







## **TERMS USED IN THE MANUAL**

- ACIP - Advisory Committee on Immunization Practice**
- APIC - Association of Professionals in Infection Control and Epidemiology, Inc.**
- CDC - Centers for Disease Control and Prevention**
- ICC - Infection Control Committee**
- ICP - Infection Control Practitioner**
- ICO - Infection Control Officer**
- ISO - Institutional Safety Officer**
- LPN - Licensed Practical Nurse**
- MSM - Morehouse School of Medicine**
- NIOSH - National Institute of Occupational Safety and Health**
- NP - Nurse Practitioner**
- OSHA - Occupational Safety and Health Administration**
- PI - Principle Investigator**
- RN - Registered Nurse**

## **IMPORTANT NUMBERS TO REMEMBER IN CASE OF BLOODBORNE PATHOGEN EXPOSURE**

- Atlanta Medical Center Outpatient Center - **404-265-3958**
- Children's Healthcare of Atlanta at Hughes Spalding - **404-616-4373**
- Columbus Medical Center - Occupational Health Office, **706-571-1880**
- Egleston-

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## **II. INFECTION CONTROL: GENERAL PRINCIPLES AND GUIDELINES**

### **A. “What is Infection Control?”**

Preventing the sp

One might have open cuts, nicks or abrasions on the skin such as dermatitis or acne. Healthcare workers transfer germs to patients and colleagues. Microorganisms on the skin that might be harmless to one individual might cause serious infections in patients and others.

**Handwashing** keeps one from transferring germs to other areas of the body and environment or patients. If infectious material gets on the hands, the sooner they are washed, the less chance one has of becoming infected or passing along germs to others.

**Effective Handwashing** criteria include:

1. Lather hands with soap and water.
2. Vigorously rub together all surfaces of lathered hands for 20 seconds.
3. Rinse hands thoroughly under a stream of water.
4. Dry hands completely with clean, dry paper towel.
5. Avoid splashing or touching sink.
6. Use dry paper towel to turn off faucet.

In general, one should wash hands:

- x After eating, smoking, coughing, sneezing or using toilet
- x Before and after performing invasive procedures or touching a patient's face or mouth
- x After contact with wounds, body secretions, mucous membranes, blood or other body fluids
- x Before caring for high-risk patients and between direct contacts with different patients
- x When one touches, blood, body fluids or secretions while providing care for a patient, wash hands before proceeding to another care activity on the same patient
- x Before eating, drinking, smoking, applying make-up or handling contact lenses
- x Some areas have special hand washing procedures and/or special hand washing agents.

### **Remember: Help Prevent the Spread of Germs and Infections!**

1. Understand what causes infections and how they are spread
2. Use Infection Control standards of practice each day – Universal Precautions. Prevent and control infections!
3. Hand washing: Use proper washing technique AND comply with current CDC hand - hygiene protocols: “Alcohol-Based Gels; Guidelines for Hand Hygiene in Health-care Settings.”  
[MMWR 2002; vol. 51.no.RR-16.](#)
4. Do not wear artificial fingernails or extenders during direct contact with patients in high- risk patient care areas. Keep natural nail tips less than ¼ inch long.
5. Know special infection issues and criteria of special work areas



## **E. SHARPS DISPOSAL**

OSHA recommended needleless systems in high-risk areas in 1999 per the Bloodborne Pathogen Plan #75. However, immediate and proper disposal of sharps into puncture resistant containers is imperative when these systems are not available. In addition, to prevent needlesticks, do not bend, remove or recap sharps.

- x Use clean or sterile technique (where appropriate).
- x Observe strict precautions when working with dressings, catheters, and other devices.

## L. RESEARCH LABORATORY AND ENVIRONMENTAL SAFETY

Research Laboratories and Production Facilities shall meet the following criteria:

- x All waste shall be incinerated or decontaminated before disposal i.e., AUTOCLAVE.
- x Laboratory doors should be kept closed while performing duties involving HIV and/or HBV.
- x Contaminated waste must be placed in durable, leak-proof, labeled and/or color coded containers before transfer to off site locations for decontamination.
- x **Only** authorized persons should enter Biohazard work areas and animal facilities (See Biohazard Safety Manual).
- x A Universal Biohazard Symbol must be posted on all access doors.
- x All activities involving potentially infectious materials must be conducted in biological safety cabinets (physical-containment device) within the working laboratory or module. No opened benches.
- x Appropriate personal protective clothing shall be used in work areas, i.e., laboratory coats, gowns, smock, uniforms). Decontaminate and/ or discard before exiting work area.
- x Use gloves when handling infectious materials and/or infected animals.
- x All spills shall be addressed immediately according to the Bio-Safety Manual for protocol and procedure.
- x Vacuum lines shall be protected with liquid disinfectant trap and high efficiency particulate air filters (HEPA). These filters shall be checked routinely for maintenance

- x Eye wash shall be maintained in all work areas.
- x All exposures shall be reported to supervisor.
- x Exposures determined potentially infectious shall be reported to the Office of Infection Control and Human Resources according to federal regulations (Bloodborne Pathogen Standard) and MSM pol (B.

