



CITY OF
PITTSBURGH
"AMERICA'S MOST LIVABLE CITY"

LUKE RAVENSTAHL, MAYOR

City of Pittsburgh Infectious Disease Control Program

Exposure Control Manual

July 2011 Revision

This manual is administered through the City of Pittsburgh Safety & Injury Prevention Program
Department of Personnel and Civil Service Commission

IMPORTANT NUMBERS (available anytime)

City Infectious Disease Officer, Safety Manager David C Reed (412) 287-9920
 Police Infectious Disease Officer, Assistant Chief Regina McDonald (412) 560-5415
 Fire Infectious Disease Officer, Chief Darryl Jones (412) 287-9978
 EMS Infectious Disease Officer, Patient Care Coordinator Roy Cox (412) 670-4198

To report an injury or possible infectious disease exposure, call
 UPMC WorkPartners 1-800-633-1197

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INTRODUCTION

This Information Could Save Your Life

This manual has been developed to help you increase your level of awareness of exposure control and prevention of bloodborne pathogens and infectious disease events. By carefully following the procedures and guidelines outlined in this document you can considerably reduce your risk of contracting an infectious disease in the workplace.

The first part of this manual includes a summary of the minimum standards established by the Occupational Safety and Health Administration (OSHA), Department of Labor, for the protection of workers from the hazards of bloodborne pathogens. These standards are published in 29 Code of Federal Regulations, Section 1910.1030. This document also references and utilizes the most recent recommendations from the Department of Health and Human Services Centers for Disease Control.

The second part of this manual titled “Information on Infectious Disease” provides the reader with a brief background on various infectious diseases that emergency responders should be aware of.

Please make this manual readily accessible to all employees. This manual will be reviewed and updated at least once per year. It is important that each department communicate to the Department of Personnel Safety Office when new or modified tasks and procedures are instituted or employee positions are revised.

Any questions concerning this manual should be directed to the City Safety Manager at 412-255-2403.

EXPOSURE DETERMINATION

Thousands of City Employees are at Risk

Job Classification	Task	Control Methods
Any City of Pittsburgh Employee	Face to face contact with other employees and/or with members of the public	Available hand washing facilities and free annual influenza vaccination at the consent of each employee
EMS- Paramedic	Pre-hospital Health Care Rescue services	State mandated and approved EMT and EMT-P response training (safe work practices), the use of needleless devices, gloves, masks, face shields, mechanical ventilation in vehicles, sharps containers, decontamination procedures
Firefighter including company officers	Initial first on scene medical response Response and duties at fire scene	State mandated and approved First Responder training (safe work practices), gloves, masks, face shields, use of EMS mechanical ventilation in vehicles, sharps containers, decontamination procedures
Police Officers of all rank	Initial first on scene medical response Law enforcement activities	State mandated and approved First Responder training (safe work practices), gloves, masks, face shields, decontamination procedures
Public Works / Environmental Services Parks & Recreation - certain assignments	Collecting household/public refuse and placing in vehicle for disposal	Gloves, coveralls, sharps containers. Education regarding safe work practices involving the handling of sharps and needles

UNIVERSAL PRECAUTIONS

The Most Important Approach to Infection Control

“Universal Precautions”, (sometimes called Standard Precautions when referring to infectious disease exposures in a hospital setting), is the approach to infection control that recommends that all human blood and certain body fluids be treated as if they are infected with the Hepatitis C Virus (HCV), the Hepatitis B Virus (HBV), and Human Immunodeficiency Virus (HIV).

City of Pittsburgh employees are instructed, in all State mandated and approved training at new hire and in annual refresher training thereafter, to treat all blood and blood products as though they were infectious for HIV and HBV, HCV. Universal Precautions are observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

Universal Precautions include:

Hand washing

Hand washing is the single most important means of preventing the spread of infection. Antiseptic towelettes or antiseptic hand cleanser and clean cloth/paper towels should be used when handwashing facilities are not readily available. (Hands should then be washed with soap and running water as soon as this is feasible.)

Employees must wash hands and other skin surfaces immediately or as soon as possible after removing gloves or other personal protective equipment. Personnel should scrub hands briskly for 10-15 seconds with warm water and soap. When facilities are not available, personnel should use antiseptic towelettes or antiseptic hand cleanser according to the manufacturer’s directions.

Employees must wash hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or other potentially infectious materials.

Needles/Sharps

Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed. Shearing or breaking of contaminated needles is prohibited. The City of Pittsburgh does not approve of re-usable needles or sharps for uses involving human body fluids.

Contaminated needles or sharps are **NOT** to be recapped or removed. Immediately or as soon as possible after use, contaminated sharps shall be placed in the appropriate puncture resistant, properly labeled, leak-proof container until properly reprocessed. Employees must never reach their hands into these containers to retrieve a sharp.

Eating/Drinking

Eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.

Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets, or on countertops or benchtops where blood or other potentially infectious materials are present.

Containers

Specimens of blood or other potentially infectious materials shall be placed in a container, which prevents leakage during collection, handling, processing, storage, transport, or shipping.

The container shall be properly labeled or color-coded and closed before being stored, transported, or shipped.

When City of Pittsburgh personnel utilize Universal Precautions in the handling of all specimens, the labeling/color-coding of specimens is not necessary as long as it is clear that the containers hold specimens. This exemption only applies while such specimens/containers remain within the facility. Labeling or color-coding is required when such specimens/containers leave the facility.

If the outside of the primary container is contaminated, the primary container shall be put inside a labeled or color coded secondary container designed to prevent leakage during handling, processing, storage, transport or shipping.

If the specimen could puncture the primary container, the primary container shall be placed within a secondary container, which is puncture-resistant in addition to the above characteristics.

Equipment

Equipment that may become contaminated with blood or other potentially infectious materials shall be examined before servicing or shipping and shall be decontaminated as necessary, unless the employer can demonstrate that decontamination of such equipment or portions of such equipment is not feasible.

If the equipment is not decontaminated, a readily observable label shall be attached to the equipment stating which parts remain contaminated.

The fact that all or part of some equipment is contaminated must be conveyed to all affected employees, the servicing representative, and/or the manufacturer, as appropriate, so that appropriate precautions will be taken prior to handling, servicing, or shipping the equipment.

Engineering/Work Practice Controls--Equipment should be studied to seek means of isolating or removing the bloodborne pathogen hazard from the workplace (e.g., sharps disposal container, self-sheathing needles) and shall be maintained or replaced on a regular basis to ensure their effectiveness. Engineering and Work Practice Controls should be used as the primary method of minimizing or eliminating occupational exposure to bloodborne pathogens.

Handling Technique

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

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Simple Barriers Can Effectively Protect You

City of Pittsburgh employees will minimize the risk of exposure through the use of Universal Precautions, Engineering Controls, Safe Work Practices and the use of appropriate Personal Protective Equipment (PPE).

Appropriate PPE includes but is not limited to:

- Gloves
- Gowns
- Laboratory coats
- Face shields, or masks and eye protection
- Mouthpieces, resuscitation bags, pocket masks, or other ventilation devices

PPE is “appropriate” only if it does not permit blood or potentially infectious materials to reach the employee’s

- Work cloths
- Street clothes
- Undergarments
- Skin
- Eyes
- Mouth
- Other mucous membranes

Accessibility of PPE

The City of Pittsburgh and City of Pittsburgh employees shall ensure that appropriate PPE in appropriate sizes is readily accessible at the worksite.

Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives should be readily accessible to employees who are allergic to the gloves normally provided.

Care of PPE

It is important that Personal Protective Equipment is maintained in order to be effective. All PPE shall be cleaned, laundered, and disposed of according to individual department policies and/or contractual agreement.

Provisions must be in place in order for PPE to be repaired or replaced as needed to maintain its effectiveness.

Removal of PPE

If blood or other potentially infectious materials penetrate a garment(s), the garment(s) shall be removed immediately or as soon as possible.

All contaminated PPE shall be removed before leaving the work area or the scene of an emergency.

When PPE is removed, it shall be placed in an appropriately designated area or container for storage, washing, decontamination, or disposal.

Gloves

Gloves shall be worn when it can be reasonably anticipated that the employee may have contact with blood, other potentially infectious materials, mucous membranes, and non-intact skin; when performing vascular access procedures; and when handling or touching contaminated items or surfaces.

Disposable single use gloves such as surgical or examination gloves **shall be replaced** as soon as possible when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised.

Disposable (single use) gloves shall not be washed or decontaminated for re-use.

Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised.

Masks and Eye Protection

Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin length face shields, shall be worn whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and the employee anticipates contamination of the eye, nose, or mouth.

Extremity Protection

Appropriate protective clothing such as, but not limited to, gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated.

Shoe covers or boots shall be worn in instances when gross contamination can reasonably be anticipated.

