

# PUBLIC SAFETY WORKERS AND AIDS

A GUIDEBOOK FOR AMBULANCE SERVICE, CORRECTIONS,  
FIRE SERVICE, AND LAW ENFORCEMENT PERSONNEL

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Prepared as a part of  
the  
ion for Emergency Workers Project

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# PUBLIC SAFETY WORKERS

## AND AIDS

A GUIDEBOOK FOR AMBULANCE SERVICE, CORRECTIONS,  
FIRE SERVICE, AND LAW ENFORCEMENT PERSONNEL

Previously published as

Emergency Workers and the AIDS Epidemic

Prepared

by the

**California Firefighter Foundation**

Funded by the California Department of Health Services

Director: Kenneth W. Kizer, M.D., M.P.H.

Fourth Edition  
May 1989\*

**NCJRS**

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*\*The information in this guidebook is based on research conducted by public health officials around the world; it is current as of May 1989. If you have any questions, you may wish to check with one of the professional organizations listed in the Resource Directory (Chapter X).*

## ERRATA

Public Safety Workers and AIDS  
(Fourth Edition, May 1989) i

Page 1; third paragraph; fifth sentence should read: "By the end of 1992, the U.S. Public Health Service estimates that as many as 365,000 individuals could be diagnosed with AIDS;..."

Page 49; third paragraph under the heading "Hotlines;" the fourth sentence should read: In Southern California, call 1-800-922-2437 (English) or 1-800-222-7432 (Spanish).

PUBLIC SAFETY WORKERS AND AIDS: A Guidebook for Ambulance Service, Corrections, Fire Service, and Law Enforcement Personnel.

Edited by Kim Mueller

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## NOTES ON GUIDEBOOK PREPARATION

This guidebook is produced as a part of the AIDS Education for Emergency Workers Project which was established in 1986. Coordinated by the Sacramento Area Chapter of the American Red Cross and funded by the California Department of Health Services, the Project serves as a central resource for public safety and emergency service personnel throughout California.

Recognizing the importance of involving the target population in developing educational materials and strategy, the Project has convened an Advisory Committee which includes representatives from law enforcement, fire service, corrections, and ambulance service. Committee members and members of a special Jail and Probation Task Force are shown on pages ii-iii.

The AIDS Education for Emergency Workers Project responds to the epidemic of HIV infection and public safety workers' concern by "Fighting the Fear with Facts". The Project has developed a training officers' curriculum, which has become the "gold standard" for AIDS education in the public safety arena. To ensure proper use of the curriculum, the project has assembled a corps of Master Trainer teams which conducts "train the resource/trainer" courses throughout the state.

This guidebook is distributed to all individuals who complete courses delivered by resource/trainers affiliated with the project. In addition, it is used by interested parties throughout California. Given the continuing demand for accurate, up-to-date information on HIV/AIDS and other communicable diseases we are pleased to present this fourth edition.

Many talented and caring professional people have contributed to the guidebook in its current form. They include Monte Blair of the American Red Cross and his staff Joyce Bright, Susan Orsborn, and Albert Wilson, R.N.; Neil Flynn, M.D., of the University of California at Davis Medical Center; Guillermo Acuña, Ph.D., of the Sacramento AIDS Foundation; Stan Hadden of the Office of the President Pro Tempore of the California State Senate; Norm Nickens, Attorney for the San Francisco Human Rights Commission; David Schulman of the Los Angeles City Attorney's Office; Rebecca Craig of the California Medical Association; Lt. Jan Dempsey of the San Francisco Sheriff's Office; and Mark Vandervelden. Special thanks to Christine Fischer and Yvonne McDermott for their patience and the many hours required to typeset and arrange the camera-ready copy.

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# PUBLIC SAFETY WORKERS

## AND AIDS

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## I. INTRODUCTION

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Public safety workers are on the front line in any matter affecting the public health and safety. Your jobs involve facing physical danger in criminal scenes where persons may be armed and violent, auto accidents, fires, floods, and chemical spills. You also come into direct contact with the ill or injured on a daily basis. In fact, your willingness to accept increased personal risk accounts for much of the prestige and respect you are accorded in our society.

AIDS is the newest public health hazard public safety workers must address. On the job, you may come into contact — knowingly or unknowingly — with persons who are infected with the AIDS virus, known as HIV (Human Immunodeficiency Virus). The ethics and the rules of your job demand that you provide equal and adequate services to all those in need, regardless of their condition. The good news, as this guidebook will explain, is that you can take steps to greatly reduce the risk of becoming infected with HIV. At the same time, you will reduce your risk for other communicable diseases such as hepatitis and meningitis, which you are more likely to catch on the job.

\* \* \* \*

AIDS is a relatively new disease that has erupted in epidemic proportions in the United States (and many foreign countries) since 1981. As of May 1989, 157,191 cases of AIDS had been reported worldwide. 97,193 cases had been reported in the United States. Of these at least 56,468—or about 58 percent—have died. By the end of 1992, the U.S. Public Health Service estimates that as many as 365,000 individuals in the United States could be infected with HIV; a total of 263,000 are expected to have died.

For the estimated 1 to 1.5 million Americans already infected with the virus believed to cause AIDS, only time will tell whether they will become ill with one of the “opportunistic” infections or cancers which can take over once the virus has infiltrated the body.

Even as the number of AIDS cases continues to mount, so too does our understanding of the disease. Although medical researchers still are far from finding a cure for AIDS, we do know quite a lot about how the disease is spread. Today, human transmission of HIV can be prevented, if proper preventive measures are applied.

We know, for example, that HIV is not transmitted casually. Despite its ability to shut down the human immune system and cause death, HIV is quite fragile. Although HIV infection is communicable, it is not highly contagious. The virus does not easily survive once outside the body. Only the most intimate forms of human contact, such as sexual or bloodstream to bloodstream contact, cause transmission.

The activities which transmit HIV are well documented. They are: sharing needles

with an infected person; unprotected sexual intercourse (i.e., anal or vaginal, heterosexual or homosexual) with an infected person; or infected blood through a portal of entry (through an open cut or a weeping lesion or via a needlestick injury). These risk behaviors have remained unchanged over the past eight years. Risk for HIV infection probably increases the more frequently one engages in the specific activities that facilitate HIV transmission. However, anyone who engages in high risk activities can contract HIV or transmit it if infected.

Transfusion of blood products poses a very small risk of HIV transmission. In the Spring of 1985, the U.S. Food and Drug Administration approved the HIV antibody test for screening blood products. Since that time, the risk associated with transfusion is very small.

This guidebook will provide you with the most current and accurate information about AIDS. It discusses in detail how HIV infiltrates and overwhelms the body's defenses. The pathways the virus travels are carefully outlined. Clear, specific recommendations on preventive techniques and decontamination to reduce your risk of inadvertent exposure to HIV are spelled out. Current information on laws and legislation affecting public safety workers also is provided. Finally, a list of resources is provided to help you find out more on your own.

The overall message of the guidebook is simple. There is legitimate reason for public safety workers to be concerned, but you do not have to feel helpless. Because we do know a great deal about HIV, the greatest risk factor in its transmission is ignorance. Information and education are your best defenses. With these important tools, public safety workers like yourself can make choices and decisions that greatly reduce the possibility of work related transmission of HIV while still fully discharging your duties and responsibilities.

## II. AIDS: BACKGROUND INFORMATION

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AIDS stands for Acquired Immune Deficiency Syndrome. AIDS is the endpoint of a progressive disease process which starts with HIV infection.

As already noted, HIV stands for Human Immunodeficiency Virus. Other names the virus has gone by include Human T-cell Lymphotropic Virus (HTLV-III), Lymphadenopathy-Associated Virus (LAV), and AIDS - related Retro Virus (ARV). By whatever name, the virus that causes AIDS is one of the most devastating known to medical science, striking at the heart of the immune system's ability to respond to any number of "opportunistic infections."

Researchers have determined that the first AIDS case in the United States appears to have been that of a 15 year old boy who died in 1969. In Africa, the earliest trace of HIV has been found in frozen blood serum from an anonymous donor who gave blood in Zaire in 1959.

In the early years of the AIDS epidemic, some scientists thought that HIV resulted from an unusual interspecies jump from green monkeys to humans. This theory is not conclusive, however, and the exact origin of the virus remains a mystery—as is the case with other infections such as hepatitis, measles, and mumps. It appears that HIV is a relatively new virus which has been around in its current form for 40 to 50 years, but not for hundreds of years.

As is the case with other communicable diseases, some people infected with HIV will become very ill and die. Others will experience no illness at all for many years. Some people apparently fight off illness for long periods of time. In the U.S., there are documented cases of persons having been infected for 12 years without developing any other symptoms of AIDS. According to an October 1986 report by the U.S. Surgeon General, a person who currently is infected has a 20 to 30 percent chance of developing AIDS within five years. A report by the Centers for Disease Control, issued in December 1987, states that "the mean interval between infection with HIV and the onset of AIDS exceeds 7 years."

The spectrum of disease following infection with HIV ranges from a condition where an infected person has no symptoms, to the condition of having symptoms, to clinically defined full-blown AIDS. The diagram on the following page provides a visual image of the HIV disease spectrum. It should be noted that a person may be able to transmit HIV from the time he or she is first infected.

## THE HIV DISEASE SPECTRUM

HIV INFECTION	ANTIBODY POSITIVE	MILD SYMPTOMS	MORE SEVERE SYMPTOMS	AIDS
<p>Infection with HIV. Antigen detectable.</p> <p>No symptoms; person feels well</p>	<p>Production of specific antibodies that can be detected in serum by screening tests (seropositive).</p>	<p>Unexplained mild fatigue.</p> <p>Intermittent symptoms; night sweats, fever.</p>	<p>Unexplained prolonged and severe diarrhea, weight loss, night sweats.</p>	<p>Full blown disease diagnosis; requires specific CDC criteria.</p> <p>May be manifested in certain "opportunistic infections" (Kaposi's sarcoma (KS), <i>pneumocystis carinii</i> pneumonia (PCP)) or "wasting syndrome".</p>

AVERAGE TIME: 3 MONTHS →

→ AVERAGE TIME: 5 YEARS →

PERSON WITH  
AIDS

CENTRAL NERVOUS SYSTEM INVOLVEMENT

CAN OCCUR DURING THIS PERIOD

ALL PERSONS WHO ARE INFECTED ARE INFECTIOUS

## AIDS Defined

A diagnosis of HIV infection cannot be made on sight, under the circumstances most public safety workers are called upon to provide emergency services. A formal diagnosis can be made only by a qualified medical professional. AIDS can be diagnosed only when certain strict conditions spelled out by the Centers for Disease Control (CDC) are met. The CDC, an agency of the U.S. Public Health Service, is our country's primary medical agency, charged with identifying disease problems, keeping records on disease, and recommending solutions.

As noted, HIV infection is a progressive disease process, with AIDS as its endpoint. Persons infected with HIV may have a variety of clinical manifestations, ranging from the initial acute stage of HIV infection to asymptomatic HIV infection and finally to symptomatic HIV infection and AIDS.

The current definition of AIDS was issued by the CDC in August of 1987. This definition is more inclusive than the one previously used for reporting AIDS cases. It indicates that patients with laboratory evidence of HIV infection should be diagnosed as having AIDS if: 1) they exhibit HIV "wasting syndrome", and a broad range of specific diseases (including diseases formerly classified as "severe ARC"); 2) they are diagnosed "presumptively" (without clear laboratory evidence); or 3) they have immune system deficiencies which appear linked to HIV, even if there are other possible causes of these deficiencies.

Also, application of the definition for children differs from that for adults in two ways. First, serious bacterial infections and certain lymphoid conditions are accepted as indicative of AIDS among children but not among adults. Second, for children less than 15 months of age whose mothers are thought to have had HIV infection, the laboratory criteria for HIV infection are more stringent because of the persistence of passively acquired maternal antibodies less than 15 months after birth.

At its most advanced stage, AIDS usually is fatal within two years of clinical diagnosis. Treatment for specific illnesses linked to HIV is steadily improving, but there is no way to destroy the virus once a person is infected. Although a vaccine is being worked on now, medical researchers believe an effective preventive agent will not be available until well into the 1990s.

## **ARC No Longer Used**

The term AIDS Related Complex (ARC) was used early in the HIV epidemic to identify some stages between asymptomatic infection (see below) and development of full-blown AIDS. However, the CDC now indicates that the term "symptomatic HIV infection" should be used in place of "ARC".

## **Asymptomatic HIV Infection**

It is possible to be an "asymptomatic" carrier of HIV - that is, be infected with HIV and not have any of the symptoms discussed above. Asymptomatic infection begins shortly after infection with HIV. An asymptomatic carrier's HIV antibody test will be positive, indicating infection. The carrier will feel well, and in most cases will carry the virus for life.

### III. THE IMMUNE SYSTEM: HOW IT WORKS

In order to understand AIDS and HIV disease it is important to understand the normal workings of a healthy immune system. This is because HIV attacks a key element of the immune system, known as the T-helper cells. It also may attack the brain.

The human immune system is remarkable in its complexity and scope. Acting without a central controlling organ, the immune system is nevertheless capable of vast biochemical interconnections towards a singular objective: the identification and destruction of all substances, living or inert, that are not a natural part of the body and which might pose a threat to the body.

There are four phases to each immune response:

1. Recognition of the Invading Enemy;
2. The Mounting of Defenses;
3. The Attack; and
4. Suppression of the Immune Response (shutting it off when the job is done).

Acting against any foreign substances or disease agents are about one trillion white blood cells, amounting to about one percent of the body's 100 trillion cells.

#### **Three Cell "Armies"**

One way to understand how the immune system works is to compare it to armies on a battlefield. Specifically, there are three different white blood cell "armies," each charged with a special task, which circulate throughout the human bloodstream. (See diagram, pages 26-27.)

Army number one is composed of macrophages which are cells that first ingest and "process" a foreign invader. Acting as the body's "early warning system", macrophages perform reconnaissance, then chemically inform the field commanders, called T-helper cells, of the alien invasion. The T-helper cells issue orders for the subsequent immune response.

