



STATE OF MARYLAND  
OFFICE OF THE GOVERNOR

WILLIAM DONALD SCHAEFER  
GOVERNOR

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While I was at the Maryland State Firemen's Convention in June to address the convention delegates, I heard many concerns and fears voiced about AIDS. Emergency medical personnel were worried about possible exposure to AIDS -- about infected patients when performing their duty of providing vital care during medical emergencies. I want you to know that I share the concerns of all EMS providers about AIDS and that the AIDS problem is one of my top priorities.

The guidelines in this newsletter were developed by MIEMSS staff as a step in providing you with the most up-to-date information on AIDS, and what you can do to protect yourself against possible AIDS exposure. In addition, beginning August 1, 1987, a toll-free hotline will be in operation for exclusive use by emergency medical care providers in the MIEMSS system who still need help with questions or problems after reading the guidelines. The number for this line will be 1-800-323-AIDS.

Let me also say how pleased I am that Dr. R Adams Cowley and his outstanding staff are working very closely with us in combatting this disease. We appreciate their input, and we are grateful for their commitment and their caring. AIDS is certainly a serious health problem and I urge you to follow the guidelines discussed in this newsletter and to call the hotline if you have any questions.

Sincerely,

William Donald Schaefer  
Governor

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### MIEMSS Task Force on AIDS

"AIDS: A Guide for EMS" was compiled by the following members of the MIEMSS Task Force on AIDS: R Adams Cowley, MD; Ellis Caplan, MD, Chairman; Ameen Ramzy, MD, Vice-Chairman; Mary Beachley, RN, MS; John Britten, MD; William E. Clark; Brad Cushing, MD; Barbara Friend Nucci, RN, MS; Nancy Hoyt, MA, CIC; Pat McAllister; Louis Panos; Elizabeth Scanlan, RN, MS; and Peggy Trimble, RN, MA

The guide on AIDS was distributed to ambulance companies and fire departments in Maryland. It is copyrighted by MIEMSS and reprinted in this newsletter so that each Maryland EMS provider can have a copy.

# AIDS: A Guide for EMS

*The purpose of this newsletter is to provide information to EMS providers about the AIDS virus, the diseases caused by this virus, and how they relate to the performance of EMS duties. It must be emphasized that currently the risk to EMS providers is extremely small. If common sense is used and available techniques are implemented to protect against exposure to blood and secretions of patients, the risk is reduced to essentially zero. The risk to family members of EMS personnel is also essentially zero. Research on this disease continues. As new information is developed it will be made available.*

## What Is AIDS?

This article is taken from the Surgeon General's Report on Acquired Immune Deficiency Syndrome, U.S. Department of Health and Human Services, 1987.

AIDS stands for Acquired Immune Deficiency Syndrome. AIDS is caused by a virus (germ) that can be passed from one person to another chiefly during sexual contact or through the

sharing of intravenous drug needles and syringes used for "shooting" drugs. In referring to the AIDS virus, scientists have used several abbreviations: HIV (Human Immunodeficiency Virus), HTLV-III (Human T-Lymphotropic Virus Type III), LAV (Lymphadenopathy Associated Virus). Throughout this guide we will call it the "AIDS virus." The AIDS virus attacks a person's immune system and damages his/her ability to fight other diseases. Without a functioning immune system to ward off other germs, this person becomes vulnerable to infection by bacteria, protozoa, fungi, other viruses, and malignancies. Some of these may cause life-threatening illness, such as pneumonia, meningitis, or cancer.

Although massive research programs are underway, there is no known cure for AIDS or preventive vaccine for AIDS.

## VIRUS INVADES BLOOD STREAM

When the AIDS virus enters the blood stream, it begins to attack certain white blood cells (T-lymphocytes). Substances called antibodies are produced by the body. These antibodies can  
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be detected in the blood by a simple test, usually 2 weeks to 3 months after infection. Even before the antibody test is positive, the victim can pass the virus to others by methods that will be explained.

Once an individual has acquired the AIDS virus and is infected, there are several possible outcomes. Some people may remain well, but even so they are able to infect others. Some people may develop a disease that is less serious than AIDS—something called AIDS-Related Complex (ARC). Some people with ARC will develop AIDS over a period of months to years. Others with ARC will not develop AIDS. In some people the protective immune system may be destroyed by the virus; and then other germs (bacteria, protozoa, fungi, and other viruses) or cancers that ordinarily would never get a foothold cause “opportunistic diseases,” using the opportunity of lowered resistance to infect and destroy. Among the most common are pneumonia and tuberculosis. Individuals infected with the AIDS virus may also develop certain types of cancers such as Kaposi’s sarcoma. These infected people have typical AIDS. Evidence shows that the AIDS virus may also attack the nervous system, causing damage to the brain.