HOUSEKEEPING/DECONTAMINATION

Cleanliness is Critical

General

- The worksite, including all emergency vehicles, shall be maintained in a clean and sanitary condition. Gloves and eye protection (face shield/goggles) shall be worn at all times when working with chemical germicides and clean up of blood or potentially infectious materials.
- All equipment and work surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials.
- Contaminated work surfaces shall be decontaminated with an appropriate disinfectant after completion of procedures.
- Decontamination shall occur immediately or as soon after as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials. Cleaning shall take place as per your department schedule and at the end of the work shift if the surface may have become contaminated since the last cleaning.
- Protective coverings, such as plastic wrap, aluminum foil, or imperviously backed absorbent paper used to cover equipment and work surfaces, shall be removed and replaced as soon as possible when they become overtly contaminated.
- Protective coverings shall be removed at the end of the workshift if there is a chance that they became contaminated during the shift.
- All reusable bins, pails, cans, and similar receptacles that have a reasonable chance of becoming contaminated shall be regularly inspected and decontaminated. A schedule shall be established to accomplish these activities.
- All receptacles described above shall be cleaned and decontaminated immediately or as soon as feasible, upon visible contamination.
- Broken glassware or discarded needles which may be contaminated with bodily fluids shall not be picked up directly with the hands. It shall be cleaned up using mechanical means, such as dustpan, tongs, or forceps.

ENGINEERING CONTROLS

Eliminating the Risk

An engineering control is a device that eliminates or minimizes exposure to blood or other potentially infectious materials.

Any City of Pittsburgh Employee

TYPE OF ENGINEERING CONTROL	LOCATION OF CONTROL/DESCRIPTION
Hand washing facilities	At workplace

Pittsburgh Bureau of Emergency Medical Services

TYPE OF ENGINEERING CONTROL	LOCATION OF CONTROL/DESCRIPTION
Hand washing facilities	In station, at hospital
Waterless hand gel	In vehicle, In station, in First Responder Bag
Sharps Containers	In vehicle, at hospital, in First Responder Bag
Biohazard waste containers	In station, in vehicle, at hospital
Eye wash station	In vehicle, at hospital
Seal-able plastic bags for specimen transport	In vehicle
Laundry container	At hospital
Re-sheathing needles/devices - Safety type (needles, lancets, etc.)	In vehicle

Pittsburgh Bureau of Fire

TYPE OF ENGINEERING CONTROL	LOCATION OF CONTROL/DESCRIPTION
Hand washing facilities	In station
Waterless hand gel	In vehicle, In station, in First Responder Bag
Eye wash station	In vehicle, In station (showers if necessary)
Laundry container	In station

Pittsburgh Bureau of Police

TYPE OF ENGINEERING CONTROL	LOCATION OF CONTROL/DESCRIPTION
Hand washing facilities	In station
Waterless hand gel	In vehicle, In station
Sharps Containers	In station
Biohazard waste containers	In station

Pittsburgh Department of Public Works/ Parks & Recreation (where appropriate)

TYPE OF ENGINEERING CONTROL	LOCATION OF CONTROL/DESCRIPTION
Waterless hand gel	In vehicle, In station
Sharps Containers	In vehicle, In station

CONTAINERS FOR CONTAMINATED ITEMS

Separate the Hazard from the Employee

Contaminated sharps shall be discarded and contained immediately, or as soon as possible, in containers that are

- Closable
- Puncture resistant
- Leak proof on sides and bottom
- Labeled or color-coded

During use, containers for contaminated sharps shall be

- Easily accessible to personnel
- Located as close as possible to the immediate area where sharps are used, or found
- Maintained in an upright position throughout use
- Replaced routinely
- Not overfilled

When moving containers of contaminated sharps from the area of use, the containers shall be:

- Closed immediately before removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping
- Placed in a secondary container if leakage is possible

The secondary container shall be:

- Closable
- Able to contain all contents and prevent leakage during handling storage, transport, or shipping
- Labeled or color coded

Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner that would expose employees to the risk of percutaneous injury.

Containers for Other Regulated Waste

In addition to contaminated sharps, regulated waste includes the following:

- Liquid or semiliquid blood or other potentially infectious materials
- Contaminated items that could release blood or other potentially infectious materials in a liquid or semi liquid state when compressed
- Items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling
- Pathologic and microbiologic wastes containing blood or other potentially infectious materials

Regulated waste shall be placed in containers that are:

- Closable
- Able to contain all contents and prevent leakage of fluids during handling, storage, transport, or shipping
- Labeled or colored-coded (see Labels/Color Coding section)
- Closed before removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping

If outside contamination of the regulated waste container occurs, it shall be placed in a secondary container.

Laundry

- Contaminated laundry/clothing shall be handled as little as possible with a minimum of agitation.
- Contaminated laundry/clothing shall be bagged or put into a container at the location where it is used if possible or in the designated emergency room/hospital location.
- Contaminated laundry/clothing shall be placed and transported in bags or containers labeled or color-coded in accordance with this standard.
- When a facility uses Universal Precautions in the handling of all soiled laundry alternative labeling or color coding is allowed as long as it alerts all employees to the fact that Universal Precautions must be used when handling these containers.
- When contaminated laundry is wet and presents a reasonable likelihood of soaking through or leakage from the bag or container, the laundry shall be placed and transported in bags or containers that prevent soak-through and or leakage of fluids to the exterior.
- All employees who have contact with contaminated laundry must wear protective gloves and use other personal protective equipment as appropriate.
- When a facility ships contaminated laundry off-site to a second facility that does not use Universal Precautions in the handling of all laundry, the facility generating the contaminated laundry must place it in bags or containers that are labeled or color coded.

LABELS/COLOR CODING

Boldly Assuring the Hazard is Communicated

Location of Labels

Warning labels shall be affixed to:

- Containers of regulated waste
- Refrigerators and freezers containing blood or other potentially infectious materials
- Other containers used to store, ship, or transport blood or other potentially infectious materials
- Red bags or red containers are substituted for labels in the EMS vehicles

Content

- Warning labels should include the following symbol:



- Labels required for contaminated equipment shall also indicate which portions of the equipment remain contaminated

Color

- Warning labels shall be predominantly fluorescent orange or orange-red
- Lettering or symbols shall be in a contrasting color
- Red bags or red containers may be substituted for labels

Exemptions from Labeling or Color Coding Requirements

- Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use
- Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment, or disposal
- Regulated waste that has been decontaminated

HEPATITIS B VACCINATION

The Hepatitis B vaccine series will be offered to those employees at risk of potential exposure to human body fluids. The vaccination series will be offered free of charge and at a reasonable time and place for the employee. The Hepatitis B vaccine should be made available within 10 working days of the initial assignment unless the employee has already been vaccinated against Hepatitis B, the employee is immune, or the employee cannot be vaccinated for other medical reasons. The medical procedures must be performed by a licensed healthcare professional according to the protocols defined by the U.S. Public Health Service.

The employee may decline the vaccination and will be asked to sign a statement to that effect. The employee can only sign the statement after he/she has received appropriate training regarding Hepatitis B; the Hepatitis B vaccination; the efficacy, safety, method of administration, the benefits of vaccination; and the availability of the vaccine and vaccination free of charge. The statement is not a waiver; employees can request and receive the Hepatitis B vaccination at a later date if they remain at occupational risk for Hepatitis B.

POST-EXPOSURE MANAGEMENT

Providing Employees Every Resource to Beat an Infection

A potential exposure to infectious disease is a specific eye, mouth, other mucous membrane, open skin, or parenteral contact with blood or other potentially infectious material that results from the performance of an employee's duties, for example, a needlestick from a contaminated sharp.

Remember, intact skin is an adequate barrier against bloodborne pathogens and most other infectious agents.

After a potential exposure incident, employees must:

- 1) treat the exposure site;
- 2) immediately report the incident and
- 3) participate in necessary follow-up.

These chains of events have been put in place to provide City of Pittsburgh employees with the best care possible.

Post-exposure management may also be necessary should the City be contacted by other Hospital/ Health Officials detailing a situation which may have unknowingly placed a city employee at risk of exposure to a member of public who has been determined to be infectious.

Treatment of the Exposure Site

- Wash wounds and skin sites that have been in contact with blood or body fluids with soap and water.
- Mucous membranes (eye, mouth, etc.) should be flushed with water.
- Antiseptics may be used for wound care although there is no evidence that this reduces the risk for HIV transmission.
- Do not apply caustic agents such as bleach or inject antiseptics or disinfectants into the wound.
- If blood or other potentially infectious materials penetrate an employee's garment, garments must be removed immediately or as soon as possible. Pullover uniform tops should be removed carefully and in such a way as to avoid contact with the outer surface (e.g., the employee can roll up the garment as it is pulled toward the head for removal).
- In some situations, it may be better to train employees to cut the contaminated uniform top to aid removal and prevent exposure to the face.

Reporting the Incident

There are several professionals available to help assist the potentially exposed employee. In order to receive the standard of care in these situations, it is important that the employee in need of care contacts their Immediate Supervisor as soon as they possibly can. Each Public Safety Bureau/Department has an appointed Infectious Disease Officer who will assure all information dealing with the patient/employees is held in confidence accordance to HIPAA laws.

