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## Members

**Dr. David Vlahov, Co-Chairperson**
The Johns Hopkins University School of Hygiene & Public Health
Representation: Epidemiologist with expertise in HIV

**Dr. Newton Kendig, Co-Chairperson**
Chief of Infectious Diseases, Federal Bureau of Prisons
Representation: Former Medical Director of the Maryland correctional facilities (not specifically listed in Bill)

Mr. David N. Bezanson
Deputy Secretary, Maryland Public Safety and Correctional Services
Representation: Department of Public Safety and Correctional Services

Dr. Mack Bonner
Medical Director, Maryland Correctional Facilities, Department of Public Safety & Correctional Services
Representation: Medical Director of the Maryland Correctional Facilities

Mr. Devon Brown
Director, Montgomery County Department of Correction & Rehabilitation
Representation: Administrator of a local correctional facility

Mr. Jay H. Cutler
Addictions Program Director, Dorchester County Health Department
Representation: Former inmate

Mr. Thomas W. Davis
Director, Alcohol & Drug Abuse Administration, Maryland Department of Health & Mental Hygiene
Representation: Maryland Department of Health & Mental Hygiene

Lieutenant Keith C. Hamby
Maryland Correctional Training Center
Representation: Maryland Classified Employees Association

Ms. Jacqueline Ryles Harris
Deputy Director, Prince George's County Department of Corrections
Representation: Administrator of a local correctional facility

Corporal Michael T. Martin
Maryland House of Correction, Department of Public Safety & Correctional Services
Representation: Correctional officer

Ms. Joan Narer-Hebden, RN
Infection Control Manager, University of Maryland Medical System
Representation: Occupational exposure expert with expertise in HIV

Mr. Eugene M. Nuth
Warden, Maryland Penitentiary, Department of Public Safety & Correctional Services
Representation: Warden, Department of Public Safety and Correctional Services

Mr. Andrew P. Reese
Chairperson, AIDS Legislative Committee
Representation: AIDS Legislative Committee

Dr. Liza Solomon
Director, AIDS Administration, Maryland Department of Health & Mental Hygiene
Representation: Maryland State AIDS Administration

Mr. Dwight H. Sullivan, Esq.
American Civil Liberties Union of Maryland
Representation: Prisoner advocate

Ms. Alice E. Thompson
Maryland Public Employees, Council 67, Southern MD
Representation: American Federation of State, County, and Municipal Employees

Dr. Lawrence S. Wissow
The Johns Hopkins University School of Hygiene & Public Health
Representation: Behavioral scientist with expertise in HIV

**Staff**

Mr. Kip Castner, M.P.S.
Coordinator of HIV Prevention Planning, Department of Health & Mental Hygiene, AIDS Administration

Ms. Kathy Chavis, Esq.
Special Assistant to the Director, Department of Health & Mental Hygiene, AIDS Administration

Ms. Karen Wulff, Chief
Office of Policy and Public Information, Department of Health & Mental Hygiene, AIDS Administration

## Introduction

The Task Force on HIV Exposure in Maryland Correctional Facilities was convened by appointment of Governor Parris N. Glendening in accordance with House Bill 1178 (1997) in November 1997. House Bill 1178 directed the Task Force to conduct a study to include:

**(1)** an assessment of the nature of potential and actual exposures between inmates and correctional officers;

**(2)** an assessment of HIV education and training for correctional officers and inmates, including defining and identifying exposure, preventing exposure and transmission, and protocols and intervention to treat actual exposures;

**(3)** the feasibility and cost-effectiveness of mandatory HIV antibody testing of inmates and correctional officers;

**(4)** the current status of treatment for HIV and AIDS infected correctional officers and inmates;

**(5)** the feasibility of procedures for providing adequate and appropriate treatment to correctional officers and inmates who are infected with HIV; and

**(6)** findings and recommendations from relevant national advisory committees, federal agencies, and peer-reviewed medical, public health, correctional, and legal literature.

House Bill 1178 also directed the Task Force to submit a report on the results of its investigation and study, together with policy recommendations, to the House Environmental Matters Committee, to the Senate Economic and Environmental Affairs Committee, to the Governor, and to the General Assembly by January 1, 1998. Due to a delay in completing the appointment process for the Task Force, an extension of this deadline was granted until March 2, 1998.