## SIGNS AND SYMPTOMS OF INFECTION

1. *No Signs.* Some people remain apparently well after infection with the AIDS virus. They may have no physically apparent symptoms of illness. However, if proper precautions are not used with sexual contacts and/or intravenous drug use, these infected individuals can spread the virus to others. Anyone who thinks he or she is infected or who is involved in high-risk behaviors should not donate blood, organs, tissues, or sperm because they may contain the AIDS virus.

2. *ARC.* AIDS-Related Complex (ARC) is a condition caused by the AIDS virus, in which the patient tests positive for AIDS infection and has a specific set of clinical symptoms. However, ARC patients’ symptoms are often less severe than those of patients with the disease we call classic AIDS. Signs and symptoms of ARC may include loss of appetite, weight loss, fever, night sweats, skin rashes, diarrhea, tiredness, lack of resistance to infection, or swollen lymph nodes. These are also signs and symptoms of many other diseases; therefore, a physician should be consulted if they appear.

3. *AIDS.* AIDS is the result of a natural progress of infection by the AIDS virus. Only a qualified professional can diagnose it. AIDS destroys the body’s immune (defense) system and allows otherwise controllable infections to invade the body and cause additional diseases. These opportunistic diseases would not otherwise gain a foothold in the body. These opportunistic diseases may eventually cause death.

Some symptoms and signs of AIDS and opportunistic infections may include a persistent cough and fever associated with shortness of breath or difficult breathing and may be the symptoms of *Pneumocystis carinii* pneumonia. The AIDS virus in all infected people is essentially the same; the reactions of individuals may differ.

The AIDS virus may also attack the nervous system and cause damage to the brain. This damage may take years to develop and the symptoms may show up as memory loss, indifference, loss of coordination, partial paralysis, or mental disorder. These symptoms may occur alone or with other symptoms mentioned earlier.

## RISK: MYTH AND REALITY

### No Risk from Casual Contact

The need to guard against infection by AIDS is very real. If common sense precautions are observed, the risk of contraction is extremely low. There is no known risk of non-sexual infection in most of the situations we encounter in our daily lives. Family members living with individuals who have the AIDS virus do not become infected except through sexual contact or sharing needles. There is no evidence of transmission (spread) of the AIDS virus by everyday contact even though the family members studied shared food, towels, cups, razors, and even toothbrushes and kissed each other.

### Risks

Although the initial discovery of AIDS in the United States was in the homosexual community, it is not a disease of only homosexuals. AIDS is found in heterosexuals as well. AIDS is not a black or white disease. AIDS is not a male disease. AIDS is found in women; it is found in children. In the future AIDS will probably increase and spread among people who are not homosexual or intravenous drug abusers in the same manner as other sexually transmitted diseases like syphilis and gonorrhea.

*Sex Between Men.* Men who have sexual relations with other men are especially at risk. About 70 percent of AIDS victims throughout the country are male homosexuals and bisexuals. This percentage probably will decline as heterosexual transmission increases. **Infection results from a sexual relationship with an infected person.**

*Multiple Partners.* The risk of infection increases according to the number of a person’s sexual partners, male or female. The more partners you have, the greater the risk of becoming infected with the AIDS virus.

*IV Drug Use.* Drug abusers who inject drugs into their veins are another population group at high risk and with high rates of infection by the AIDS virus. Users of intravenous drugs make up 25 percent of the cases of AIDS throughout the country.

### Are There Risks to Health Workers?

We know even more about health-care workers exposed to AIDS patients. About 2,500 health workers who were caring for AIDS patients when they were sickest have been carefully studied and tested for infections with the AIDS virus. These doctors, nurses, and other health care givers have been exposed to AIDS patients’ blood, stool, and other body fluids. Approximately 750 of these health workers reported possible additional exposure by direct contact with patients’ body fluid through spills or accidental sticks with needles. Upon testing of these 750, only 3 who accidentally stuck themselves with a needle had a positive antibody test for the AIDS virus.

