretions of a person with tuberculosis disease when that person coughs, speaks, sings, or spits.

A positive tuberculin skin test without signs or symptoms of disease and no history of previous TB infection indicates tuberculosis infection.

1.2 Treatment

If an employee who previously tested negative with a TB skin tests positive to the test during employment, an evaluation should be performed by occupational health to determine occupational exposure. If the employee does not show symptoms of the disease and it is determined that they are not infectious, they may continue to work. A regimen of drug therapy is often recommended to prevent the development of the TB disease. Employees with infectious pulmonary or laryngeal tuberculosis must remain off work until they are no longer infectious to others.

1.3 Compensation

In cases of occupationally acquired TB, the employer is responsible for all health care costs, lost wages, and benefits during the medical removal period in accordance with workmen's compensation insurance.

1.4 References

University of Utah Hospital policy and procedure manual. April 1994. 1-69.

University of Utah Department of Epidemiology. April 1994. "Tuberculosis information and training brochure."

2 Exposure determination

Laboratory regulations seek to limit employees' occupational exposure to potentially infectious materials as the result of performing their job duties. OSHA has not attempted to list all situations where exposures could occur.

Caution must be used when working in the histology laboratory. One never knows if a surface or item has been contaminated. One cannot be positive that a tissue specimen has been completely fixed. Any incidents of unexpected exposure should be documented and reported in the quality assurance minutes.

2.1 Job classification

Exposure risk determination is made for histology and surgical pathology job classifications where occupational exposure to potentially infectious materials such as unfixed tissue specimens occurs. The determination is made without personal protective equipment.

2.2 High risk

The following duties, usually performed by the surgical pathology assistant or the grossing room attendant, are high risk:

- handling leaking or contaminated specimen containers
- working with frozen sections that involve handling fresh unfixed human tissue including
 - freezing specimens
 - sectioning in the cryostat
 - washing off freezing compound prior to fixation
- grossing specimens (cassetting, cutting in) that involve handling unfixed and fixed human tissue and organs
 - examining and handling specimens

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- sectioning to obtain the proper size for processing
 - wrapping small specimens in paper prior to cassetting
 - using disposable needles—disposable needles should never be recapped; the syringe and needle combined should be disposed of in the sharps container
 - cleaning up and disinfecting counter tops, cryostats, and refrigerators.

2.3 Low risk

Low risk duties include those performed by the histology technicians, histology supervisor, and laboratory aides:

- picking up, grossing and cassetting specimens
- loading tissue processors and handling contaminated specimen containers such as with autopsy cases
- staining frozen sections and touch prep slides (smears)
- handling processed tissue sections
- cleaning counters
- cleaning tissue processors
- returning dirty specimen containers to autopsy

2.4 Notification of exposure

Employees must report illness or exposure to possible infectious materials immediately to the supervisor and to employee health. Documentation should be maintained in employees personnel file.

3 Method of compliance

3.1 Universal precautions

Universal precautions should be observed to prevent contact with potentially infectious materials. All body fluids and unfixed tissue from a human (living or dead) should be considered potentially infectious. Universal precautions are followed by environmental services as well as laboratory employees. All garbage is treated as infectious and disposed of in a specified landfill for hospital waste, in accordance with state regulations.

3.2 Engineering controls

Engineering controls are a means of isolating or removing pathogens from the workplace. These must be provided by the employer.

3.2.1 Sharps containers

Sharps containers are closable, puncture resistant and leak-proof on the sides and bottom. They should be used to dispose of anything that could puncture or cut the skin such as razor and microtome blades, pipettes, needles, cover glasses and glass slides. Sharps containers should not be overfilled and should be kept closed. When containers are full, environmental services should be called for pick-up and replacement.

3.2.2. Regulated waste

All waste in the laboratory is regulated. Garbage cans are provided by environmental services and are lined with brown plastic bags. Garbage cans are emptied daily. Specimen containers should be emptied before being disposed of in garbage cans. All contaminated paper towels and gloves should be disposed of in garbage cans. Glass bottles should be placed in a large yellow trash can labeled, "GLASS". Broken glassware should be disposed of in the sharps container.

3.2.3 Contaminated laundry

On site linen services follows universal precautions. Contaminated laundry should be placed in the bags provided by linen services. If laundry is wet, it should be placed in a leakproof bag.

3.2.4 Specimen containers

If specimen containers are to stay on site, universal precautions are followed and they do not need to be labeled as "biohazard"; containers that will be used outside of the hospital must show the "biohazard" label. Specimen containers must be closable and leakproof. If leakage does occur, the container should be placed in a secondary leakproof container with appropriate labeling.