Per HB1178, the Task Force consisted of:

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| *Two representatives of the Department of Public Safety and Correctional Services. | Mr. David N. Bezanson<br>Deputy Secretary, Maryland Public Safety and Correctional Services |
| *One representative of the Department of Health and Mental Hygiene. | Mr. Thomas W. Davis<br>Director, Alcohol and Drug Abuse Administration, Maryland Department of Health and Mental Hygiene |

| | |
|---|---|
| *One representative of the Maryland State AIDS Administration. | Dr. Liza Solomon<br>Director, Maryland AIDS Administration |
| *The medical director of the Maryland correctional facilities. | Dr. Mack Bonner<br>Medical Director, Maryland Correctional Facilities |
| *An epidemiologist with expertise in HIV. | Dr. David Vlahov<br>The Johns Hopkins University School of Hygiene & Public Health |
| *A behavioral scientist with expertise in HIV. | Dr. Lawrence Wissow<br>The Johns Hopkins University School of Hygiene & Public Health |
| *An occupational exposure expert with expertise in HIV. | Ms. Joan Narer-Hebden, RN<br>Infection Control Manager, University of Maryland Medical System |
| *A correctional officer. | Corporal Michael T. Martin<br>Maryland House of Correction |
| *A former inmate. | Mr. Jay H. Cutler<br>Addictions Program Director, Dorchester County Health Department |
| *One representative from the AIDS Legislative Committee. | Mr. Andrew P. Reese<br>Chair, AIDS Legislative Committee |
| *A prisoner advocate. | Mr. Dwight H. Sullivan, Esq.<br>American Civil Liberties Union of Maryland |
| *An administrator of a local correctional facility. | Ms. Jacqueline Ryles Harris<br>Deputy Director, Prince George's County Department of Corrections |
| *One representative of the Maryland Classified Employees Association. | Lieutenant Keith C. Hamby<br>Maryland Correctional Training Center |
| *One representative of the American Federation of State, County, and Municipal Employees (AFSCME.) | Ms. Alice E. Thompson<br>Maryland Public Employees, Council 67, Southern Maryland |

Two additional members were appointed:

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| *An administrator of a local correctional facility. | Mr. Devon Brown<br>Director, Montgomery County Department of Corrections and Rehabilitation |
| *Former medical director of the Maryland correctional facilities (not specifically listed in Bill) | Dr. Newton Kendig, Chief of Infectious Diseases, Federal Bureau of Prisons |

The Task Force accomplished its purpose and goals through a review of the scientific literature and institutional policies and procedures assembled by the members of the Task Force. Detailed discussions were held during a series of five scheduled meetings on November 6, 1997, November 20, 1997, December 11, 1997, January 22, 1998, and February 19, 1998, at the offices of the AIDS Administration, Maryland State Department of Health and Mental Hygiene. All decisions regarding the Recommendations and actions of the Task Force were reached by consensus. The Recommendations herein are therefore presented without note of individual opinions or votes. Minutes from the meetings were submitted to all members and were amended or approved. Minutes and documents pertaining to the Task Force will be maintained by the AIDS Administration staff or by the Maryland State Archives.

At the November 20, 1997, meeting, Dr. Robyn Gershon, from the Johns Hopkins University School of Hygiene & Public Health, presented on occupational exposure to HIV as a guest of the Task Force.

## Executive Summary

### Current Circumstances for Involuntary HIV testing of Inmates

The Task Force addressed the current status of the law regarding involuntary HIV testing of inmates. The Annotated Code of Maryland, Health-General §18-338, allows for involuntary HIV testing of an inmate when: (1) there has been an exposure involving an inmate; (2) the exposure occurred in connection with the inmate's violation of an institutional regulation; (3) the inmate is found guilty of an infraction; (4) the employee has given written notice of the exposure to superiors in the facility; and (5) the exposure is confirmed by a health care provider.

The Task Force considered the adequacy of the process required by the code in two ways: first, the process and timeliness of establishing an inmate's guilt and the impact on the employee; second, the issue of whether any purpose is served by involuntarily testing inmates when an exposure does not involve rule infractions. These issues were discussed at length by the Task Force and are discussed later in the report.

The following considerations were addressed in making the subsequent recommendations:

* To date, no case of occupational HIV transmission to correctional employees has been documented in Maryland.
* Instances of potential employee exposures that did not involve a rule infraction uniformly resulted in the inmate volunteering to undergo HIV testing as reported by Dr. Newton Kendig in relation to his former position as Chief Medical Officer in the Maryland Division of Correction, Department of Public Safety & Correctional Services.
* If the inmate is involuntarily tested and refuses to be counseled on the test results, the correctional system would then have information about an inmate that could ordinarily be used to start treatment. However, if the inmate refuses testing and learning the test results, the correctional system is caught in an ethical dilemma.
* Public Health Service guidelines on post-exposure prophylaxis with antiretroviral combination therapy require treatment to begin within hours of exposure. Test

results under the current state of the art cannot be made available before a treatment decision must be made. Therefore, therapy would need to be initiated regardless of test results.

