

# HEALTH AND SAFETY ORIENTATION TRAINING

## INFECTION CONTROL/PERSONAL PROTECTIVE EQUIPMENT

### Standard Precautions

Standard precautions are work practices used in the care of **all** patients that help prevent the spread of infectious diseases in the hospital. Infectious diseases can be spread through the air, by droplet, or by direct contact. Use standard precautions whenever there is a chance you will be exposed to: blood, any other body fluids, secretions or excretions (except sweat), broken skin, or mucous membranes. **Treat all blood and other potentially infectious body fluids as if they are infected.**

### Transmission Precautions

Follow transmission precautions for any patient who may have a contagious disease. These precautions include droplet precautions for infectious large particle droplets (i.e. sneezing or coughing), and contact precautions for skin-to-skin contact or contact with a contaminated object (i.e. MRSA, VRE). Methicillin Resistant Staphylococcus Aureus (MRSA) and Vancomycin Resistant Enterococcus (VRE) can be spread through direct contact. Wear the appropriate protective equipment when entering the room of a patient with MRSA or VRE. Before leaving the room, remove the protective equipment and remember to wash your hands. Unless limiting the use of equipment to a patient with MRSA or VRE, make sure equipment is disinfected before using it with another patient. If possible leave all supplies and equipment in the patient's room-don't use them on other patients.

### Hand Washing

Hand washing is considered the most important single procedure for preventing nosocomial (hospital-acquired) infections. Hand washing is a basic form of sanitation and a required part of all infections control measures.

1. Proper Hand Washing Techniques
  - turn on faucet with a clean paper towel
  - wet hands under running water
  - wash hands thoroughly, (10-15 seconds) with soap and water, including between fingers
  - rinse thoroughly
  - dry hands with a clean paper towel
  - turn off the faucet with a paper towel and dispose of in trash can. Waterless alcohol hand rinses are to be used as a supplement to hand washing.
2. Wash your hands:
  - before and after your work shift
  - before and after physical contact with each patient
  - after handling contaminated items, such as bedpans, dressings, etc.
  - before putting on and after removing protective clothing and gloves
  - after using the toilet, blowing your nose, covering a sneeze, etc.
  - whenever hands become obviously soiled
  - before eating, drinking or handling food.
3. Remove gloves properly by pulling from inner cuffs causing the outer surface to become the inside surface. Make sure the glove's outer surface never touches your skin.

### Aseptic Technique

Principles of aseptic technique should guide our daily activities whether it is in the Operating Room or any other patient care area. The purpose of basic principles is to ensure that bacteria and other contaminants are not introduced to anywhere they can cause harm to a patient.

The principles of aseptic technique are:

- All materials in contact with the wound and used in the sterile field must be sterile.
- Gowns are considered sterile in front from chest to the level of the sterile field. The sleeves are also considered sterile from 2" above the elbow to the stockinet cuff.
- Sterile drapes are used to create a sterile field. Only the top surface of a draped table is considered sterile. Items should be dispensed to a sterile field by methods that preserve the sterility of the items and the integrity of the sterile field.
- Motions are from sterile to sterile areas and from un-sterile to un-sterile areas
- Movement around a sterile field must not cause contamination of that sterile field.
- Whenever a sterile barrier is permeated, it must be considered contaminated.
- Every sterile field should be constantly monitored and maintained.
- In non-sterile field, work from clean to dirty, not returning to the clean area.

## Infection Control Guidelines

1. Use personal protective equipment (PPE). PPE includes gloves, gowns, eye protection and facemasks. If you have a latex allergy inform the agency, the staffing office and the charge nurse/team leader and obtain non-latex products.
2. Dispose of infectious wastes properly. Red leakproof biohazard containers are available for disposal of bloody items that may leak or flake when dry.
3. Sterilize or disinfect patient-care equipment properly after each use.
4. Handle linen and laundry with care. Place in leakproof laundry bags. Use gloves if items are soiled or wet.
5. Clean up spills promptly per facility policy.

## Bloodborne Pathogens

A bloodborne pathogen is a microorganism found in blood that is capable of causing disease. OSHA developed the Bloodborne Pathogens Standard to prevent job-related exposures to viruses like HIV, Hepatitis B and C. Hepatitis B vaccine is offered free-of-charge to all employees for prevention of Hepatitis B. All facilities have Exposure Control Plans, describing procedures designed to eliminate or minimize worker exposures to bloodborne pathogens. Locate and familiarize yourself with the Exposure Control Plan in each facility.

## Prevention of Sharps Injuries

1. Wear gloves.
2. Never recap, bend, or break needles.
3. Dispose of used sharps promptly after use in designated containers only. Dispose of 2/3 full sharps containers according to facility's policy.

## Bloodborne Pathogens Exposure

- Perform first aid immediately. The following measures are recommended:
- for needlestick/sharp injury, wash with soap and water, and notify the agency, the staffing office and the charge nurse/team leader.
- for non-intact skin exposure, wash the wound with soap and water.
- for mucous membrane exposure irrigate copiously with tap water. Post exposure treatment may or may not be recommended. It is important that you report blood/body fluid exposures immediately after performing first aid since the CDC recommends that post-HIV exposure medications be taken within 1-2 hours of the exposure incident.