Bureau/ Department Infectious Disease Officers

★ CITY ...	Safety Manager David C Reed...	(412) 287-9920
◎ Police...	Assistant Chief Regina McDonald...	(412) 560-5415
◎ Fire...	Chief Darryl Jones...	(412) 287-9978
◎ EMS...	Patient Care Coordinator Roy Cox...	(412) 670-4198

Immediate Procedures and Communications

- **Employee informs Immediate Supervisor.**
- **Employee contacts UPMC Work Partners @ 1-800-633-1197 to report injury claim.**
- **Employee proceeds to the nearest Concentra location or to Mercy Hospital Emergency Department (after business hours or on weekends).**
- **Immediate Supervisor** investigates the incident and documents the facts, most importantly the name of the source patient and their location (hospital, jail, unknown, etc).
- **Immediate Supervisor** reminds **Employee** to contact Work Partners and proceed to the appropriate facility to receive treatment.
- **Immediate Supervisor** relays the information to their respective **Bureau/ Department Infectious Disease Officer**.
- ◎ **Bureau/ Department Infectious Disease Officer** informs employee's **Immediate Supervisor** that the exposed **Employee** can immediately call and talk with the **CITY Infectious Disease Officer** (24/7) should they want immediate information regarding disease epidemiology, a personalized risk assessment or other pertinent information.
- ◎ **Bureau/ Department Infectious Disease Officer** informs the **CITY Infectious Disease Officer** of the incident, the exposed employee's name, where they are going for treatment, and as much information as possible regarding the source patient.
- ◎ **Bureau/ Department Infectious Disease Officer** will coordinate any communication necessary to determine if any other city public safety employees were exposed to the infectious source patient.
- ★ **CITY Infectious Disease Officer** will be available to all city employees and administration for questions regarding city policy and bloodborne pathogen /infectious disease epidemiology.
- ★ **CITY Infectious Disease Officer** begins the process of getting the source patient tested for infectious diseases and relays any progress to the facility treating the **Employee** and to the **Bureau/ Department Infectious Disease Officer**.

Follow-up Procedures and Communications

- **Employee** shall communicate all information regarding any work-related limitations recommended by Concentra or Mercy ER to their **Immediate Supervisor**.
- **Employee** shall fill out and submit a City of Pittsburgh Work Injury Report Form to the City Safety Office.
- **Employee** shall fill out an Infectious Disease form (DPS Form 1), have it signed by their **Immediate Supervisor** and submit it to the City Safety Office.
- **Employee** shall attend all follow-up appointments related to exposure incident.
- **Immediate Supervisor** shall assure all paperwork related to the exposure incident is complete by the employee and submitted to the Safety Office.
- **Immediate Supervisor** shall arrange any departmental workforce adjustments related to employee recommendation by Concentra or Mercy ER medical representatives.
- ⊙ **Bureau/ Department Infectious Disease Officer** shall work with all parties to investigate the incident to determine the root cause of the injurious situation. This may include communication with other city departments. A City of Pittsburgh Incident Investigation Form should be submitted to the City Safety Office.
- ★ **CITY Infectious Disease Officer** will communicate the status of source patient testing efforts to the **Employee** and the **Bureau/ Department Infectious Disease Officer**. Please note that there may be complications related to obtaining the patient's consent for testing, although all efforts will be made to protect confidentiality and obtain the information that will best serve the exposed employee.
- ★ **CITY Infectious Disease Officer** shall communicate all source patient test results to the exposed **Employee** and the medical facility they were seen at.
- ★ **CITY Infectious Disease Officer** shall arrange all payments for source patient testing services provided by applicable healthcare providers.
- ★ **CITY Infectious Disease Officer** shall evaluate all information provided concerning the incident and work to incorporate any changes in policy associated with improving injury prevention /management.

Outside Infectious Disease Exposure Notification

If a Hospital or Health Official notifies an Infectious Disease Officer directly concerning a possible infectious disease exposure affecting City of Pittsburgh employee(s), the following procedure shall be followed:

1. **Bureau/ Department Infectious Disease Officer** is notified by outside health officials of a potential exposure to city **Employee(s)**.
2. **Bureau/ Department Infectious Disease Officer** notifies **CITY Infectious Disease Officer**.
3. **Bureau/ Department Infectious Disease Officer**, in conjunction with the **CITY Infectious Disease Officer** and other appropriate health officials, investigate the incident to better understand the situation, those exposed, and the threat to the general public.
4. If appropriate, the potentially exposure **Employee(s)** and their **Immediate Supervisor(s)** are notified.
5. If appropriate, the potentially exposure **Employee(s)** are directed to call UPMC Work Partners @ 1-800-633-1197 and file a claim.
6. **Employee(s)** involved may be requested to go to the closest Concentra clinic for assessment and treatment.
7. **CITY Infectious Disease Officer** and the **Departmental Infectious Disease Officer** work together until the incident is resolved.

TRAINING

Providing Employees Accurate Information

Employees, new hire employees, and transfers in Police, Fire, EMS, and Environmental Services must participate in a training program on bloodborne pathogens and infectious disease. This program will be provided at no cost to the employee and will be held during working hours.

The person conducting the training program shall be knowledgeable in the subject matter and how it relates specifically to the employer's workplace.

Timing

- Training shall be provided at the time of initial assignment to tasks where occupational exposure may occur.
- Additional training will be provided when changes such as modification of tasks or procedures, or institution of new tasks or procedures affect the employee's occupational exposure.

Content

The training program will cover the following topics:

- An explanation of this infection control program.
- The incidence, prevalence, and symptoms of bloodborne and other infectious diseases.
- Modes of transmission of bloodborne pathogens.
- Appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials.
- Use and limitations of methods that will prevent or reduce exposure, including universal precautions, engineering and work practice controls, and personal protective equipment.
- Types, proper use, location, removal, handling, decontamination, and disposal of personal protective equipment.
- The basis for selection of personal protective equipment.
- Prophylaxis (e.g. hepatitis B vaccine) and treatment of bloodborne viral diseases and other infectious diseases.
- Appropriate actions to take and people to contact in an emergency involving blood or other potentially infectious materials.
- The procedure to follow if an exposure incident occurs, including the method of reporting the incident.
- Postexposure evaluation and medical follow up that the employer is required to provide.
- The labels and/or color coding are required to prevent or reduce exposure to bloodborne viruses.

RECORDKEEPING

Documentation of Protective Efforts

Medical Records

- The City (through a professional services contract with a medical provider) will establish and maintain an accurate record for each employee who experiences an occupational exposure
- This record will include the following:
 - The name and social security number of the employee
 - A copy of the employee's hepatitis B vaccination status
 - A copy of all results of examinations, medical testing, and follow up procedures after an exposure incident
 - A copy of the healthcare professional's written opinion
 - A copy of the information provided to the healthcare professional
- The employee medical record will be kept confidential and will not be disclosed or reported without the employee's express written consent to any person within or outside the workplace, except as may be required by law.
- The employee's medical records will be maintained for at least the duration of employment and 30 years thereafter.

Training Records

- Training records shall include the following information:
 - Dates of training and retraining sessions
 - Contents or a summary of the sessions
 - Names and qualifications of person(s) conducting the training
 - Name and job titles of all persons attending the training sessions
- Training records will be maintained for 5 years after the session.