* The rationale for testing of inmates following exposure is to provide a basis for stopping post-exposure therapy (if the inmate tested negative); however, a seronegative test is not a guarantee that a person is uninfected (i.e., the person could be in the window period of early infection prior to seroconversion). Therefore, another rationale for testing was "peace-of-mind" for correctional employees. Some of the concerns of employees have been the lack of support to ease their stress and fears related to this issue. Adequate counseling and support services could alleviate much of the concern. Whether test results are needed to establish a documented occupational transmission for the purpose of workman's compensation coverage requires clarification.
* There is a risk associated with involuntary testing because in using force to restrain an unwilling inmate, another employee could be injured and thereby receive an occupational exposure.

## Recommendations

**Pursuant to conclusions drawn from the research, discussions and analysis, the Task Force recommends repeal of Maryland Annotated Code, Health-General §18-338.** This Primary Recommendation is made because the law would be unnecessary if the following comprehensive recommendations are adopted and implemented in all correctional facilities:

**1. Annual education for correctional employees on blood-borne pathogens should be uniformly provided by instructors certified by infectious disease clinicians. Correctional systems should develop a mechanism to monitor and enforce compliance with Universal Precautions through education followed by periodic audits of employee compliance (through knowledge questions and observation of behavior) and inventory and location of supplies (i.e., personal protective equipment). Any training conducted in conjunction with**

**local health departments should be based on a curriculum that is corrections-sensitive. Training should include:**

- **Occupational transmission: correctional staff should be trained to assess their own risk of HIV transmission.**
- **Universal precautions: correctional staff should be trained in the importance of taking universal precautions, including the use of gloves, masks, and resuscitation apparatus.**
- **Post-exposure prophylaxis protocols: correctional staff should be trained on PEP protocols, and on the importance of speed in reporting actual exposures to HIV.**
- **Inmate testing procedures: correctional staff should be educated about the process for requesting inmate testing and the relevance of the results.**

**Additionally, inmates should receive orientation on blood-borne pathogens in a timely manner.**

**2. Personal protective equipment required to implement universal precautions should be made conveniently available to correctional staff. Correctional systems should facilitate correctional employees using universal precautions, by providing adequate supplies of personal protective equipment, including gloves and eyewear. Gloves should be adopted as a standard part of the uniform.**

**3. Post-Exposure Prophylaxis (PEP) should be made available in all correctional facilities. Correctional systems should provide on-site procedures for exposure evaluation, documentation and provision of starting kits of antiretroviral combination therapy. Any measures adopted for dealing with post-exposure should include counseling and support for the injured employee throughout the process. No employee should merely be referred to their private health care provider for care.**

**4. Within correctional systems, formal policies and procedures need to be developed and implemented to solicit voluntary testing of inmates following an exposure of an employee.**

**5. Medical surveillance of correctional employees in relation to occupational exposures should be improved and expanded.**

**6. Correctional systems should provide clinical evaluation and appropriate antiretroviral combination therapy for HIV infected inmates, according to U.S. Public Health Service guidelines. Such therapy should not be restricted by any requirements for patient co-payments if such co-payments might result in refusal of therapy. It is strongly recommended that inmates who are undergoing treatment for HIV not be charged for the cost of prescription medication.**

**7. Hepatitis B vaccine should be offered to all correctional employees at risk for exposure. Although Hepatitis B vaccine is already offered, further education on the risk associated with Hepatitis should be instituted.**

**8. In cases of exposure, viral tests such as PCR tests should be available as a supplement to HIV antibody tests such as the ELISA or Western Blot.**

**9. Studies and surveys should be conducted periodically to document and evaluate the rates of HIV infection in the correctional population in all correctional facilities.**

## Key Findings

One of the themes emerging from the discussions of the Task Force was the differences which exist between the state and local correctional systems, and the variations which exist among the local detention centers. The Task Force was mindful of the diversity in correctional settings throughout Maryland in generating its recommendations, and believes that its recommendations are wise *policy* for all settings in Maryland. The Task Force appreciates that *implementation* of its recommendations would need to be responsive to the needs of each local jurisdiction.

Additionally, the Task Force found it necessary to consider the fear of exposure experienced by correctional employees in state and local facilities. Members reiterated the fact that such fear is often related to contact with the blood of inmates during recreational or work-related activities and not during activities violating institutional rules and thereby subjecting the inmate to involuntary testing. In light of this issue of fear, Task Force Co-Chairperson, Dr. Newton Kendig, presented results from the Federal Bureau of Prison's "Prison Social Climate Survey." Dr. Kendig reported that potential exposure to HIV does in fact create stress for correctional employees. However, he directed the Task Force's attention to certain findings which suggested that during the 1990's there has been a decline among federal correctional employees in their perception of risk of HIV infection on the job. Dr. Kendig noted a decline, from 26.7% to 12.2%, in the percentage of federal correctional employees responses indicating that they think their odds of acquiring HIV from an inmate is "high." In addition, from 1990 to 1996, the percentage of respondents indicating that the number of inmates who were HIV-infected bothered them "a great deal," fell from 49.2 to 35%. Thirdly, Dr. Kendig noted the decline, from 20.4% to 9.4%, of respondents reporting that "...the number of HIV-infected inmates...is so objectionable that you have considered either resigning or transferring to another institution." Although similar data are not available from employees at Maryland facilities, the fact that Maryland correctional staff potentially have these concerns was addressed by the Task Force in making the subsequent recommendations.

