



BLOODBORNE PATHOGENS CONTROL AND HANDLING BODY FLUIDS IN THE SCHOOL SETTING

MARYLAND STATE SCHOOL HEALTH GUIDELINE

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MARYLAND SCHOOL HEALTH SERVICES GUIDELINE

Foreword

There is a strong relationship between academic achievement and a child's physical, emotional and mental health. This link is the foundation for providing school health services as an important component of a school program. School health services provide primary prevention aimed at keeping students in schools through appropriate screenings, early identification of children at risk for physical, emotional and mental health concerns, and case management of students with chronic health concerns.

The Annotated Code of Maryland, Education Article, §7-401 requires the Maryland State Department of Education (MSDE) and the Maryland Department of Health and Mental Hygiene (DHMH) to jointly develop public standards and guidelines for school health programs. The following guideline is developed in accordance with that requirement and is based on the expressed needs of the local school health services programs. These guidelines contain recommendations for minimum standards of care and current best practices for the health service topics addressed. It is intended that these guidelines will be used by the local school systems in developing local school health services policies and procedures as a means to assist local school health services programs in providing consistent and safe care to the students of Maryland. Specific laws and regulations that direct school nursing practice or other health services are identified in the guidelines.

BLOODBORNE PATHOGENS CONTROL and HANDLING BODY FLUIDS IN THE SCHOOL SETTING

Introduction

The Maryland State Department of Education (MSDE) and the Department of Health and Mental Hygiene (DHMH) recognize that prevention of communicable diseases is an important area of concern for school staff. To assist local school systems (LSSs) in dealing with health-related issues, MSDE and DHMH have worked collaboratively to address these concerns. This resource manual was specifically developed to address prevention of the transmission of Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), and other bloodborne pathogens.

The Centers for Disease Control and Prevention (CDC) emphasizes the need to consider all blood and other potentially infectious materials (OPIM) from all individuals as potentially infectious for bloodborne pathogens. Many people who are infected with HIV, HBV, or HCV have no symptoms. Transmission of these diseases to other persons can occur through exposure to body fluids. Based on this fact, school staff should consider the body fluids from all persons as potentially infectious and should use universal precautions. Universal precautions are a method of infection control that considers blood and OPIM from all sources as potentially infectious for bloodborne pathogens.

In 1992, the Federal Occupational Safety and Health Administration (OSHA) promulgated the Bloodborne Pathogen Standard (BBPS), which was incorporated into the Maryland Occupational Safety and Health Regulation (MOSH) under Code of Maryland Regulations (COMAR) 09.12.31, J-1. Part 1910 of Title 29 of the Code of Federal Regulations (29 CFR 1910.1030) supplies the details of the BBPS. It requires that employers (including schools) who have employees at risk of being exposed to body fluids do the following:

- determine which employees have potential for occupational exposure;
- write and annually update an Exposure Control Plan;
- provide appropriate personal protective equipment (e.g., gloves);
- provide initial and annual training to all staff with the potential of occupational exposure;
- offer hepatitis B vaccine to employees who are identified at risk for occupational exposure;
- provide post exposure management of employees who have "exposure incidents";
- maintain records of training and exposure incidents, including all needlesticks; and
- provide appropriate engineering controls, such as safe needle systems, to reduce risk of needlesticks, with employee input in choosing safer devices.

Local school systems must provide initial and annual general information about bloodborne pathogens and universal precautions.

Purpose

To provide guidelines for policy and safe practices to prevent the transmission of HIV, HBV and HCV. In addition, this guideline may be used to supplement in-service training for school personnel.