A second army of B cells is then mobilized by the T-helper cells. By means of cellular signals and hormones, B cells, acting as a biological arms factory, begin to manufacture

chemical weapons called antibodies. These molecules are directed specifically against the particular foreign agent.

Once they arrive on the scene, these specifically designed antibodies either neutralize the enemy or tag it for attack by other cells or chemicals.

In addition to the antibodies that circulate in the bloodstream, a battalion of cell-killing T-cells also is mobilized. Further, the immune response produces substances, such as the antiviral protein interferon, to augment the attack. Thus under normal circumstances, an infecting microbe would be subjected within a few hours or days to an overwhelming assault of macrophages, antibodies, killer T-cells, and other inflammatory toxins.

Naturally, such a response may also release substances that cause temporary symptoms such as fever, malaise, muscle aches, and fatigue. Once the microbe is successfully eliminated, the immune system's response subsides and the symptoms abate.

Remarkably, the B and T cells become programmed to remember the particular invading microbe for life. If needed, they are ready to launch a more vigorous, immediate response if the enemy microbe reappears.

The immune system has been programmed genetically with the ability to recognize an almost infinite variety of "foreign" materials. The ability to distinguish between "host" (the person's own cells and tissues) and "invader" is aided by specific markers on the cell surface of "host" cells. These markers can be called insignias, to continue the military metaphor. The immune cellular armies can detect immediately whether a material is friendly or alien by its insignia. In rare cases, the body's immune system may mistakenly identify a material and attack its own cells or organs causing an "auto-immune disease". Rheumatoid arthritis or systemic lupus are examples of such a disease.

## **HIV and Immune Response**

There are three important aspects of the immune response as it relates to HIV. The first is that whenever a microbe enters the body, antibodies specific to that microbe are formed and remain in the bloodstream for many years. (In some cases antibodies may disappear over time, but the body's B and T cells remain programmed to remember the invading microbe so they can very quickly resume antibody production in the case of a second invasion.) Antibodies can be measured and tell us that at some time, a person was infected by a particular organism.

The second aspect is that the body has a limited defense system against viruses. The immune response can only neutralize the virus in the bloodstream by producing antibodies, or killing the cells in which the virus spreads.



Third, by infecting and killing T-helper cells, HIV has found the Achilles heel, or weak spot, of the immune system, since these cells are critical administrators of the immune response. Thus, an immune response to an infected T-helper cell presents an ironic challenge to the person's immune system: the immune system must attack one of its own members.

After entering the human bloodstream, HIV seeks out the T-helper cells responsible for coordinating the immune system's response to disease causing agents and infects them.

Once inside the T-helper cell, HIV can take over the cell's entire genetic machinery, turning it into a factory capable of producing large amounts of HIV and killing off the "host" T cell.

The immune system is not the only target of attack by HIV. The central nervous system disorders experienced by some AIDS patients indicate that the virus also infects brain cells and spinal cord cells.

### **Incubation Period of Virus**

The time period from infection with the virus to antibody development seems to be about 3 months. However, it may range up to one year. The vast majority of infected individuals produce antibodies within six months after infection with HIV. The incubation period from initial infection with the virus to the development of AIDS can vary from several months to several years.

Scientists examining frozen blood samples now think the incubation period may in some cases be as long as 14 years, or even lifelong. During incubation, the virus may be waiting for a second factor or event to spur the next stage of disease. For example, if an HIV-infected person gets a new sexually transmitted disease such as syphilis, the HIV may become very active and begin killing T-helper cells. If a second event does not occur, the incubation period may be lifelong, and the person infected may never develop AIDS. It's also clear that infection with HIV, without any other factor, can proceed to AIDS.

At this point, experts estimate that 20 to 30 percent — and probably more — of the 1 to 1.5 million Americans infected with the virus will go on to develop clinically diagnosed AIDS within five years of infection.

Infection with HIV is believed to be a permanent, chronic condition. Although infected persons may never show any outward signs of infection, it is likely that they will be capable of transmitting HIV for life.

#### **IV. HIV: HOW IT IS TRANSMITTED**

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Many thousands of AIDS cases have been studied in the United States as of April 1989. The Centers for Disease Control regularly conducts follow up studies of all AIDS cases reported among health care workers, persons with no known risk identified, and those who have survived with the disease for more than 4 years.

The means by which HIV is transmitted from person to person are now well known and usually are limited to the most intimate and deliberate forms of human contact. In a few rare cases accidental contact has transmitted the virus, but in each case, transmission can be traced to direct exposure in unusual circumstances to contaminated body fluids. In each case, infected material must pass through a "portal of entry" into a person's body. The good news is that each new case of HIV infection confirms our knowledge regarding transmission.

**Medical experts agree that HIV is not casually transmitted.** HIV is very fragile and is not able to live very long in the air or survive in the environment — on a door knob or a kitchen utensil, for example. A sneeze won't spread it as it spreads the virus for the common cold.

Infection requires the direct transfer of certain specific bodily fluids -- mainly blood, semen, and cervical secretions -- from inside the body of one person to inside the body, and in particular into the bloodstream, of another. Other body fluids which transmit HIV are listed in a table on page 22.

As of May 1989, the CDC had collected information on twenty-five health care workers infected with HIV and with documented seroconversion who do not exhibit high risk behavior and who deny other risk factors. Sixteen of these health care workers had needlestick exposures to blood from Persons With AIDS. Two infections were believed to have resulted from cuts with sharp, HIV-contaminated objects. In seven cases, exposure occurred via mucous membrane or non-intact skin.

Two of the twenty-five workers were exposed to highly concentrated volumes of HIV in laboratory situations.

One was cut by a sharp, HIV-contaminated object. The other experienced skin exposure to HIV.

Forty-four other health care workers have been reported as infected with HIV, but without a documented event which led to seroconversion. These workers also have no

reported nonoccupational risk factors.

Most importantly to public safety workers, as of February 1989 the Centers for Disease Control have not reported a single peace officer, firefighter, correctional officer, or ambulance service employee as having been infected with HIV in the course of performing his or her duties. This includes life saving support such as CPR or exposure to blood or other body fluids.

While one paramedic and three law enforcement officers have been reported with HIV infection, the CDC has not been able to determine conclusively that the infection occurred on the job. Several other public safety workers have tested positive for HIV antibody or have AIDS, but in each case transmission has occurred off-duty as a result of known high-risk behavior such as sexual activity with an infected person or i.v. drug use where needles are shared.

As noted, several health care workers have been infected as a result of needlestick injuries involving infected blood or infected blood through a portal of entry (an open cut or weeping lesion). Therefore, extreme caution should be followed when handling sharp objects or blood.

### **CDC: Four Modes of Transmission**

In February 1989, the CDC released Guidelines for Prevention of Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Healthcare and Public Safety Workers. Individuals associated with the AIDS Education for Emergency Workers Project were involved in development of the CDC guidelines. The guidelines include a discussion of transmission which states:

"Although the potential for HBV transmission in the workplace setting is greater than for HIV, the modes of transmission for these two viruses are similar. Both have been transmitted in occupational settings only by percutaneous inoculation or contact with an open wound, nonintact (e.g., chapped, abraded, weeping, or dermatitic) skin, or mucous membranes to blood, blood-contaminated body fluids, or concentrated virus. Blood is the single most important source of HIV and HBV in the workplace setting."

In short, HIV in particular may be transmitted by any activity or situation that results in direct contact whereby certain body fluids of an infected person enter the body of another person and infect this person's blood. Direct contact includes sexual activity; sharing of contaminated needles; mother to fetus, either in-utero or at the moment of birth; or breastfeeding, mother to infant.

The specific fluids associated with transmission of HIV — blood, semen, cervical

secretions, possibly breast milk, and others listed on page 22 — contain lymphocytes, which are components of the system of white blood cells. Lymphocytes are the name of the body's T-cells, which are the "targets" of HIV infection. They are produced in the lymph tissue which helps make up the body's white blood cells. Fluids which do not contain concentrations of lymphocytes are not associated with transmission of the virus.

Prior to the widespread adoption of blood screening programs in the Spring of 1985, HIV could also be transmitted through blood transfusions, artificial insemination, or injection of blood products. Medical experts now agree that the risk of HIV infection from receiving a blood transfusion has been greatly reduced, although not completely eliminated, due to screening programs now in place. Transfusion-associated HIV accounts for only about 2 percent of all AIDS cases.

Known Methods of Transmitting HIV	
<b>Sexual</b>	<b>Blood-to-Blood</b>
o Unprotected intercourse: heterosexual or homosexual (anal or vaginal) with an infected person	o Needle sharing and needlesticks involving infected blood
	o Infected blood through a portal of entry (an open cut or a weeping lesion or possibly blood splash to the eye)
<b>Other</b>	o Infected mother to fetus
o Breast feeding by infected mother	o Transfusions of infected blood products (mostly prior to introduction of HIV antibody tests in Spring of 1985)

Before the introduction of blood screening programs, an estimated 75 percent of all hemophiliacs were exposed to HIV through injections of "Factor VIII", a blood clotting medication made from the blood of those without hemophilia. With blood screening, this risk has been reduced nearly to zero.

## HIV: How NOT Transmitted

Antibodies to HIV have been detected in very low concentrations in the saliva and tears of some Persons With AIDS, but these body fluids have not been linked to transmission of the virus or the development of any individual cases of AIDS. In fact, recent reports suggest that saliva may actually counteract the virus. Proteins in saliva which begin the digestive process may help inactivate HIV.

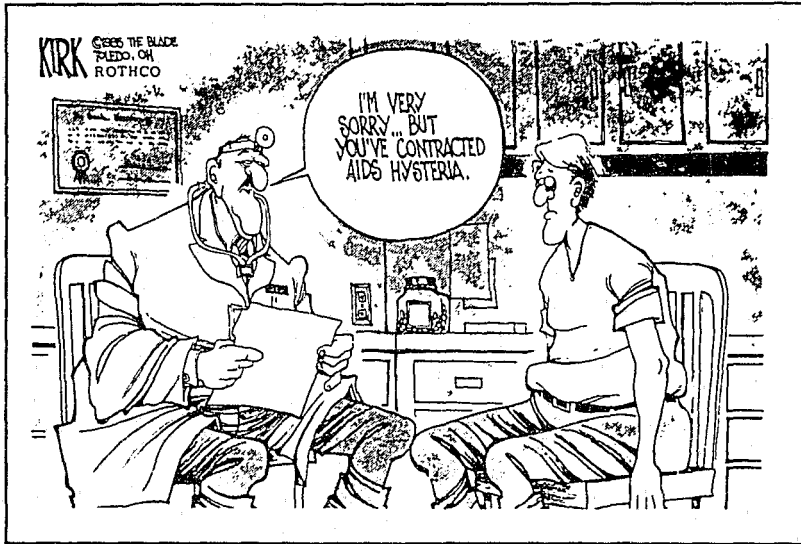
Logically, if HIV could be easily transmitted from one person to another via saliva, then there would now be millions of documented AIDS cases, and infected persons would lack known risk factors. However, this is not the case. Persons infected with HIV are those individuals who engaged in specific activities known to transmit the virus.

As noted earlier the main difference between body fluids which transmit HIV and those that don't is lymphocyte count. Body fluids with low lymphocyte counts, and which are not linked to HIV transmission, include tears, sweat, feces, nasal secretions, sputum, urine, and vomit. Saliva also is not documented as transmitting HIV, except potentially in dental settings where saliva is likely to be contaminated with blood.

According to the CDC:

"All secretions and excretions of an infected person may contain lymphocytes, host cells for [HIV]; therefore, thorough study of these fluids might be expected to sometimes yield this virus. Despite positive cultures from a variety of fluids of infected persons, spread from infected persons to household contacts who have no other identifiable risk for infection has not been documented. Furthermore, there is no evidence to date that the virus has been transmitted through contact with the tears of infected persons or through medical instruments used to examine patients with AIDS."

One reason that HIV is difficult to transmit — in addition to its fragility — may be the relatively low concentration of infectious particles in the blood of a Person infected with HIV. Recent research conducted by the Montefiore Medical Center of the Albert Einstein College of Medicine in New York City has found that a typical AIDS patient has approximately 10,000 viral particles per milliliter of blood, compared to up to 100,000,000 viral particles per milliliter for a patient with hepatitis B.



Cartoon by Kirk Walters. Reprinted with permission of The Blade, Toledo, O.

*It is natural and understandable for you to be concerned about AIDS and HIV. Based on what we know today, you can take precautions to greatly reduce your risk for contracting HIV - on and off the job.*

As of May 1988, a total of more than 1,500 dentists and hygienists had participated in studies to determine the prevalence of HIV antibody in blood. These dental personnel had many, many exposures to saliva and blood of HIV-infected patients, **without gloves**. Only one dentist was found to be antibody positive. Although exposure to a known HIV infected person could not be identified, the infected dentist had a history of needlestick injuries and other injury to the hands and did not wear gloves when providing dental care.

The CDC, in a November 1985 report, substantiates the difficulty of transmitting HIV, even in the case of direct needlesticks: "Current evidence indicates that, despite epidemiological similarities of [hepatitis B] and [HIV] infection, the risk for [hepatitis B] transmission in health care settings far exceeds that for [HIV] transmission. The risk of acquiring [hepatitis B] infection following a needlestick from a [hepatitis B] carrier ranges from 6 percent to 30 percent, far in excess of the risk of [HIV] infection following a needlestick involving a source patient infected with [HIV], which is less than 1 percent" (emphasis added). The actual figure for health care workers studied to date is approximately 3 transmissions per 1,000 needlesticks with an HIV-contaminated needle."

**For methods to prevent transmission of HIV, see Chapter VII.**

## V. AIDS: WHO IS AT RISK?

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The largest number of AIDS cases in this country has resulted from sexual intercourse between men. Additionally, it is now clear that sex between men and women can also transmit HIV if one partner is infected. In this regard, AIDS is a sexually transmitted or venereal disease. The second largest group affected is i.v. drug users. In some parts of California the number of HIV-infected i.v. drug users is increasing rapidly.