A total of 1,097 health-care workers with parenteral or mucous-membrane exposure to the blood of patients with AIDS or other manifestations of HIV infection had been enrolled in a Centers for Disease Control (CDC) study as of March 31, 1987. Needlestick injuries and cuts with sharp objects accounted for 969 (89 percent) of the exposures to blood; 298 of these had samples tested for HIV antibody. One (0.3 percent) developed antibodies against the virus, indicating that the risk of transmission during these exposures is very low. In addition, 70 health-care workers had open wounds exposed to blood, and 58 had mucous membranes exposed to blood. Postexposure serum samples from 82 of

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these 128 workers have been tested for antibody to HIV; none was seropositive.

In a study at the National Institutes of Health through April 30, 1987, none of the 103 workers with needlestick exposures and none of 229 workers with mucous-membrane exposures to blood or body fluids of patients with AIDS were seropositive. At the University of California, none of 63 workers with open wounds or mucous membranes exposed to blood or body fluids of patients with AIDS was seropositive. Although the precise risk of transmission during exposures of open wounds or mucous membranes to contaminated blood cannot be defined, these studies indicate that it must be very low. The Centers for Disease Control reported 3 health-care workers who apparently had blood on their chapped skin or in their mouth and subsequently had a positive AIDS test. These are the only three known cases in which a nonparenteral (nonpuncturing) contact *may* have been the source of the infection. Because health workers have much more contact with patients and their body fluids than would be expected from common everyday contact, it is clear that AIDS virus is not transmitted by casual contact.

## HOW ARE PEOPLE EXPOSED?

### Sexual Activity

The AIDS virus is found in several body fluids: a person acquires the virus during sexual contact with an infected person's blood or semen and possibly vaginal secretions. The virus then enters a person's blood stream through the rectum, vagina, or penis.

Small tears (unseen by the naked eye) in the surface lining of the vagina or rectum may occur during insertion of the penis, fingers, or other objects, thus opening an avenue for entrance of the virus directly into the blood stream; therefore, the AIDS virus can be passed from penis to rectum and vagina and vice versa without a visible tear in the tissue or the presence of blood.

### Intravenous Drug Use

The AIDS virus is carried in contaminated blood left in the needle, syringe, or other drug-related implements; the virus is injected into the new victim who reuses dirty syringes and needles. Even the smallest amount of infected blood left in a used needle or syringe can contain live AIDS virus to be passed on to the next user of those dirty implements.

No one should shoot up drugs, because addiction, poor health, family disruption, emotional disturbances, and death could follow and because it is illegal. However, many drug users are

addicted to drugs and, for one reason or another, have not changed their behavior. For these people, the only way not to get AIDS is to use a clean, previously unused needle, syringe, or any other implement necessary for the injection of the drug solution.

### Hemophilia

Some persons with hemophilia (a blood-clotting disorder that makes them subject to bleeding) have been infected with the AIDS virus either through blood transfusions or the use of blood products that help their blood clot. Now that we know how to prepare safe blood products to aid clotting, this is unlikely to happen. This group represents a very small percentage of the cases of AIDS throughout the country.

### Blood Transfusion

Currently blood donors are initially screened and blood is not accepted from high-risk individuals. Blood that has been collected for use is tested for the presence of antibodies to the AIDS virus. However, some people who have received blood transfusions prior to March 1985, before we knew how to screen blood for safe transfusion, may have become infected with the AIDS virus. Fortunately, there are not now a large number of these cases. With routine testing of blood products, the blood supply for transfusion is now safer than it has ever been with regard to AIDS.

Persons who have engaged in homosexual activities or have shot street drugs within the last 10 years should never donate blood.

### Infection of Newborn by Mother

If a woman is infected with the AIDS virus and becomes pregnant, she is more likely to develop ARC or classic AIDS, and she can pass the AIDS virus to her unborn child. Approximately one-third of the babies born to AIDS-infected mothers will also be infected with the AIDS virus. Most of the infected babies will eventually develop the disease and die. Several of these babies have been born to wives of hemophiliac men infected with the AIDS virus by way of contaminated blood products. Some babies have also been born to women who became infected with the AIDS virus by bisexual partners who had the virus. Almost all babies with AIDS have been born to women who were intravenous drug users or the sexual partners of intravenous drug users who were infected with the AIDS virus. More such babies can be expected.

Think carefully if you plan to become pregnant. If there is any chance that you may be in any high-risk group or that you have had sex with someone in a high-risk group, such as homosexual and bisexual males, drug abusers, and their sex partners, see your doctor.