Overview and Definitions

HIV, HBV, and HCV are spread from one person to another by exposure to blood or OPIM. All of these viruses cause serious illnesses, which can result in death. There are no cures for the diseases caused by these viruses; however, certain treatments may help improve the quality and length of life. The most common methods of spreading these viruses are unprotected anal, oral, or vaginal sexual intercourse with an infected person, injection of infected body fluids (such as occurs from sharing drug injection equipment), and from an infected mother to her baby during pregnancy, childbirth, or breast-feeding. These viruses can also be transmitted when a person is stuck with a needle that contains infected blood, or by getting blood or OPIM in the eyes, mouth, or in an open cut. Special procedures have been developed to manage exposures to body fluids that may contain these viruses. Management of exposures to body fluids is covered in this manual. Body fluids known to transmit these viruses are blood, semen, and vaginal secretions. These viruses are NOT spread by casual contact with an infected person, (e.g., hugging, sharing eating utensils, touching, sitting next to someone, shaking hands, sharing food or drink, or closed mouth kissing). Unless visible blood is present in saliva, tears, and sweat transmission of HIV, HBV, and HCV is generally not transmitted (Centers for Disease Control and Prevention, <http://www.cdc.gov/az/h.html>).

The spread of these viruses from one person to another can be prevented by abstaining from anal, oral, or vaginal sexual intercourse. **Risk of transmission can be significantly reduced by** using barriers (e.g., latex condoms) during intercourse, not sharing needles, and protecting oneself from blood and OPIM (e.g., using gloves). It is also recommended that individuals not share personal items such as razors, nail clippers, body-piercing implements, and toothbrushes, as blood may be present on these items.

Human Immunodeficiency Virus

HIV infection causes Acquired Immunodeficiency Syndrome (AIDS). HIV infection causes a person's immune system to weaken over time, making the person more vulnerable to otherwise harmless infections as well as malignancies. Current treatments for HIV infection have extended life expectancy for people with HIV/AIDS and have reduced the number and severity of infections.

People who have occupational exposure to HIV may benefit from postexposure prophylaxis (PEP), which means receiving medications that may prevent a person from acquiring HIV infection.

Hepatitis B Virus

HBV causes infection of the liver and may lead to liver failure and liver cancer. Some individuals who are infected with HBV will carry the virus for the rest of their lives. Hepatitis B carriers, or persons with chronic HBV infection, are often symptom-free. They may be unaware that they are infected with the virus, but they are capable of passing the virus on to others. The risk of hepatitis B infection following an exposure to blood far exceeds that for HIV infection. Unlike HIV, there is an effective vaccine to prevent HBV infection in adults and children. People who have occupational exposure to HBV may benefit from postexposure prophylaxis (PEP), which means receiving medications that may prevent a person from acquiring HBV infection.

Hepatitis C Virus

HCV also causes infection of the liver and may lead to liver failure and liver cancer. Certain people are at increased risk of getting hepatitis C, including people who received blood transfusions before screening of blood began in 1992 and drug users who share needles. Like HBV, some people can carry HCV after they have been infected and can transmit the disease even if they do not have symptoms. There is no vaccine to prevent hepatitis C. However, there are medications available to manage the disease process.

Approaches to Disease Prevention in the School Setting

Transmission of HIV, HBV, or HCV can result from contact with infected body fluids from an infected person. To help prevent the spread of bloodborne pathogens, the use of gloves is essential when contact with blood or other potential infected materials (OPIM) is anticipated, in addition to **thorough handwashing** (See Appendices B and C, Correct Procedure for Handwashing and Removing Gloves). Proper disposal of waste, clean up of body fluid spills, and proper cleaning of equipment are also essential techniques of infection control.

Gloves and Other Barriers (See Appendix B)

- ❑ All school staff shall routinely use gloves to prevent skin exposure when contact with blood or other potentially infectious body fluids is anticipated.
- ❑ Types of gloves: Disposable gloves are used as effective barriers. Keep in mind some people are sensitive to latex materials. It is recommended that custodial staff use washable, reusable gloves of a heavy material, such as industrial-type gloves designed for custodial work.
- ❑ Size of gloves: Fit is essential for protection of the individual wearing gloves. Gloves should be available in small, medium, and large sizes for use by school personnel.
- ❑ Accessibility: Disposable gloves should be available in every classroom, office area, custodial closet, cafeteria, and laundry area. These gloves should be maintained in locations accessible to all staff, substitutes, and volunteers. Gloves should also be available

during playground periods, physical education classes, athletic events, field trips, etc. All first aid kits should be stocked with gloves and replenished as necessary.