Among those at highest risk are gay men who have had multiple anonymous sexual partners going back as far as the mid-to-late 1970s. Women who have had multiple partners also are at risk. Many cases of AIDS diagnosed today have resulted from exposure to the virus before preventive measures were clearly known.

Sexually active gay and bisexual men (including those using intravenous drugs) account for approximately 60 percent of all AIDS cases reported nationally. One case has been reported from sexual contact between women; the case appears to have involved blood-to-blood contact.

The primary mode of transmission among men who have sex with men is unprotected anal intercourse where the rectal tissues of the receptive partner are traumatized. Small fissures in the rectal lining — which as a part of the digestive system is designed to absorb liquids — allow HIV-contaminated semen to come into direct contact with the partner's bloodstream. The virus can be transmitted from the insertive (active) partner to the receptive (passive) partner, or vice versa.

Sexual transmission can be reduced, if not prevented, by using proper protection and sexual techniques. A recent report published in the American Journal of Public Health confirms the effectiveness of following "safe sex" guidelines. A study group of bisexual and homosexual men reduced their high risk sexual practices and over the same period the annual new HIV infection rate decreased significantly - from 18.4 percent to 4.2 percent in two years.

Oral ingestion of semen or cervical secretions is regarded as holding a much lower risk for infection. In fact, no cases of transmission linked to oral ingestion have been reported to date. However, infected semen and cervical secretions are capable of transmitting the virus through a portal of entry.

### **Heterosexual Transmission**

While most cases of sexually transmitted HIV in the U.S. occur among men who have sex with men, the disease also has been transmitted sexually among heterosexuals. Indeed, in some parts of the world, heterosexual contact is the principle means of transmission. It is likely that the incidence of heterosexual (male to female or female to

male) transmission in the U.S. will rise as the virus spreads to sexually active i.v drug users.

By April 31, 1989 the Centers for Disease Control (CDC) reported that in the United States 2,396 women were known to have contracted the disease from infected men. Included in this group of women were sexual partners of hemophiliacs and of bisexual men. One thousand seven hundred thirty-two (1,732) men are known to have been infected by women carrying the virus, indicating that transmission of the virus can occur from female to male.

Researchers estimate that in the United States within the next five years, at least 7,000 cases of AIDS will develop among heterosexual men and women, most of whom will have had sexual contact with high risk partners.

### **Blood to Blood Transmission via Intravenous Needles**

Nationally, the second largest number of AIDS cases is found among men and women who have been infected through the sharing of needles (syringes) and possibly other paraphernalia which are contaminated with HIV infected blood. Ethnic communities, particularly black and hispanic, have been significantly affected by HIV disease resulting from infection due to i.v. drug use.

Transmission by shared needles is not limited to people addicted to drugs. Occasional or recreational use of drugs is more widespread in America then generally accepted. The occasional users who may not be addicted but share needles are at risk of becoming HIV positive and so are their sexual partners. Anyone who shares a needle with an HIV infected person to inject any substance, e.g. steroids, is also at risk for HIV infection.

According to the most recent estimate prepared by the California Department of Alcohol and Drug Programs in February 1986, there are at least 222,000 drug users in California. Counting occasional recreational users of drugs, there may be as many as 500,000 persons in the state at risk of becoming HIV infected by sharing contaminated needles.

Although comprehensive data are not available at this time, it appears that the level of HIV infection among drug users in California is relatively low, but increasing. One limitation of the data on transmission is that the only drug users who have been tested for HIV antibodies are those seeking help at treatment centers or hospital emergency rooms, or those found in jail.

A recent study of drug users in Los Angeles showed an infection rate of approximately 2 percent. A 1987 investigation in the San Francisco area identified a level of infection



of 13 to 26 percent. This rate is believed to be one of the higher in the state. A follow up study indicates that this rate has already risen to 20 percent.

In Sacramento, researchers at the University of California at Davis have documented a 3 to 5 percent infection rate among drug users. As noted, these figures are all based on studies of drug users who have received education concerning HIV transmission. There is evidence to suggest that among those without access to treatment or education, the rate is much higher—probably 10 percent.

These figures are considerably lower than the rate found on the East Coast—especially in New York—where the infection rate is estimated to exceed 50 percent of those studied. However, public health authorities estimate that California will witness a rapid rise in this percentage over the next five years, unless drug users begin to practice known effective methods to prevent HIV transmission. This effort should focus on preventing HIV transmission through both sharing needles and unsafe intercourse.

## VI. AIDS: ARE THERE CLEAR SYMPTOMS?

It is **not** possible on the basis of outward symptoms alone to determine whether an individual has AIDS, is antibody positive, has been exposed to HIV, or otherwise is at high risk of exposure. To rely on symptoms to provide information about a person's antibody status can provide a false sense of security. Instead, the key is to follow universal safety precautions to prevent exposure to all infectious diseases in the first place. These precautions are discussed in Chapter VII.

There are no specific symptoms associated with HIV infection or with AIDS. Some symptoms may also be linked to other conditions which have nothing whatsoever to do with AIDS or HIV infection.

Persons diagnosed with AIDS may have widely different physical responses. Some may remain quite healthy for extended periods of time. Others may have periods of serious illness, followed by periods of good health.

Some symptoms that can appear are probably due to low grade infections that occur because a person's immune system is defective.

Symptoms alone cannot be used to make a diagnosis of HIV infection. However, a list is provided below for information only, and to help enhance your understanding of the disease. These obvious symptoms can be caused by a wide variety of diseases. Therefore, if a person exhibits these symptoms, he or she may be considered infected with something, not necessarily HIV, but should not be identified or labelled a Person With AIDS (PWA).

It is highly unlikely that a person with these symptoms has AIDS unless he or she has engaged in the specific risk behaviors already identified. Also, in most cases symptoms must persist for some time before HIV can be implicated. The only way to determine if someone is HIV- infected is through an official medical diagnosis, based on the CDC criteria.

Understanding the above paragraphs is crucial in reading the following list of early non-specific symptoms.

- o Unexplained, increasingly persistent fatigue;
- o persistent fever, chills and night sweats, not accompanied by a known illness and lasting longer than several weeks;
- o unexplained weight loss of more than ten pounds in less than two months;

o swollen glands (lymph nodes), especially on the side and back of the neck and under the arms unexplained by other illness and lasting more than two months;

o creamy white patches on the tongue or mouth, known as thrush (a fungal or yeast infection);

o **persistent** diarrhea;

o **frequent** dry cough, shortness of breath and difficulty breathing — not from smoking or common respiratory infection — may be a symptom of *Pneumocystis carinii* pneumonia;

o loss of vision, which may signal cytomegalovirus infection in the eyes;

o pink or purple blotches — flat or raised — that don't go away and don't pale when pressed, which may be a sign of Kaposi's sarcoma;

o **persistent** loss of memory, changes in gait or in the sense of equilibrium; episodic blurring or loss of vision or hearing, changes in mood, and/or other **persistent** or **frequently recurrent** neurologic or psychiatric symptoms that are otherwise unexplained.

**Each of these symptoms, it must be emphasized, may be associated with any number of diseases or conditions that have nothing at all to do with HIV infection or AIDS. Remember — don't attempt to make a diagnosis of HIV infection yourself. Only properly trained doctors and other informed health care professionals, using appropriate diagnostic tools, can make a correct diagnosis.**

## **VII. EXPOSURE TO HIV AND OTHER INFECTIOUS AGENTS: HOW TO PROTECT YOURSELF**

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At this point we have learned that HIV is not transmitted casually, and that the virus's spread is confined to certain clearly identifiable risk behaviors.

With this knowledge, let's focus on the issues that most concern you as a first responder. These include exposure to any communicable disease in two main ways: (1) respiratory and/or droplet discharges from the nose and throat of infected individuals, through sneezing, coughing, and spitting; and (2) direct contact — exposure to skin or open cuts or sores — with body fluids such as blood, saliva, mucous membrane secretions, urine and feces. These potential exposure routes to any disease are relatively common in emergency situations.

Law enforcement personnel, for example, assist bloodied accident victims. In the course of apprehending suspects, officers may be spat upon or bitten. Firefighters, in contrast, respond more frequently to acute first aid situations calling for CPR or steps to control bleeding. Ambulance service personnel run higher risks of accidental exposure from skin puncture by i.v. needles.

Because you are so often in situations where you run a higher than normal risk of exposure to disease, you should be concerned. Since performing your job depends on your being healthy, it is important that you protect yourself from disease viruses. Also, since you often assist many people in one day, you should take care to prevent the spread of viruses from one person you are assisting to another.

The good news is that exposure does not automatically lead to infection. In fact, no emergency worker has been reported to the CDC as contracting HIV clearly as a result of job-related activity. By following the precautions discussed below, you can help make sure this number remains as close to zero as possible.

To make sure that proper precautions are used, and that adequate equipment and supplies are available to employees, employers should develop policies and procedures that apply to all workers. To ensure that adopted policies are carried out, employers also should conduct training and regular "refresher" sessions on handling of communicable disease exposures.

### **CDC Guidelines**

The following discussion includes suggestions for preventing exposure to HIV and other disease viruses. It draws on the most qualified source on the subject, a document entitled Guidelines for Prevention of Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Health-Care and Public-Safety Workers published by the

U.S. Public Health Service's Centers for Disease Control (CDC) in February 1989. The guidelines are advisory and should be heeded by employers, even though they do not impose mandatory programs or procedures.

A Joint Advisory Notice, issued by the U.S. Department of Labor and the Department of Health and Human Services on October 19, 1987, contains essentially the same information contained in the CDC guidelines. This notice, however, is the basis for regulation. Federal OSHA relies on it in conducting inspections and issuing citations in private sector settings in states which do not have their own OSHA program. The notice is entitled "Protection Against Occupational Exposure to Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV)."

Both Federal OSHA and California OSHA are developing communicable disease standards which will provide the basis for regulation. The Cal/OSHA standard should take effect some time in 1989.

<div>BE S A F E</div>	<div>General Guidelines: Disease Exposures</div> <div>Be careful! Think when responding to emergency calls, and exercise common sense!</div> <div>Soap and water kills some disease viruses on contact. Wash your hands "often and well".</div> <div>Avoid needlesticks, cuts, or other punctures of the skin. Exercise particular caution when working around needles, medical injection equipment, or other sharp objects.</div> <div>Face and hands: pocket masks and rubber gloves to prevent exposure to disease viruses during CPR and other medical procedures when contact with blood or bodily fluids is involved.</div> <div>Every person you handle may be a carrier of disease. Remember these important guidelines!</div>
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The CDC's February 1989 guidelines discuss infection control for emergency and public safety workers, employer responsibilities, and include special sections on fire and emergency medical, and law enforcement and correctional facility officers.

The CDC acknowledges that public safety workers work in "inherently unpredictable"

environments. In light of this unpredictability "control measures that are simple and uniform across all situations have the greatest likelihood of worker compliance."

The CDC recommends "universal precautions" originally developed in 1985 to address concerns regarding transmission of HIV. The concept of universal precautions emphasizes that "all patients should be assumed to be infectious for HIV and other blood-borne pathogens." Precautions should be followed when workers are exposed to body fluids linked to virus transmission, including blood, semen, and vaginal secretions.

### Body Fluids and Transmission of HIV and HBV

#### Linked to Transmission

Blood  
Semen  
Vaginal secretions  
Any fluid visibly contaminated with blood  
Amniotic fluid (surrounds human fetus)  
Pericardial fluid (surrounds heart)  
Peritoneal fluid (abdominal lining)  
Pleural fluid (surrounding lung)  
Synovial fluid (secreted by membrane surrounding tendons or joints)  
Cerebrospinal fluid (secreted from blood into the brain)

#### Not Linked to Transmission

Feces  
Nasal secretions  
Sputum  
Sweat  
Tears  
Urine  
Vomit  
Saliva

its guidelines the CDC defines exposure as "contact with blood or other body fluids ...through percutaneous inoculation or contact with an open wound, nonintact skin, or mucous membrane during the performance of normal job duties".

The CDC concludes that "when emergency medical and public-safety workers encounter body fluids under uncontrolled, emergency circumstances in which differentiation between fluid types is difficult if not impossible, they should treat all body fluids as potentially hazardous."

## Universal Precautions

1. Gloves should be worn for touching blood and body fluids, and should be changed after each contact. Wherever possible, masks and protective eye wear, gowns or aprons, should be worn during procedures that generate splashes of blood or other body fluid.
2. Hands and skin surfaces should be washed immediately and thoroughly if contaminated with blood or other body fluids. Hands should be washed immediately after gloves are removed.
3. Workers should take precautions to prevent injuries caused by needles, scalpels, and other sharp instruments. Needles should not be recapped, bent or broken by hand. After use needles should be disposed of in puncture-resistant containers.
4. Although saliva has not been implicated in HIV transmission, mouthpieces or other ventilation devices should be available for use in resuscitation.
5. Workers who have open sores or dermatitis should refrain from direct patient care and from handling patient-care equipment until the condition is resolved. Cuts may be covered with adhesive bandages that repel liquids.
6. Pregnant workers should be especially familiar with and strictly adhere to precautions.

## Employer Responsibilities

The CDC guidelines contain an in-depth discussion of employer responsibilities and identify five main areas where employers should take action to prevent worker exposures to disease viruses. These areas are:

1. Classification of work activity and provision of protective equipment.
2. Development of standard operating procedures (SOPs) for all activities where exposure may occur.
3. Provision of initial and periodic training and education for workers who may be exposed.
4. Development of administrative procedures and record keeping systems

to monitor and ensure compliance with work procedures.

5. Modification, where possible, of the workplace environment to reduce worker exposure risk.

The CDC also recommends that employers provide a medical management program for workers, including counseling, hepatitis B (HBV) vaccines, post exposure management for both HIV and HBV, management of human bites, management of workers infected with HBV or HIV, and documentation of individual medical information. All medical information must be kept strictly confidential. Decontamination and disposal procedures also are recommended.