INFORMATION ON INFECTIOUS DISEASES

Disease Information for Emergency Response Personnel

Disease/Infection	Mode of Transmission	Is Vaccine Available?	Signs & Symptoms
Actinobacter	Close skin-to-skin contact, openings in the skin such as cuts or abrasions, contaminated surfaces, and poor hygiene	No	Fever, painful skin areas or wounds, an area of orange, bumpy skin with blisters, coughing, chest pain, trouble breathing,
Hepatitis A	Contaminated food and water	Yes	Fever, loss of appetite, jaundice, fatigue
Hepatitis B (serum hepatitis)	Needlestick, blood splash into mucous membranes (e.g., eyes, nose, mouth), blood contact with open wound; possible exposure during mouth to mouth resuscitation	Yes	Fever, fatigue, loss of appetite, nausea, headache, jaundice
Hepatitis C	Same as Hepatitis B Virus	No	Same as Hepatitis B Virus
AIDS/HIV (Human Immunodeficiency Virus)	Same as Hepatitis B Virus	No	Fever, night sweats, weight loss, cough
Herpes simplex (cold sores)	Contact of mucous membrane with moist lesions; fingers at particular risk of becoming infected	No	Skin lesions located around mouth
Rubella (measles)	Respiratory aerosols and contact with respiratory secretions	Yes	Fever, rash, bronchitis
Mumps (infectious Parotitis)	Respiratory aerosols and contact with saliva	Yes	Fever, swelling of salivary glands (parotid)
Varicella (Chicken pox)	Respiratory aerosols and contact with moist vesicles	Yes	Fever, rash, cutaneous vesicles (blisters)
Varicella (Shingles)	Contact with moist vesicles	Yes	Mild itching to severe pain followed usually within 5 days by swelling or redness of the skin and clusters of clear vesicles.
Lice: Head, body, pubic	Close head to head contact; both body and pubic lice require intimate contact (usually sexual) or sharing of intimate clothing	No	Severe itching and scratching, often with secondary infection; scalp and hairy portions of body may be affected; eggs of head lice (nits) attach to hairs as small, round, gray lumps
Scabies	Close body contact	No	Itching, tiny linear burrows or “tracks”, vesicles –particularly around fingers, wrists, elbows, and skin folds
Influenza	Respiratory aerosols	Yes	Fever, fatigue, loss of appetite, nausea, headache,
Meningitis: Meningococcal	Respiratory aerosols	Yes	Fever, severe headache, stiff neck, sore throat
Rabies	Bite of an infected animal	Yes	Fever, headache, malaise
Tetanus	Puncture wound or wound exposure to sewage/floodwaters	Yes	Lockjaw, facial spasms, stiffness of the neck, difficulty in swallowing
Tuberculosis, pulmonary	Respiratory aerosols	No	Fever, night sweats, weight loss, cough
Pertussis (Whooping cough)	Direct contact with oral secretions; Respiratory aerosols	Yes	Violent cough at night, whooping sound when cough subsides
Methicillin-resistant Staphylococcus aureus (MRSA)	Close skin-to-skin contact, openings in the skin such as cuts or abrasions, contaminated surfaces, and poor hygiene	No	Skin infections that may look like a pimple or boil and can be red, swollen, painful, or have pus or other drainage
Conjunctivitis (Pink eye)	Dermal contact with eye/nose secretions then transferring to eye	No	Red & sore eye with discharge; excessive tearing

INFECTIOUS DISEASES

Subject: Acinetobacter

I. Etiology

- a. Acinetobacter is a bacteria infection transmitted through contact with open wounds. Acinetobacter can also spread by person-to-person contact and contact with contaminated surfaces in intensive care units and other healthcare settings. Some types of Acinetobacter are resistant to antibiotics and can be severe and especially difficult to treat if they result in bloodstream infections.
- b. Acinetobacter can be isolated from many sources including drinking and surface water, soil, sewage and different types of foods. At least a quarter of healthy people carries Acinetobacter harmlessly on their skin but can be harmful in hospital settings.
- c. Common in the environment but are rarely a medical threat to healthy, uninjured persons. Persons most at risk of difficult-to-treat Acinetobacter infections are those who are very ill, have traumatic wounds, and are treated in intensive care units.
- d. Symptoms include fever, painful skin areas or wounds, an area of orange, bumpy skin with blisters, coughing, chest pain, trouble breathing, sleepiness, headaches and stiff neck.

II. Prevention

- a. Good hand hygiene.
- b. Standard wound cleansing.
- c. Proper disinfection techniques at medical facilities.

III. Vaccination

- a. No vaccine exists at this time.

IV. Post-exposure Management

- a. Proper hand washing and
- b. Isolate contact from patients that are very ill, have traumatic wounds, and are treated in intensive care units. Other isolations procedures should include wearing of gowns and gloves by hospital staff or visitors who come in contact with infected patient.
- c. Most types of Acinetobacter are easily treated with common antibiotics. Other types of Acinetobacter, and especially those acquired in hospitals, can be resistant to many commonly prescribed antibiotics and require special treatments.

V. Work Status

- a. Those infected do not pose an increased health risk to healthy, uninjured people in the community, including babies and pregnant women.
- b. Restrict contact with individuals with traumatic wounds, poor hygiene, weak immune systems, and who are very ill.

INFECTIOUS DISEASES

Subject: Hepatitis A

I. Etiology

- a. Hepatitis A is a liver disease caused by the Hepatitis A virus (HAV). Persons with HAV infection may be asymptomatic, however,
 - i. If symptoms are present, they usually occur abruptly and may include fever, tiredness, loss of appetite, nausea, abdominal discomfort, dark urine and jaundice. Symptoms usually last less than two months.
- b. The incubation period for HAV is 15 to 50 days.
- c. Route of transmission is fecal-oral. The virus is more easily spread in areas where there are poor sanitary conditions or where good personal hygiene is not observed. Casual contact does not spread the virus.

II. Prevention

- a. Washing hands.
- b. No hand to mouth contact.

III. Vaccination

- a. Hepatitis A vaccine (Havrix) is recommended before exposure to HAV for the following personnel:
 - i. Staff working with HAV infected primates.
 - ii. Staff performing HAV research.
 - iii. Staff assigned to areas where HAV is endemic.
- b. Recommended dosages of Havrix in adults over 18 years:
 - i. Initial dose (1 cc IM deltoid muscle).
 - ii. Second dose given six (6) months after initial dose (1 cc IM).
- c. Soreness at the injections site is the most frequent side effect.
- d. Protection against HAV begins as early as 14-21 days after the first dose of Havrix.
- e. Protection is estimated for 20 years.
- f. Safety of Hepatitis A vaccine during pregnancy has not been determined. No special precautions need to be taken when vaccinating immunocompromised persons.
- g. Post-vaccination testing for serologic response is not indicated.

IV. Post-exposure-Management

- a. Washing exposed area.
- b. Immune Globulin is recommended for persons who have been recently exposed to HAV and who have not previously been vaccinated with Hepatitis A vaccine. A single dose of Immune Globulin (IG) should be administered as soon as possible, but not greater than two (2) weeks after the last exposure.

V. Work Status

- a. Restrict from direct patient contact or food handling until seven (7) days after onset of jaundice.
- b. Employees who have been exposed to Hepatitis A will be evaluated on a case by case basis. Work restrictions may vary depending upon treatment options and risk of disease transmission.

INFECTIOUS DISEASES

Subject: Hepatitis B

I. Etiology

- a. Hepatitis B is a serious disease caused by a virus that attacks the liver. The virus, which is called the Hepatitis B virus (HBV), can cause life long infection, cirrhosis (scarring) of the liver, liver cancer, liver failure and death.
- b. Clinical features of infection can include but are not limited to: jaundice, fatigue, abdominal pain, loss of appetite, intermittent nausea and vomiting.
- c. Routes of transmission include bloodborne, sexual, and perinatal.
- d. If an exposure to Hepatitis B occurs, there is an estimated 6-30% risk of developing the disease for unvaccinated individuals.
- e. HBV may survive on environmental surfaces at room temperature for up to 7 days.

II. Prevention

- a. Standard Precautions.

III. Vaccination

- a. Hepatitis B vaccine is a recombinant DNA Hepatitis B vaccine. The vaccine is highly effective in preventing Hepatitis B infection and is highly recommended for all employees with the potential for exposure to blood or body fluids.
- b. All employees with the potential for blood or body fluid exposure must be offered the Hepatitis B vaccination if they have not already completed the series.
- c. Vaccination and counseling must be documented by administrator on consent form.
- d. Employees that decline the Hepatitis B vaccine must sign the vaccine declination statement.
- e. The vaccine consists of three doses administered in the following sequence:
 - i. Initial dose.
 - ii. Second dose given 1 month after initial dose.
 - iii. Third dose given 6 months after initial dose.
 - iv. A titer should be drawn 1-2 months post vaccination to ensure that the vaccinated person developed the antibodies.
- f. Those that interrupt their vaccination series should resume administration timeline recommendations regardless of period since last vaccination.
- g. Vaccination is contraindicated in the following individuals:
 - i. Hypersensitivity to yeast.
 - ii. Previous vaccine related reactions.
- h. Little information is available regarding Hepatitis B vaccination reproduction studies. Check the manufacturer insert on the vaccine being used. Vaccine administration on pregnant and nursing mothers should take place only when clearly indicated and after consultation with OB/GYN.

Hepatitis B Titers

- a. Hepatitis B Surface Antibody Titers should be obtained on all personnel unsure of their vaccination status.
- b. Hepatitis B titers should be drawn 1-2 months after completing the third vaccination.
- c. Positive Titer: (may vary by reference lab, however, greater than or equal to 10mIU/ml) Employees are considered immune and are protected against Hepatitis B infection.
- d. Negative Titer: May be susceptible to Hepatitis B infection. See next section - Non Responders/Booster Doses.

Non-Responders/Booster Doses

- a. There has been considerable debate over the need for HBV booster doses. No research literature supports administering doses after successful completion of the series, especially those that have had a previous positive Hepatitis B titer.
- b. If an employee has a negative titer after successfully completing the initial series, then the current recommendation is to repeat the 3-dose series. If the titer still comes back negative, then no further vaccination series should be given.