- Torn or punctured gloves should not be used.
- Disposal: Used gloves should be removed using the recommended procedure illustrated in Appendix B, Correct Procedure for Removing Gloves. Dispose of used gloves by placing them in a trash can lined with a plastic bag. Wash hands after removing gloves. Do not reuse latex, vinyl, or non-latex gloves.
- Staff instruction: Appropriate use of gloves and procedures for putting on, removing, and disposing of gloves should be included in staff education programs.
- Other barriers: When gloves are not immediately available, other barriers (e.g., a wad of tissues, paper, cloth towels, or clothing) should be used to prevent body fluids from getting on the hands. Other personal protective equipment (e.g., face shields) should be worn whenever splashes, spray, spatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or, mouth contamination can be reasonably anticipated.

Handwashing (See Appendix C)

- Hands should always be washed before and after eating, and after toileting, sneezing, or coughing into the hands.
- Alcohol-based hand rubs are an efficacious agent for reducing the number of bacteria on the hands and have been recommended for routine decontamination of hands for all clinical indications (except when hands are visibly soiled).¹ When hands are visibly soiled or contaminated with blood or other body fluids, wash them with soap and water.
- Effective handwashing is accomplished by using soap and running water while rubbing hands together for at least 15 seconds.²
- Hands should be dried with disposable paper towels. Before discarding, these paper towels should be used to turn off faucets to prevent recontamination of hands.
- Any type of soap is effective. Antimicrobial soap is not necessary.³
- Hands should always be washed before and after providing first aid or similar treatment; after assisting with toileting, after cleaning up body fluid spills; and after handling potentially infectious materials. Always wash hands after removing gloves.

Disposal of Soiled Materials

- Liquid waste and body fluids may be discarded in the toilet or utility sink.

1 *Guideline for Hand Hygiene in Health-Care Settings*. MMWR, October 25, 2002, Vol. 51, No. RR-16, p. 27.

2 *Guideline for Hand Hygiene in Health-Care Settings*. MMWR, October 25, 2002, Vol. 51, No. RR-16, p. 32.

3 *Guideline for Hand Hygiene in Health-Care Settings*. MMWR, October 25, 2002, Vol. 51, No. RR-16, p. 32.

- ❑ Special medical waste may be defined as:
 - (a) Liquid or semiliquid blood or another potentially infectious material;
 - (b) A contaminated article that releases liquid or semiliquid blood or another potentially infectious material if compressed;
 - (c) An article that contains dried blood or another potentially infectious material and is capable of releasing the blood or material during handling;
 - (d) Pathological and microbiological waste containing blood or another potentially infectious material; and
 - (e) Contaminated sharps.⁴

Special medical waste (waste that releases blood or another potentially infectious material) must be stored in closable, leak proof containers built to hold all contents during handling, storing, and transporting. Each school health suite should have a biohazard labeled trash can for disposal of regulated waste. The trash can should be lined with a plastic bag and have a lid. Daily, the contents of this trash can must be decontaminated by saturating it with a hospital grade disinfectant or with 1:10 to 1:100 bleach solution made daily or other recognized EPA tuberculocidal (See COMAR 10.06.06.04). This trash can then be double bagged and discarded with other school trash. In general, bandaids and menstrual products are not considered special medical waste.

- ❑ Disposable Sharps (i.e., needles, syringes, capillary tubes, and lancets) should be left intact and placed in puncture-resistant, leak-proof containers and labeled Biohazard. Never attempt to recap, bend, or purposely break needles. Do not overfill the container, as this can lead to needle-stick injuries. Schools are required to outline the disposal procedures for these containers in their Exposure Control Plan. These containers must be removed by special medical waste transporters under Maryland regulation, and may not be placed with the regular trash.

Clean up of Blood and OPIM

- ❑ Wear protective gloves.
- ❑ Use a hospital grade disinfectant to clean surfaces contaminated with blood and OPIM. The disinfectant should be registered by the U.S. Environmental Protection Agency (EPA) for use as a disinfectant in hospitals that are tuberculocidal (see Appendix E - Understanding the Labels of Germicides). A 1:10 solution of household bleach may be an adequate disinfectant only if mixed fresh every 24 hours.