## **INDIVIDUAL SAFETY**

Health Care facilities have policies and procedures addressing emergency response situations such as but not limited to: inclement weather, bomb threat, violence, kidnapping, medical emergencies, hazardous spills, electrical failure and include general policy and procedures such as medication and blood administration, restraints, patient rights, use of information systems, fall prevention, and other. Familiarize yourself with the location of these during the first shift.

## Medication Administration

The 7 "rights" of safe drug administration:

1. The right day.
2. The right dose.
3. The right time.
4. The right route.
5. The right patient.
6. The right administration. Make sure the patient assessment supports administration of the drug (check labs, allergies, vital signs, etc.). When the patient takes an oral medication, stay with him while he swallows it. Verify which can be crushed. If using equipment for administration, make sure it is set up and working properly.
7. The right documentation. Document the drug, route, dose, and time of the MAR. Document adverse drug reactions and medication errors. Always check back with the physician or pharmacist if you can't read an order. Double check orders you believe may be unsafe or incorrect. **Report all medication errors or adverse drug reactions promptly.**

## **Latex Allergy**

Latex allergy is an allergic reaction to natural rubber latex (NRL). Repeated exposures to NRL proteins through skin and mucous membrane contact or inhalation can result in a latex allergy. Anyone who comes in regular contact with latex can become allergic to it over time. Severe symptoms can include facial swelling, runny nose, eye symptoms, hives, a drop in blood pressure, rapid heartbeat, respiratory distress, asthma, and possibly anaphylactic shock. This can be caused by skin or mucous membrane contact with latex or by inhaling the powder inside of gloves or balloons that carry latex proteins. There is no cure for latex allergy and the treatment is to avoid latex. If you think someone is having a severe reaction to latex **Get Emergency Help Immediately!**

## **Accident Prevention**

Things to remember:

- Accident prevention in the hospital is everyone's responsibility.
- Accidents can be prevented if workers recognize hazards and respond to them.
- Use warning signs to warn others of possible hazards and take extra care when you see a warning sign.
- Almost all accidents can be prevented if you REMOVE the problem or REPORT the problem.
- All accidents need to be reported.

If you REMOVE a problem, it is eliminated or taken away so that it will not cause an accident for you or anyone else. If you see a problem that you cannot remove, report it to the appropriate department.

## **Electrical Safety**

Do:

- Use only electrical equipment with three pins on the plug.
- Look at plugs for loose or broken pins or for any melted areas.
- Unplug equipment by handling the plug itself and not the cord.

Don't:

- Use plugs with broken pins or with only two pins.
- Pull on an electrical cord to unplug equipment. Pulling can damage the cord.
- Use cheaters. Cheaters are adaptors that convert three-pin plugs into two-pin plugs.

## **Back Safety**

Do:

- Plan your lift
- Keep a shoulder-width stance
- Squat bending the knees
- Tighten stomach muscles
- Hold load close to your body
- Maintain your back's natural curves
- Lift with your legs
- Minimize the weight you must lift
- Get help and make use of special handling equipment
- Exercise & limit stress on your back

Don't:

- Bend at the waist or lift with your back
- Twist while lifting or carrying
- Try to lift more than you can handle
- Reach over your shoulders for a load
- Try to recover a falling load
- Pull any load

## **Safe Transfers**

1. Move the patient's center of gravity as close to the person lifting as possible.
2. Stand with feet slightly apart. Take as much strain with the leg muscles as possible.
3. Shift the position of your legs to turn – never twist.
4. Do not let the patient “land” unsupported.
5. Let the patient know that you are about to lift him/her.
6. If the patient is too heavy or uncooperative – get help.
7. When moving a patient from OR table to stretcher, use a roller and make sure you have plenty of assistance (4 people) one at the head, one at the foot, and two on either side of the patient. Make sure the patient does not fall between the stretcher and the bed. The person at the head (usually anesthesia) will coordinate and determine when the transfer will occur.
8. Get training on mechanical lift/transfer devices – don't assume they all operate the same.

## **Radiation Safety**

1. Minimize Time: If you reduce your time around radiation, you reduce your exposure. Put forethought into how you will accomplish a procedure, before you attempt it.
2. Maximize Distance: Doubling the distance between a person and the radiation source reduces the radiation exposure by 3 of the original exposure. This means every step back makes a significant exposure difference.
3. Maximize Shielding: If a lead wall is provided, use it. Wear lead aprons, double sided preferred. Wear a thyroid shield. Use lead gloves if provided. Use equipment or other personnel as shielding. A 0.5-mm thick lead apron reduces scattered radiation by approximately 10 times.
4. Badge Monitors: Wear the badge monitor on the outside of the lead apron and have it read at the prescribed times. Only wear your own badge-never another person's badge. Never wear the badge at home and/or when you are undergoing a radiological procedure yourself.