IV. Post-exposure Management

HbsAg + or Unknown Source		
<i>Vaccinated Employee</i>	<i>Unvaccinated Employee</i>	<i>Non-Converter</i>
If adequate anti-HBs level (titer)* no additional treatment is necessary	HBIG 0.06ml/Kg Administer within 24 hours – can be started within 7 days of exposure	HBIG 0.06ml/Kg
If inadequate titer, provide Hepatitis B vaccine	Begin Hepatitis B vaccine series, repeat HBIG if Hepatitis B vaccination not started.	Repeat HBIG in 30 days
If employee has not completed the series, initiate HBIG and complete series on prior schedule		
*Adequate or positive Hepatitis B antibody titer is greater than 10mLU/mL		

- a. Source patient will be tested if it is at all possible.
- b. Hepatitis B Immune Globulin (HBIG).
 - i. HBIG is a solution of immunoglobulin that contains antibodies to Hepatitis B surface antigens (anti-HBs).
 - ii. It contains no preservatives and is intended for IM use only (administration based on weight of exposed person, 0.06mL/kg body weight).
 - iii. Due to the volume associated with the HBIG vaccination, many times the vaccine is administered in the buttock, if so, the recommendation is that the upper outer quadrant is used and that the administration needle is directed anteriorly to minimize possible involvement with the sciatic nerve.
 - iv. Vaccination and risk counseling must be documented on consent form.
 - v. Contraindications to HBIG administration:
 - 1. Individuals with sensitivity to human globulin.
 - 2. Patients with thrombocytopenia or coagulation disorders that would contraindicate IM injections.
 - 3. There is no current research data on pregnant or nursing women. Should only be given when clearly indicated and/or after consultation with OB/GYN.

V. Work Status

- a. No work restrictions at this time have been advocated for employees with acute or chronic infection with Hepatitis B. However, infected employees that are performing documented exposure prone procedures need to seek recommendations from their Department Medical Director.
- b. Standard precautions should be observed at all times.

INFECTIOUS DISEASES

Subject: Hepatitis C (HCV)

I. Etiology

- a. Hepatitis C is a serious disease caused by a virus that attacks the liver. The virus, which is called the Hepatitis C virus (HCV), can cause life long infection, cirrhosis (scarring) of the liver, liver cancer, liver failure and death.
- b. Clinical features of infection can include but are not limited to: jaundice, fatigue, abdominal pain, loss of appetite, intermittent nausea and vomiting.
- c. Routes of transmission include bloodborne, sexual, and perinatal.
- d. If an exposure to Hepatitis C occurs, there is an estimated 1.8% risk of developing the disease.
- e. Recent studies suggest that HCV may survive on environmental surfaces at room temperature at least 16 hours, but no longer than 4 days.
- f. There is neither vaccine nor post-exposure prophylaxis.

II. Prevention

- a. Standard Precautions.

III. Vaccine

- a. There is no vaccine for the HCV virus.

IV. Post-exposure Management

- a. As there are no post-exposure medications to deter transmission of HCV, appropriate follow-up with physician is especially important.
- b. Source patient will be tested if it is at all possible.
- c. Baseline and follow-up blood tests from exposed employee will determine if there has been a transmission episode. The determination of an acute HCV infection will necessitate the involvement of an Infectious Disease Specialist.

V. Work Status

- a. Employees with confirmed Hepatitis C should not perform exposure prone invasive procedures until counsel from the Department Medical Director has been sought. The Department Medical Director should review and recommend procedures the worker can perform, taking into account the specific procedure as well as the skill and techniques of the worker.
- b. Standard precautions should always be observed.

INFECTIOUS DISEASES

Subject: Human Immunodeficiency Virus (HIV)

I. Etiology

- a. HIV destroys a certain kind of blood cells which are crucial to the normal function of the human immune system. Most people infected with HIV are asymptomatic, carrying the virus for years before enough damage is done to the immune system for AIDS (acquired immunodeficiency syndrome) to develop.
- b. Routes of transmission include bloodborne, sexual, and perinatal.
- c. If an exposure to HIV occurs, there is an estimated 0.3% risk of developing the disease.
- d. The HIV does not survive on environmental surfaces.

II. Prevention

- a. Standard Precautions.

III. Vaccine

- a. There is no vaccine for the HIV virus.

IV. Post-exposure Management

- a. Post-exposure medications are available and have been shown to reduce the risk of disease transmission by 80%. There are side-effects associated with these medications and the decision to begin post-exposure medication should be done after consultation with a physician.
- b. Source patient will be tested if it is at all possible.
- c. Baseline and follow-up blood tests from exposed employee will determine if there has been a transmission episode.

V. Work Status

- a. Employees with confirmed HIV should not perform exposure prone invasive procedures until counsel from the Department Medical Director has been sought. The Department Medical Director should review and recommend procedures the worker can perform, taking into account the specific procedure as well as the skill and techniques of the worker.
- b. Standard precautions should always be observed.

INFECTIOUS DISEASES

Subject: Herpes Simplex

I. Etiology

- a. Herpes is a common viral infection. It causes oral herpes (cold sores or fever blisters) and genital herpes (genital sores). Personnel may acquire a herpetic infection of their fingers (Herpetic Whitlow) from contaminated oral secretions.
- b. Herpes is spread by direct skin-to-skin contact. It is most easily spread when a sore is present.
 - i. Prodromal symptoms (itching, tingling or other sensations) warn that the virus may be present on the skin. Herpes is most likely to be spread from the time these first symptoms are noticed until the area is completely healed and the skin looks normal again.
 - ii. Herpetic Whitlow is frequently spread by contact with contaminated saliva.
- c. Symptoms of herpes usually develop within two (2) to 20 days after contact with the virus. The skin becomes red and sensitive and soon afterward one or more blisters or bumps appear. The blisters first open and then heal as new skin tissue forms. The area is usually painful and may itch, burn, or tingle.

II. Prevention

- a. Standard Precautions.

III. Vaccination

- a. No vaccine exists at this time.

IV. Post-exposure Management

- a. There are few guidelines available for post-exposure prophylaxis for herpes, and no controlled clinical trials in humans. The short incubation period and early establishment of latency in herpes infection remain obstacles for effective delivery of post-exposure prophylaxis.
- b. Although there is no cure for herpes, some drugs have been effective in reducing the frequency and duration of outbreaks.

V. Work Status

- a. Genital Herpes: No restriction.
- b. (Hands) Herpetic Whitlow: Restrict from direct contact with patients until lesions crusted.
- c. Orofacial Herpes: Restrict from care of high risk patients until lesions crusted.

INFECTIOUS DISEASES

Subject: Measles

I. Etiology

- a. Measles is an acute viral infectious disease that causes a systemic infection.
- b. Measles Transmission – transmitted primarily person to person via large respiratory droplets. Measles is transmissible from four days prior to four days after the rash onset.
- c. The primary site of infection is the respiratory epithelium of the nasopharynx. Replication of the virus occurs in the nasopharynx and regional lymph nodes.
- d. The incubation period of measles from exposure to rash onset averages 14 days (range 7-18 days).
- e. Symptoms include fever, cough, runny nose and/or conjunctivitis. Koplik's spots (small red spots with bluish red centers on lingual or buccal mucosa) are characteristic signs of measles infection. The measles rash erupts one to two days after the presence of Koplik's spots. The measles rash usually lasts five to six days. It begins at the hairline involving face and upper neck. Over the next three days the rash gradually proceeds downward and outward, reaching the hands and feet. Other symptoms include anorexia, diarrhea and generalized lymphadenopathy.

II. Prevention

- a. Standard Precautions.

III. Vaccination

- a. Vaccine: Prior to receiving the vaccine a titer may be drawn to determine immunity status. Vaccinate with Measles, Mumps and Rubella vaccine (live vaccine 0.5ml SQ).
 - i. The most common adverse reactions following vaccination include fever, rash and possible mild pain in the joints.
 - ii. Contraindications of the vaccine include:
 1. Severe allergic reaction to prior dose or vaccine component
 2. Pregnancy
 3. Immunosuppression (except asymptomatic HIV positive persons)
 4. Moderate or severe acute illness
 5. Persons who recently received blood products
 6. Persons receiving 20mg/day or more of prednisone therapy for 14 days or more should avoid vaccination for one (1) month after cessation of therapy.
 - iii. Precautions when vaccinating:
 1. Pregnancy should be avoided for 4 weeks after vaccination.
 2. PPD testing and MMR vaccination may be administered simultaneously. If the MMR vaccination is administered prior to PPD testing, then PPD testing should be delayed four (4) to six (6) weeks to minimize false negative interpretations.

IV. Post-exposure Management

- a. Vaccinate with Measles, Mumps and Rubella vaccine (MMR).

V. Work Status

- a. Non immune employees should be restricted from duty from the 5th day after the first exposure to the 21st day after the last day of exposure.
- b. Employees who develop active disease should be restricted from duty until four (4) days after the appearance of rash.

INFECTIOUS DISEASES

Subject: Mumps

I. Etiology

- a. Mumps virus is acquired by respiratory droplets. Transmission occurs through airborne transmission or direct contact with infected droplet nuclei or saliva. The virus replicates in the nasopharynx and regional lymph nodes.
- b. The incubation period of mumps is 14 to 18 days (range 14-25 days).
- c. Symptoms are nonspecific and may include low-grade fever, headache, malaise and myalgia. Parotitis is the most common manifestation.
- d. The infectious period is considered to be from three days before to the 4th day of active disease. The virus has been isolated from saliva 7 days before to 9 days after the onset of Parotitis.