Cleaning of Equipment/Clothing/Athletic Mats Soiled with Blood and other Body Fluids

- ❑ Handle soiled clothing as little as possible. Place soiled clothing in a leak-proof bag, seal, and send home to be laundered as soon as possible.

⁴ Code of Maryland Regulations 10.06.06.02.

- ❑ Wear protective gloves when handling soiled clothing.
- ❑ Clean sponges, mops, or other non disposable equipment which are contaminated with body fluids with soap and water and soak in a hospital grade disinfectant. (See Appendix E- Understanding the Labels of Germicides.)
- ❑ Wash toys and nonsoakable equipment soiled with body fluids with soap and water after each child's use.⁵ Clean them with a hospital grade disinfectant, rinse, and dry.
- ❑ Prohibit the sharing of athletic mouthpieces.
- ❑ Clean musical instrument mouthpieces by soaking them in a hospital grade disinfectant for 2-3 minutes. Rinse very well with water to remove all disinfectant.
- ❑ Develop a procedure to ensure the safety of students participating in life skills and community based programs that may expose them to bloodborne pathogens and OPIM, e.g., custodial tasks, laundering, etc.
- ❑ Clean/disinfect all equipment such as athletic equipment routinely (e.g. wrestling and gymnastic mats). If an incident occurs where blood or OPIM have contaminated a surface, cleaning and disinfecting should take place prior to allowing the activity to continue. The surface should be cleaned of visible contamination and then disinfected with an agent, such as a hospital grade disinfectant referenced above. It is recommended that an ample supply of disposable towels and tissues be available at athletic events for initial clean up.

Cleaning Carpets and Rugs

- ❑ Refer to Cleaning of Equipment/Clothing (above), for directions on how to clean any materials or equipment used to clean the carpet or rug.

Engineering Controls

- ❑ OSHA bloodborne pathogen standard requires use of the safest systems available to reduce the risks of needlesticks. Frontline staff must have input in considering and choosing safer needle devices as part of re-evaluation of appropriate engineering controls during annual review of exposure control plans.

Education and Training for School Staff

- ❑ Each LSS must develop a bloodborne pathogens Exposure Control Plan. (See Appendix A.) The LSS must ensure that all staff with potential for occupational exposure receives general information about bloodborne pathogens and occupational exposure risk factors associated with the transmission of HIV, HBV, and HCV. MOSH requires employers to maintain confidential medical records for each employee with an occupational exposure and training records that include dates and participants in the annual training sessions.

⁵ *Healthy Young Children, A Manual for Programs*, NAEYC, 2002.

Refer to Bloodborne Pathogens Regulations 29 CFR 1910.1030 through the following link:

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10052

MOSH provides consultation service for work sites. Contact the consultants by telephone at 410-537-4500 or 866-225-0478.

- LSSs must provide initial and annual general information about bloodborne pathogens and universal precautions.
- COMAR 13A.04.18.04 requires annual training about HIV/AIDS for the staff designated to teach HIV/AIDS prevention curricular topics.

Management of Exposures to Body Fluids

"Exposure Incident" means a specific contact between blood and OPIM and the eye, mouth, or other mucous membrane, non intact (i.e., broken or cut) skin, vein, or muscle. The following are NOT considered exposure incidents:

- Being in the same room as a person with HIV, HBV, or HCV infection;
- Touching a person infected with HIV, HBV, or HCV;
- Getting blood and OPIM on clothing or equipment;
- Getting blood and OPIM on intact (i.e., without cracks or cuts) skin;
- Sharing bathroom facilities; and
- Being bitten by mosquitoes or other insects.

Management of situations where body fluids get on non intact (i.e., broken or cut) skin or clothing

- Wash skin immediately and thoroughly with soap and running water. If running water is not available, cleanse with bottled water or waterless cleanser until running water is available.
- Remove contaminated clothing as soon as possible to eliminate prolonged contact with the skin.