## Transmission of HIV

The Human Immunodeficiency Virus (HIV) can be transmitted when infected blood, semen, or vaginal secretions are able to enter the bloodstream. Transmission can occur when these fluids pass from an infected person to another, e.g. unprotected vaginal, anal, or oral sexual contact, sharing intravenous drug needles, blood transfusions, or perinatal transmission. HIV is unable to survive long outside the body. The risk of HIV transmission by (non-percutaneous, non-sexual) casual contact is extremely remote. There have been no reports of transmission by sweat, saliva, feces, or urine.

## Correctional Context

Correctional facilities in Maryland are managed at the state level by the Department of Public Safety & Correctional Services (DPSCS). The Division of Correction, with a total correctional staff of approximately 7,100, plans, establishes, and operates the State correctional facilities which house approximately 22,000 inmates. The Division is responsible for the Maryland Reception, Diagnostic and Classification Center; Maryland Correctional Pre-Release System; Central Home Detention Unit; State Use Industries; Victim Notification Program; and Capital Punishment in Maryland. Ten State prisons are also managed by the Division: Metropolitan Transition Center (Baltimore City); Maryland Adjustment Center (Baltimore); Roxbury Correctional Institution (Hagerstown); Maryland Correctional Institution (Hagerstown); Maryland Correctional Training Center (Hagerstown); Maryland House of Correction (Jessup); Maryland Correctional Institution (Jessup); Maryland Correctional Institution for Women (Jessup); Eastern Correctional Institution (Westover); and Western Correctional Institution (Cumberland). Additionally, 23 county managed facilities currently house approximately 10,000 inmates.

## Occupational HIV Transmission in Correctional Settings

Dr. Robyn Gershon from the Johns Hopkins University presented background on Occupational Exposure to the Task Force. She cited results from a survey conducted 2 years ago in Maryland prisons on the risk of HIV transmission to health care workers. Significant results from the survey of 230 workers reporting 73 exposures included: 1) No evidence of transmission of HIV by casual contact; 2) Highest risk of infection is associated with needlesticks; 3) Risk of

transmission by needlestick is less for HIV than for Hepatitis B or C; 4) There have not been any reports of transmission through exposure and/or contact with feces, urine or sweat.

Other than a nurse in the performance of her duties, there have been no documented HIV occupational exposures of correctional employees that have led to transmission in the United States. Nor have there been any confirmed cases of occupationally acquired HIV infection among emergency medical technicians (EMT's), the category with exposure risks most similar to those of correctional staff. Exposures in correctional facilities are usually in the form of nonparenteral or non-sexual contact, for which the risk of HIV transmission is remote. Some contact with blood may occur in recreational or work related activities, but there are no data suggesting this has been associated with HIV transmission in correctional facilities.

To date, data on HIV *transmission* to correctional employees, including either employees or health care workers, are sparse. Two cases of occupationally acquired HIV infection among correctional employees have been reported in the world's literature. The first involved a correctional officer in Australia who was stuck with a needle from an inmate infected with HIV. The second involved a nurse in the United States stuck with a needle during the course of her duties within a correctional health care setting. While no systematic surveys have been performed which follow documented HIV seronegative correctional employees to identify rates of new HIV infection, the two cases reported in the literature represent parenteral exposures and not casual contact.

Data to document occupational *exposures* (with or without infection) among correctional employees are also sparse. Legal research revealed that there are court cases alleging occupational exposures; however, no systematic surveys could be identified from the literature. The Maryland Division of Correction reported that there were 104 episodes of "serious contact" between correctional employees and inmates in a recent year, which may have included contact with blood from an inmate. The Task Force members working in corrections noted that more frequent contact occurs with saliva, urine, and feces from inmates; however, the frequency of such events has not been determined and the risk of HIV transmission from these body fluids in the absence of blood has been established as extremely remote.