II. Prevention

- a. Standard Precautions.

III. Vaccination

- a. Vaccine: Prior to receiving the vaccine a titer may be drawn to determine immunity status. Vaccinate with Measles, Mumps and Rubella vaccine (MMR, live vaccine 0.5ml SQ).
- b. The most common adverse reactions following vaccination include fever, rash and possible mild pain in the joints.
- c. Contraindications of the vaccine include:
 - i. Severe allergic reaction to prior dose or vaccine component
 - ii. Pregnancy
 - iii. Immunosuppression (except asymptomatic HIV positive persons)
 - iv. Moderate or severe acute illness
 - v. Persons who recently received blood products
 - vi. Persons receiving 20mg/day or more of prednisone therapy for 14 days or more should avoid vaccination for one (1) month after cessation of therapy.
- d. Precautions when vaccinating:
 - i. Pregnancy should be avoided for 4 weeks after vaccination.
 - ii. PPD testing and MMR vaccination may be administered simultaneously. If the MMR vaccination is administered prior to PPD testing, then PPD testing should be delayed four (4) to six (6) weeks to minimize false negative interpretations.

IV. Post-exposure Management

- a. Antibody response to the mumps component of MMR vaccine does not develop soon enough to provide effective prophylaxis after exposure to suspected mumps. Even though it is too late to provide effective post-exposure prophylaxis with MMR, the vaccine can provide protection against future exposure to all three infections. Therefore, contact with suspected measles, mumps or rubella, provides a good opportunity to offer MMR vaccine to previously unvaccinated individuals. If the individual is already incubating measles, mumps or rubella, MMR vaccination will not exacerbate the symptoms.

V. Work Status

- a. Non immune employees should be restricted from duty from the 12th day after the first exposure to the 26th day after the last day of exposure.
- b. Employees who develop active disease should be restricted from duty until nine (9) days after the onset of Parotitis.

INFECTIOUS DISEASES

Subject: Rubella

I. Etiology

- a. Rubella is spread from person to person via airborne transmission of droplets shed from the respiratory secretions of infected persons. The virus replicates in the nasopharynx and regional lymph nodes.
- b. The disease is most contagious when the rash is erupting but the virus may be shed from seven days before to five to seven days or more after the rash onset.
- c. The incubation period of Rubella varies from 12 to 23 days.
- d. Symptoms include low-grade fever, malaise, swollen glands and upper respiratory infection preceding the rash. The rash of Rubella usually occurs initially on the face and then progresses from the head to foot.

II. Prevention

- a. Standard Precautions.

III. Vaccination

- a. Vaccine: Prior to receiving the vaccine a titer may be drawn to determine immunity status. Vaccinate with Measles, Mumps and Rubella vaccine (MMR, live vaccine 0.5ml SQ).
- b. The most common adverse reactions following vaccination include fever, rash and possible mild pain in the joints.
- c. Contraindications of the vaccine include:
 - i. Severe allergic reaction to prior dose or vaccine component
 - ii. Pregnancy
 - iii. Immunosuppression (except asymptomatic HIV positive persons)
 - iv. Moderate or severe acute illness
 - v. Persons who recently received blood products
 - vi. Persons receiving 20mg/day or more of prednisone therapy for 14 days or more should avoid vaccination for one (1) month after cessation of therapy.
- d. Precautions when vaccinating:
 - i. Pregnancy should be avoided for 4 weeks after vaccination.
 - ii. PPD testing and MMR vaccination may be administered simultaneously. If the MMR vaccination is administered prior to PPD testing, then PPD testing should be delayed four (4) to six (6) weeks to minimize false negative interpretations.

IV. Post-exposure Management

- a. Vaccinate with Measles, Mumps and Rubella vaccine (MMR).

V. Work Status

- a. Non immune employees should be restricted from duty from seven (7) days after the first exposure to the 21st day after the last day of exposure.
- b. Employees who develop active disease should be restricted from duty until five (5) days after the appearance of the rash.

INFECTIOUS DISEASES

Subject: Varicella – Chicken Pox or Shingles

I. Etiology

- a. Varicella Virus (VZV) is transmitted via airborne droplets or direct contact with infected source.
- b. Chicken Pox (Varicella) causes a characteristically itchy rash which then forms blisters that dry and become scabs in 4-5 days.
 - i. Chicken Pox is contagious via airborne droplets 1-2 days before the rash appears and until all the blisters have formed scabs.
 - ii. Chicken Pox can be transmitted to those who have not had the disease/vaccinated against the disease via fluid from blisters.
 - iii. Chicken Pox Incubation period: 10-21 days.
- c. Shingles is a reactivation of Chicken Pox (Varicella). The virus remains dormant in the nerve roots of the body. The virus travels along the nerve roots, causing pain (neuralgia) in areas supplied by the nerve. The pain which can range from mild itching to severe pain is followed usually within 5 days by swelling or redness of the skin and clusters of clear vesicles. Shingles is only infectious when lesions are open. Shingles is not infectious prior to the development of lesions or after the lesions have crusted over – even if neuralgia persists.

II. Prevention

- a. Barrier protection and distancing.
- b. Recovery from primary Chicken Pox infection (often acquired as a child) usually results in lifetime immunity. A reliable history of Chicken Pox has been found to be a valid measure of immunity because the rash is distinctive and subclinical cases are unusual.
- c. Chicken Pox Titers: If immune status is unknown, a titer may be drawn to determine immunity.
 - i. Positive Titer: Personnel are considered immune and are not susceptible to Varicella.
 - ii. Negative Titer: Personnel may be susceptible to Varicella.

III. Vaccine

- a. Prior to receiving the vaccine a titer may be drawn to determine immunity status.
- b. The Varicella vaccine (Varivax) is a live attenuated virus vaccine. The vaccine is effective in preventing Chicken Pox and is recommended for all susceptible employees.
- c. The vaccine consists of two doses administered 4-8 weeks apart.
- d. Vaccination is contraindicated in the following individuals:
 - i. Primary or acquired immunodeficiency.
 - ii. Individuals currently on high dose steroid therapy.
 - iii. Pregnant / nursing females.
 - iv. Individuals with current severe illnesses.
- e. Precautions when vaccinating:
 1. Pregnancy should be avoided for 4 weeks after vaccination.
 2. Vaccine recipient should avoid salicylates (aspirin) for 6 weeks after vaccination.
 3. Vaccination should be delayed for at least 3-11 months after administration of antibody-containing blood products such as blood, plasma, immunoglobulin etc.
 4. Persons with a history of allergic reactions to other vaccines, gelatin and neomycin should not receive the Varicella vaccination.
 5. Persons receiving the Varicella vaccination should still avoid unprotected exposure to patients with infectious Chicken Pox.

IV. Post-exposure Management

- a. Contact City or Departmental Infectious Disease Officer for suspected or confirmed exposure and initiate claim report process.
- b. If an employee has a reliable history of having Chicken Pox or vaccinated against Chicken Pox, no further post-exposure management is necessary.
- c. If an employee is unsure of their susceptibility to Chicken Pox then they should report to Panel Provider (Concentra; call for hours) to have lab work drawn the same day (or next business day).
- d. Depending on the level of exposure and susceptibility of the individual exposed, Varicella zoster immune globulin (VZIG) may be administered. The decision to administer VZIG is based on the:
 - i. Susceptibility to VZV infection.
 - ii. Nature of exposure.
 - iii. Risk factors of person exposed.
- d. VZIG should be administered as soon as possible but may be effective if administered as late as 96 hours (4 days) post exposure.

V. Work Status (work related and non-work related Varicella)

- a. Exposed (**immune**) personnel require no restrictions.
- b. Exposed (**non-immune**) personnel should be restricted from direct patient care and contact with other non-immune employees/personnel beginning day 8 after the exposure to the 21st day after the exposure. The restriction will be extended to the 28th day if VZIG is given post exposure.
- c. Personnel who report active Varicella should be placed on the following restrictions:
 - i. For Chicken Pox - Restrict from duty until all lesions dry and crust.
 - ii. For localized Shingles - cover lesions and restrict from direct patient care activities.
 - iii. All staff reporting either work-related or non-work-related Varicella should receive clearance through a designated City Panel Provider prior to returning to work.

VI. Public Health/Social

- a. Employees with known immunity to Chicken Pox do not pose a risk of infection to others they come in contact with.
- b. Exposed employee without known immunity may be infectious to others from day 8 after a significant exposure to day 21 after a significant exposure if no lesions develop. If lesions develop, workers are infectious until lesions have crusted over.
- c. If the employee is not known to have immunity to Chicken Pox there is a concern of possible infection to a pregnant female or young child if either is not known to be immune. If the pregnant female or young child is known to be immune there is not a concern for infection. In the event the Chicken Pox immunity status of a pregnant female is unknown, the treating obstetrician gynecologist should be contacted so that immunity status can be confirmed and VZIG administration within the first 96 hours can be considered.
- d. If the employee is not known to be immune to Chicken Pox they should avoid contact with immune-compromised individuals from day 8 after significant exposure to day 21 if no rash develops or until all lesions have crusted over if a rash has developed.

