Law Enforcement Session

Law Enforcement's Response to AIDS and Hepatitis B

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Abstract: In response to new state mandates and increasing concerns regarding the risks and seriousness of exposure to the AIDS and Hepatitis B viruses, the Law Enforcement Division of Texas Parks and Wildlife drafted an AIDS/Hepatitis B policy and instituted an ongoing training program. The training program is designed specifically for game wardens and equips them with the knowledge, skills, and equipment to respond to this growing concern. The goals of the program are to (1) increase awareness about AIDS and Hepatitis B transmission, (2) lay out exposure prevention strategies for occupational and personal lifestyles, (3) and address legal issues unique to the law enforcement profession. Agencies involved in law enforcement should begin providing education and training based on sound current medical findings. In addition, provision of protective equipment for their officers and development of policies to address issues of occupational exposure prevention and procedures are both critical to insuring the safety of officers who may be exposed to these viruses.

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Background

Acquired Immune Deficiency Syndrome (AIDS) was first described in 1981 and has now been diagnosed in all 50 states and more than 170 countries. Seldom has a disease generated as much media and public attention. Now, more than 10 years into the AIDS "epidemic," there are still daily news articles that address this topic. AIDS, unlike most other serious public health diseases, is complicated in that AIDS is both a human rights issue and an extremely emotional issue. AIDS, as a public health concern, is virtually unique in the level of fear and misinformation that has surrounded its appearance on the horizon of public health policy.

Game wardens, due to the range of job-related incidents, responsibilities, and duties, may be at substantial risk of being infected with the AIDS virus or other communicable diseases such as Hepatitis B. Occupational exposures to the AIDS virus include searches, cardiopulmonary resuscitation (CPR), first aid, body recovery, evidence handling, and assaultive behavior.

Although a law enforcement officer may be at substantive risk of exposure to the AIDS virus, the risk is minimal (Natl. Inst. Justice 1988); however, the consequences are great—AIDS is incurable. The minimal risk of exposure can be even further reduced by consistently following guidelines and precautions aimed at minimizing the potential for infection.

Surveys of law enforcement personnel indicate that the level of officer concern about AIDS tends to be highest in those departments which serve jurisdictions with few AIDS cases (Hammett 1987). This suggests that concern—and especially misinformed fear—about AIDS is inversely related to actual knowledge of the disease. There is clearly a need for current information and training on AIDS and on prevention strategies geared specifically to the law enforcement officer.

The ever increasing number of diagnosed AIDS cases suggests that game wardens will increasingly come in contact with people who are infected with the AIDS virus. It follows that agencies employing such officers must be ready to respond to the risks, issues, and fears related to this problem and to meet legal mandates.

The 71st Texas Legislature mandated a Texas Parks and Wildlife Department (TPWD) policy addressing the threat of an occupational exposure to AIDS. In response to this mandate and to insure the safety of state game wardens, the Law Enforcement Division of TPWD initiated an AIDS educational program and instituted an AIDS/Hepatitis B (HBV) policy (TPWD 1992). Believing that prevention is the key in addressing communicable diseases—particularly AIDS—the cornerstone of the division's response to the issue is prevention, education, and training. The goal of the ongoing training program is to increase knowledge and awareness, teach skills in infection control measures and affect attitudes towards the disease. The program was developed to ensure consistent use of precautions, to provide procedures for addressing an occupational exposure, to ensure the officer is able to obtain health benefits in a confidential manner and to address issues of employee rights, confidentiality and discrimination. Because the risk of exposure to Hepatitis B is far greater than exposure to the AIDS virus (Ctrs. for Disease Control 1989), and because the manner in which HBV is transmitted is very similar to that of AIDS, the policy and training addresses both diseases.

Disease Characteristics

AIDS is a viral disease caused by Human Immunodeficiency Virus (HIV), commonly called the AIDS virus. AIDS is the end stage of an HIV infection and is characterized by progressive deterioration of the human immune system. This deterioration allows these "opportunist" diseases which would normally not be life threatening to jeopardize the person's health and life.

The outcome of an HIV infection varies with individuals from no outward signs of disease to moderate but not life threatening problems to the severe and life-threatening symptoms characteristic of an AIDS diagnosis. Any HIV infected per-

son, regardless of the relative progression of the disease, is capable of transmitting the active virus (Ctrs. for Disease Control 1989).

Hepatitis B is a serious infectious disease characterized by inflammation of the liver. This disease may progress and can cause cirrhosis, hepatitis or liver cancer. The Hepatitis B virus (HBV) is a much hardier virus than HIV and is (like HIV) transmitted through blood and certain body fluids.