3.2.5 Handwashing facilities

Sinks with soap and paper towel dispensers are located in each laboratory. Dispensers are filled by environmental services as needed.

3.3 Work practice controls

3.3.1 Handwashing

Wash hands immediately after any exposure to blood or other potentially infectious materials, immediately after removing gloves, and before leaving the laboratory.

3.3.2 Housekeeping

Countertops should be cleaned with either chlorine bleach (sodium hypochlorite), or cyclophene. Wipe down countertops as soon as possible after exposure. Replace protective coverings and absorbent materials as soon as feasible when they become contaminated.

3.3.3 Equipment

Equipment should be decontaminated if possible before being serviced. A "biohazard" label should be affixed to the portions which remain contaminated.

3.3.4 Eating, drinking, smoking, and cosmetics

Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in the histology laboratory and in the surgical pathology laboratory. Food and drink should not be kept in refrigerators, freezers, shelves, cabinets or on countertops or bench tops where potentially infectious materials are kept.

3.3.5 Splashes

All procedures involving potentially infectious materials should be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances.

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- 3.3.6 Mouth pipetting
Mouth pipetting and mouth suctioning of potentially infectious materials is prohibited.
- 3.4 Personal protective equipment
Personal protective equipment is ordered by the histology supervisor. Employees are responsible for requesting new orders when supplies are low.
- 3.4.1 Gloves
Small, medium, and large sizes of latex disposable gloves are kept in the lab. Gloves are to be worn when any possible contact with potentially infectious materials exists. Gloves should be changed as soon as feasible after contamination and should not be worn out of the laboratory.
- 3.4.2 Safety glasses, goggles, and face shields
Safety glasses, goggles and face shields should be worn when there is a possibility of a splash, spray, or spatter of body fluids, such as when grossing specimens. They should be disinfected after use with a 5% bleach solution.
- 3.4.3 Aprons, gowns, lab coats, and sleeves
Whenever the possibility of occupational exposure exists, aprons, gowns, lab coats, and sleeves should be worn, as appropriate. Aprons and sleeves are disposable and lab coats and gowns should be placed in the laundry. These items should not be worn outside of the work area.

4 Respiratory protection

The department of epidemiology is responsible for the respiratory protection program for tuberculosis. They are also responsible for TB prevention and control. Epidemiology is authorized to evaluate the appropriateness of airborne precautions and to discontinue precautions that are inappropriate or no longer necessary.

4.1 Tuberculosis prevention training

Initial training for tuberculosis prevention is provided at orientation. If necessary, the department safety officer will schedule additional training with hospital epidemiology.

4.2 Respirators

When suspected or known TB cases are being handled in the grossing room, TB masks must be worn. These dust-mist respirator masks, Tecno DMR 2010, are NIOSH approved. They are purchased through the hospital storeroom and a supply is retained in the grossing room.

4.3 Respirator training

Environmental health and safety services is responsible for fit-testing the respirator masks and providing training in the use and limitations of respirators. Arrangements for respirator fit-testing and training must be made by each section supervisor and scheduled with environmental health and safety.

Employees not fit-tested and trained in the appropriate use of the respirator may not perform the duties requiring the masks. No action may be taken against employees who cannot be successfully fitted.

4.4 Record keeping

Training records are kept in the department employee folders. These records are maintained by the lab supervisors.

4.5 References

J. J. Keller and Associates Inc. April 1994 *Health care hazards compliance and guidelines, hazard communication*. 89-120.

University of Utah Hospital policy and procedure manual. March 1994. 1-65.

University of Utah Hospital policy and procedure manual. April 1994. 1-69.

University of Utah Hospital Epidemiology. April 1994. *University of Utah Hospital tuberculosis information and training brochure*.

5 Tuberculosis testing

5.1 Policy

All employees should be screened for tuberculosis when they start employment. Testing should be repeated annually. Occupational health is responsible for the TB testing program.

5.2 PPD skin test

The purified protein derivative tuberculin skin test is a standard preparation of proteins and other materials obtained by filtration of tubercle bacilli cultures. An intradermal injection of 5 units is given.

5.3 Testing procedure

1. The department safety officer will be contacted by the occupational health nurse (OHN) and a date will be scheduled for the annual testing.
2. The OHN will administer the tuberculin PPD skin test. The injection of 5 units will be given intradermally in the arm.
3. If an employee is absent on the scheduled testing date, it is the supervisor's responsibility to see that the employee is rescheduled with the OHN.
4. Records are maintained by occupational health.

5.4 References

J. J. Keller and Associates Inc. April 1994. *Health care hazards compliance and guidelines, hazard communication*. 89-120.
University of Utah Hospital policy and procedure manual. April 1994. 1-69.