### **Fire and Emergency Medical Services**

The CDC recommends some specific protections for fire and emergency medical employees. These protections are based on "prudent health practice", and include:

1. Disposable gloves, which should be put on prior to beginning any emergency patient care. Gloves should fit tightly at the wrist to prevent contamination of the hands. Extra pairs of gloves should always be readily available. For situations where broken glass and sharp edges are a hazard, structural fire fighting gloves should be worn and may be worn over latex gloves.
2. Masks, eyewear and gowns for situations where splashes of blood or other potentially infected body fluids are likely to occur. This protection is not necessary for minor cuts or small amounts of blood. An extra change of work clothes should be available at all times, in case one set is contaminated.
3. Resuscitation equipment should be provided given the risk of transmission of certain communicable diseases (such as herpes simplex and meningitis). Mechanical devices such as bag valve masks or oxygen demand resuscitators should be on all emergency vehicles. Pocket masks should be provided to all personnel who may provide emergency treatment.



## Gloves - Special Tips

- o Practice putting disposable gloves on and taking them off, so that when an incident happens you are familiar with them.
- o Use caution when removing disposable gloves covered with infected material. To prevent cross contamination when ungloving never use the exposed fingers of the ungloved hand or teeth to remove the remaining contaminated glove.
- o When possible, wash off disposable gloves before removing, to reduce the potential for spreading infected material.
- o Wherever possible, double glove to protect against disposable gloves breaking or tearing.
- o Wash hands often, even when gloves are used. Use warm running water with soap, and wash hands for 15 seconds before rinsing and drying. Where water is not available, one of several hand cleaning germicides, available in towelette form, may be used. Use lotion to prevent hands from drying and cracking.
- o When possible, wash hands **before and immediately following** each potential exposure.

## Law Enforcement and Correctional Facility Officers

The CDC guidelines contain recommendations for both law enforcement and correctional employees. At the same time, the guidelines recognize that these employees face a diverse range of situations in attempting to control unpredictable, violent or psychotic persons. Therefore, says the CDC, "informed judgment of the individual officer is paramount when unusual circumstances or events arise." In short, "rational decision making" will be the best guide, particularly when immediate action is needed to protect life or prevent injury.

The CDC guidelines cover three areas of concern which are common to both law enforcement and correctional officers. These are:

1. **Fights and assaults.** When blood is present, or when a suspect or inmate is combative, appropriate protective gloves should be put on as soon as

*(continued on page 28)*

# CELL WARS

About one trillion strong, our white blood cells constitute a highly specialized army of defenders, the most important of which are depicted here in a typical battle against a formidable enemy.



## VIRUS

Needing help to spring to life, a virus is little more than a package of genetic information that must commandeer the machinery of a host cell to permit its own replication.



## MACROPHAGE

Housekeeper and frontline defender, this cell engulfs and digests debris that washes into the bloodstream. Encountering a foreign organism, it summons helper T cells to the scene.



## HELPER T CELL

As a commander in chief of the immune system, it identifies the enemy and rushes to the spleen and lymph nodes, where it stimulates the production of other cells to fight the infection.



## KILLER T CELL

Recruited and activated by helper T cells, it specializes in killing cells of the body that have been invaded by foreign organisms, as well as cells that have turned cancerous.



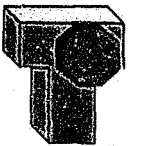
## B CELL

Biologic arms factory, it resides in the spleen or the lymph nodes, where it is induced to replicate by helper T cells and then to produce potent chemical weapons called antibodies.



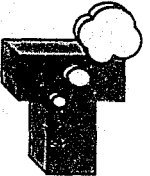
## ANTIBODY

Engineered to target a specific invader, this Y-shaped protein molecule is rushed to the infection site, where it either neutralizes the enemy or tags it for attack by other cells or chemicals.



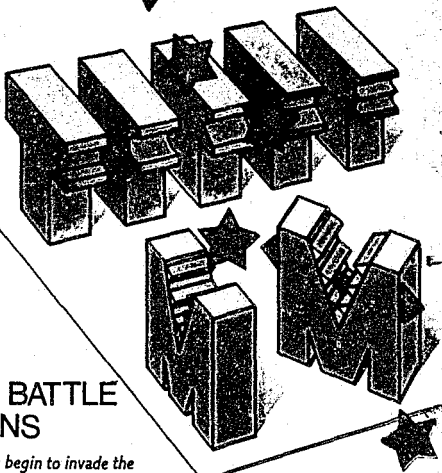
## SUPPRESSOR T CELL

A third type of T cell, it is able to slow down or stop the activities of B cells and other T cells, playing a vital role in calling off the attack after an infection has been conquered.



## MEMORY CELL

Generated during an initial infection, this defense cell may circulate in the blood or lymph for years, enabling the body to respond more quickly to subsequent infections.



## 1 THE BATTLE BEGINS

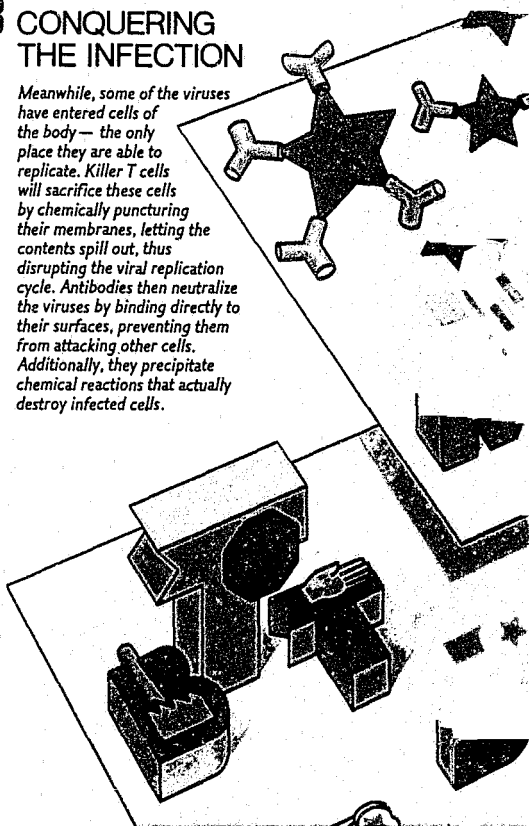
As viruses begin to invade the body, a few are consumed by macrophages, which seize their antigens and display them on their own surfaces. Among millions of helper T cells circulating in the bloodstream, a select few are programmed to "read" that antigen. Binding to the macrophage, the T cell becomes activated.

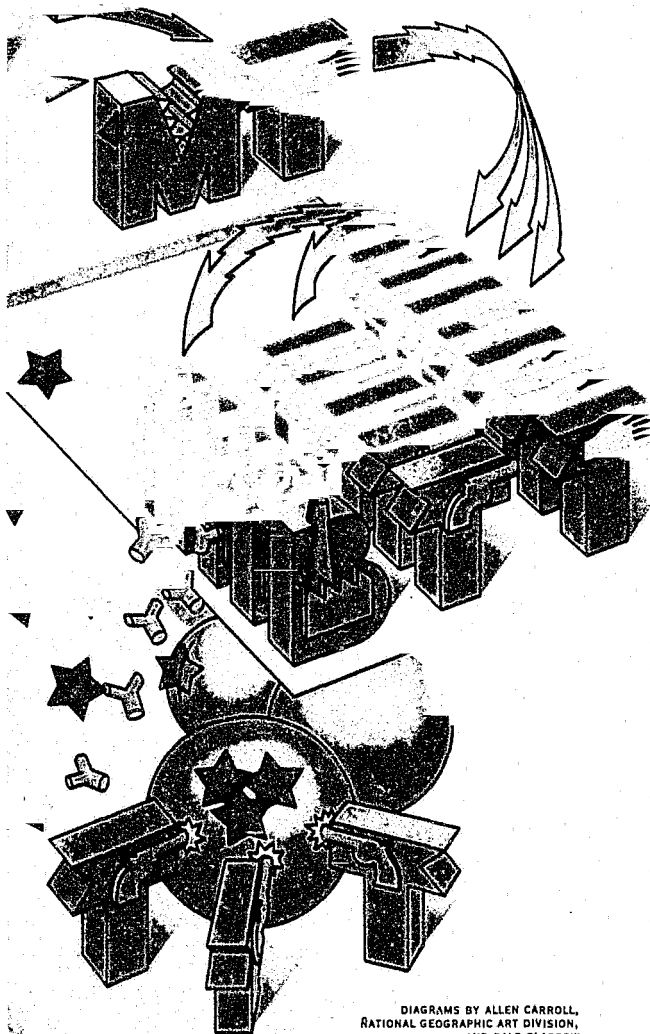
## 2 THE FORCES MULTIPLY

Once activated, helper T cells begin to multiply. They then stimulate the multiplication of those few killer T cells and B cells that are sensitive to the invading viruses. As the number of B cells increases, helper T cells signal them to start producing antibodies.

## 3 CONQUERING THE INFECTION

Meanwhile, some of the viruses have entered cells of the body — the only place they are able to replicate. Killer T cells will sacrifice these cells by chemically puncturing their membranes, letting the contents spill out, thus disrupting the viral replication cycle. Antibodies then neutralize the viruses by binding directly to their surfaces, preventing them from attacking other cells. Additionally, they precipitate chemical reactions that actually destroy infected cells.

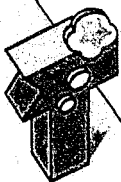




DIAGRAMS BY ALLEN CARROLL,  
NATIONAL GEOGRAPHIC ART DIVISION,  
AND DALE GLASGOW

#### 4 CALLING A TRUCE

As the infection is contained, suppressor T cells halt the entire range of immune responses, preventing them from spiraling out of control. Memory T and B cells are left in the blood and lymphatic system, ready to move quickly should the same virus once again invade the body.



A miracle of evolution, the human immune system is not controlled by any central organ, such as the brain. Rather it has developed to function as a kind of biologic democracy, wherein the individual members achieve their ends through an information network of awesome scope. Accounting for one percent of the body's 100 trillion cells, these defender white blood cells arise in the bone marrow. They fall into three groups: the phagocytes, or "cell eaters," of which the stalwart macrophage is one, and two kinds of lymphocytes, called T and B cells. All share one common objective: to identify and destroy all substances, living and inert, that are not part of the human body, that are "not self." These include human cancer cells, which have turned from self to nonself, friend to foe.

There are four critical phases to each immune response: recognition of the enemy, amplification of defenses, attack, and slowdown. Each immune response is a unique local sequence of events, shaped by the nature of the enemies. Chemical toxins and a multitude of inert environmental substances, such as asbestos and smoke particles, are normally attacked only by phagocytes. Organic invaders enlist the full range of immune responses. Besides viruses, these include single-celled bacteria, protozoa, and fungi, as well as a host of multicelled worms called helminths. Many of these enemies have evolved devious methods to escape detection. The viruses that cause influenza and the common cold, for example, constantly mutate, changing their fingerprints. The AIDS virus, most insidious of all, employs a range of strategies, including hiding out in healthy cells. What makes it fatal is its ability to invade and kill helper T cells, thereby short-circuiting the entire immune response.

possible. An extra change of clothes should be available in case clothing becomes contaminated with blood.

**2. Cardiopulmonary resuscitation (CPR).** Agencies should provide protective masks or airways and make training in their use available to employees. Even though HIV is not transmitted by saliva or through CPR, other diseases may be (for example, herpes simplex, meningitis and the flu).

**3. Searches.** Injuries including puncture wounds can occur during search activities. The following steps can help reduce the risk of infection in this way:

- a) Exercise caution in searching clothing. Use your employer's policy and procedures to determine whether a person should empty his or her own pockets or whether the officer should use his or her skills to determine contents of a pocket.
- b) Maintain a safe distance between officer and suspect or inmate as prescribed by your employer's policy and procedures.
- c) Wear appropriate protective gloves if blood is present.
- d) Wear appropriate protective gloves for all body cavity searches. Gloves should be selected which provide the best balance of protection and search efficiency.
- e) Dimly lighted areas of vehicles, residences and cells may pose additional risks to searchers. For example, hypodermic needles may be stashed under seats and so forth. Always use caution and appropriate light sources when searching any area that presents increased risk of injury to you.

### **Other Law Enforcement and Correctional Advice**

For law enforcement officers who may be involved in evidence handling, the CDC recommends as follows:

- 1. Wear protective disposable gloves under cotton gloves when working with evidence with potential latent fingerprint value.
- 2. In searching a purse, empty contents carefully by turning upside down over a table or flat surface, rather than sticking hands into the purse.
- 3. Store sharp instruments in puncture-proof containers, and other contami-

*(continued on page 31)*

**COMMUNICABLE DISEASE EXPOSURES ON THE JOB:  
HOW TO PROTECT YOURSELF**

*his chart is intended as a quick reference tool for the most common occupational exposures you experience. It specifies protective measures which are effective against the range of viruses you encounter — including HIV, and also hepatitis, meningitis, tuberculosis, the common cold.*

TYPE EXPOSURE	TRANSMISSION DOCUMENTED		PROTECTIVE MEASURES
	HIV	HEPATITIS	
Bites	No	No	Exercise care in making arrests and in every work situation. If arrestee or prisoner has open wounds or if body fluids are present, wear gloves.
Spitting	No	No	Exercise care in every work situation. If saliva or other mucous gets on your skin or uniform, wash as soon as possible with soap and water.
CPR (mouth to mouth)	No	No	Pocket mask to provide protective barrier. If reusable, decontaminate mask immediately after use, using proven germicide or chlorine bleach solution. Bleach is not recommended for use on rubber material.
Needlesticks	Yes*	Yes	<p>Exercise extreme care in searching arrestees or prisoners. Pockets, purses, waistbands, and garment linings are some potential sites for hiding contraband, handcuff keys or hypodermic needles. Use caution when searching any area that poses potential threat of injury to you. Wear protective (not rubber) gloves to prevent sticks.</p> <p>Exercise care around needles and other sharp objects. DO NOT recap or break needles prior to disposal.</p> <p>DO NOT recap or break needles or other sharp objects after use. Rather, place in puncture-proof container. Handle all sharp items with care, as if they are contaminated.</p>
Contact with blood or other bodily fluids	Yes**	Yes	If working with or transporting person or body with open sores or wounds, wear disposable gloves. Be especially careful to protect cuts or sores on your hands. After contact, wash thoroughly with soap and water. Clean up spills of blood and other fluids with a proven germicide or chlorine bleach solution.