Prevalence and Transmission

The Center for Disease Control (CDC) estimates that the total number of HBV infections in the United States is 300,000 per year which is greater than the prevalence of diagnosed AIDS cases—230,179. There are an estimated 1.5 million persons infected with HIV (CDC 1989, 1992). Studies suggest that 54% of those infected with HIV will develop AIDS within 10 years (Laszlo 1990). Although HIV has been isolated in urine, sweat, saliva, and tears, studies show that both HIV and HBV can only be transmitted through blood, body fluids containing blood, semen, vaginal fluids and breast milk. In addition, HBV can be transmitted through saliva (Friedland and Klein 1987, CDC 1991). One cannot "catch" HIV or HBV like a common cold or flu. There is no medical evidence of transmission by casual contact such as sharing living or working spaces or transmission through food, air, water, sweat, tears, or urine.

A commonly expressed concern among game wardens is the risk of acquiring an HIV infection from insects. Current laboratory and epidemiological data do not support insects as a vector for HIV infection (Friedland and Klein 1987, Lifson 1988).

Both viruses have been transmitted in occupational settings only by:

- percutaneous inoculation (e.g., needle stick, sharp instrument puncture, or contaminated glass),
- blood or body fluid containing blood contacting an open wound, nonintact (e.g., chapped, abraded, weeping, or dermatitic) skin, or mucous membrane of the eyes, nose, or mouth (CDC 1989)
- saliva is a potential medium to transmit HBV

Since blood is the single most important source of an occupational exposure to HIV and HBV, protection measures should focus primarily on preventing such exposure.

Occupational Exposure

An occupational exposure is defined as contact with blood or other body fluids, capable of transmitting HBV or HIV, through percutaneous inoculation (such as a puncture wound) or contact with an open wound, nonintact skin, or mucous membrane during the performance of job duties (Texas Dep. Health 1990). An exposure is not dependent on the HIV or HBV status of the source blood or body fluid.

The risk of an HBV infection is far greater than an HIV infection (Table 1). The

Table 1. Comparison of HBV to HIV (CDC 1989).

	HBV	HIV
Mode of transmission:		
blood	yes	yes
semen	yes	yes
vaginal secretions	yes	yes
saliva (from a bite)	yes	no
Target in body	liver	immune system
Risk of infection after needlestick with infected blood	6%–30%	.05%
Vaccine available	yes	no
Viability in dry environment	7–9 days	several hours

risk of an HBV infection is 6%–30% in persons not having hepatitis B vaccination or postexposure prophylaxis (CDC 1985). The risk of infection with HIV following a needle-stick exposure to blood from a person known to be HIV + is approximately 0.5% (CDC 1987, 1988). The Occupational Safety and Health Administration (OSHA) estimates that 75 to 110 of every 1,000 workers who are frequently exposed to blood or other potentially infectious materials will become infected with hepatitis B over the course of their working lifetimes (OSHA 1992). The risk of acquiring an HIV or HBV infection for law enforcement officers during execution of their duties is directly proportional to the amount of contact the officer has to blood or body fluids containing blood. In the United States, as of July 1988, only 3 law enforcement officers are suspected of occupation-related HIV infections. However, these results are inconclusive (CDC 1989).

Prevention strategies for on job exposures to HIV and HBV are based on guidelines, established by CDC, called Universal Precautions (CDC 1988). These guidelines are based on 3 general principles:

1) Treat all persons you come into contact with as if they are infectious.
2) Treat all sharp objects you handle as if they are infectious.
3) Treat all body fluids, that are capable of transmitting HIV or HBV, as if they are infectious.

Universal precautions apply whenever contact to the following fluids is likely: blood, certain fluids found in the body that are likely to contain blood because of their location in the body (amniotic fluid, pericardial fluid, peritoneal fluid, pleural fluid, synovial fluid, cerebrospinal fluid, semen, and vaginal secretions), or any body fluid visibly contaminated with blood (CDC 1989). Because of the unpredictable nature of incidents encountered by officers makes the differentiation between hazardous body fluids and those which are not hazardous very difficult, officers should treat all body fluids as potentially hazardous.

The following "universal precautions" are the guidelines established by CDC to use as a prevention strategy for occupational exposures:

1. Avoid needle sticks and injuries from sharp objects that may be contaminated with blood such as: knives, staples, glass, etc.

2. Wear gloves when contact with blood or body fluids is likely.

3. Use shoe coverings and clothing barriers if considerable blood contamination is encountered.

4. Keep all cuts and wounds covered with clean, dry bandages.

5. Avoid smoking, use of oral tobacco, eating, drinking, nailbiting, and all hand-to-mouth, hand-to-nose, and hand-to-eye actions while working in areas contaminated with blood or body fluids.