# Exposure of Health-Care Providers

## DEFINITION OF EXPOSURE

An exposure of a health-care provider to the AIDS virus requires very specific conditions. The virus must be directly introduced into the person's body. In the health-care environment, this means an infected patient's blood or body fluid must be introduced through the skin (percutaneous) or by contact with eye, mouth, or nose (mucocutaneous event).

### Percutaneous (through the skin)

A percutaneous event occurs when the blood or body fluid is introduced through the skin. This can occur by a needlestick injury with a bloody needle, by sustaining a cut by a sharp object contaminated with blood, or by having blood contaminate an already existing open wound, sore, broken cuticle, or

chapped skin.

### Mucocutaneous (in the eye, mouth, or nose)

A mucocutaneous event occurs when blood or body fluids come in contact with a mucous membrane. This means blood or fluid is splashed into the eye, mouth, or nose. Transmission of the AIDS virus has not, as yet, been documented as occurring secondary to blood or body fluid being splattered in the eye. There are no known cases of AIDS infection developing after blood has been splashed into the eye or nose.

Even though the AIDS virus has been isolated from saliva, there are no known cases of AIDS being transmitted by mouth-to-mouth resuscitation. In addition, a recent study has shown that

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the AIDS virus was present in the saliva of only 1 percent of patients with active AIDS infection. Only one case of blood spraying into the mouth of a health-care provider is thought to have been the cause of AIDS infection.

### Not an Exposure

1. Blood on intact skin
2. Blood on clothing or equipment
3. Being present in the same room as the infected person
4. Touching the infected person
5. Talking to an infected person

### AIDS AND HEPATITIS B

It is important to note that acquisition of Hepatitis B virus occurs via these same percutaneous and mucocutaneous events. This virus is much more hardy than the AIDS virus. Health-care providers are at much greater risk of acquiring Hepatitis B than AIDS. However, the same infection control measures recommended for the care of an AIDS patient can be used for a patient with Hepatitis B. A vaccine for Hepatitis B is medically available.

### WHAT TO DO IF YOU HAVE AN EXPOSURE

#### In the Field

1. For percutaneous (through the skin) exposure, wipe off blood and apply alcohol to the wound.

2. For mucocutaneous (in eye, nose, or mouth) exposure, flush eye thoroughly or rinse mouth with saline or water.

3. On arrival at the hospital and as soon as patient care allows, thoroughly wash your hands and/or the wound; wash face and flush eyes for eye exposures. If the wound is larger than a needle-stick or small laceration, have a physician in the emergency room assess it and provide treatment.

### Follow-up Procedure

1. Follow the report of injury guidelines established by your department. The provider should be assessed for both AIDS and Hepatitis B exposure.

2. If guidelines have not been established for an AIDS exposure, the following procedures could be utilized: (a) Report to your supervisor and document the event; and (b) contact the Maryland State Health Department at 1-225-6707 for information about counseling and testing at your nearest regional center or consult your private physician.

**Note:** *If you have an exposure, it is important to remember that your chance of actually developing AIDS is very low. Only 5 of more than 1,000 health-care workers sustaining exposures have been reported to have developed the antibody as the result of the exposure. Of all the persons who have been documented as having positive antibody tests, 50-80 percent have NOT developed the disease.*

## Patient Care Practices for the Prevention of AIDS

The most important factor in protecting health-care providers from acquiring AIDS is to carefully follow infection control guidelines. Any patient's blood or body fluid must be considered as probably infected. This means appropriate protective attire such as gloves, masks, and eye protection must be worn when the likelihood of percutaneous (through the skin) or mucocutaneous (in the mouth, nose, or eye) exposures to the patient's blood is high. This is essentially important for first responders to situations involving open injuries, such as gunshots and stabbings, high-speed motor vehicular accidents, or delivering babies. However, it should be pointed out that the vast majority of calls will not involve these kinds of situations and the wearing of protective attire may not be necessary.

Some prehospital care personnel have voiced concern that a patient may be needlessly frightened by the providers if they arrive on the scene wearing gloves, masks, and eye protection. So, in order to minimize the patient's anxiety, they prefer to wait and assess the situation before donning the appropriate garb. The risk to the provider is that there may not be time to dress if the patient is in critical need of resuscitation.

For most situations, the chance that the patient is bleeding can be determined in advance. Therefore, if the chances of handling blood or body fluids is high (CPR; IV insertion; trauma; delivering babies), the provider should put on the protective attire before beginning patient care. It is much easier to take off gloves and masks if they are not necessary than to attempt to put them on in an emergency.