## **ENVIRONMENTAL SAFETY**

### **Fire**

Remember the “RACE” rule if fire occurs:

R = Rescue patient from the area

A = Alarm – Report Code 55 and the location

C = Confine the fire, close doors and windows

E = Extinguish the fire if small or evacuate the area

### **Fire extinguisher use – remember “PASS”:**

P = Pull the pin

A = Aim low at base of fire

S = Squeeze lever above the handle

S = Sweep from side-to-side

**Class A** is used on ordinary combustible like wood, cloth and paper.

**Class B** is used on flammable liquids such as gas, oil and oil based paint.

**Class C** is used on electrical equipment.

**Know the evacuation routes. All routes are posted by elevators.** Do not use the elevators. If evacuation of an area is required, first move patients or visitors to a “safe zone” beyond the fire doors, then out the proper fire exit. Ambulatory patients should be evaluated first, patients that need minimal assistance second, and bed-ridden patients last. Patients that are unable to walk may be moved by carrying them or sliding them on a blanket on the floor. Review the facility's policy manual for department specific duties.

### **Hazardous Waste & Materials Management**

To keep you informed about the hazards you may face at work, Occupational Safety and Health Administration created standards including the Hazard Communication Standard and Hazardous Waste Operations and Emergency Response Standard. These standards give you the right to know about chemical hazards in your workplace and require training of individuals who may work with hazardous substances. Seek out the location of the facilities plan to handle occurrences related to hazardous waste and materials management.

### **Regulated Medical Waste (RMW) defined:**

RMW is waste that has the potential to be infectious. Mostly, this waste consists of items that are heavily-saturated with blood or body fluids, blood-filled containers and tubing, as well as “sharps”, including needles, syringes, lancets and scalpels. RMW is kept separate from general trash and other hospital wastes. Below is RMW separated into four categories: Red Bag Waste, Sharps, Pathological Waste, and Chemotherapy Waste.

## Red Bag

- Bandages, gauze and other materials that are saturated or dripping with blood or body fluids
- Blood-filled containers and IV tubing
- Disposable high-strength metal devices that are contaminated (note: clean, damaged instruments go in regular trash)
- Check tubes
- Suction canisters with blood or body fluids

Note: Bed linen should NEVER be placed in red bag waste, even if soaked in blood. Bed linens ALWAYS go in linen hampers.

Disposal Requirements: Do not overfill bags. Bags must be tied off and placed in designated container (red tub or cart). Do NOT put general trash in red bags.

## Sharps

- Needles
- Guidewires
- Lancets
- Test tubes & vac-u-tainers
- Other items that may easily puncture the skin
- Syringes w/needles attached
- Needleless systems w/contamination
- IV tubing with needles attached
- Safe needle devices

Disposal Requirements: Place in approved sharps boxes. Do not overfill. Do not include high-strength metal devices. O.R. staff should place explanted-implants (i.e. hip joints) in large, oversized sharps boxes.

## Pathological

- Tissues, Organs, Limbs

Disposal Requirements: Place in approved tubs or transport boxes lined with red bags. Formalin must be decanted prior to disposal.

## Chemotherapy

- Items contaminated with trace amounts of chemotherapeutic agents
- Disposal Requirements: Place in approved yellow containers.

## **Material Safety Data Sheets (MSDS)**

The MSDS is a basic hazard communication tool that provides details on chemical and physical dangers, safety procedures, and emergency response techniques. The MSDS gives you all of the information you need to work safely with chemicals.

All clinical affiliates should have an MSDS for each chemical and medications that have hazardous chemical properties. Check with your clinical instructor, preceptor or supervisor for the location of the facility's MSDS.

THE MSDS provides more details information on a particular chemical including: safe exposure limits, special precautions to take, and/or physical and health hazards. Check the MSDS before you start any job using a hazardous chemical you are unsure of. Then follow its instructions to stay safe on the job.

1. Use all required PPE (protective gloves, safety goggles, safety shoes, etc.)
2. Follow proper handling procedures (ensure adequate ventilation, never mix chemicals unless you're trained and authorized, use only approved equipment for dispensing hazardous liquids, etc.)
3. Properly transport, store, and dispose of chemicals (use properly labeled safety containers, store in designated areas and never pour chemicals down drains or put into ordinary waste containers).
4. If you have a chemical exposure, please notify the agency, the staffing office and the charge nurse/team leader.

## **Dealing with Hazardous Spills**

All clinical affiliates will have specific clean-up policies for various types of hazardous spills. Please consult with your clinical instructor, preceptor or supervisor in the event you encounter a hazardous spill in an area you are working in. In general, you should respond to a hazardous spill by:

1. Protecting your safety and the safety of others;
2. Isolating the scene and denying entry to it; and
3. Notifying the individual or department who is responsible to clean up hazardous spills.