#### **IV. ISOLATION PROTOCOLS:**

Isolation procedures are used to define steps to prevent the spread of Infectious Disease agents from an infected or colonized person to another. Isolation precautions are designed to:

- x Control or eliminate the agent (germ)
- x Control or eliminate the reservoir
- x Interrupt transmission
- x Protect large numbers of susceptible persons in specified areas

The Centers for Disease Control and Prevention (CDC) recommends that hospitals and other medical arenas use specific isolation precautions. Isolation manuals are available in all Morehouse School of Medicine (MSM) clinical and research areas. In addition, each MSM clinical affiliate site provides like guidelines and protocols. Isolation systems use color coded cards displayed near patient areas to alert personnel and visitors that special precautions are necessary.

Isolation precautions and/or protocols are the main focus relative to prevention of Infectious Diseases. Private rooms, surgical and/or N-95 masks, gowns, and gloves are indicated to interrupt transmission of disease. Furthermore, isolation precautions are recommended to prevent the transmission of infectious agents and diseases which are likely to be found in United States hospitals, laboratories and other academic-medical and clinical arenas. Education is KEY.



**VI. PURPOSE AND INTENT OF THE OSHA BLOODBORNE PATHOGEN STANDARD IN DECEMBER, 1991:**

As with all OSHA regulations, the Bloodborne Pathogen Standard is intended to protect

**D. THREE BLOODBORNE PATHOGENS OF MOST CONCERN TO THE HEALTHCARE WORKER:**

1. Hepatitis B Virus (HBV) attacks the liver.

**FOLLOW UNIVERSAL AND STANDARD PRECAUTIONS**

- x Take steps to prevent contact with blood and other body fluids.
- x Refer to your Isolation Manual for additional details at your respective practice site.
- x If you have any questions, ask your supervisor.

**BIOHAZARD LABELS are Red - Orange**





**VII. Universal Precautions and the “Expanded” Standard Precaution - BLOODBORNE FACTS.** The expansion involves isolation precautions and environmental compliance guidelines.

**x PROTECT YOURSELF WHEN HANDLING SHARPS**

**x PROMPT DISPOSAL**

The best way to prevent cuts and sticks is to minimize contact with sharps. This means disposing of them immediately after use. Puncture-resistant containers must be available nearby to hold contaminated sharps. When reprocessing contaminated reusable sharps, employees must not reach by hand into the holding container. Contaminated sharps must never be sheared or broken.

Recapping, bending or removing needles is permissible only if there is no feasible alternative or if required for a specific medical procedure such as blood gas analysis. If recapping, bending, or removal is necessary, workers must use either a mechanical device or a one-handed technique. Staff might recap with a one-handed “scoop” technique, using the needle itself to pick up the cap, pushing cap and sharp together against a hard surface to ensure a tight fit. Or they might hold the cap with tongs or forceps to place it on the needle.

**SHARPS CONTAINERS**

Containers for used shar

## **BLOODBORNE FACTS**

### **HEPATITIS B: VACCINATION - PROTECTION FOR YOU**

#### **WHAT IS HBV?**

Hepatitis B **virus (HBV)**

based vaccine given in three injections in the arm. Yeast preps.

## **BLOODBORNE FACTS REPORTING EXPOSURE INCIDENTS**

The OSHA bloodborne pathogen standard includes provisions for medical follow-up after a potential exposure incident. The most common exposure is via needlestick. However, exposure to the eye, mouth, non-intact skin and other mucous membranes, or contact with blood and/or potentially infectious materials are considered exposure incidents and should be reported to the employer.

Exposure incidents can lead to infection from hepatitis B virus (HBV) or human immunodeficiency virus (HIV) which causes AIDS. Few cases of AIDS are directly related to workplace exposure. Nevertheless, approximately 8,700 health care workers contract hepatitis B from occupational exposures each year. Approximately 200 die from bloodborne infections. Some become carriers, passing infections to others.

### **WHY REPORT?**

Reporting an exposure incident right away permits immediate medical follow-up. Early action is crucial. Immediate intervention can prevent the potential development of hepatitis and/or HIV infection. Prompt reporting helps to prevent spread of infection to others. In addition, further evaluation of each incident aids in prevention of reoccurrence.

Additional follow-up includes blood testing for Hepatitis B and C as well as HIV infection or disease of the source individual. The exposed employee must be informed of test results.

Exposure protocols are provided to each employee. See Exposure Control Card.

### **MEDICAL EVALUATION AND FOLLOWUP**

For

OSHA 29 CFR 1910.103, 1910.1036

1910.1036

1910.1036

1910.1036

1910.1036

## **SELECTING PPE**

The level of protection must fit the potential exposure. For example, gloves would be sufficient for a laboratory technician while drawing blood, whereas a pathologist conducting an autopsy would need considerably more protective clothing.