Medical surveillance of correctional employees may be helpful in gathering more data on exposures. Extrapolating from other data, the risk of HIV transmission is low. Most exposures

reported to CDC are needle sticks and not mucous contacts. Feces and urine may be thrown on employees; however these incidents are not considered HIV exposures. Post-exposure prophylaxis is not recommended unless there is evidence of visible blood in the feces and urine. **Conclusion: Although data for the correctional setting are limited, data from comparable settings such as community health care settings show that the risk of occupational HIV transmission is low. The two cases of occupationally-acquired HIV infection in the correctional setting were from established routes of transmission.**

## HIV Seroprevalence in Prisons

In August, 1997, the Bureau of Justice Statistics released a report entitled "HIV in Prisons and Jails, 1995." The report noted that the overall rate of confirmed AIDS cases among the nation's prison population (0.5%) was more than six times the rate in the U.S. population (0.08%). At year end 1995, 2.3% of all state and federal prison inmates were reported to be infected with HIV, and 2.2% of all tested inmates who reported results. In this survey, Maryland ranked 9$^{th}$ in the number of HIV-positive prison inmates with 72 individuals, accounting for 3.4% of the population in custody at the end of 1995. Between 1991 and 1995, the proportion of prison inmates with HIV infection remained stable (2.2% in 1991, 2.3% in 1995).

In Maryland, anonymous HIV seroprevalence surveys of HIV infection among entrants to the state prison system were performed in 1985-1988 and in 1991; HIV rates ranged from 7% - 8% among male entrants and 14% - 15% for female entrants. The major risk factor for being HIV infected was injection drug use. In 1996, the results of voluntary HIV testing in Maryland show HIV rates of 4% for male entrants and 8% for female entrants; the proportion accepting voluntary testing was 38%. In 1987, a study of transmission within the Maryland Division of Corrections found the rate of new HIV infections detected inside prison to be 0.4% per year among 389 inmates tested, who consented to testing at least one year after entry into prison. This rate is lower than that found in community based samples of high risk populations in Baltimore.

**Conclusion: Although prisons and jails have higher rates of HIV infection than in the general population, the proportion of inmates infected does not appear to be rising. The main factor contributing to HIV infection among inmates is injection drug use prior to**

**incarceration, not acquisition of infection while in prison, although the latter does occur to some extent.**

## Recommendations

In light of its key findings, the Task Force concluded that there is currently not enough evidence to warrant expansion or continuation of the current law on involuntary testing. The following policy recommendations and discussion are presented to address the concerns about occupational exposure to HIV in correctional facilities in a more comprehensive way than would the use of a law for involuntary testing of inmates.

### *Education & Training*

**1. Annual education for correctional employees on blood-borne pathogens should be uniformly provided by instructors certified by infectious disease clinicians. Correctional systems should develop a mechanism to monitor and enforce compliance with Universal Precautions through education followed by periodic audits of employee compliance (through knowledge questions and observation of behavior) and inventory and location of supplies (i.e., personal protective equipment). Any training conducted in conjunction with local health departments should be based on a curriculum that is corrections-sensitive. Training should include:**

- **Occupational transmission: correctional staff should be trained to assess their own risk of HIV transmission.**
- **Universal precautions: correctional staff should be trained in the importance of taking universal precautions, including the use of gloves, masks, and resuscitation apparatus.**
- **Post-exposure prophylaxis protocols: correctional staff should be trained on PEP protocols, and on the importance of speed in reporting actual exposures to HIV.**
- **Inmate testing procedures: correctional staff should be educated about the process for requesting inmate testing and the relevance of the results.**

**Additionally, inmates should receive orientation on blood-borne pathogens in a timely manner.**

The major means to prevent occupational HIV transmission in the correctional setting is through education about and implementation of universal precautions as detailed in the OSHA Bloodborne Pathogens Standards. There is evidence of non-compliance with universal precautions among correctional staff. The Maryland Division of Correction reported that personnel received a half hour of training annually on blood borne pathogens, down from three hours in previous years and instructors are no longer required to be certified. Public Safety and Correctional Services staff indicated that besides initial officer orientation and pre-service training, employees are only reminded of universal precautions during the First Aid portion of an annual in-service training of approximately one hour in length. It is expected that one outcome of enhanced training will be greater compliance with universal precautions. Employees with more training could greatly reduce their risk of exposure by using equipment such as gloves, masks, and resuscitation apparatus.

Members considered a variety of options on how to monitor and verify compliance with standards of universal precautions. It is suggested that systems look to the Security Audit, the Maryland Commission on Correctional Standards (MCCS), Occupational Safety and Health Administration (OSHA), and Maryland Occupational and Safety Health Administration (MOSHA) as possible agents for a standardized review of staff compliance and adherence to universal precautions. For example, employees should be required to demonstrate knowledge of the location and operation of the Bloodborne Pathogens Spill Kit.

Furthermore, although some jurisdictions provide brief written materials to inmates at intake on blood-borne pathogens, it is necessary that inmates receive timely education in a format that is appropriate for their level of literacy. Counseling and videos may be more effective modes of communication regarding this information.