## **Safe Medical Device Act**

The safe Medical Device Act of 1990 requires us to report all serious illnesses or serious injuries involving a medical device to the FDA. A reportable incident is one that reasonably suggests that there is a probability that the device contributed to the death, serious injury or serious illness of a patient or employee.

In June 1993, the FDA implemented MEDWATCH, their medical products reporting program. Designed to facilitate reporting and to encourage healthcare professionals to review reporting as their professional duty, the FDA emphasizes that it is the people on the front-line that are most able to recognize suspected problems with products in use. This program asks for reporting serious allergic/adverse reactions to drugs, medical devices or nutritional products. If there is an adverse reaction, the MEDWATCH form must be reported if they caused or contributed to a serious injury even if it resulted from user error.

1. Assess the patient's clinical situation. Attend to the patient's needs first.
2. Remove the suspected device from service and tag as "Defected Do Not Use".
3. Do not change any control settings on the device unless necessary to minimize injury at the time of the occurrence.
4. Retain all disposable and reusable equipment, accessories and packaging related to the incident.
5. Do not clean the device – place contaminated materials in an appropriate container and label with biohazard tag.
6. Report the incident to your manager.
7. Complete the appropriate documentation.
8. Do not give the device to the company vendor.
  - Professional demeanor at all times.
  - Speak only positively about all other facilities, physicians, agencies, etc.
  - No sleeping, regardless of practice of others.
  - State concerns diplomatically.

### **CULTURAL COMPETENCE**

This involves understanding and respecting the patient's cultural values, beliefs and practices. Consider the patient's views about health care, family, community relationships, language and communication styles, ties to another country or part of the United States, food preferences, religion, views about birth and death and other factors that may affect care needs. Suggestions for employees regarding cultural sensitivity and diversity:

- Pay attention to body language, facial expressions and other behavioral cues.
- Avoid yes/no questions or ones that give multiple choices.
- Consider that smiles and laughter may indicate discomfort or embarrassment.
- make formal introductions using titles (Mr., Mrs., Ms., Dr.) and surnames; let the individual take the lead in getting more familiar.
- If there is a language barrier, assume confusion.
- Take your cue from the other person regarding formality, distance, and touch.
- Explain the reasons for all information you request or directions you give.
- Use a soft, gentle tone and maintain an even temperament.
- Pay attention to subtle cues that may tell you an individual's dignity has been wounded.
- Recognize that differences in time consciousness may be cultural and not a sign of laziness or resistance.
- Question your assumptions about the other person's behavior; expressions and gestures may not mean what you think.

### **PATIENT RIGHTS**

Health Care facilities have policy and procedures addressing patient rights. Familiarize yourself with the location of these during the first shift. Expect to find information including, but not limited to, the following concerns.

Patients have the right to:

- have his or her cultural, psychosocial, spiritual, and personal values, beliefs, and preferences respected.
- pastoral and other spiritual services.
- receive information about their rights.
- be involved in decisions about care, treatment, and services provided.
- **Informed consent is obtained.**
- refuse care, treatment, and services in accordance with law and regulation.
- effective communication with care givers and all staff.
- **The facility addresses the resolution of complaints from patients and their families.**
- confidentiality, privacy, and security.
- an environment that preserves dignity and contributes to a positive self image.
- be free from mental, physical, sexual, and verbal abuse, neglect, and exploitation.
- pain management.
- access protective and advocacy services.

## HIPAA COMPLIANCE (Protection of Health Information)

The Health Information Portability and Accountability Act, more commonly referred to as HIPAA was enacted in 1996. HIPAA was designed to provide uniformity in data exchange, promote patient privacy and establish security standards for electronic storage of health data. HIPAA's "privacy standard" is based on the principal that patients have the fundamental right to expect that their medical information and corresponding medical records will remain confidential and secure. The privacy standards conveyed authority for compliance inspection by the Department of Health and Human Services and (HHS) and at some later point, enforcement and penalty standards.

### **INNOVATIONS' policy on Protection of Health Information is as follows:**

Staff acknowledge that they may become aware of or come in contact or possession of client/patient information, including, but not limited to; electronically exchanged data and information in any other form, that contains individually identifiable health or financial information ("Protected Health Information ["PHI"]) during the performance of their assignment. Staff agrees to comply with any PHI/HIPAA privacy and security policies and standard of **INNOVATIONS** and/or client that are applicable. Staff, agrees they shall:

- a. not use or further disclose any PHI other than that as expressly permitted or authorized by patient or as required by law;
- b. not use or further disclose any PHI in a manner that would violate any privacy, confidentiality or information security laws or regulations to which **INNOVATIONS** and/or client may be subject, including with out limitation, the Health Insurance Portability and Accountability Act ("HIPAA") and privacy and security regulations promulgated pursuant to HIPAA;
- c. at all times maintain and use appropriate safeguards to prevent use or disclosure of any PHI other than as expressly permitted or authorized by patient or as required by law;
- d. report to **INNOVATIONS** and/or client any use or disclosure of PHI of which staff becomes aware that is not expressly permitted or authorized by patient or as required by law;
- e. provide access to PHI by individuals who have a right of access thereto in accordance with applicable law, including, without limitation, the HIPAA privacy regulation;
- f. ensure that any amendments or corrections to the PHI are incorporated in accordance with the HIPAA privacy regulation;
- g. make available the information required for client to provide an accounting of disclosures in accordance with the HIPAA privacy regulation;
- h. participate in **INNOVATIONS** HIPAA Compliance Training and sign electronic HIPAA Compliance Agreement prior to placement on assignment.
- i. participate in and adhere to client specific HIPAA Compliance Training where applicable.