6. Wash hands thoroughly with soap and water after removing gloves and after any contact with blood or body fluids.

7. Clean up any spills of blood or body fluids thoroughly and promptly, using a 1:10 dilution of household bleach. This mixture should not be used after 24 hours from dilution time.

Universal Precautions Applied to Law Enforcement Issues

First Aid

Because situations requiring first aid are often unpredictable in nature, protective measures should be taken when contact with any body fluid is likely. If splashes or profuse bleeding is likely, goggles, mask, and gown should be considered for protection. The possibility of allowing the victim to administer gauze and pressure on his or her own wounds is often overlooked in a first aid setting. Changing gloves between first aid recipients is important to prevent infection. Handwashing after each incident, even if gloves are worn, is one of the most important preventative measures that can be taken. Table 2 summarizes personal protective equipment for prevention of an occupational exposure in situations requiring first aid (CDC 1989).

Table 2. Summary of precautions.

Task/Activity	Disposable gloves	Gown	Mask	Protective eyewear
Bleeding control with spurting blood	Yes	Yes	Yes	Yes
Bleeding control with minimal bleeding	Yes	No	No	No
Emergency childbirth	Yes	Yes	Yes	Yes
Blood drawing	Yes	No	No	No
Handling and cleaning contaminated instruments or equipment	Yes	No[1]	No	No
Measuring blood pressure	No	No	No	No
Measuring temperature	No	No	No	No
Giving an injection	No	No	No	No

[1] Unless soiling likely.

Cardiopulmonary Resuscitation (CPR)

A particular concern to officers is the risk of acquiring an HBV or HIV infection while administering cardiopulmonary resuscitation (CPR). Although there have been no documented cases of HIV transmission through this mechanism, the possibility of transmission of other infectious disease including HBV exists (CDC 1989). CPR masks with one-way valves to prevent the victim's saliva or vomitus from entering the rescuer's mouth should be used. CPR training on mannequins should be performed utilizing the mask to ensure adequate proficiency and to reinforce the idea that the mask is a necessity.

Body recovery

While body recovery activities are often complicated by emotional distractions from family members and friends of the deceased, game wardens and other recovery personnel must constantly remind themselves that their first consideration is their own protection from acquiring an infection such as HIV or HBV. Prevention efforts are focused at avoiding contact of body fluid with the skin or mucous membranes of the rescuer. As stated earlier, HIV is a very fragile virus and cannot live long in a dry environment. CDC studies show that drying causes a 90% to 99% reduction of HIV concentration within several hours (CDC 1989). There have not been any studies to determine how long HBV can survive in the moist environment of a dead body; but, theoretically it should be longer than the 7 to 9 days it can survive in dry blood. Gloves should certainly be worn and the use of goggles or glasses and a mask should be considered to protect the mucous membranes of the officer's eye, nose, and mouth. If a lot of body fluid is anticipated, a gown or other type of barrier should be worn over the uniform to prevent contamination.

Searches and Handling Evidence

Although searches and evidence handling present a low risk of exposure, precautions should be followed. Punctures or cuts are of utmost concern. If officer safety allows, a suspect can be asked to empty his or her own pockets. Game bags, purses, and other containers can be dumped out instead of the officer blindly searching with fingers. Dark areas can be visualized using a mirror or flashlight before reaching with fingers. Protective gloves that are puncture resistant are available and latex gloves can be worn underneath for additional protection from contact with body fluids. Evidence should be sealed using tape instead of staples to reduce risks of punctures. Needles, glass, and other sharp objects should be placed in a puncture resistant container.

Decontaminating Uniforms

Uniforms can be cleaned and decontaminated like any other clothing. The washing machine or dry cleaning is adequate. Care should be taken to prevent contact of clothing, still wet with body fluid, from contacting skin.

Decontaminating Equipment

Equipment such as patrol car seats, handcuffs, first aid kit or radio equipment and blood spills can be decontaminated by wiping with a 1:10 dilution of household bleach to water. This solution is only effective for 24 hours after time of dilution.

Assaults and Human Bites

Assaults, human bites, and other disruptive behavior are commonly expressed concerns of officers (Hammett 1987). Behaviors of particular concern are biting, spitting, and throwing urine or feces. In the situation of a human bite, the individual doing the biting is the one who comes into contact with the blood of the person being bitten—supposedly the officer. The officer is not at risk of an HIV infection unless that individual has blood in his or her mouth which comes into contact with the officer's blood. In case of a human bite, the wound should be encouraged to bleed by applying pressure and "milking the wound." The area should be thoroughly washed with soap and water and medical attention sought. A victim of a human bite is at greater risk of an HBV infection than an HIV infection. In considering precautions to take when dealing with individuals it is important to remember that HBV and HIV cannot be transmitted by casual contact. The importance of "polishing" defensive and verbal subject control skills to minimize physical involvement should not be overlooked. Urine and feces are not a concern for HIV or HBV transmission unless these fluids are contaminated with blood. Spitting presents a risk of transmitting the HBV virus, but this risk is minimal when compared to a human bite.