VII. What is a Significant Exposure?

- a. Individuals with immunity to Chicken Pox are immune from contracting Shingles if exposed.
- b. Individuals with non-immunity to Chicken Pox are at risk for contracting Chicken Pox if they are directly exposed to Shingles; as such, exposure to open lesions in a non-immune individual is considered a significant exposure. Exposure prior to the Shingles rash developing or after the rash has crusted is not a significant exposure to the VZV regardless of immunity.

INFECTIOUS DISEASES

Subject: Scabies/Head Lice (Pediculosis)

Scabies

I. Etiology

- a. Transmitted via direct skin-to-skin contact with mite *Sarcoptes scabiei*.
- b. Transmission by casual contact is rare.
- c. Symptom/Presentation includes intense pruritus and cutaneous tracts where mites have burrowed under the skin.

II. Prevention

- a. Barrier Protection.

III. Vaccine

- a. There is no vaccine.

IV. Post-exposure Management

- a. Healthcare personnel do not require treatment or prophylaxis unless evidence of infestation.
- b. Consider Lindane 1% or Permethrin Cream 5%.
- c. Over the Counter treatment medications available.

V. Work Status

- a. Symptomatic: restrict from direct patient care until the employee has received initial treatment and has been medically evaluated and determined to be free of infestation.
- b. Asymptomatic: No restrictions.

Head Lice/ (Pediculosis)

I. Etiology

- a. Transmitted via direct close contact with hair or clothing of infected person (i.e. sharing hats, combs, brushes, etc.).
- b. Symptom/Presentation include:
 - i. Infestation with lice causes intense itching. Frequently the only evidence of infestation is found by observation of small eggs located on the hair follicles.

II. Prevention

- a. Barrier Protection.

III. Vaccine

- a. There is no vaccine.

IV. Post-exposure Management

- a. Healthcare personnel do not require treatment or prophylaxis unless evidence of infestation.
- b. Consider Lindane 1% or Permethrin Cream (1% cream rinse).
- c. Over the Counter treatment medications available (i.e. NIX).

V. Work Status

- a. Symptomatic: restrict from direct patient care until after treatment.
- b. Asymptomatic: no restrictions.

INFECTIOUS DISEASES

Subject: Influenza (including H1N1)

I. Etiology

- a. Causes an array of symptoms including sore throat, fever, malaise, myalgia and cough.
- b. Employees are at risk for contracting influenza from infected members of the public, as well as transmitting the flu to patients and co-workers up to 7 days after illness onset.
- c. Incubation Period: 1-5 days.

II. Prevention

- a. Employees are at risk are to use barrier protection.
- b. Good hand hygiene.
- c. Proper disinfection techniques.
- d. Yearly vaccination.

III. Vaccine

- a. The flu vaccine is offered to all employees from mid October to mid November.
- b. The flu vaccine (injectable vaccine only) is a killed virus and can not give you the flu.
- c. The Flu vaccine is 70-90% effective, with antibodies developing within 1-2 weeks.
 - i. Precautions: Anaphylactic reaction to eggs.
 - ii. Acute febrile disease.
 - iii. Pregnant employees should consult their PCP.

IV. Post-Exposure Management

- a. Antiviral prophylaxis is available from your PCP.

V. Work Status

- a. No work restrictions indicated unless symptomatic.
- b. Exclusion from care of high risk patients until symptoms resolve.

VI. Public Health/Social

- a. Employees who contract the flu should be sure to cover their cough so as to not infect others.
- b. Employees who contract the flu should get lots of rest and consume plenty of fluids.

INFECTIOUS DISEASES

Subject: Meningococcal Disease

I. Etiology

- a. Caused by a viral or bacterial infection. Knowing whether meningitis is caused by a virus or bacterium is important because the severity of illness and the treatment differ. Viral meningitis is generally less severe and resolves without specific treatment, while bacterial meningitis can be quite severe and may result in brain damage, hearing loss, or learning disability.
- b. The diagnosis of viral vs. bacterial meningitis is based on testing the source patient (24-48 hours).
- c. Transmission requires close contact with infected source patient, primarily through respiratory secretions (intubation/ CPR). Incubation Period: 2-10 days.

II. Prevention

In suspected cases, respiratory protection should be worn.

III. Vaccine

- a. It is recommended that only those that culture and work with meningococcal specimens be offered the meningococcal vaccine. The vaccine is not used in post-exposure prophylaxis situations.

IV. Post-exposure Management

- a. Contact the City or your Departmental Infectious Disease Officer with suspected or confirmed exposure and initiate claim report process.
- b. Evaluation for post-exposure treatment should be sought for all suspected or confirmed exposures within 24 hours.
- c. Antibiotic prophylaxis should be considered for workers who have provided intensive unprotected care to an infected person (i.e. not using a mask while intubating, suctioning, standing within 3 feet of patient for >10 minutes, or performing any procedure with face to face contact >10 minutes).

V. Work Status

- a. Contact City or your Departmental Infectious Disease Officer.
- b. If exposed and cannot be evaluated at Occupational Medicine (Concentra; call for hours) within 12 to 24 hours, should be referred to a (Panel) Emergency Department for evaluation/treatment.
- c. If exposed, on prophylactic treatment and showing no signs and symptoms of active illness, no work restrictions are applicable.
- d. Personnel with meningitis are non-infectious 24 hours after completion of effective therapy or eradication of disease and should remain out of the workplace until such time.

VI. Public Health/Social

- a. Personnel without meningitis are not considered to be at risk of transmission of the disease to others unless they have signs or symptoms of having the disease themselves. Personnel on prophylactic antibiotics are not at increased risk of transmission of the disease to non-infected individuals.
- b. Personnel exposed to a patient with meningitis who have not begun prophylaxis and who have no symptoms of the disease are not considered infectious to others.

VII. Significant Exposure

- a. A significant exposure occurs when an individual has contact with an infected person's respiratory secretions without having worn appropriate Personal Protective Equipment (PPE).
- b. A significant exposure is also considered to have occurred if an individual has been in close contact with someone diagnosed with meningitis for an extended period of time; such as an individual seated next to an infected person on an airline flight greater than or equal to 8 hours or individuals in a classroom or meeting room setting with an infected person for a full day of training or meetings.

INFECTIOUS DISEASES

Subject: Rabies

I. Etiology

- a. Rabies is a preventable viral disease of mammals, most often transmitted through the bite of a rabid animal. Saliva and Brain/Nervous tissue are considered infectious materials that can transmit the rabies virus. Contact such as petting or handling an animal, or contact with blood, urine or feces does not constitute an exposure.
- b. The vast majority of rabies cases reported to the Centers for Disease Control (CDC) each year occur in wild animals like raccoons, skunks, bats, and foxes. Domestic animals account for less than 10% of the reported rabies cases, with cats, cattle, and dogs most often reported rabid.
- c. Rabies among humans is rare in the United States. There is no treatment for rabies after symptoms of the disease appear.

II. Prevention

- a. Always use barrier precautions when handling wild animals.
- b. Recognize the symptoms of rabies infection and report possible rabies infected wildlife to authorities.
- c. Distance oneself from possible rabies-infected wildlife.

III. Vaccine

- a. Vaccination is recommended for persons in high risk groups such as veterinarians, animal handlers and certain laboratory workers. The vaccine consists of three doses of rabies vaccine given on days 0, 7 and 21 or 28.

IV. Post-exposure Management

- a. Post Exposure Prophylaxis (PEP) is indicated for persons possibly exposed to a rabid animal. Possible exposures include animal bites or mucous membrane contamination with infectious tissue, such as saliva.
- b. PEP should begin as soon as possible after an exposure.
- c. PEP consists of a regimen of one dose of immune globulin and five doses of rabies vaccine over a 28 day period. Rabies immune globulin and the first dose of vaccine should be given as soon as possible after exposure. Additional doses should be given on days 3, 7, 14 and 28 after the first vaccination.
- d. For those who have received proper pre-exposure vaccination or have a documented rabies titer, PPE consists of vaccine administration on days 0 and 3.

V. Work Status

- a. Consult your healthcare provider.

INFECTIOUS DISEASES

Subject: Tetanus

I. Etiology

- a. A medical condition caused by a neurotoxin produced by the anaerobic bacterium *Clostridium tetani*. Infection generally occurs through wound contamination and often involves a cut or deep puncture wound.
- b. Symptoms of tetanus include lockjaw and facial spasms followed by stiffness of the neck, difficulty in swallowing, and rigidity of pectoral and calf muscles.
- c. In the United States, approximately 100 people become infected with tetanus each year, with about five deaths from tetanus each year. The disease occurs *almost exclusively* in persons who are unvaccinated or inadequately immunized
- d. The incubation period of tetanus may be up to several months but is usually about 8 days.