### PROCEDURAL DRESS GUIDELINES

The following dress code should be followed when responding to calls involving open injuries such as gunshots and stabbings; high-speed motor vehicular accidents; delivering babies; or any situation where the provider must handle blood or body fluids. It is

designed to minimize the occurrence of percutaneous and mucocutaneous exposures.

#### Gloves

Three types of gloves must be available.

1. *Heavy duty or leather gloves.* These should be worn when performing extrication procedures to protect the hands from cuts and scratches that could become contaminated with a patient's blood or body fluids.

2. *Mid-weight rubber or plastic gloves.* These should be worn for those non-patient care duties that may involve handling of equipment and/or evidence items contaminated with blood or secretions as well as cleaning the interior of transport vehicles or equipment. These gloves can be disposable or non-disposable types. Household rubber gloves are but one example.

3. *Medical-grade latex gloves.* These should be worn for all patient care procedures that may involve contamination of the hands with blood or body fluids. These include IV insertions; dressing and splinting open injuries; establishing patent airways; etc. Examples include sterile surgical gloves and disposable non-sterile gloves.

#### Masks

Masks are not necessary for most situations. However, medical-grade face masks should be worn by direct care providers in those situations where blood and/or bloody secretions could be splashed into the provider's mouth.

#### Eye Protection

Eye protection should be worn in those situations where blood or body fluids can be splashed into a provider's eye. Eye protection can be either glasses, goggles, or helmet visors. However, if goggles are selected, they should be designed so that peripheral vision is not obstructed and clear vision is maintained. If helmet visors are used, they should be maintained to allow clear

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vision.

### Gowns

Many providers believe that wearing of cover gowns increases protection against the virus. Actually gowns offer no additional protection. Standard cloth hospital gowns become easily saturated with blood. Impervious plastic gowns and cover suits are extremely hot to wear and may be intolerable even in cool temperatures.

Since gowns offer no additional protection, are cumbersome and hot to wear, and may be dangerous to wear during the performance of some duties, the best action is to change soiled clothing as soon as possible and shower or wash any skin that may be contaminated with blood. Guidelines for the cleaning and decontamination of clothing are found under the cleaning and disinfection section of this document.

Remember that blood on clothing and unbroken skin is NOT considered to be an exposure to the AIDS virus and that the virus dies in a very short time once it dries.

### PROTECTION OF BROKEN SKIN

The provider should protect any of his/her cuts, abrasions, insect bites, etc., with bandaids or small dressings. This will reduce

even further the already low risk of having blood on abnormal skin.

### MOUTH-TO-MOUTH RESUSCITATION

Respiratory assist devices should be used whenever possible. Some examples include pocket masks and bag-valve masks. If this is not feasible, it is important to remember that the risk is extremely low — there have been no documented cases of AIDS infection following mouth-to-mouth resuscitation. In addition, studies have shown that the virus was present in the saliva of only 1 percent of AIDS patients.

### HANDLING OF SHARPS

Take special care when handling sharp instruments, needles, objects, and/or glass. The majority of needlestick injuries occur when recapping needles. Don't do it. Dispose of needles and other sharps in impervious (heavy plastic or metal) containers. All transport vehicles, advanced life support medical kits, and IV therapy kits should be equipped with these containers. Evidence items should be placed in cut-proof evidence bags.

### HANDWASHING

Thorough handwashing should be performed after each patient transport and as soon as patient care allows.

## Cleaning and Decontamination Procedures

### WHEN ARE CLEANING AND DECONTAMINATION PROCEDURES NECESSARY?

Although many aspects of AIDS are unknown, we do know that the disease is caused by a virus. In order for a virus to reproduce and survive it must be inside another living organism. For the AIDS virus, this means inside a human body. This virus quickly dies with contact to air. If the virus is in a fluid or blood, it dies when the fluid dries. Therefore, routine cleaning of environmental surfaces is adequate prevention for the transmission of the virus. However, disinfection and sterilization of devices and equipment that enter directly into the body must be performed to prevent transmission of disease.

### TYPES OF DISINFECTANTS USED FOR AIDS VIRUS

Applications of a disinfectant must be done on clean surfaces. The greater the amount of blood and dirt, the less effective the disinfectant.