Management of an Occupational Exposure

Training and operational procedures should be focused on prevention of exposure to potentially hazardous body fluids; however, procedures should be established for situations when an exposure does occur.

The affected area should be washed thoroughly with soap and water if available. A disinfectant cleanser can be utilized if soap and water is not immediately available. Mucous membranes should be flushed with copious amounts of water. If the wound is a puncture wound or bite, pressure should be applied to encourage bleeding. Medical attention should be sought for assessment, counseling, and treatment as is appropriate.

Most states require reporting of an incident within certain time limits in order for the officer to obtain workers compensation benefits. In Texas, an officer has 72 hours and a noncommissioned state employee has 10 days to report to the health authority for the Texas Department of Health in order to qualify for workers' compensation benefits (TDH 1990). It would be advisable for all law enforcement agencies to establish clearly defined procedures for reporting occupational exposures in order to ensure its employees are eligible to receive the benefits they deserve and may desperately need.

HIV Testing

A series of tests can be conducted to test for antibodies against HIV in an infected individual's blood. Antibodies are substances in the blood produced in response to the presence of the virus and are a part of the body's immune defense system. The fact that it takes an average of 6 to 12 weeks and as long as 6 months to produce the antibodies creates additional concerns. This time lag is often called the "window period." Because of this window period, a person who has received an occupational exposure has to have a series of tests over a 6-month period to check if he or she converts from an HIV negative to an HIV positive state (CDC PHS 1987). During this period, the officer should consider taking precautions to avoid infecting others.

HBV Testing and Vaccinations

There are simple blood tests that can identify markers of hepatitis B virus and, unlike HIV, there is a safe and effective vaccine to prevent hepatitis B. Clinical studies have shown that 85 to 96 percent of those vaccinated prior to exposure to HBV evidence immunity to the virus (CDC 1991). Vaccinations administered within one week after exposure yields a 70% to 80% effectiveness (CDC 1991). The guidelines established by OSHA are standards that could be utilized to establish a policy whether employees should receive vaccinations prior to exposure or following an exposure to HBV. OSHA has mandated that as of 1 July 1992, the hepatitis B vaccine be made available, at the employer's expense, to employees under 2 circumstances: (1) if they are exposed to potentially infectious material at least once per month and (2) following any exposure incident (Rekus 1991).

Legal Considerations

Legal and liability case decisions addressing rights and responsibilities of HIV-infected persons will continue to be defined in the next few years. While some legal and liability questions remain largely hypothetical, there exists a substantial body of legislative and regulatory policy, case law and legal opinions (Laszlo 1990) to guide law enforcement agencies in making HIV-related policies and decisions. Most states have laws and regulations that deal with confidentiality of HIV test results, release of medical records, conditions where HIV testing can be compulsory, discrimination against persons infected with HIV, occupational exposure procedures, communicable disease reporting procedures, training requirements, and equipment requirements. Any law enforcement agency involved in developing an HIV and HBV policy should check their state's regulation to ensure compliance.

The federal law states, with the Rehabilitation Act of 1973 and the American Disabilities Act of 1990, that a person with AIDS or carrying HIV is categorized as a "handicapped person" and as such an employer may not discriminate against the person in employment. Effective 1 July 1992, agencies that fall under OSHA regula-

tions and have employees involved in job duties where exposures to body fluid could occur are required to (1) have a written exposure control plan, (2) provide personal protective equipment, (3) provide training, (4) provide HBV vaccinations, and (5) must maintain records of employee exposures for the duration of their employment plus 30 years (1991 and OSHA 1992).

Conclusions

The game warden profession is rapidly changing. Game wardens will increasingly be faced with contacting and working with people who are infected with HIV or HBV or whose HIV/HBV status is unknown. These contacts, whether with the public or fellow employees, must be made in a professional nondiscriminating manner. At the same time, precautions must be followed to protect the game warden from acquiring a life threatening or fatal disease that not only has severe ramifications for the officer but, for his or her family as well. Added to the many roles a game warden must fill is that of an educator for the public, other employees, other law enforcement officers, and family. A current and ongoing training program on AIDS and Hepatitis B prevention can better equip the officer to face these changing and challenging demands. An emphasis is placed on current and ongoing because what we know about HIV is probably changing faster than any other disease we are currently facing.

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