**COMMUNICABLE DISEASE EXPOSURES OFF THE JOB:  
HOW TO PROTECT YOURSELF**

*You may also encounter communicable diseases away from work. In fact, current statistics indicate that public safety workers are at greater risk for contracting HIV off the job than at work.*

TYPE EXPOSURE	TRANSMISSION DOCUMENTED		PROTECTIVE MEASURES
	HIV	HEPATITIS	
<b>Unprotected sexual intercourse</b> (heterosexual, bisexual, homo- sexual)	Yes	Yes	Use a condom during intercourse with someone whose sexual history you don't know and/or who may be infected. Better yet, use sexual techniques which do not require anal or vaginal penetration.
<b>Needlesticks</b>	Yes	Yes	Refrain from drug use. Do not share needles. At the very least, disinfect a used needle with bleach or another germicide.

*\* Needlesticks are a possible means of transmitting HIV - but as of this date the Centers for Disease Control have not reported any public safety worker having been infected as a result of a needlestick. The rate of transmission among other health care workers is approximately 3 transmissions per 1,000 needlesticks with an HIV-contaminated needle.*

*\*\* As of May 1989, the Centers for Disease Control report 25 health-care workers who have acquired HIV infection on the job. These workers do not exhibit high risk behavior and deny other risk factors for infection. For further discussion see Chapter IV.*

nated items in clearly marked plastic bags.

4. Use evidence tape instead of staples to seal evidence. This will help avoid tearing gloves.
5. Follow local procedures for evidence handling. It is proper procedure for evidence handling to let items air dry before sealing in plastic.

For officers who have to touch or remove a body, gloves should be worn, cuts and abrasions should be covered with a Band-Aid or moisture resistant material, and all exposed areas should be washed after contact with blood.

When performing or attending autopsies, persons should wear protective masks and eyewear, gowns, gloves, and waterproof aprons.

The CDC also recommends precautions for workers in forensic laboratories. These recommendations include placing specimens in secure, labeled containers, using mechanical pipetting devices instead of mouth pipetting, and posting labs with clear warning signs to remind workers of ongoing hazards of disease transmission.

In addition to the search guidelines noted above, the CDC prescribes decontamination and disposal steps after a prisoner has spat or thrown feces at an officer. Gloves should be put on, and then a paper towel used to remove materials. A germicide should be used to decontaminate the area affected. Soiled towels and gloves should be disposed of according to guidelines for disposal of infectious waste.

### **Cleanup and Disposal Procedures**

- o Areas and equipment contaminated with blood should be cleaned with soap and water or household bleach as soon as possible. A dilute chlorine bleach solution (1 part chlorine to 10 parts water) should be applied to the contaminated surface as a disinfectant, leaving it on for at least 30 seconds. (This solution is effective in killing HBV, HIV, and TB.)
- o As in a hospital, persons cleaning up biological spills should wear disposable latex gloves and take care not to contaminate shoes or clothing.
- o Wherever possible, use disposable equipment to minimize and contain cleanup.
- o Regularly clean all equipment carried on rescue vehicles or other vehicles used for emergency response.
- o After completion of a response, disinfect all non-disposable equipment (ambubags,

protective gloves, etc.). When handling and disinfecting contaminated equipment:

—DO NOT rinse or wash in kitchen or living areas.

—DO dry reusable equipment carefully and thoroughly.

—DO use a recommended germicidal/virus sanitizing product. Alcohol may be used on surfaces where other products are not advised. A pistol spray bottle may be acceptable to apply sanitizing solutions as directed. Discard and replace outdated germicidal products.

—DO pay special attention to headsets, oxygen masks and related equipment, stretchers, breathing bags and any other equipment used for patient care. Clean all parts of any equipment that has been and will again be in contact with a patient.

—DO place all disposable equipment (gloves, masks, dressings, etc.) in a clearly marked plastic bag, and seal and dispose of as contaminated materials.

—DO clean stethoscopes after each use. A daily cleaning also is recommended.

o All equipment should be stored only after it is completely dry. To dry, let air for 3 to 4 hours, depending on environmental conditions.

o Clean training equipment regularly. Follow manufacturers' recommendations for sanitary practices. Where recommendations are not provided, use a chlorine bleach solution (1-part chlorine to 10 parts water). Leave solution in contact with surfaces for at least 30 seconds before wiping dry. Rinse with alcohol to help dry and reduce growth of bacteria and molds. For CPR manikins, see the recommendations for decontamination developed by the Multidisciplinary Ad Hoc Committee for Evaluation of Sanitary Practices in Cardiopulmonary Resuscitation Training (representing the American Heart Association, the American Red Cross, and CDC). These recommendations appeared in the Journal of the American Medical Association of June 6, 1986.

o For disposal of contaminated materials, use double bagging to prevent leakage or if the outside of a bag is contaminated with blood or other fluids. Clearly mark bags and place in designated place for biological refuse. Ambulance or hospital staff may be able to help in disposing of materials.

o In disposing of sharp items, assume they are potentially infective and use extreme caution. Do not cap or break needles prior to disposing.

o Blood and other body fluids may be poured carefully down a drain connected to a



sanitary sewer. (A sanitary sewer is not necessarily the same as a storm sewer. To determine the location of sanitary sewers in your community contact your city or county water and sewer division.) Avoid splashing material into your eyes.

o Contaminated clothing should be handled carefully and washed as soon as possible. Home laundry and dishwashing cycles are adequate for decontamination.

### **Decontamination**

o Non disposable equipment used on all patients should be decontaminated after use rather than just rinsed with water.

o A freshly prepared solution of liquid household bleach and water is an inexpensive and very effective germicide for killing HIV and other bacterial and viral pathogens including HBV and TB. Concentrations ranging from 1:10 to 1:100 dilution are effective, depending on the amount of organic material (blood, mucous, etc.) present on the surface to be cleaned. A solution must be changed and remixed every 24 hours to be effective.

o All visible blood and other secretions must be removed from cracks and crevices in instruments to ensure penetration of disinfectant.

o If you want something other than bleach for decontaminating instruments or medical devices, chemical germicides that are registered with and approved by the U.S. Environmental Protection Agency (EPA) as "sterilants" can be used for either sterilization or for high-level disinfection depending on contact time.

o Germicides that are approved for use as "hospital disinfectants" and are fungicidal/mycobactericidal when used at appropriate dilutions can also be used for high-level disinfection of devices and instruments. Germicides that are mycobacterial are preferred by hospitals because mycobacteria represent one of the most resistant groups of microorganisms.

### **Debriefing and Reporting**

Follow the policies and procedures established for your agency for debriefing and reporting.

Review the steps you took **prior** to responding. Have you learned something this time that may help in the future?

Review the steps you took **while** responding. Did you learn something this time that may help in the future?

Examples are shown below of steps employers should take to make sure that proper debriefing and reporting occurs.

- o Designate an individual to be responsible for handling reports of exposures.
- o A reporting procedure should be established. Procedures should allow for providing the employee with information on level of risk posed by exposure. A copy of this guidebook or other informational material should be available.
- o In the event of on the job exposure to an infectious disease, a system should be in place to monitor the health of the employee. Opportunities should exist for anonymous testing and counseling at the discretion of the employee.

### **Immunizations**

A basic protective measure is to be sure that all basic immunizations are up to date. Recommended immunizations follow:

**Td (tetanus-diphtheria):** One every ten years throughout life.

**Influenza:** Annually as recommended by physician or health officer.

**Mumps and Rubella Vaccines (one time dose):** May be advisable if not received as a child.

**Hepatitis B:** The CDC and the California Department of Health Services suggest that public safety workers receive the vaccine. Some studies indicate that paramedics and EMTs, in particular, are at excess risk for hepatitis B. Many health plans now are providing the vaccine to their members who are public safety workers, as part of their health care package. In addition to the original vaccine there is available a synthetic vaccine known as "Recom-bivax".

**Tuberculin skin test (P.P.D.):** Should be given to all staff upon employment. Positive reactors need to be followed up with a chest X-ray or other diagnostic evaluation.

### **General Good Health**

Finally, remember that general good health helps ensure that your body is in optimal condition to fight off "invader" organisms. Stay healthy by eating properly, staying fit, getting plenty of rest, and eliminating high risk activities such as needle sharing and unprotected intercourse with individuals who may be infected with a communicable disease.

## **VIII. HIV: WHAT IF YOU ARE EXPOSED?**

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### **WHAT YOU SHOULD KNOW ABOUT THE "AIDS TEST"**

One of the first reactions of public safety workers who believe they may have come into contact with HIV will be to seek the testing of the person to whom they have been exposed. Given the unreliability of existing test methods, however, and the difficulty in securing another person's test results, most public health professionals recommend that public safety workers themselves take the so-called "AIDS test". What is this test? What are its limitations? Should you take the test? What happens with the test results? This chapter will attempt to answer these questions.

On March 2, 1985, the federal Food and Drug Administration approved the enzyme-linked immunosorbant assay, known as the **ELISA** (pronounced ee-ly-suh) test, for commercial use in antibody testing. Up until that time, the test was used strictly in research labs to detect antibodies to HIV, specific proteins formed by white blood cells in response to infection. But concern for the need to protect the nation's blood bank supplies from contamination prompted federal health officials to approve the test for screening purposes.

**It should be remembered that the ELISA test was not developed as a diagnostic test for AIDS.** It is used to detect the presence of HIV. Although the new definition of AIDS released by the CDC in August 1987 incorporates use of the test, its main purpose still is not for diagnosis.

**It is essential to understand that the antibody test is not a test for AIDS.** A positive result does not mean that a person has developed or will go on to develop AIDS or AIDS related conditions. Likewise, a negative result does not necessarily mean that a person has not been infected with HIV.

Researchers and blood bank officials are satisfied with the overall reliability of the ELISA test as a means of protecting the blood supply. However, it should be noted that among persons who are not otherwise involved in known risk behaviors, the test does register falsely positive readings. These readings, indicating that a person is infected with HIV even when he or she is not, occur approximately 1 to 5 percent of the time. To a lesser extent, the test also will produce falsely negative results —indicating that a person is not infected, when in fact he or she is a carrier of the virus.

Depending on the test setting, positive ELISA tests are routinely subject to a second confirmatory test. This back-up testing ordinarily detects false positive readings. The Western Blot Test or a similar specific test, which is more expensive than the ELISA test, must be used to confirm HIV infection. These tests, which are more detailed than the ELISA, may occasionally be negative even though a person is infected, but when they are positive they are very accurate.

In California, there are alternative test sites established throughout the state where a person can be tested for HIV at no charge. Test site locations are available through local health officers or phone numbers listed in Chapter X.

In deciding whether to take the test, you must weigh a number of factors that are outside the usual requirements of medicine. Such considerations include whether you actually may have been exposed to the virus through "high-risk" activities in your personal life, the uncertainties inherent in the results of the test, whether your personal test results are needed in case you have to file a workers' compensation claim for disease, and the social and legal consequences to you personally of taking the test and knowing the results. If you do become infected with HIV, you should take every precaution to prevent transmitting the virus to your family or other persons with whom you come in contact.

A new test for the presence of HIV itself in the blood of an infected person has been submitted to the U.S. Food and Drug Administration and should be available soon. It will help to identify HIV carriers who haven't yet developed antibody to the virus.

## **What to Do After Exposure**

### *Quick Checklist*

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- o Wash all contaminated areas (hands, uniforms, and equipment) with soap and water or disinfectant.
- o Follow proper reporting procedures for your agency. This may include filing a workers' compensation claim.
- o If exposure to HIV is suspected, HIV antibody testing should be conducted as soon as practical to establish a baseline. This should be followed with retesting at 3 and 6 months.
- o If exposure to hepatitis B has occurred, and the person exposed has not received the hepatitis vaccine, a doctor should be consulted immediately. The immune globulin shot or hepatitis vaccine may be administered to prevent onset of the disease.
- o Counseling should be considered to address medical and psychological issues that are raised by exposure.
- o Care should be taken to protect your sexual partner until any possibility of infection is resolved.

## CDC Guidelines

The Centers for Disease Control, in anticipation of the possibility that public safety workers and other individuals may come into contact with potentially infectious body fluids, has outlined general guidelines with regard to the ELISA test. These guidelines apply to needlestick cases, or where cuts or mucous membrane have been exposed to blood or other infectious body fluids. Keep in mind that the risk of HIV infection following occupational exposure to blood is low.

**First**, the CDC suggests that in the event of exposure, and where possible, the source patient be assessed by medical personnel to determine the likelihood that he or she may be infected with HIV. If there is clear and convincing evidence that indicates the individual may be infected, he or she should be informed of the public safety worker's exposure and asked to consent to a blood test for evidence of HIV infection.

It is important to note that under current California law, with only few exceptions, no person may be tested involuntarily for evidence of antibodies associated with HIV (Health and Safety Code, Section 199.22). In addition, again with few exceptions, no one except for purposes of protecting blood samples, may disclose HIV antibody test results (Health and Safety Code, Section 199.20). The situations in which a public safety worker may obtain the test results of another person are specifically and narrowly defined. Consequently, it may be extremely difficult, if not impossible, to prove that the individual knew that he or she was infected with HIV at the time of an emergency response. (For more information on antibody tests and the law, see Chapter IX.)