Management of an Exposure Incident

- Perform emergency medical care and wound management following established school guidelines for First Aid Procedures. Use tepid or cool water for the following exposures:
 - Puncture exposure: As soon as possible, wash area with running water and soap or germicidal handwashing solution;
 - Mucous membrane exposure: Flush exposed area thoroughly with water or sterile saline;
 - Eye exposure: Flush eyes with copious amounts of clean running water; and

- Non intact skin exposure: Wash area with soap and water for at least 10 seconds. Rinse with water and dry.

Evaluation of Exposure Incidents

Each exposure incident should be evaluated by a qualified health care provider to determine the appropriate follow-up. The exposure incident, evaluation, follow-up recommendations, and actions should be documented according to MOSH regulations. All needlesticks must be documented on a log specifically used for that purpose. Each employee should immediately report an exposure incident to his or her supervisor or to the designated individual in the school. For exposure incidents occurring to those who are not employees, direct the person (or parent/guardian if the person is a minor) to immediately consult with his or her health care provider about the incident. There are situations where post exposure medication therapy may be considered for the exposed person.⁶ Consultation with the health care provider within a few hours of the incident allows decisions for treatment to be made without delay.⁷

Follow-up Procedure

Each school system's Exposure Control Plan should detail how exposure incidents will be managed. The source, if known, may be asked to be tested for HBV, HCV, and HIV infection following legally mandated procedures. The exposed employee will be referred to a licensed health care professional to manage the exposure incident. Non-employees will follow the advice of their health care provider.

Note: School health services programs should consult their local attorneys for any confidentiality issues arising from exposure.

Guideline Administrative History: Original date of Issue, 1992. Revised 2000 and 2007.

⁶“Postexposure Prophylaxis After Nonoccupational HIV Exposure”, Journal of the American Medical Association (11/25/98) Vol. 280, No.20, P. 1769; Lurie, Peter; Miller, Suellen; Hecht, Frederick; et. al.

⁷Centers for Disease Control and Prevention. “Management of Possible Sexual, Injecting-Drug-Use, or Other Nonoccupational Exposure to HIV, Including Considerations Related to Antiretroviral Therapy.” Public Health Service Statement. MMWR 1998; 47 (No. RR-17): 1-14.

References

Centers for Disease Control and Prevention. Guideline for Hand Hygiene in Health Care Settings. Morbidity and Mortality Weekly Report. Vol. 51, No. RR-16, October 25, 2002.

Infectious Disease Control Guide for School Staff. State of Washington Office of Superintendent of Public Instruction, Department of Health, April 2004.

Maryland Department of Health and Mental Hygiene. Code of Maryland Regulations, 10.06.06. Communicable Disease Prevention, December 20, 1993.

Maryland Occupational Safety and Health Bloodborne Pathogens Resources:
<http://www.dllr.state.md.us/labor/bbp/bbpappendixc.doc>.

Postexposure Prophylaxis after Nonoccupational HIV Exposure”Journal of the American Medical Association. November 25, 1998. Vol. 280, No. 20, p. 1769; Lurie, Peter; Miller, Suellen; Hecht, Frederick; et al.

Appendix A

SAMPLE BLOODBORNE PATHOGENS EXPOSURE CONTROL PLAN

MOSH provides guidelines and instructions for completing a bloodborne pathogens exposure control plan. The table of contents for the web based guideline is below. The following guideline can be obtained at <http://www.dllr.state.md.us/labor/bbp/bbpbrochure.doc>.

Guidelines and Instructions for Developing a Bloodborne Pathogen Exposure Control Plan

A. Exposure Determination

B. Implementation Schedule

- Engineering Controls
- Work Practice Controls
- Personal Protective Equipment
- Housekeeping
- Hepatitis B Vaccination
- Post-Exposure Evaluation and Follow-Up
- Information and Training
- Recordkeeping

C. Exposure Plan Review

Compliance Worksheet

Appendices

Appendix A — **29 CFR 1910.1030**

Appendix B — **Model Exposure Control Plan**

Appendix C — **Bloodborne Pathogens Information Resources**

The MOSH program is funded in part with up to 50% federal funds.
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Correct Procedure for Removing Gloves