### When Domestic Violence Comes to Work

While it may be called "domestic," violence between spouses or partners can be a very dangerous type of violence, and it can easily spill over into any workplace, including yours. Besides bringing danger to the workplace, it can also bring increased absenteeism and decreased productivity. Women are most frequently the victims, but men can also be abused.

Powerful forces such as embarrassment and realistic fear often make it difficult for victims to seek help. Before a specific incident surfaces, it is important to let employees know that competent, confidential help is available, and that victims will be treated with respect and concern. Work with your Employee Assistance Program (EAP) to ensure that educational materials about domestic violence are readily available, and that employees all know how to access the EAP itself.

Possible signs of domestic violence include:

- Changes in behavior or work performance
- Preoccupation/lack of concentration
- Increasing or unexplained absences
- Harassing phone calls to the workplace
- Bruises or other injuries that are unexplained or come with explanations that just don't add up

If you, as a manager, observe these or other possible signs, you should not try to diagnose the problem, but you should talk with the employee about what you have observed and offer your support and concern. In a private

setting, tell the employee what you have observed: "I noticed the bruises you had last week and you look upset and worried today." Express your concern that the employee might be abused: "I thought it was possible that you are being hurt by someone and I am concerned about you." Express your support: "No one deserves to be hit by someone else." If the employee does not disclose violence or other problems, do not make further questions or speculations. But do point out the EAP is available for confidential assistance and that your door is open as well.

If the employee discloses a problem with domestic violence, resist any temptation to take charge of the employee's safety planning. There are risks on the path to a safe resolution, and well meaning advice can actually increase the employee's danger. It is essential that the employee receive advice from people with solid experience in the field. Refer the employee to the EAP, which can help in ways that you cannot and should not.

Most often, the EAP will provide the employee with support at work and also refer the employee to an advocacy organization that specializes in helping victims of violence. If the employee prefers not to talk with the EAP, an alternate resource is the National Domestic Violence Hotline at 1-800-799-7233. The hotline staff can provide advice and referral to local resources. Explain that the employee's disclosure to you is confidential, but in the case of a clear threat to the workplace, you and anybody else who knows would be obliged to seek help.

Once the employee begins working on a safety plan with qualified advice, offer your cooperation in working out the workplace components of the plan. This might involve temporary changes such as moving the employee to a more secure location or instituting a variable work schedule to make the employee less vulnerable to ambush. Your security office can help with this kind of planning, and in other ways as well, such as keeping copies of restraining orders and photos of the abuser at the guard station.

Be approachable, and let the employee know you are available to discuss work related issues such as needing leave for court appointments. If you think of potentially helpful options, present them, but do not pressure the employee to accept them. Show respect for the employee's decisions.

Remember the healing value of work. Victimization often separates people from their friends and family, and robs them of their self confidence. Having a chance to succeed, contribute, and be part of a team can be a real lifeline for the employee.

### **Care of Patient with Acquired Immunodeficiency Syndrome (AIDS)**

- A. Description.** AIDS is a severe immunodeficiency caused by HIV, which allows normally benign organisms to flourish and cause disease. The virus causes cell death and a decline in immune function resulting in opportunistic infections, malignancies, and neurologic problems. These opportunistic conditions define the syndrome.
- B. Etiology**
1. HIV is transmitted in sexually and through direct contact with blood or blood products.
  2. Persons at risk for contracting HIV
    - a. Anyone who engages in unprotected sexual activity with an infected partner.
    - b. Recipients of transfused blood or blood components (uncommon since 1985, when blood screening was instituted)
    - c. Intravenous drug abusers
    - d. Children (perinatally) of mothers with HIV
    - e. Health care workers exposed to HIV by needle stick. However, the incidence for health care workers exposed to HIV by needle stick is estimated to be less than 1%
- C. Pathophysiology.** HIV is part of a group of viruses known as retroviruses, which carry genetic material in ribonucleic (RNA) rather than deoxyribonucleic acid (DNA). HIV infects cells with CD4 lymphocytes (also called T4 or helper T cells). This infection causes cell death and a decrease in the immune function, resulting in opportunistic infections and neurologic problems. HIV can be isolated from blood, semen, saliva, tears, breast milk, and cerebrospinal fluid. After a variable course of about 10 years from the time of infection, 50% of infected persons develop AIDS. The incubation period of HIV varies, ranging from about 6 months to 5 years, with an average of 2 years.
- D. Assessment findings**