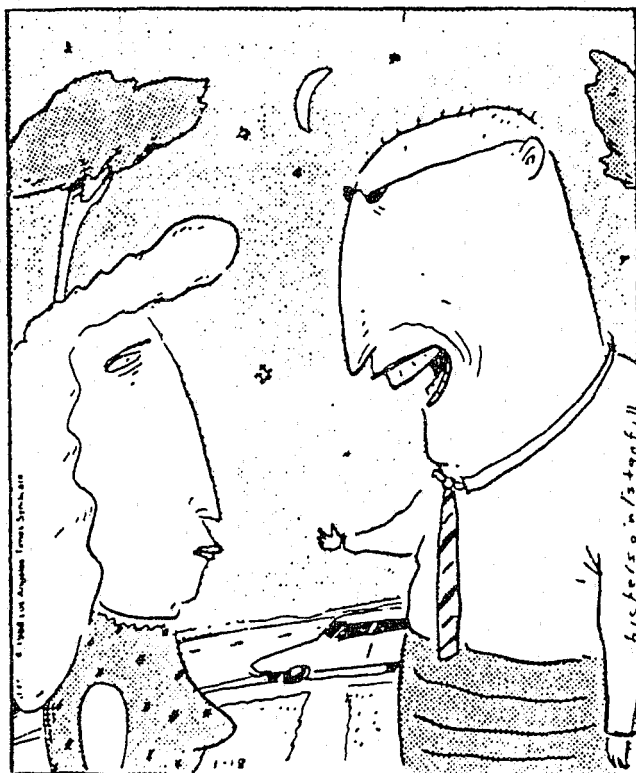
**Second**, in the event the source patient declines testing, has AIDS or other evidence of HIV infection, or has a positive test, the CDC advises that the exposed public safety worker be clinically and serologically evaluated for signs of HIV. This means taking the HIV antibody test as soon as practical after exposure, and, if seronegative, being retested after 3 to 6 months to determine if transmission has occurred. As mentioned above, California has established test sites where testing and counseling are available at no cost. To locate the site nearest you, contact your local health officer. As noted in Chapter II of this guidebook, the average time period from infection with the virus to antibody development (seroconversion) seems to be about 3 months.

**Third**, during the follow-up period between testing, especially the first 12 weeks when most infected persons are expected to seroconvert (start producing antibodies), exposed public safety workers may wish to receive counseling about the risk of infection and sexual transmission of the virus. They should also follow U.S. Public Health Service guidelines for AIDS risk reduction for their sexual partner while waiting for antibody tests to confirm that they did not become infected. These guidelines include observing "safer sex" methods (using a condom during intercourse, and avoiding sharing of blood, semen, or cervical secretions during sex) and avoiding use of needles and needle sharing.

Finally, if the individual in question proves to be seronegative and has no other evidence of infection with HIV, no further follow-up of the public safety worker is necessary. If the source patient cannot be identified, decisions regarding appropriate follow-up should be made on an individual basis, taking into account the type of exposure and the likelihood that the source patient was infected.

Although taking the HIV antibody test can help provide reassurance or resolve uncertainty in the mind of the public safety worker, the feeling of relief or certainty may be a false one. Be sure you have considered the full range of social, legal, and medical issues **before** making your own decision. You may wish to discuss your questions and concerns with representatives of one of the organizations listed in the back of this book (see Chapter X).

## The Quigmans



"So! It's our first date! How does dinner, a movie and a blood test sound?"

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## **IX. AIDS AND THE LAW**

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Laws regarding AIDS are still new and evolving. For now, most cases involving AIDS-related matters are resolved through either mediation or arbitration. But at state and federal levels, legislators review and decide on over a thousand pieces of legislation regarding AIDS every year. As time goes on, more and more AIDS-related matters may be codified.

The following discussion touches on some of the key provisions of California law and select federal law which you should keep in mind when you face a potential risk due to occupational exposure to disease. The discussion is divided into six parts: 1) Discrimination Prohibited, 2) Duty to Provide Care, 3) HIV Testing and Confidentiality, 4) Prevention of Occupational Exposure, 5) Treatment After Occupational Exposure, and 6) Notification After Exposure.

### **1) Discrimination Prohibited**

Discrimination against persons with AIDS is addressed by federal, state and local law.

#### **Federal Law**

The Federal Rehabilitation Act of 1973, as amended, applies to programs that receive federal funds. It provides protection to persons who are discriminated against in employment and other areas because they are physically handicapped. In addition to covering people who are actually disabled, it also prohibits discrimination against those who have a history of a handicap and those perceived as having a history of a handicap. Court decisions have held that the provisions of this Act protect from employment and other types of discrimination those Persons With AIDS, those who test positive for HIV, and those persons perceived as having AIDS or being infected with HIV.

A Supreme Court decision issued in 1987, based on the Federal Rehabilitation Act, held that a communicable disease can be a physical handicap. This court decision is known as School Board of Nassau County (Florida) vs. Gene H. Arline. In the Arline case, the Court provided criteria for future courts to use in determining whether a communicable disease is a handicap. Based on these criteria, the courts are considering Persons With AIDS and those who test positive for HIV and who otherwise are qualified to perform their jobs as handicapped under federal law and protected against employment discrimination.

An even clearer ruling based on the Federal Rehabilitation Act was issued in June 1988. In Doe vs. Centinela Hospital, a Federal District Judge ruled that a patient who is HIV seropositive but otherwise symptom-free is covered by the federal law. In the Doe

case, a patient sued a hospital for excluding him from its chemical dependency program because he tested positive for HIV antibodies. The patient alleged that his exclusion from the hospital violated federal law because it constituted discrimination against a handicapped person by a recipient of federal funds. As a result of the Doe ruling, asymptomatic HIV seropositives clearly are covered by federal law against discrimination by schools, hospitals, state and local governments, and government contractors.

The U.S. Department of Labor's Office of Federal Contract Compliance Programs has issued a policy statement to the effect that HIV-related conditions are considered handicaps and furthermore indicating the office's intent to investigate complaints of HIV-based discrimination.

Retired Admiral James D. Watkins, Chair of President Reagan's AIDS Commission, commenting on the Commission's findings, noted:

**"[We found that discrimination was the] foremost obstacle to progress [in fighting AIDS] . . . If the nation does not address this issue squarely, it will be very difficult to solve most other HIV-related problems. People simply will not come forward to be tested, or will not supply names of sexual contacts for notification, if they feel they will lose their jobs and homes based on an HIV-positive test. So, once those with HIV are treated like anyone else with a disability, then we will find that what is best for the individual is also best for the public health." (American Medical News, June 17, 1988)**

### California Law

The California Fair Employment and Housing Act (FEHA) was first passed by the State Legislature in 1959 and has been amended numerous times to expand its protections. The FEHA prohibits discrimination in employment and other areas because of race, religious creed, color, national origin, ancestry, physical handicap, some medical conditions, marital status or sex of any person. There are also special provisions in the statute prohibiting discrimination on the basis of pregnancy.

The Fair Employment and Housing Commission, which enforces the provisions of the FEHA, and a court have ruled that AIDS is a "physical handicap" as that term is defined in the FEHA. In April 1988, a Santa Barbara Superior Court decided in favor of a Commission decision that AIDS is a physical handicap and that individuals with AIDS can work safely with others. This decision is known as Raytheon Company vs. Fair Employment and Housing Commission.

Under the FEHA, it is unlawful for employers to discriminate against an employee on any of the protected bases listed above either in the hiring process, during the course of



employment (in terms of wages, working conditions, employee benefits, promotions, etc.), or in the continuation or termination of employment.

The FEHA generally applies to all private employers with five or more employees, employment agencies, labor organizations, licensing boards or agencies, local governments and the State of California. The FEHA clearly applies to local law enforcement and fire departments, the state Department of Corrections, and private ambulance companies with more than five employees.

The California State Civil Service Act also protects state civil service employees and applicants against employment discrimination. California Government Code Section 19702 specifically prohibits discrimination based on a physical handicap by any state civil service agency. To date, AIDS is considered a physical handicap under both the Civil Service Act and the FEHA.

California Government Code Section 11135 prohibits discrimination on the basis of ethnic group identification, religion, age, color, or physical or mental disability by any program or activity that is funded directly by the state or receives any financial assistance from the state.

### Local Law

At least 13 cities in California have passed ordinances prohibiting discrimination against Persons with AIDS or infected with HIV. These cities include Los Angeles, San Francisco, and Sacramento.

## 2) Duty to Provide Care

On July 29, 1985, the California Office of Legislative Counsel issued an opinion on the legal duties of a firefighter providing CPR. The Legislative Counsel serves as legal staff to the Legislature. The Opinion was in response to a request from then Assemblymember Art Agnos of San Francisco. In January 1988, the Legislative Counsel issued a second opinion in response to a request from Senator David Roberti. Even though the first opinion was issued nearly four years ago, the 1988 version was essentially the same.

In its 1985 opinion, the Counsel reviewed a number of professional and legal standards. These included standards published by the American Medical Association and the American Heart Association, the California Tort Claims Act, and the Special Relationship Doctrine developed in case law.

The Counsel concluded, "we think emergency medical care personnel responding to an emergency call are generally required to administer cardiopulmonary resuscitation to the cardiac arrest victim. While there is no express statutory duty for emergency

medical care personnel to provide CPR when on emergency calls, some published professional standards indicate **there is a general duty to provide CPR to the cardiac arrest victim**. Furthermore, local EMS-agency guidelines and protocols may establish professional standards which could create this duty to provide CPR" (emphasis added).

The Counsel's opinion also considers whether public safety workers legally are permitted to wait to provide CPR until they have access to a mechanical breathing device. Presupposing that waiting to administer CPR could reduce a victim's chance of survival, Counsel concludes that "the delay caused by lack of a mechanical device would be a breach of duty."

Additionally, Counsel concluded that a public safety worker could be found liable if he or she initiates but does not follow through on a rescue attempt even when not on duty.

The 1988 opinion adds the observation that "it is possible that a court might find a refusal to provide services as reasonable when the firefighter is bleeding, whereas, since no reported cases have been spread through saliva, a refusal to provide cardiopulmonary resuscitation without a pocket mask might not be found as reasonable." The Legislative Counsel concludes that final legal determinations will be made on a case by case basis.

### **3) HIV Testing and Confidentiality**

The first laws to deal with blood testing took effect in April 1985 as urgency measures. Health and Safety Code sections were adopted to set forth clear regulations regarding blood bank screening for HIV antibodies, and also establish the confidentiality of persons tested for antibodies and their test results. While the main principles legislated in 1985 still guide most of California's AIDS laws, certain exceptions have since been approved as will be discussed.

**California Health and Safety Code Section 1603.1** requires that all blood and blood products, with few exceptions, be screened for HIV prior to use. The law prohibits use of contaminated blood for transfusions or other uses which may result in human exposure. It allows the blood to be used for research or vaccination programs where there is informed consent.

**Health and Safety Code Section 1603.3** requires that all blood donors receive prior notice of blood screening requirements and test results.

**Health and Safety Code Sections 199.20 and 199.22** establish clear rights for individuals with regard to blood testing for HIV infection. The main principles embodied in these sections of law are listed below. Exceptions to these principles are discussed immediately hereafter.

1. A person must give his or her informed consent to be tested for HIV infection. Generally, no person can be forced to take the test, except as described below.
2. A person tested must give his or her written authorization, except in circumstances described below. Penalties are established for disclosure of test results without written authorization. The maximum penalties are \$1,000 for negligent disclosure, and between \$1,000 and \$5,000 for willful disclosure. Moreover, if the disclosure leads to "economic, bodily, or psychological harm" to the subject of the test, the fine can be upped to \$10,000 along with a year in jail.
3. The result of a blood test for HIV antibodies cannot be used in any instance to determine an individual's eligibility for group health insurance or suitability for employment. Test results, however, can be used to determine eligibility for life insurance.
4. Although the state Department of Health Services may require monthly reports from blood banks summarizing the results of tests to detect HIV antibodies, these reports cannot contain individual names or identifying characteristics.

During 1987 and 1988, exceptions to the main principles of California AIDS law were passed and signed into law. These exceptions provide, but do not require, that:

1. a physician may disclose positive test results to the person reasonably believed to be a spouse or a sexual partner, or a person with whom a patient has shared the use of hypodermic needles, or to the county health officer without being held liable civilly or criminally, except that no identifying information about the patient may be disclosed (**Health and Safety Code Section 199.25**);
2. a patient's parents, guardian, conservator or other lawfully authorized person may provide written consent for testing that patient's blood for antibodies to HIV, when the patient is not competent to give consent and when the test is necessary to provide appropriate care or to practice preventative measures (**Health and Safety Code Section 199.27(a) (1) and (b)**);
3. a court may give written consent for the testing of a minor who is a dependent child of the court pursuant to Section 362 or 369 of the Welfare Code, as long as the test is necessary to provide appropriate care or practice preventative measures (**Health and Safety Code Section 199.27(a)(2) and (b)**);
4. disclosure may be made to local health officers of test results from autopsies, or to assist in locating and notifying a donor of infected blood when efforts by a blood bank or plasma center have failed (**Health and Safety Code Section 199.22 (b) and 160.3(f), respectively.**) Local health officers have discretion under the law with regard to releasing information on test results to public safety workers (see

discussion on notification below).

5. disclosure may be made to the subject, the subject's legal representative, conservator, or any person authorized to consent to the test pursuant to law; to the test subject's provider of health care, except that the provider of health care does not include the health care service plan; and to a provider of health care who procures, processes, distributes, or uses a human body part donated pursuant to the Uniform Anatomical Gift Act (**Health and Safety Code Section 199.24**).

Also, a law passed in 1987 requires that everyone applying for a marriage license be offered and recommended a blood test for HIV antibodies (**California Civil Code Section 4300(c)**).

### Proposition 96 — The Block Initiative

As discussed above, a number of recent laws allow for broader testing without an individual's consent. One new law was voted on and passed by the California voters. Proposition 96, otherwise called the Block Initiative, was approved in the November 1988 election and added **Health and Safety Code Sections 199.95 to 199.99**.

These sections of the **Health and Safety Code** apply to peace officers, firefighters, emergency medical personnel, correctional staff and correctional medical staff, as well as victims of certain crimes. The law allows public safety personnel to request a court order requiring testing for communicable diseases of individuals, both juveniles and adults, charged with assault or interference of official duties. If testing is ordered, tests will be conducted for the HIV antibody and any communicable diseases for which there is medically approved testing readily and economically available. Test results will be provided to the subject, to the requesting party and— if the subject is incarcerated— to his or her supervising and medical officers.