1

Grasp glove at heel of hand without touching skin



2

Pull glove toward fingers



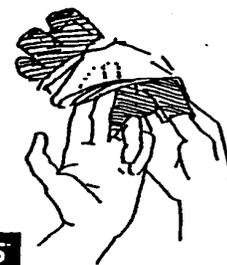
3

Remove glove from hand



4

While holding soiled glove, insert index finger and middle of free hand under glove at cuff



5

Pull glove toward fingers



6

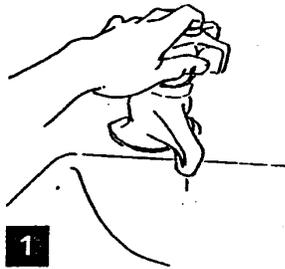
As glove is removed it is turned inside out, over the glove that has already been removed



7

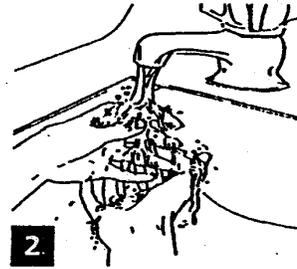
Discard contaminated gloves in appropriate waste container and wash hands

Handwashing Procedure



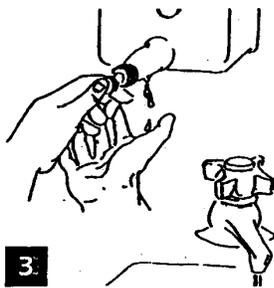
1

Open faucet



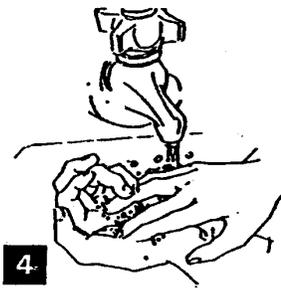
2

Wet hands thoroughly



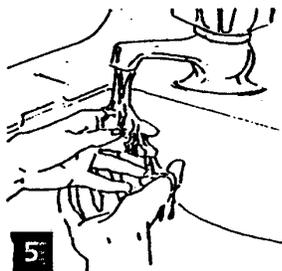
3

Apply soap



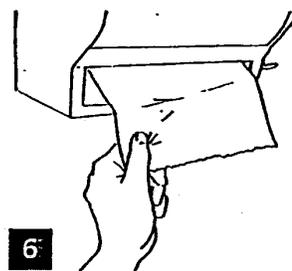
4

Rub vigorously
10 seconds or more



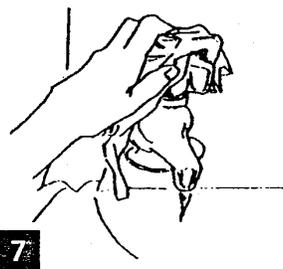
5

Rinse thoroughly



6

Dry hands with
disposable towel



7

Use towel to turn off faucet

UNDERSTANDING THE LABELS OF GERMICIDES

Under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), the Environmental Protection Agency (EPA) is responsible for the registration and regulation of germicides. In exercising this responsibility, the EPA requires that label claims be truthful, meaningful and practical for safe and effective use of the product.

When a germicide is being considered for purchase, the label should be checked for:

1. The EPA registration number;
2. An ingredient statement;
3. Directions for use;
4. Adequate safety and precautionary information;
5. The name and address of the manufacturer or distributor.

The use of a disinfectant that is tuberculocidal is required by MOSH for proper clean up of blood/body fluid spills. The label of the product will state that it is tuberculocidal, if the product has been registered by the EPA as tuberculocidal.

Additionally, examine the label for the tabulation of benefits. The claims that appear on the label are established by testing the product against a uniform set of official standards of the Association of Official Analytical Chemists, which are used by the EPA. Under these standards a “hospital disinfectant” must be effective against the test organisms *Staphylococcus aureus*, *Salmonella cholerasuis* and *Pseudomonas aeruginosa*. A “tuberculocidal” label means the chemical has been tested against *Mycobacterium tuberculosis var. bovis*. Labels may also include fungicidal, virucidal, and sporocidal claims.

The label on a germicide is a legal document and is a guarantee that the product will perform as stated on the label. An informed examination of the label will result in the purchase of a germicide that will perform the desired functions effectively.