1. **Associated findings.** The clients may report recurring viral and bacterial infections.
2. **Clinical manifestations**
  - a. Fatigue
  - b. Fever and night sweats
  - c. Weight loss
  - d. Generalized lymphadenopathy
  - e. Nonproductive cough, and shortness of breath
  - f. Skin lesions, dry skin, and pallor
  - g. Gastrointestinal upset and chronic diarrhea
  - h. Edema
  - i. Visual impairment
  - j. Painful oral lesions
  - k. Bruising and bleeding tendencies
  - l. Joint pain
  - m. Opportunistic infections, such as *Pneumocystis carinii* pneumonia, mycobacterial infections, cryptococcal infection, toxoplasmosis, histoplasmosis, and cytomegalovirus infection
  - n. Kaposi sarcoma, an AIDS-related lymphoma
  - o. Neurologic deficits, such as AIDS dementia complex (ADC)
  - p. HIV wasting syndrome
3. **Laboratory and diagnostic study findings**
  - a. Enzyme linked immunosorbent assay (ELISA) indicates exposure to or infection with HIV but does not diagnosis AIDS
  - b. Western blot assay identifies HIV antibodies
  - c. AIDS is diagnosed on clinical history, risk factors, physical examination, laboratory evidence of immune dysfunction, and positive ELISA, or Western blot assay

- E. Nursing Management.** No cure or vaccine has been found, and treatment focuses on maintaining health and improving survival time.
1. **Administer prescribed medication**, which may include antibiotics for HIV related infections, antiretroviral therapy, antidiarrheals, and antiemetics
  2. **Promote preventive measures related to the transmission of HIV.** This is a prime concern until a vaccine is found; researchers have reported that a vaccine is being investigated and tested for prevention of HIV transmission.
    - a. Promote public education regarding HIV and AIDS. Teach clients and families to practice safe sex, avoid sharing needles, and avoid touching another's body fluids without protection.
    - b. Inform HIV-infected clients that, even though HIV is undetectable, they may be infectious and should practice safe sex.
    - c. Promote standard precautions to protect health care providers from exposure to the client's blood or body fluids and to protect the client from cross contamination.
  3. **Maintain skin integrity** by instructing the client to avoid scratching, strong perfumed soaps, and adhesive tapes; follow routine oral care; keep anal area clean as possible; wear white socks to prevent foot problem; keep linens dry and clean; and apply protective barriers to skin as necessary.
  4. **Instruct the client about promotion of normal bowel movements and prevention of diarrhea.** Instruct the client to monitor the quantity and volume of liquid stools and avoid bowel irritants such as raw fruits, vegetables, spicy foods, and hot or cold foods.
  5. **Promote infection prevention.** Discuss the importance of maintaining personal hygiene, keeping bathrooms and kitchens clean, avoiding exposure to individuals who are sick, avoiding smoking and alcohol, and getting adequate rest, activity, and a well balanced diet.
  6. **Teach energy conservation techniques**, such as sitting while doing morning care, using a shower chair, and arranging the home in a way to save time from walking or standing. In hospital, put all necessary items within easy reach.
  7. **Discuss ways the client and family can assist with mental status problems.** These include putting notes on the refrigerator or note boards, using calendars and clocks to orient the client to time and place, and assisting client with paying bills, shopping, and other household activities.
  8. **Teach methods for airway clearance.** These include turning, coughing and deep breathing; increasing fluid intake to thin secretions; maintaining a semi-Fowler position; and using humidified oxygen if necessary.
  9. **Help maintain nutritional status** by controlling nausea and vomiting; encouraging foods that are easy to swallow; encouraging oral hygiene before and after meals; promoting a high-protein diet; monitoring weight, intake and output; monitoring fluid and electrolyte balance; and administering appetite stimulants.
  10. **Monitor and manage complications of opportunistic infections.**

11. **Teach ways to cope with chronic illness** to the client and significant others in teaching and care. Provide grief counseling for significant others and family.
12. **Provide referrals** to the National Association of People with AIDS, CDC National AIDS Clearinghouse, and Project Inform.<sup>1</sup>

## IF AN EXPOSURE OCCURS

### What should I do if I am exposed to the blood or body fluids of a patient?

1. Immediately following an exposure to blood:
  - Wash needlesticks and cuts with soap and water
  - Flush splashes to the nose, mouth, or skin with water
  - Irrigate eyes with clean water, saline, or sterile irrigants

No scientific evidence shows that using antiseptics or squeezing the wound will reduce the risk of transmission of a bloodborne pathogen but it is not contra indicated.

2. **Report the exposure** to your immediate supervisor and to **INNOVATIONS** as soon as possible after the occurrence. Prompt reporting is essential and it should be started as soon as possible. Discuss the possible risks of acquiring HBV, HCV, and HIV and the need for postexposure treatment with the provider managing your exposure. You should have already received hepatitis B vaccine, which is extremely safe and effective in preventing HBV infection.