II. Prevention

- a. Keeping any open wounds cleaned and dressed as a precaution when anticipating exposure to sewage/floodwaters.
- b. Personal protective equipment and general precautions to prevent puncture/laceration injuries.

III. Vaccination

- a. Vaccination with tetanus toxoid. The CDC recommends that adults receive a booster vaccine every ten years.
- b. It can take up to two weeks for tetanus antibodies to form.

IV. Post-exposure Management

- a. Proper wound cleaning immediately after exposure/ puncture.
- b. Vaccination post-injury is dependent on past vaccination and the cleanliness /severity of the wound.

Previous doses of Tetanus Toxoid	Clean and minor wound	All other wounds (as determined by physician)
<3 or unknown	Vaccinate	Vaccinate*
≥3	Vaccinate only if last dose was given ≥10 years ago	Vaccinate only if last dose was given ≥5 years ago

* May be a candidate for human tetanus immune globulin (rare)

- c. Vaccination does not need to be immediately after exposure to be effective. It is recommended that for all sewage/floodwater exposures, that medical treatment be sought through a non-emergency provider at a time that is least disruptive to operations.

V. Work Status

- a. Those individuals who have received post-injury care involving a tetanus toxoid vaccination have no work restrictions related to the vaccination (although other injury restrictions may apply).

INFECTIOUS DISEASES

Subject: Tuberculosis

I. Etiology

- a. Transmission of *M. tuberculosis* is via airborne droplets.
- b. The probability that a person exposed to *M. tuberculosis* will become infected depends upon the concentration of the infectious droplet nuclei in the air and the duration of exposure.
- c. Persons infected with *M. tuberculosis* have a 10% risk of developing active TB in their lifetime.
- d. Symptoms include nausea, weakness, fatigue, rapid weight loss, fever, night sweats, productive cough or coughing up blood.
- e. Conversion period post-exposure: 10-12 weeks.

II. Prevention

- a. Recognizing individuals with symptoms.
- b. Wearing face mask when assisting symptomatic individuals.
- c. Proper follow-up after a potential exposure.

III. Vaccine

- a. BCG, or bacille Calmette-Guérin, is a vaccine for tuberculosis (TB) disease.
- b. Many *foreign-born* persons have been BCG-vaccinated. BCG is used in many countries with a high prevalence of TB to prevent *childhood* tuberculosis, meningitis and miliary disease.
- c. BCG is not generally recommended for use in the United States because of the low risk of infection with *M. tuberculosis*, the variable effectiveness of the vaccine against adult pulmonary TB, and the vaccine's potential interference with tuberculin skin test reactivity.

IV. Post-exposure Management

- a. A Purified Protein Derivative test (PPD) should be administered as soon as possible after a TB exposure is recognized.
- b. A PPD will be performed at 12 weeks post-TB exposure to determine if an infection has occurred from the exposure.
- c. Persons known to have prior positive PPD tests do not need to be tested with a PPD nor do they need to have a chest X-ray unless they are symptomatic for TB.

V. Work Status

- a. Active TB infections: Persons with pulmonary or laryngeal TB are excluded from the workplace until they are non infectious.
 - i. Non-infectious will mean documentation from the persons healthcare provider that the person is receiving adequate therapy, the cough has resolved and there have been three (3) consecutive negative sputum smears collected on different days.
- b. Persons with TB from sites other than the lung or larynx are not excluded from work and may perform their normal duties.
- c. Latent TB infections: Persons receiving preventive treatment for latent TB infections are not restricted from their normal job duties.
- d. Latent TB infections: If a full course of preventive therapy is not completed these persons will be allowed to work their normal job duties but will be counseled about the risks signs and symptoms of developing TB.

INFECTIOUS DISEASES

Subject: Pertussis (Whooping Cough)

I. Etiology

- a. Transmitted through contact with respiratory secretions or large airborne droplets from the respiratory tract.
- b. Incubation Period: 7-10 days.
- c. Symptoms include runny nose, sneezing, low-grade fever, dry coughing evolves into coughing spells lasting as long as one minute.

II. Prevention

- a. Recognizing individuals with symptoms.
- b. Wearing face mask when assisting symptomatic individuals.
- c. Proper follow-up after potential exposure.

III. Vaccine

- a. Tdap is a trivalent vaccine that protects against tetanus, diphtheria and pertussis.

IV. Post-exposure Management

- a. Antibiotics.

V. Work Status

- a. Symptomatic (Active Pertussis): Restriction from duty is indicated for personnel with Pertussis from the beginning of the catarrhal stage (inflammation of the mucous membranes, especially of the head and throat) through the third week after the onset of paroxysms (sudden onset or periodic occurrence of the peculiar cough ending in a whooping inspiration), or until 5 days after the start of effective antimicrobial therapy.
- b. Asymptomatic: No restriction.

INFECTIOUS DISEASES

Subject: Methicillin-resistant *Staphylococcus aureus* (MRSA)

I. Etiology

- a. *Staphylococcus aureus* (staph) is a bacteria commonly carried on the skin or in the nose of healthy people. Most of staph skin infections are minor (such as pimples and boils) and can be treated without antibiotics. However, staph bacteria can also cause serious infections such as surgical wound infections, bloodstream infections, and pneumonia.
- b. **Methicillin-resistant *Staphylococcus aureus* (MRSA)** is a type of staph bacteria resistant to the most common antibiotics, but not all antibiotics.
- c. MRSA infections look similar to other staph infections.
- d. Transmission is through close skin-to-skin contact, openings in the skin such as cuts or abrasions, MRSA contaminated items and surfaces, crowded living conditions, and poor hygiene.

II. Prevention

- a. MRSA can be prevented by covering exposed wounds, properly treating new wounds and wearing appropriate barrier protection when close contact with others is necessary.

III. Vaccine

- a. There is no vaccine to prevent MRSA infections.

IV. Post-exposure Management

- a. **Cover your wound.** Keep wounds that are draining or have pus covered with clean, dry bandages. Follow your healthcare provider's instructions on proper care of the wound. Pus from infected wounds can contain bacteria, so keeping the infection covered will help prevent the spread to others. Bandages or tape can be discarded with the regular trash.
- b. **Clean your hands.** You and others for which you have close contact with should wash their hands frequently with soap and warm water or use an alcohol-based hand sanitizer, especially after changing the bandage or touching the infected wound.
- c. **Do not share personal items.** Avoid sharing personal items such as towels, washcloths, razors, clothing, or uniforms that may have had contact with the infected wound or bandage. Wash sheets, towels, and clothes that become soiled with water and laundry detergent. Drying clothes in a hot dryer, rather than air-drying, also helps kill bacteria in clothes.
- d. **Talk to your doctor.** Tell any healthcare providers who treat you that you have or had a staph or MRSA skin infection.

V. Work Status

- a. The patient must follow good hygiene practices as mentioned earlier. Unless the treating physician recommends restriction to duties, there is no deviation in work status in relation to MRSA infection unless the infected wound cannot be covered (face wound or similar situation).

INFECTIOUS DISEASES

Subject: Conjunctivitis (Pink eye)

I. Etiology

- a. Conjunctivitis can be caused by bacterial or viral infections or by allergic reactions to dust, pollen and other materials. All types involve redness and burning/ itching eyes.
- b. Bacterial infections usually produce thick white or yellowish pus (purulent discharge) that may cause eyelids to stick shut.
- c. With viral infections there is no purulent discharge, yet excessive tearing is often reported.
- d. Purulent discharge in allergic conjunctivitis is often clear and watery.
- e. Red and sore eyes may also be a part of viral respiratory infections.

II. Prevention

- a. Conjunctivitis can be prevented by hand washing, glove use, disinfection of equipment and avoiding hand to eye contact.

III. Vaccine

- a. There is no vaccine to prevent conjunctivitis infections.

IV. Post-exposure Management

- a. Antibiotic therapy for bacterial conjunctivitis if indicated.
- b. There is no effective treatment for viral conjunctivitis. Some eye lubricants can provide relief of some symptoms.
- c. For allergic conjunctivitis, the best practice is to identify the allergen and remove it from the individual.
- d. As bacterial and especially viral conjunctivitis are highly contagious conditions, it's important to ensure that a strict code of hygiene is adhered to, such as hand/ face washing and no sharing of face towels or other items in contact with one's eye fluids.

V. Work Status

- a. Those individual confirmed to have viral conjunctivitis are not to have patient contact for the duration of symptoms. This may include either limiting patient contact or if necessary, not permitting the employee to return to regular duty until symptoms are resolved.
- b. Those individual confirmed to have bacterial conjunctivitis are not to have patient contact until 24-hours after starting topical antibiotic therapy.
- c. Those individuals without patient contact as part of their work duties may continue to work their full-time position, with the permission of their supervisor, as long as they take the necessary hygiene precautions.
- d. Note that most cases of conjunctivitis will be non-work related.

Notes