## *Universal Precautions*

**2. Personal protective equipment required to implement universal precautions should be made conveniently available to correctional staff. Correctional systems should facilitate correctional employees using universal precautions, by providing adequate supplies of personal protective equipment, including gloves and eyewear. Gloves should be adopted as a standard part of the uniform.**

As previously stated, implementation of universal precautions as detailed in the OSHA Bloodborne Pathogens Standards is critical to preventing exposures. Once employees receive training in the proper use of the range of personal protective equipment, they must have access to the items. The Task Force reviewed documents on policies and procedures for the Maryland Division of Correction and the survey conducted by Task Force member, Jacqueline Ryles-Harris, of eight county detention centers and determined that all facilities have policies for use of personal protective equipment. However, one reason given for employees' non-compliance with universal precautions is inconvenience associated with accessing and using supplies. According to the survey of counties, in many jurisdictions, gloves needed for implementing universal precautions are not a standard part of the employee uniform. Employees could likely be in a situation or location where they need immediate access to gloves and not have them readily available.

The OSHA Standard also calls for proper disposal of needles and sharps. Equipment must be provided for employees to dispose of these items with consideration given to the need for security.

There is concern over situations where an exposure to large amounts of blood may occur such as when an inmate gets into the razor wire. However, in such circumstances, employees are required to use special gloves when handling an inmate in the wire and the gloves should provide protection from exposure. It was concluded that most incidents subjecting employees to exposure are preventable. The Task Force does recommend stressing to employees that at a minimum they should carry their accessory pouch containing rubber gloves and CPR mouthpiece.

## *Post-Exposure Prophylaxis*

**3. Post-Exposure Prophylaxis (PEP) should be made available in all correctional facilities. Correctional systems should provide on-site procedures for exposure evaluation, documentation and provision of starting kits of antiretroviral combination therapy. Any measures adopted for dealing with post-exposure should include counseling and support for the injured employee throughout the process. No employee should merely be referred to their private health care provider for care.**

Dr. Gershon presented recommendations from the Centers for Disease Control and Prevention's (CDC) Guidelines for post-exposure prophylaxis that indicates that in order to be effective, chemoprophylaxis must be started within 1-2 hours following an exposure. The risk of HIV transmission is reduced by 80% for those who undergo chemoprophylaxis pursuant to the standards after an exposure. However, currently in the state system, a correctional employee gets care on site only in an emergency situation. Occupational exposures have not historically been defined as emergencies.

It should be noted that due to the nature of the work environment, correctional employees may not receive immediate care after an exposure. These delays are in part due to the fact that under current operating conditions, employees are required to take time to write a report on the incident prior to seeking evaluation and treatment. Some facilities currently refer employees to their private health care provider following an exposure and provide no treatment or support services. It is proposed that the medical care providers servicing inmates onsite be trained to provide emergency care for employees after exposure and that the prophylaxis kit be made available for administering the first dosage of medications. Under these exigent circumstances, the cost of PEP would be covered by the employer: the state or local jurisdiction. Employees should be entitled to counseling and support throughout the evaluation and treatment process.

One rationale for testing of inmates following exposure is that it provides a basis for stopping post-exposure therapy if the inmate tests negative. However, a seronegative test is not a guarantee that a person is uninfected (i.e., the person could be in the window period of early infection prior to seroconversion). A negative test result should not be the determinative factor in ceasing treatment. Counseling about the health implications of continuing or stopping treatment needs to be provided to the individual employee by their health care provider with support from the facility administrators.

Another rationale for testing is "peace-of-mind" for correctional employees. Some of the concerns of employees have related to the lack of support to ease their stress and fears about potential exposures. Employees taking the PEP medications may be subjected to toxicities that make them ill or unable to work. During this treatment, it is important that employees receive support and counseling to educate them about their condition and to further address their

concerns. Adequate education about PEP prior to exposure should help provide some peace of mind.

The federal prisons have adapted the CDC Guidelines for PEP, and adopted the CDC's definition of exposure. In the federal prison system, when an exposure is reported, a risk assessment is conducted. The outcome of the risk assessment determines the recommendation for follow-up. Up to a four-day supply of medication is provided. Afterward, the employee's health care provider is responsible for providing appropriate care and medication. PEP is administered for one month, or, until the source of the exposure tests HIV-negative.

Maryland correctional facilities should have at least minimal post exposure procedures in place to include:

1. An emergency number for staff to call for immediate review by a medical team;
2. First review of the exposure by a medical team;
3. A post-exposure prophylaxis kit available for cleaning the wound; and
4. Administration of the 1st dosage of prophylaxis medication.

One concern regarding the implementation of this policy is confidentiality. In particular, there is concern about what inmates and other employees could learn about the serostatus of those involved in an infraction once PEP is administered. The Federal Bureau of Prisons provided a set of principles to guide confidentiality policies that may be adaptable for use in Maryland. Also, the Task Force recognizes there are legal implications that must be addressed regarding providing direct health care to employees.