## EXPOSURE MANAGEMENT

### Assessment of Infection Risk

After an occupational exposure, the source person and the exposed HCW should be evaluated to determine the need for HIV Post Exposure Prophylaxis (hereafter PEP). Follow-up for hepatitis B virus and hepatitis C virus also should be conducted in accordance with previously published CDC recommendations.

**Evaluation of Exposure.** The exposure must be evaluated for potential to transmit HIV based on the type of body substance involved and the route and severity of the exposure. Exposures to blood, fluid containing visible blood, or other potentially infectious fluid (including semen; vaginal secretions; and cerebrospinal, synovial, pleural, peritoneal, pericardial, and amniotic fluids) or tissue through a percutaneous injury (i.e., needlestick or other penetrating sharp-related event) or through contact with a mucous membrane are situations that pose a risk for bloodborne transmission and require further evaluation.

**Evaluation and Testing of an Exposure Source.** The person whose blood or body fluids are the source of an occupational exposure should be evaluated for HIV infection. Information available in the medical record at the time of exposure (e.g., laboratory test results, admitting diagnosis, or past medical history) or from the source person may suggest or rule out possible HIV infection. Examples of information to consider when evaluating an exposure source for possible HIV infection include laboratory information (e.g., prior HIV testing results or results of immunologic testing [e.g., CD4+ count]), clinical symptoms (e.g., acute syndrome suggestive of primary HIV infection or undiagnosed immunodeficiency disease), and history of possible HIV exposures (e.g., injecting drug use, sexual contact with a known HIV-positive partner, unprotected sexual contact with multiple partners [heterosexual and/or homosexual], or receipt of blood or blood products before 1985).

If the source is known to have HIV infection, available information about this person's stage of infection (i.e., asymptomatic or AIDS), CD4+ T-cell count, results of viral load testing, and current and previous antiretroviral therapy should be gathered for consideration in choosing an appropriate PEP regimen. If this information is not immediately available, initiation of PEP, if indicated, should not be delayed; changes in the PEP regimen can be made after PEP has been started, as appropriate.

If the HIV serostatus of the source person is unknown, the source person should be informed of the incident and, if consent is obtained, tested for serologic evidence of HIV infection. If consent cannot be obtained (e.g., patient is

---

<sup>1</sup> Medical Surgical Nursing, Third Edition, Ray A. Hargrove-Huttel

unconscious), procedures should be followed for testing source persons according to applicable state and local laws. Confidentiality of the source person should be maintained at all times.

HIV antibody testing of an exposure source should be performed as soon as possible. Hospitals, clinics, and other sites that manage exposed HCWs should consult their laboratories regarding the most appropriate test to use to expedite these results. An FDA-approved rapid HIV antibody test kit should be considered for use in this situation, particularly if testing by enzyme immunoassay (EIA) cannot be completed within 24-48 hours. Repeatedly reactive results by EIA or rapid HIV antibody tests are considered highly suggestive of infection, whereas a negative result by Western blot or immunofluorescent antibody is not necessary for making initial decisions about postexposure management but should be done to complete the testing process.

**Clinical Evaluation and Baseline Testing of Exposed HCWs.** Exposed HCWs should be evaluated for susceptibility to bloodborne pathogen infections. Baseline testing (i.e., testing to establish serostatus at the time of exposure) for HIV antibody should be performed. If the source person is seronegative for HIV, baseline testing or further follow-up of the HCW normally is not necessary. If the source person has recently engaged in behaviors that are associated with a risk for HIV transmission, baseline and follow-up HIV antibody testing (e.g., 3 and/or 6 months postexposure) of the HCW should be considered. Serologic testing should be made available to all HCWs who are concerned that they may have been exposed to HIV.

For purposes of considering HIV PEP, the evaluation also should include information about medications the HCW may be taking and any current or underlying medical conditions or circumstances (i.e., pregnancy, breast feeding, or renal or hepatic disease) that may influence drug selection. Pregnancy testing should be offered to all nonpregnant women of childbearing age whose pregnancy status is unknown.<sup>2</sup>

## **Prophylaxis for Occupational Exposure to HIV Information for Employee**

Each year, 600,000 to 800,000 occupational needlestick injuries are estimated to occur - these can lead to serious or potentially fatal infections with bloodborne pathogens such as hepatitis B virus, hepatitis C virus, or human immunodeficiency virus (HIV). The exact number of injuries is not known because needlesticks often go unreported. Most reported needlesticks involve nurses, but laboratory staff, physicians, housekeepers, dental workers and other health care workers are also injured.

We think that the risk of infection when exposed to needle puncture or similar injury is 0.32%. The use of zidovudine (a pill taken daily for 4 weeks) is estimated to reduce odds of transmission by 79%. Two other medications may be Remember, 99.7% of health care providers who are exposed will not be infected even if treatment is not provided.