PPE may include gloves, gowns, laboratory coats, face shields or masks, eye protection, N-95 masks, and other protective gear. The gear must be readily accessible to employees and available in appropriate sizes.

When contact with blood or other potentially infectious materials or contaminated surfaces might occur, wear gloves. Single use gloves cannot be washed or decontaminated for reuse. Utility gloves may be decontaminated if not compromised. They should be replaced if signs of cracking, peeling, tearing, puncturing, or deteriorating occurs. Hypoallergenic gloves or similar alternatives are provided to personnel with known allergy to standard gloves.

Health care workers should wear eye and mouth protection such as goggles and masks, glasses with solid side shields, and masks or chin-length face shields when splashes, sprays, splatters, or droplets of potentially infectious materials might occur. More extensive coverings such as gowns, aprons, surgical caps and hoods, and shoe covers or boots are needed when extensive contamination is expected i.e., during orthopedic surgery or autopsy.

## **AVOIDING CONTAMINATION**

Important: Use of PPE and Handwashing is important. Avoid direct contact with potentially infectious bloodborne pathogens and contaminants.

## **DECONTAMINATING AND DISPOSAL OF PPE**

Remove personal protective clothing and equipment prior to leaving the work area and/or when PPE becomes contaminated. When a garment is penetrated with potentially infectious material, remove it immediately. Used protective clothing and equipment should be placed in designated containers for storage, decontamination, or disposal.

## **OTHER PROTECTIVE PRACTICES**

Remember to wash with soap and-water and flush eyes with water immediately. Wash hands after the removal of personnel protective equipment.

Health care workers must refrain from eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses in areas where they may be exposed to blood or other potentially infectious materials.





- x Alcoholics and intravenous drug users
- x People with medical conditions such as diabetes, certain types of cancer and being underweight
- x Especially people with HIV INFECTION (the virus that causes AIDS)

### **SIGNS AND SYMPTOMS OF ACTIVE TB**

- x Fatigue
- x Fever
- x Weight loss
- x Anorexia Loss
- x Night sweats
- x Cough
- x Hemoptysis
- x Chest pain
- x Other symptoms depending on affected body part

### **RISKS OF DEVELOPING TB**

When one has a negative skin test that converts to a positive skin test, there is a 5% chance of development of TB disease in the first or second year after the conversion. An additional 5% of infected people will develop disease in their lifetime. It varies with age and immunologic status. Medications are prescribed for those who experience skin test conversions to prevent in their skin test to prevent TB disease.

### **TOOLS FOR DIAGNOSING TB**

- x PPD skin test: Most common method utilized to determine an INFECTION. A small amount of testing solution is placed intra-cutaneously on the forearm. Reading is done within 48 to 72 hours.
- x Baseline PPD skin testing of all Health Care Workers including Bacillus of Calmette and Gurerin (BCG) vaccination recipients will identify those who previously infected with TB. Baseline testing, a two-step procedure is used to minimize the likelihood of confusing reactivity with infection or conversion
- x Quantiferon testing (QFT), whole blood testing
- x Chest x-ray
- x AFB smear
- x Cultures

### **PREVENTIVE THERAPY AND TREATMENT**

There is preventive therapy medication for patients with skin tests conversions. TB medications are available for people with active TB. TB is easily prevented and cured with medication(s) when medication(s) is taken as instructed.

## **CONNECTION BETWEEN TB AND AIDS**



## **IX. EXPOSURES RELATED TO INFECTION CONTROL**

**A. WHAT IS AN EXPOSURE?** Contact with potentially infectious agents.

**B. WHAT ARE KNOWN INFECTIOUS DISEASES WHICH WOULD CAUSE CONCERN TO HEALTH CARE WORKERS? HOW IS ONE EXPOSED?**

### **HIV/AIDS**

Contact through body fluids: blood, products, semen, vaginal secretions, fluid in uterus of pregnant woman, fluid surrounding brain, spine, heart, joints, fluid in chest, abdomen, and fluid with visible blood.

### **HEPATITIS A**

Contact with feces, blood, and urine

### **HEPATITIS B**

Contact with blood, saliva, semen and urine

### **HEPATITIS C**

Contact with body fluids, blood

### **HERPES ZOSTER**

Contact with lesions by individual who is susceptible to infection

### **CHICKEN POX**

Contact with airborne droplets and lesions of infected person. If health care workers are vaccinated with (varivex), he/she should wear a surgical mask when caring for patients with chicken pox.

### **MUMPS**

Contact with oral secretions

### **RUBELLA**

Contact with airborne and droplet secretions

### **MYCOBACTERIUM T.B. (PULMONARY)**

Prolonged contact with chronic coughers who do not practice good secretions precautions; prolonged airborne contact/sharing air space with person with active pulmonary TB.

### **CMV**

Contact with secretions

### **SCABIES & LICE**

Close contact with infected person, sharing of combs, brushes or clothes and linen



5. **Varivax:** One of the newest vaccines, this vaccine is >95% effective in providing protection

## REFERENCES

American College Health Association (1994). Program development guidelines for Nurse :2(i) 6861J 0