## *Voluntary Testing*

**4. Within correctional systems, formal policies and procedures need to be developed and implemented to solicit voluntary testing of inmates following an exposure of an employee.**

In federal prisons, inmates cannot be HIV-tested involuntarily, even if an infraction caused the exposure. Many systems across the nation are moving toward routinized testing of inmates upon intake into a facility. This new approach will result in more people already knowing their serostatus early during their incarceration. (No data from other states about the cost and the feasibility of implementing such a system were readily available for the Task Force.)

At present, Division of Correction social workers can offer HIV testing in non-infraction cases. However, there are no standard procedures on requesting voluntary testing of inmates after an employee exposure. There are complexities in implementing testing procedures in the local correctional facilities where approximately 85% of inmates are pre-trial, and have more rights than sentenced inmates.

The Task Force suggests that procedures be developed and implemented for voluntary testing of inmates. The procedures should include the following steps: a) the exposed correctional employee submits a letter to the appointing authority notifying them there has been an exposure; b) the employee is counseled by an infection control practitioner to ascertain circumstances of the exposure and to document the incident; c) at the request of the employee, the infection control practitioner submits a written request to the appointing authority requesting that the inmate be tested; d) the employee submits for baseline testing according to current OSHA standards; e) social work and other departments are called in to counsel the inmate on being tested, as needed; f) if the inmate accepts testing, his or test results shall be kept confidential; g) the requesting employee shall be made aware of the inmate's refusal or acceptance of the test, and the inmate's test results.

While the Task Force recommends the expansion of access to HIV testing and counseling, it is also concerned about issues of policy implementation, particularly issues of confidentiality as related to the employees' and the inmates' test results. HIV testing of inmates should be provided as a voluntary activity with appropriate confidentiality assurances. Even under the current law, circumstances that involve occupational exposures with a potential for HIV transmission should always involve a request for voluntary HIV testing.

## *Medical Surveillance*

**5. Medical surveillance of correctional employees in relation to occupational exposures should be improved and expanded.**

There is little occupational exposure information on correctional employees in Maryland. Some data are gathered and maintained by the Division of Correction for the Injured Workers Insurance Fund. This limited data have not been analyzed. One question to ask this data is whether employees are missing work after exposures.

## *Medical Care*

**6. Correctional systems should provide clinical evaluation and appropriate antiretroviral combination therapy for HIV infected inmates, according to U.S. Public Health Service guidelines. Such therapy should not be restricted by any requirements for patient co-payments if such co-payments might result in refusal of therapy. It is strongly recommended that inmates who are undergoing treatment for HIV not be charged for the cost of prescription medication.**

Recently, regulations authorizing the billing of inmates for correctional health services have become quite prevalent across the nation. In Maryland, such authorization may be found in Annotated Code of Maryland, Article 87, Section 46 and Article 27, Section 698. In the state system, viral load testing is done, the combination therapies including protease inhibitors are provided, and testing and counseling are all provided for free.

While such practices may have the managerial benefit of reducing the magnitude of correctional resources devoted to frivolous inmate medical requests, the imposition of fee-for-service programs may inadvertently decrease offender access to appropriate health care while jeopardizing public health. Those concerns are particularly severe for inmates in need of treatment for HIV. Should these individuals be unwilling and/or unable to pay for critically important prescription drugs, the risk of exacerbating their condition becomes quite high.[1] Moreover, in the event that these inmates return to the community without having received proper treatment, their prospects of developing a drug resistant strain of virus becomes unacceptably high.

Much more research is needed to fully ascertain the current status of and the needs for inmates' health care in all facilities. A complicated aspect of this issue is the movement of inmates across jurisdictions and how the length of sentence affects their access to education and

[1] Powerful new drug therapies are now available which can dramatically reduce the progress of HIV on the immune system. However, the success of the new therapies critically depends on the continuity of care provided to the patient. If the patient's supply of drugs is interrupted, the virus is able to mutate. The mutated virus is likely to be resistant to these drugs. This limits the treatment options for the patient. At the macro level, the development of drug-resistant strains of HIV poses a threat to public health. If patients spread resistant strains of HIV, newly-infected persons cannot benefit from existing drug therapies at all. Care *must* be continuous within the correctional system, as well as from the system through release and into the community. In addition, physicians must contribute to patient compliance with the drug regimen by providing treatment and management of the drugs' side effects.

care. Due to the time constraints in completing the report, limited resources were used to address this issue. It is recommended that further assessment of this issue be conducted.