### **Factors Predicting Transmission of HIV after Percutaneous Exposure:**

<b>FACTOR</b>	<b>ADJUSTED ODDS RATIO</b>
deep IM injury	16.1
visible blood on sharp device	5.2
needle used to enter blood vessel	5.1
source patient with terminal aids	6.4

### **Experimental data on efficacy of anti-retroviral treatment:**

1. animal models are inconclusive
2. no randomized clinical trials in health care workers have been completed, one is underway now and if you elect to receive anti-retroviral treatment you are encourage to enroll to help those who follow you
3. this treatment has been shown to confer protection in preventing transmission from infected women to offspring

<sup>2</sup> Summaries from <http://archderm.ama-assn.org/cgi/content/full/134/10/1317>

## **Safety of anti-retroviral treatment:**

About 1/3 of people stop because of intolerance of side effects including:

- nausea
- fatigue
- headache
- gastrointestinal dist

If you are offered treatment and elect to take it, you will need to have follow up examinations, blood testing, etc. to be sure that you are doing well and safe.

## **The Drugs**

**Zidovudine (AZT, Retrovir)** - HIV attacks the immune system and this medicine appears to slow down it's destruction. It works best when there is a constant amount in your blood. Do Not miss any doses, and do not stop taking this medicine without checking with your doctor first. The most common side effects include fever, chills, sore throat, unusual tiredness or weakness, pale skin. More commonly you may have abdominal discomfort, confusion, convulsions, a general feeling of discomfort, loss of appetite, mood changes, muscle tenderness or nausea. Dose: 200mg by mouth 3 times a day.

**Lamivudine( 3TC, Epivir)** - This is only used in combination with zidovudine and it weakens the HIV virus' ability to replicate. Side effects include headache, nausea, malaise, fatigue, diarrhea, and abdominal pain. Gastrointestinal upset and rarely pancreatitis. Dose: 150mg by mouth twice a day.

**Indinavir (Crixivan, MK 639)** - This drug is added for high-risk exposures and acts on the assembly of HIV particles making them non-infectious. It is usually well tolerated but may cause gastrointestinal upset, a change in your liver blood tests, kidney tests. Dose: 800mg by mouth three times a day.

## Guidelines for Management of Occupational Exposure to HIV HIV Postexposure Prophylaxis (PEP)

Excerpted from MMWR, Vol. 45/No. 22, June 7, 1996

<b>Evaluate Risk of Percutaneous Exposure</b>		
<b>Highest Risk</b>	<b>Increased Risk</b>	<b>No Increased Risk</b>
BOTH larger volume of blood (e.g., deep injury, large diameter needle previously in source patient's vein or artery) AND high titer of HIV (e.g., source patient with acute retroviral illness or end-stage AIDS)	EITHER larger volume of blood OR high titer of HIV	NO larger volume of blood  NO high titer of HIV  (e.g., injury with a solid suture needle from source patient with asymptomatic HIV)

<b>Summary of PHS Recommendations for PEP</b>		
<b>Exposure Type: PERCUTANEOUS</b>		
Source	Prophylaxis	Regimen
Blood- Highest Risk	Recommend	ZDV + 3TC + IDV
Blood- Increased Risk	Recommend	ZDV + 3TC ± IDV
Blood- No Increased Risk	Offer	ZDV + 3TC
Fluid containing visible blood, other potentially infectious fluid, or tissue	Offer	ZDV + 3TC
Other body fluid (e.g., urine)	Don't Offer	n/a
<b>Exposure Type: MUCOUS MEMBRANE</b>		
Source	Prophylaxis	Regimen
Blood	Offer	ZDV + 3TC ± IDV
Fluid containing visible blood, other potentially infectious fluid, or tissue	Offer	ZDV ± 3TC
Other body fluid (e.g., urine)	Don't Offer	n/a
<b>Exposure Type: SKIN - INCREASED RISK</b> (e.g., exposure to high titer of HIV, prolonged contact, extensive area involved, or skin is visibly compromised)		
Source	Prophylaxis	Regimen
Blood	Offer	ZDV + 3TC ± IDV
Fluid containing visible blood, other potentially infectious fluid, or tissue	Offer	ZDV ± 3TC
Other body fluid (e.g., urine)	Don't Offer	n/a
<small>If PEP is offered, the recommended course of treatment is 4 weeks.                      *Recommendations from MMWR, Vol. 45/No. 22, June 7, 1996; ZDV-zidovudine (200 mg t.i.d.), 3TC-lamivudine (150 mg b.i.d.), IDV-indinavir (800 mg t.i.d.-i.e., q8h). Please refer to manufacturers' full prescribing information for dosing and other information.</small>		
<b>Follow-Up</b>		
Any adverse effects associated with PEP, as well as signs and symptoms of possible retroviral illness (e.g., fever, enlargement or tenderness of lymph nodes, rash), should be reported. Recommended laboratory testing for an occupational exposure to HIV: HIV antibody: baseline, 6 weeks, 12 weeks, and 6 months postexposure. Drug toxicity: baseline and 2 weeks postexposure (CBC, renal, hepatic function). <sup>3</sup>		

<sup>3</sup> Summaries from <http://www.akochealth.com/tertiary/HIV.html>