Several constitutional challenges to Proposition 96 have been filed in California courts as of this writing. To date, the proposition has been upheld and testing has been ordered by the court. At least one judge, however, has reinforced strict confidentiality requirements for the test results of persons suspected of being infected with HIV.<sup>1</sup>

Interpretation and application of the provisions of Proposition 96 should be reviewed by each department and agency impacted and by the appropriate legal counsel.

### Testing of Prisoners

**California Penal Code Sections 7500 to 7553** became law on September 30, 1988, as a result of Senate Bill 1913 (Presley). This legislation deals specifically with the testing of prisoners, both adult and juvenile, for the HIV antibody. The Department of Health Services currently is developing guidelines for implementing SB 1913.

This law requires that a procedure be established through which custodial and law enforcement personnel are required to report certain situations and may request and be granted a confidential HIV antibody test of an inmate convicted of a crime, or a person arrested or taken into custody. The custodial or law enforcement officer must have reason to believe he or she may have come into contact with the blood or semen of the inmate or in any other manner has come into contact with the inmate in a way that could result in HIV infection.

In general, each situation will be assessed based on the latest information available from the federal Centers for Disease Control and the state Department of Health Services on the means for the transmission of HIV. Appropriate medical authorities must believe there is good medical reason for the test. **Penal Code Sections 7511 to 7515** prescribe a clear process to determine if the test is necessary. An appeals process must also be established for both the officer requesting the test and the subject of the test.

Additionally, this law requires notification to a parole officer or probation officer by the chief medical officer when a person under his or her supervision has AIDS or is HIV positive.

**Penal Code Section 7512** also provides a process for prisoners who have been exposed to the bodily fluids of another prisoner to request and be granted the results of an HIV antibody test of the prisoner to whom they were exposed.

The law on testing of prisoners includes a "sunset" clause which states it shall be operative until July 1, 1991, and will be repealed as of January 1, 1992, unless a later statute deletes or extends its effective dates.

#### **4) Prevention of Occupational Exposure**

Most laws passed and signed in the last few years have not focused on prevention of occupational exposure and disease transmission. For example, one bill which would require that firefighters be provided with pocket masks has passed the Legislature twice but both times has been vetoed by the Governor.

However, a few preventive measures have made it into state codes. One law requires that all law enforcement agencies issue portable masks and airway assemblies to employees and instruct employees in the use of these masks to prevent the spread of disease during CPR (**California Penal Code Sections 13518 and 13518.1**). (Even though CPR is not linked to transmission of HIV, other infectious diseases may be transmitted through provision of this life-saving procedure.)

Comprehensive HIV education and prevention programs for correctional, custodial and law enforcement agencies are "recommended" by **Penal Code Section 7552**, which

took effect September 30, 1988 (**Senate Bill 1913, Presley**). Another law prohibits the disposal of hypodermic needles or syringes in a public place or area unless they are destroyed and placed in a container that renders them reasonably safe from accidental cutting or sticking (**Business and Professions Code Section 4148**).

A new law effective January 1, 1989, requires the Sheriff, the Director of Corrections and the Director of the Youth Authority to provide HIV information to those inmates and wards sentenced for drug-related offenses (**Penal Code Section 4018.1 and 5008.1; Welfare and Institutions Code Section 1123**). The information is to include the type of behavior that places a person at high risk for contracting HIV and methods to prevent transmission of the virus. This law also requires that information regarding testing and services related to HIV be provided to those inmates and wards sentenced for drug-related offenses. To be implemented this law requires state funding which, at this writing, has not been appropriated in the budget.

In addition to statutory law, regulatory law has begun to address communicable disease exposures. Federal OSHA has issued communicable disease guidelines which it is enforcing in the private sector. California OSHA is writing a communicable disease standard which should be before the OSHA Standards Board for adoption in 1989.

### **5) Treatment After Occupational Exposure**

In 1985, the Legislature passed a law regarding public safety workers exposed to communicable diseases on the job. **Health and Safety Code Section 1797.186** states that a worker "shall be entitled to prophylactic medical treatment to prevent the onset of disease, provided that (he or she) demonstrates that he or she was exposed, while in the service of the department or unit, to a contagious disease...while performing first aid or cardiopulmonary resuscitation services to any person." An example of prophylactic, or preventive, treatment is the immune globulin shot or Heptavax vaccine which a doctor may prescribe after an exposure to hepatitis B.

This section of the Health and Safety Code does not affect a worker's ability to make a compensation claim for work-related illness. A claim may be filed if a contagious disease manifests itself some time after exposure, and if the worker believes the disease was contracted on the job. The burden of proof to show that the disease is job-related falls on the worker.

### **6) Notification After Exposure**

**Section 1797.188** of the California Health and Safety Code requires a local health officer to notify a prehospital emergency care worker when the health officer learns that the worker was exposed on the job to a communicable "reportable" disease. The state Department of Health Services publishes a list of reportable diseases (see California

**Administrative Code Section 2500).** AIDS is on the list, but being positive for HIV antibodies—which technically is not a disease condition—is not listed.

Prehospital emergency care workers covered by this law include peace officers, fire-fighters, emergency medical technicians (EMT-I, EMT-II, and EMT-P), registered nurses and mobile intensive care nurses, lifeguards, and prehospital physicians or surgeons. To ensure notification under this law, a public safety worker must notify the receiving ambulance company or hospital of his or her name and telephone number.

Then the hospital must notify the health officer if the patient is diagnosed as having a reportable disease. If the health officer determines that the public safety worker was exposed in a manner which could lead to transmission, then the health officer has a clear responsibility to report back to the worker.

The notification process prescribed by law works best if your agency identifies one individual to coordinate response back to the concerned employee. If your agency has not designated such an individual, you can find out about implementation in your jurisdiction by contacting the local health officer.

In 1987, coroners were added to the notification requirement established in the **Health and Safety Code** (see **Section 1797.189**). In other words, coroners are required to report to health officers if an autopsy reveals that a person suffered from a reportable disease prior to death. The health officer then has discretion to contact exposed public safety workers, if exposure could result in transmission of a disease virus.

## **X. WHERE TO FIND OUT MORE ABOUT AIDS?**

If you need more information about AIDS, there are many reliable, credible sources available.

**Law enforcement and fire personnel** can start with their departmental training officer or infection control officer, who may be familiar with information on AIDS and procedures to prevent exposure. **Ambulance service personnel** can turn to the infection control supervisor at local hospitals for expert guidance on specific field treatment procedures.

As a next step, call your **local health department**, who should have someone assigned to handle questions about AIDS and other communicable diseases. Your **local chapter of the American Red Cross** will either have trained staff that can answer specific concerns you may have about AIDS risk reduction, or will be able to refer you to an expert resource. Other sources of information are listed below.

### **AIDS Education for Emergency Workers Project**

**AIDS Education for Emergency Workers Project**  
c/o Sacramento Area Chapter, American Red Cross  
P.O. Box 160167  
Sacramento, CA 95816  
916-452-6541

Primary resource for firefighters, law enforcement, correctional, and ambulance service personnel. Has developed training materials and a team of trainers throughout California. Publishes quarterly the AIDS Update: A Newsletter for Law Enforcement, Fire Service, and Ambulance Personnel. This guidebook is prepared as part of this Project. Project Director: Monte Blair.

### **Government Agencies and Services**

**U.S. Department of Health and Human Services**  
**Public Health Service**  
**Centers for Disease Control**  
1600 Clifton Rd., N.E.  
Atlanta, Georgia 30333  
404-639-3311 (General Information)  
404-639-2076 (AIDS Surveillance)



Our country's primary medical agency, charged with identifying disease problems, keeping records, and recommending solutions. Operates a telephone information service (see "Hotlines" below). Publishes Morbidity and Mortality Weekly Report, which contains articles and statistics on disease epidemics and other public health problems.

**California Department of Health Services**  
**Office of AIDS**  
**P.O. Box 9427323**  
**Sacramento, CA 94234-7320**  
**916-445-0553**

The lead office implementing the state's response to the AIDS epidemic. Can provide current medical and statistical information, and information on alternative test sites. Manages a grants program to fund AIDS education. Director: Thelma Frazier.

### **Alternative Test Site Locations**

Testing for HIV at these test sites is funded by California state government. Testing is anonymous and free of charge. Includes counseling. For test site nearest you, call the state's Office of AIDS (see above), California AIDS hotlines (see below), or the California Firefighter Foundation (also below).

### **Hotlines**

A number of hotlines have been set up to answer questions and concerns regarding AIDS. These hotlines provide easy access to basic information about the disease. They allow the caller to remain anonymous.

The U.S. Public Health Service operates a number of telephone lines to answer questions about AIDS. One number is 1-800-342-2437 for a live operator. Another is 404-330-3020 for a pre-recorded message with up-to-date statistics related to AIDS and HIV.

In California, there are two AIDS hotlines available. In Northern California, the number to call is 1-800-367-2437. This hotline is bilingual. In Southern California, call 1-800-922-2437 (English) or 1-800-922-7234 (Spanish).

Also in California an AIDS Clearinghouse is operated by the State Department of Health Services. The number is 408-438-4822. The main purpose of the Clearinghouse is to serve other state-funded AIDS programs. It provides information on materials available for AIDS education purposes, including which materials are approved by the state and prepared with state funds. The Clearinghouse publishes a

quarterly newsletter called the CAC Review, and an annual directory of education and prevention programs in the state. It also produces a semiannual guide on experimental drug programs. Mailing address: Post Office Box 1830, Santa Cruz, California 95060-1830. Director: Susan C. Cooper.

## **National Organizations**

**American National Red Cross, AIDS Department**  
431-18th Street, N.W.  
Washington, D.C. 20006  
202-737-8300

**International Association of Fire Fighters**  
1750 New York Ave, N.W.  
Washington, D.C. 20006  
202-737-8484

Has published a pamphlet, Guidelines to Prevent Transmission of Communicable Disease During Emergency Care for Fire Fighters, Paramedics, and Emergency Medical Technicians. Also assisted in development of a video tape and related materials on hepatitis B vaccine. Director: Rich Duffy.

**National Institute of Justice**  
**National Criminal Justice Reference Service**  
Box 6000  
Rockville, MD 20850  
800-851-3420  
301-251-5500

NIJ Publishes AIDS and the Law Enforcement Officer: Concerns and Policy Responses. NIJ also provides updated information about AIDS in correctional facilities, and puts out an AIDS Bulletin. The February 1988 Bulletin featured "Precautionary Measures and Protective Equipment". Operates an AIDS clearinghouse out of Maryland.

**National Sheriff's Association**  
1450 Duke Street  
Alexandria, VA 22314  
(703) 836-7827

NSA publishes and makes available the training monograph AIDS: Improving the Response in the Correctional System. The NSA also has produced videotapes both for officers working in the correctional system and for prisoners regarding AIDS.

## **Professional Organizations in California**

The following professional organizations are available to provide assistance to public safety workers:

**California Fire Chiefs Association**  
825 "M" Street  
Rio Linda, CA 95673  
916-991-0293

Has developed EMS guidelines regarding AIDS and communicable disease exposures.

**California Medical Association (CMA)**  
P.O. Box 7690  
San Francisco, CA 94120-7690  
415-882-5132

CMA Corrections and Community Health Programs provide training, assistance in reviewing policies, and consultation on medical issues in corrections. In addition, they provide certification of jail medical facilities. Contact: Rebecca Craig.

**California Professional Firefighters/California Firefighter Foundation**  
1780 Creekside Oaks Drive, Suite 200  
Sacramento, CA 95833  
916-921-9111

Formerly Federated Firefighters of California. The Firefighters' Health and Safety staff provides technical assistance on a range of issues, including communicable disease. The Firefighters' nonprofit arm, the California Firefighter Foundation, publishes this guidebook as part of the AIDS Education for Emergency Workers Project. Health and Safety Director: Kim Mueller.

**Peace Officers Research Association of California (PORAC)**  
1911 F Street  
Sacramento, CA 95814  
916-441-0660

PORAC's legislative staff answers questions about legislative and legal issues relating to communicable disease. This staff can refer other questions about disease to qualified sources. PORAC has prepared two video tapes on communicable disease for law enforcement personnel.

**San Francisco Sheriff's Department**  
**555-7th Street, Second Floor**  
**San Francisco, CA 94103**  
**(415) 554-7225 (public information)**  
**(415) 553-9600 (training division)**

Active in local training efforts as well as in the AIDS Education for Emergency Workers Project. Contact: Lt. Jan Dempsey.

**Senator David Roberti**  
**President Pro Tempore**  
**State Capitol, Room 205**  
**Sacramento, CA 95814**

The Senator's office produces a legislative update on AIDS legislation pending at the state level. Contact: Stan Hadden.

### **AIDS Contractors and Community Groups in California**

Finally, below is a listing of state funded and community organizations that have been involved in public safety worker education.

**AIDS Project -- Los Angeles**  
**3670 Wilshire Boulevard, Suite 300**  
**Los Angeles, CA 90010**  
**213-380-2000**

Represented on Advisory Committee for AIDS Education for Emergency Workers Project. Contact: Melanie Moore.

**Labor Occupational Health Program**  
**University of California, Berkeley**  
**2521 Channing Way**  
**Berkeley, CA 94720**  
**415-642-5507**

Labor AIDS education program developed in 1986-87 continues to provide technical assistance to labor groups. Contact: Elaine Askari.

**Los Angeles Sex Information Helpline**  
**213-653-1123**

"Nonjudgmental information and ethical referrals concerning all aspects of human sexuality."

**Paramedics for Public Education**  
**P.O. Box 8496**  
**Berkeley, CA 94707**  
**(415) 531-3404 (message)**

Publishes A Community Resource Guide for Alameda County.

**Sacramento AIDS Foundation**  
**1900 K Street, Suite 201**  
**Sacramento, CA 95814**  
**(916) 448-2437**

Represented on Advisory Committee for the AIDS Education for Emergency Workers Project. Contact: Guillermo (Bill) Acuna.