1. *Bleach — 1:10 dilution.* This is 1 cup of bleach to 9 cups of water (slightly more than 1/2 gallon). Contact time is 10-30 minutes for high-level disinfection. Bleach is a powerful antimicrobial (germ-killing) agent and is therefore recommended to clean up fresh (undried) blood spills. It does have some disadvantages — it is corrosive to metal; it can hamper the function of electronic and electrical equipment; and it can decolorize fabrics.

2. *Alcohol — 70 percent isopropyl.* Contact time is 5-30 minutes for high-level disinfection. This leaves no ionic residue, does not corrode metal, and can be used around electrical and electronic equipment. It is a good skin antiseptic. The disadvantages are that it is flammable, evaporates quickly, and is inactivated by the presence of blood and dirt.

3. *Glutaraldehyde — 2 percent.* Contact time is 10-30 minutes for high-level disinfection. The major advantage is that these products can work in the presence of blood and dirt. They do not corrode metal, and most brands will not affect plastic or rubber.

The major disadvantage is that these are unstable products and must be freshly mixed with each use to maximize effectiveness.

4. *Hydrogen Peroxide — 3 percent.* Commercially available hydrogen peroxide (3 percent) is good for dissolving dried blood and body fluids from the surfaces of equipment. However, if this is used on heavily soiled equipment, cleaning and decontamination are still required.

5. *Iodophors.* These are not recommended for the disinfection of equipment but are excellent skin antiseptics.

6. *Phenolics and Quaternary Ammonium Compounds.* These are common classes of hospital environmental disinfectants. They must be used with caution inside transport vehicles because they can affect the function of electrical and electronic equipment (see cleaning the interior of transport vehicles). These products should NOT be used to disinfect equipment.

### CARE OF EQUIPMENT

Since most non-disposable prehospital equipment does not interface directly with the patient's cardiovascular system or respiratory system, sterilization and high-level disinfection are not required. Decontamination can be accomplished in most cases by thorough cleaning with hot, soapy water. However, if the equipment has been heavily contaminated with blood and/or body fluids, cleaning can be followed by disinfection with one of the previously mentioned agents. Selection of the proper disinfectant should be determined by the manufacturer of the equipment. All respiratory assist equipment should be completely cleaned and disinfected after each use. Gloves should be worn for all cleaning and decontamination procedures.

### CLEANING MAST TROUSERS

Fresh, undried blood should be wiped off with a 1:10 dilution of bleach. The outer fabric of MAST trousers is made of nylon  
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pack cloth with Scotchguard and will withstand cleaning with laundry detergents, hydrogen peroxide, 1:10 dilution of bleach, and temperatures up to 200°F. The MAST trousers can be washed in a standard washing machine using the "hot setting" for water temperature and 1 cup of bleach. **Before placing them in the washing machine, be certain that the air valves are closed.** If a washing machine is not available, manual cleaning is acceptable. After washing, the fabric may be air-dried or placed in a dryer. It is not advisable to use an ultrasonic cleaner since soil may only be loosened and not completely removed.

### CLEANING THE INTERIOR OF TRANSPORT VEHICLES

The interior of transport vehicles should be kept clean. Routine cleaning procedures with detergents are adequate decontamination. It has been suggested that blood spills should be cleaned with a 1:10 dilution of bleach. Bleach is an excellent disinfectant but the chlorine can corrode metal and may damage electrical and electronic equipment. Be careful not to use bleach on instrument panels, electrical outlets, radios, etc.

Phenolic and quaternary ammonium products commonly used as hospital disinfectants also must be used with caution on the interior surfaces of transport vehicles. These products leave ionic residues that build up over time. This residue can hamper electrical and electronic performance. In addition, if these products are used, the surfaces must be periodically stripped per the manufacturer's recommendations to ensure the future effectiveness of the product. Gloves must be worn for all cleaning and decontamination procedures.

### CARE OF CLOTHING

According to the CDC (Centers for Disease Control), routine laundry practices are adequate to decontaminate clothing that is soiled with the blood or body fluids of AIDS patients. The "high setting" of household water heaters is equal to 160°F and will kill viruses. This is the same temperature used in hospitals and commercial laundries. Therefore, hot water and detergent are sufficient. It is also not necessary to exceed 1 cup of bleach per washtub of water. Standard dry cleaning chemicals also provide adequate cleaning.

### DISPOSAL OF SHARPS AND SOILED MATERIALS

Disposal of sharps and materials such as dressings, gloves, etc., that are contaminated with blood and body fluids must be in accordance with the Maryland State Department of Health and Mental Hygiene regulations for disposal of infectious waste. Guidelines for non-institutional settings apply.