**San Diego AIDS Project**  
**P.O. Box 89049**  
**San Diego, CA 92138**  
**(619) 543-0300**

**San Francisco AIDS Foundation**  
**333 Valencia Street, Fourth Floor**  
**San Francisco, CA 94103**  
**415-864-4376**

**Sonoma County Health Department AIDS Project**  
**3313 Chanate Road**  
**Santa Rosa, CA 95404-1795**  
**707-527-3198**

Staff member Steve Parker is a trainer in the AIDS Education for Emergency Workers Project.

## Reference Materials

### AIDS Policy and Law

Legal periodical. Buraff Publications, Inc., 2445 M Street, N.W., Washington, D.C. 20037.

### CAAA Reports

Newsletter, with up-to-date information on legislation, funding services, and other AIDS news. Published by California Association of AIDS Agencies, 1900 K Street, Suite 201, Sacramento, CA 95814, 916-448-2437.

### Forum on Communicable Diseases

Report on findings from forum held by the U.S. Fire Administration in July 1988. Publication reference number is FA-86 January 1989.

### Guidelines for Prevention of Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Healthcare and Public Safety Workers.

Issued by the Centers for Disease Control in February 1989.

### Hepatitis B Exposure in Emergency Medical Personnel: Prevalence of Serologic Makers and Need for Immunization.

Article by Laureen M. Kunches, B.S.N., et.al. Published in The American Journal of Medicine, Volume 75, August 1983, pp. 269-272.

### Joint Advisory Notice: Protection Against Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV).

Issued by the U.S. Department of Labor and the Department of Health and Human Services, October 19, 1987.

### Journal of the American Medical Association (JAMA)

See March 4, 1988 article, "Do Alternate Modes of Transmission of Human Immunodeficiency Virus Exist? A Review," by Alan R. Lifson, M.D., M.P.H.

## Morbidity and Mortality Weekly Review

Key issues on AIDS include: August 14, 1987 (Supplement; Revised Definition of AIDS); August 21, 1987 (Supplement; Revised Infection Control Guidelines); December 18, 1987 (Update on knowledge regarding HIV); January 8, 1988 (Update on Antibody Testing); April 14, 1989 (Update on AIDS in the U.S., 1981-1988); current issue for most up-to-date statistics on cases reported. Published by the Centers for Disease Control, U.S. Department of Health and Human Services. Subscriptions available from the Massachusetts Medical Society, C.S.P.O. Box 9120, Waltham, Massachusetts 02254-9120.

## OSHA Instruction CPL 2-2.44, January 19, 1988. Enforcement Procedures for Occupational Exposure to Hepatitis B Virus (HBV), Human Immunodeficiency Virus (HIV), and other Blood-borne Infectious Diseases in Health Care Facilities.

Applies to private sector facilities. Federal OSHA will cite private employers for violations of recommended infection control practice based on CDC guidelines.

## Recommendations for Decontaminating Manikins Used in Cardiopulmonary Resuscitation Training.

1983 update of Centers for Disease Control 1978 Hepatitis Surveillance Report No. 42. Prepared by Members of the Multidisciplinary ad hoc Committee for Evaluation of Sanitary Practices in Cardiopulmonary Resuscitation Training representing the American Heart Association, American Red Cross and the Centers for Disease Control. Independently reviewed and approved by the National Research Council of the National Academy of Sciences. Copies available from Hospital Infections Program, Nosocomial Infections Laboratory Branch, Building 1, Room B341, Centers for Disease Control, Atlanta, Georgia 30333.

## Surgeon General's Report on Acquired Immune Deficiency Syndrome

Document issued by Surgeon General C. Everett Koop, M.D., Sc.D., in October 1986. Available from the U.S. Department of Health and Human Services.

## An Updated Quantitative Analysis of AIDS in California

Department of Health Services, April 1987. Available from the Rate Development Section, 714 P Street, Rm. 1550, Sacramento, CA 95814, 916-445-8128.

## Viral Hepatitis Risk in Urban Emergency Medical Services Personnel

Article by Paul E. Pepe, M.D., et.al. Published in the Annals of Emergency Medicine, Volume 15, No. 4, April 1986, pp. 456-457.

## **XI. GLOSSARY OF TERMS**

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**AIDS (Acquired Immune Deficiency Syndrome):** The end point of a progressive disease process which begins with infection with the human immunodeficiency virus (HIV). AIDS is precisely defined by the Centers for Disease Control (see page 5).

**Antibodies:** Proteins in the blood that are made by the body to fight foreign organisms or toxins. Antibodies are usually effective in controlling the invader (antigen). With some infections such as HIV, however, the antibodies do not fight the antigen, but only mark its presence. When found in the blood, these "marker" antibodies indicate infection by HIV has occurred.

**Antibody positive:** An antibody positive result of an AIDS antibody test indicates that the antibody to HIV is found in the blood because the person has been exposed. This test result does not indicate whether the person will become ill with AIDS; however, it may indicate that one is contagious and capable of passing the virus to others through activities such as certain sexual practices (unprotected hetero-, bi-, or homosexual intercourse), sharing of needles, and during pregnancy from mother to fetus. It is possible to have false positive test results.

**Antigen:** Any substance which, when introduced into the body, causes production of an antibody. HIV is such a substance.

**Antiviral:** Literally "against virus" -- any drug that can destroy or weaken a virus. Some experimental antivirals are being used in research trials to treat people with AIDS.

**ARC (AIDS-Related Complex):** A term used formerly for a stage of HIV infection between asymptomatic and full-blown AIDS. The CDC currently advises that the term "symptomatic HIV infection" be used instead of "ARC".

**ARV:** AIDS-related Retro Virus. See HIV.

**Asymptomatic:** Having an infectious organism within the body but showing no outward symptoms.

**B cells:** A type of white blood cell that floats through the body and is able to detect the presence of foreign agents. Once exposed to an antigen of the agent, these cells differentiate into plasma cells to produce antibody.

**Bacteria:** Plural of bacterium. Single-cell microscopic organisms which can cause disease. Can live on own in soil, water, organic matter or the bodies of plants or animals.



**Body Fluids:** Fluids manufactured by the body. Though some of these fluids have been found to contain traces of HIV, not all are thought to be able to transmit the virus to another person. Those fluids which are believed to transmit the virus are semen, blood, cervical secretions, and possibly breast milk. See chart on page 22.

**Casual transmission:** The ability to transmit a pathogen through casual daily activities such as coughing, sneezing, sharing cups, telephones or toilet facilities. The virus that causes AIDS is not casually contagious.

**Cell-mediated Immunity:** The reaction to antigenic material by specific defensive cells (macrophages) rather than antibodies. It is thought to be this system which breaks down in Persons With AIDS.

**CDC (Centers for Disease Control):** A federal health agency that is a branch of the U.S. Department of Health and Human Services. The CDC provides national health and safety guidelines and statistical data on AIDS and other diseases.

**CNS (Central Nervous System):** The CNS is made up of the brain and spinal cord. HIV has been found in the fluid surrounding the CNS and is believed to affect the nerves. Once in the CNS, the virus can cause a variety of symptoms including loss of motor control, headaches, dementia, and vision, hearing, and speech impairment. (Note: Not all viruses are able to pass out of the blood and into the CNS. HIV is attracted to nerves and can move into the CNS.)

**Co-factor:** A situation or activity or substance (such as poppers) that may increase a person's susceptibility to AIDS. Examples of cofactors are: other infections, drugs and alcohol use, poor nutrition, genetic factors, and stress.

**ELISA Test:** A laboratory test which indicates the presence of antibodies to HIV. (Various ELISA tests are being used to detect other infections as well). The HIV ELISA test does not detect the disease AIDS, but only indicates if viral infection has occurred. The test is used to screen blood supplies, is utilized in certain research projects, and has been used in specific health care situations.

**False negative:** An erroneous test result that indicates no antibodies are present when in fact they are present.

**False positive:** An erroneous test result that indicates antibodies are present when in fact there are none.

**HBV:** Acronym for Hepatitis B virus.

**High Risk Behavior:** As pertains to HIV and AIDS, a term used to describe certain

activities that increase the risk of transmitting or acquiring HIV. These include anal and vaginal intercourse without a condom, semen or urine in the mouth, manual-anal penetration, sharing intravenous needles, intimate blood contact, and sharing of sex toys contaminated by body fluids. These behaviors often are referred to as "unsafe" activities.

**HIV:** Acronym for the virus which causes AIDS. HIV stands for Human Immunodeficiency Virus. Other names the virus has gone by include HTLV-III (Human T-cell Lymphotropic Virus, Type Three), LAV (Lymphadenopathy Associated Virus), and ARV (AIDS-related Retro Virus).

**HTLV-III:** Human T-cell Lymphotropic Virus, Type III. See HIV. Acronym originally given by American scientists to the virus which causes AIDS.

**Incubation Period:** The period of a disease between infection and the first symptoms. In AIDS, the period can be from a few months to seven years or more.

**Immune status:** The state of the body's natural defense to fight disease. It is influenced by heredity, age, past illness history, diet and physical and mental health. It includes production of circulating and local antibodies and their mechanisms of action.

**Kaposi's sarcoma (KS):** A rare form of cancer. It is recognized by raised non-tender, purplish skin rash with lesions on any part of the body, notably the upper body and extremities.

**Latency:** A period when the virus is still in the body, but rests in an inactive state.

**LAV:** Lymphadenopathy Associated Virus. Name originally given by the French to the virus which causes AIDS. See HIV.

**Lymphocytes:** Commonly known as white blood cells, they play a major role in fighting disease. Lymphocytes are one subclass of leukocytes. The two types of white blood cells commonly associated with AIDS are T cells and B cells.

**MMWR (Morbidity and Mortality Weekly Report):** A weekly publication of the CDC that serves as a reference for information on current trends in the nation's health. The MMWR is often cited for its statistics on the number of AIDS related deaths and illnesses.

**Opportunistic Infections:** Infections caused by organisms that do not normally cause disease in people with healthy immune systems. The most common opportunistic infections associated with AIDS related deaths and illnesses are:

PCP (*Pneumocystis carinii* Pneumonia) -- caused by a protozoan parasite; is the most common cause of death for people with AIDS.

CMV (cytomegalovirus) -- related to the herpes family of viruses, CMV is common and normally causes only minor illness. In people with AIDS, CMV can cause serious disease, most often in the eyes, lungs or liver. It is a common cause of death in people with AIDS.

Toxoplasmosis -- a parasite that infects the brain and central nervous system. Symptoms include memory loss, motor control problems and mood swings.

PML (Progressive Multifocal Leukoencephalopathy) -- a viral infection of the brain that causes memory loss, motor control problems, and mood swings.

Cryptococcal meningitis -- a fungus that infects the covering of nerves. It can lead to serious peripheral nerve problems.

**Pneumocystis carinii pneumonia:** See Opportunistic infections.

**PWA (Person With AIDS):** This term is preferred over "victim" or "patient".

**Seroconversion:** The process by which a person who has been infected with HIV converts to testing positive for HIV antibodies.

**Syndrome:** A set of symptoms which occur together.

**T Cell:** One type of white blood cell that gives orders to the rest of the immune system. T cells are the target of HIV. By destroying them, HIV is able to damage the overall effectiveness of the immune system.

**TB:** Acronym for tuberculosis.

**Treatment:** There is no known cure for AIDS, but many drugs are being used in experimental trials to determine their possible effectiveness against AIDS. Treatments for AIDS fall into one of two categories: antiviral treatments or immuno-booster treatments. Antiviral treatments focus on destroying or inactivating HIV itself. Immuno-booster treatments attempt to rebuild or boost the immune system. Many researchers believe both treatments may be necessary to effectively treat AIDS. In addition to experimental drugs, there are also drugs which are used to treat or control the opportunistic infections and cancers found in people with AIDS.

**Virus:** Causative agent of an infectious disease. Is not a single-cell organism. Can grow and multiply only in living cells.

**Western Blot Test:** A blood test used to detect antibodies to HIV. Compared to the ELISA test, the Western blot is more accurate, more detailed and more expensive. It is used to confirm the results of the ELISA test. It may occasionally be negative even though a person is infected with HIV, particularly in the first few months, but when it is positive it is very accurate—the person is almost surely infected with HIV.

# **PUBLIC SAFETY WORKERS AND AIDS**

**"Last week, while I was arresting a middle-aged man for disturbing the peace, he bit me, perforating the skin on my right forearm. On the way back to the station, he told me he was an i.v. drug user and had AIDS. Could I have AIDS now? What should I do to find out?"**

**"Yesterday, my engine company responded to a medical call in a high income neighborhood of town. A little girl in the house had stopped breathing, so we immediately began CPR -- I did mouth to mouth breathing. Within a minute, she started breathing again and soon after that the ambulance arrived to take her to the hospital. Later, an emergency room nurse called anonymously to let us know the little girl had AIDS. Evidently, she was a liver transplant recipient and had received infected blood through a transfusion. I get off duty in an hour. Should I be afraid of exposing my family and friends to the AIDS virus?"**

**"I'm a paramedic with a busy ambulance company in a large city. About a month ago, my unit picked up a young man who had collapsed on the sidewalk in front of a movie theatre. We ran an i.v. on the guy to give him some adrenalin. On the way to the hospital, I was recapping a needle and missed, jabbing it into my thumb about one-quarter of an inch. Even though I don't know if the guy was infected with HIV, I took the ELISA test three days later to see if I had contracted anything. The test results were negative. Can I be sure now I don't have the virus?"**

These are just a few of the questions being asked by public safety workers in the face of the AIDS epidemic. These questions -- and others -- are answered in this guidebook for law enforcement, fire service, and ambulance service personnel.

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For more information:

**AIDS Education for Emergency  
Workers Project  
American Red Cross  
P.O. Box 160167  
Sacramento, CA 95816  
(916) 452-6541**

Guidebook available from:

**California Firefighter Foundation  
1780 Creekside Oaks Drive, Suite 200  
Sacramento, CA 95833  
(916) 921-9111**