#### Sharps

Needles, razors, etc., must be disposed of in heavy impervious containers (metal or plastic). When the container is full, it must be filled with a 1:10 dilution of bleach and sealed. This will decontaminate the contents so that the container can be disposed of via standard trash disposal practices.

#### Disposable Items

Disposable single-use items such as dressings, gloves, etc., that are contaminated with blood or body fluids must be placed in an impervious plastic bag and saturated by a 1:10 dilution of bleach. This must then be placed in a second impervious plastic bag and sealed. This will decontaminate the contents so that the bag can be disposed of via standard trash disposal practices.

## Answers to Questions Commonly Asked about AIDS

**1. What is the AIDS test (HIV antibody test)?** When an individual is infected with the AIDS virus, the body's initial response is to produce antibodies against this virus. This can be anywhere from several weeks to several months. The AIDS test looks for the presence of this antibody in the blood of the infected individual. The most used blood test is the ELISA (Enzyme-linked ImmunoSorbent assay). This test detects the presence of the antibodies to the AIDS virus, but not the actual virus itself. Since it may take several weeks to months before this antibody is present, it is possible for a patient to be infected with the AIDS virus and have a "negative AIDS test" because the body did not yet make the antibody.

If the ELISA test is positive, most laboratories will repeat it. If the second ELISA test is positive, a more sensitive and expensive test called the Western Blot is done. This test can take two or more weeks before the final result can be reported. A positive Western Blot confirms that the person definitely has AIDS antibodies in his/her blood. This means the person has been exposed and probably has the AIDS virus in his/her blood. This person could then infect another by sexual contact or sharing needles.

**2. How is testing for Hepatitis B different from testing for AIDS?** Unlike the AIDS tests, the Hepatitis B antigen test can detect the infecting agent for Hepatitis B. Therefore, physicians are able to definitely determine whether a patient with a positive Hepatitis B surface antigen is infectious. However, the vast majority of hospitals do not routinely test their patients for Hepatitis B antigen. The following reasons are why this testing is not done:

a. Only a very small percent (1-2 percent) of the population is

likely to be positive for Hepatitis B antigen. Even a smaller percent of these patients is likely to be hospitalized.

b. The knowledge that a patient is Hepatitis B antigen positive is, for the vast majority of patients, irrelevant to the treatment of the disease or condition that caused him/her to be hospitalized.

c. There is a treatment that can be given to health-care providers if they sustain a percutaneous (through the skin) or mucocutaneous (in the eye, mouth, or nose) exposure to a Hepatitis-B-positive patient's blood.

d. There is a medically available vaccine for Hepatitis B that can be given to health-care providers to keep them from getting this disease.

**3. Why don't hospitals routinely test patients for the AIDS virus (HIV antibody)?** Since the AIDS test does not actually look for the virus, but for the antibodies produced by the individual against the virus, and since it may take anywhere from several weeks to several months for the infected individual to produce these antibodies, this test is not helpful on an individual patient. That is, a patient may have just become infected with the virus and not yet produced the antibodies that are measured by the test, but still can infect other people with his/her blood or through sexual contact. Therefore, a negative test may mean that the patient actually was not infected or that the patient was recently infected and precautions should still be taken until it can be confirmed that a patient is truly negative with a second test done several months later. Because of the time involved in these tests, useful information for the health-care providers may not be

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made available immediately after exposure.

**4. If I am exposed to a patient's blood, why won't the hospital check the patient for the presence of AIDS?** Since it may take several weeks to months for an infected person to have a positive AIDS test, the information regarding the status of an individual patient is not really helpful for the health-care provider. If the test were positive, the health-care provider would take the steps outlined for an exposure. If the tests were negative, the same procedure would be followed; for even though the test is negative, the patient may still be infected and not yet have had a chance to develop the antibodies that would result in a positive test. Therefore in both situations the same procedures should be followed by the health-care provider, so the knowledge of the status of the patient is really of no help and may only lead to a false sense of security.

**5. What do I do if a patient's blood comes in contact with the eyes, mouth, or an open wound?** There is no prophylactic treatment to protect against AIDS that can be given to the provider who sustains a percutaneous (through the skin) or mucocutaneous (in the mouth, nose, or eye) exposure to an infected person's blood. The best means of protecting the health of the provider is by educating each provider to treat all patients as though they are infected and to wear the appropriate protective attire. All percutaneous and mucocutaneous exposures sustained by the provider should be handled in the following way. Even though the risk of transmitting the virus to a health-care provider would be expected to be extremely rare, the steps to be taken would include:

- a. In the field, if you have a percutaneous exposure, wipe off blood and apply alcohol to the wound.
- b. If it is a mucocutaneous exposure, irrigate your eye or rinse your mouth with water or saline.
- c. On arrival at the hospital and as soon as patient care allows, thoroughly wash your hands and/or the wound, wash your face, and flush your eye for eye exposures with saline or water. If the wound is larger than a needlestick or a small laceration, have a physician in the emergency room assess it and provide treatment.

*Follow-up Procedure.* Follow the report of injury guidelines established by your department. If guidelines have not as yet been established by your department, the following procedure could be utilized.

- a. Report to your supervisor and document the event.
- b. The provider should be assessed for both AIDS and Hepatitis B exposure.
- c. For AIDS exposure the provider can contact the Maryland State Health Department (1-225-6707) and can be directed to the nearest regional center for counseling and testing if desired. In addition, the provider can report to his/her private physician for follow-up care.

**6. Can I take the virus home to my family if I am involved in the treatment or handling of an AIDS patient?** Transmission of the AIDS virus occurs primarily by sexual contact and the sharing of contaminated needles and blood. In order for the provider to pass on the virus, it would first have to be in his/her blood; even then, only by sexual contact or by sharing needles with family members would it be possible to pass the virus to them. There is no known case of transmission to family members by everyday contact, even though they may share food, towels, cups, razors, and even toothbrushes and kiss each other.

**7. If I have a definite exposure, what are the risks to my family?** Even with an exposure from a known AIDS patient, the risk of acquisition is still very low. In addition, blood and body fluids of most patients in the field would not contain the AIDS virus, so the chances become even lower. Since the AIDS virus is passed primarily by sexual contact and the sharing of contaminated needles and blood, the existing evidence reveals there is essentially no chance of passing it to your children. If you would become infected and use a condom or abstain from sex, there is essentially no risk to your sexual partner. There is still no evidence that the virus is transmitted by casual contact.

**8. Whom should we consider as a high-risk patient?** **Everyone.** Although most people are at low risk of having the disease, it may be difficult to determine who may be a high risk. For example, a homosexual who has had only one sex partner is at lower risk than a heterosexual who has sex with many partners. The only way to be sure is to consider everyone as possibly infected and take precautions all the time.

**9. Is it reasonable to delay or refuse treatment for a known or possible AIDS patient?** Delay or refusal to provide treatment is a form of patient abandonment. There is no rational basis for refusal to care for an AIDS patient. Reasonable precautions can protect health care providers from this disease. Basing your actions on the facts is essential.

**10. What do I do if I think I'm in a high-risk group for having AIDS?** The high-risk groups for having AIDS consist of homosexual and bisexual men, people who use intravenous illegal drugs and share needles, heterosexual individuals who have multiple sexual contacts, and individuals who received blood prior to mid-1985 and after the late 1970s. If you feel you are in one of these high-risk groups, then you should discuss the problem with your private physician or contact the Maryland State Health Department for either anonymous screening or counseling.

**11. What does the future hold for AIDS?** While there is currently no treatment or preventive vaccine for AIDS, substantial resources and scientific effort are being spent to better understand the virus as well as the diseases it causes. New drugs are being tested currently that may offer some promise for those infected with AIDS, as well as others that may help prevent acquisition of the virus. Information concerning this disease is continually being updated, and every effort will be undertaken to provide this information to all EMS providers as soon as it is made available.

**12. Where can I get more information?**

1. Reference section of this document
2. Maryland EMS Hotline — Maryland EMS-related AIDS questions only: (1-800-323-AIDS/1-800-323-2437)
3. Maryland State Health Department, Baltimore: (1-225-6707)
4. HERO (Health Education Resource Organization): 945-AIDS (Baltimore)/(945-2437) or 1-800-638-6252 (elsewhere in Maryland)
5. Public Health Service Hotline: (1-800-342-AIDS)/(1-800-342-2437)

**13. What is the EMS AIDS hotline?** Because of the special problems involved in emergency medicine, the Maryland EMS system has set up a hotline to answer any questions that have not been answered by this informational material. Other hotlines are also available to provide information about AIDS and its related diseases and treatments. The EMS hotline is set up primarily to help Maryland EMS providers answer any questions they have concerning possible exposure to the AIDS virus on their job.



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