## *Hepatitis Risk*

**7. Hepatitis B vaccine should be offered to all correctional employees at risk for exposure. Although Hepatitis B vaccine is already offered to employees, further education on the risk associated with Hepatitis should be instituted.**

As a broader response to the health risks experienced by correctional employees, there should be a focused effort to educate staff on protection from all bloodborne pathogens. The significance of using universal precautions, the effectiveness of Hepatitis B vaccination, and post-exposure prophylaxis (PEP) following exposure to Hepatitis B should be emphasized to at risk employees. The evidence is clear that the risk of exposure to a bloodborne pathogen by needlestick is less for HIV than for either Hepatitis B or C. Currently there is no vaccination for Hepatitis C. It should be noted that inmate workers are eligible for Hepatitis B vaccinations but the general inmate population is not.

## *HIV Tests*

**8. In cases of exposure, viral tests such as PCR tests should be available as a supplement to HIV antibody tests such as the ELISA or Western Blot.**

As noted previously, following an exposure the post-exposure prophylaxis must be started within hours. There is no time to wait for an inmate's test results before initiating prophylaxis and there is no test currently available that gives immediate results. The post-exposure prophylaxis must be initiated regardless of the serostatus of the inmate at the time of such an exposure. This is due to the fact that the inmate could be seroconverting, and therefore a negative antibody test result could be misleading. Under the current law, inmates can be involuntarily tested only once following an infraction. If the inmate were to seroconvert subsequent to the initial test, that information would not readily be available to the employee. Therefore the Task Force suggests the implementation of a viral test, such as a PCR and recommends that the test be available to supplement an employee's antibody test.

### *Studies & Surveys*

**9. Studies and surveys should be conducted to document and evaluate the rates of HIV infection in the correctional population in local and state correctional facilities.**

Surveys are needed to monitor the current and future trends of HIV and other blood-borne infections in correctional populations in Maryland. Systematic surveys should be planned and incorporated in an overall plan of prevention and treatment. The data acquired from this research should help in future evaluations of policies and procedures regarding the health of employees and inmates.

## Conclusion

In an attempt to analyze the implications of involuntary testing, it became clear that there are multiple complicating factors that would affect changes in policy designed to protect the health of employees. It is evident that under current conditions there may be an exchange of blood between employees and inmates during altercations. An inmate could also be exposed to the blood of employees and other inmates in such instances. Additionally, an employee could be exposed to the blood of other employees.

Some changes are needed to address the health care needs of employees and inmates. Currently, inmates can receive care in the facility or be transferred at the expense of the jurisdiction to a health care facility. Employees are not normally provided such care in cases of exposure to a potential bloodborne pathogen although their exposure may be life threatening. These differences in treatment bring to question the rights of inmates and of employees in terms of access to emergency care, testing, PEP, emotional support and access to ongoing health care. Under these circumstances, merely testing an inmate does not adequately address any medical concerns and any otherwise justifiable issues of fear of exposure that an employee may have.

It is clear that continuing or expanding involuntary testing of inmates following occupational exposure of an employee is not warranted or productive given the state of the art and the other available options. Regardless of the status of the testing law, a plan to enhance current operating procedures for compliance with universal precautions and offering post-exposure prophylaxis needs to be adopted in all jurisdictions. Prevention of occupational transmission of HIV infection in the correctional setting can be brought up to the state of the art

through a comprehensive plan by expanding education, by implementing and auditing of universal precaution procedures, by making personal protective devices widely available, and by providing post-exposure prophylaxis following CDC guidelines. Appropriate access to treatment of HIV infected inmates with antiretroviral combination therapy is important by itself, but it may also lower the risk of HIV transmission by reducing the viral load in individuals receiving treatment. Although information from test results may at times be beneficial in making decisions regarding continuation of PEP treatment, the source's test results are not the determinative factor. With implementation of a comprehensive approach across the systems, the Task Force recommends repeal of Maryland Annotated Code, Health-General §18-338.

# APPENDICES

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# HOUSE BILL 1178

E4 7lr1662

By: Delegates Nathan-Pulliam, Branch, Ciliberti, D. Davis, Elliott, Frush, D. Hughes, Hubbard, C. Mitchell, McHale, Morhaim, Oaks, Opara, Owings, Stull, and Stup
Introduced and read first time: February 10, 1997
Assigned to: Environmental Matters

Committee Report: Favorable with amendments

Read second time: March 4, 1997

CHAPTER_____

AN ACT concerning

**Task Force to Study HIV Exposure in Maryland Correctional Facilities**

FOR the purpose of requiring the appointment of a Task Force to Study HIV Exposure in Maryland Correctional Facilities to conduct a study concerning the issues related to HIV exposure in Maryland correctional facilities; providing for the composition of the Task Force; requiring the Task Force to submit a certain report by a certain date; providing for the termination of this Act; and generally relating to requiring the appointment of a Task Force to conduct a study on HIV in Maryland correctional facilities.

Preamble

...en a correctional employee is exposed to inmate bodily fluids presently requires testing for HIV only when the exposure is in connection with the inmate's violation of an institutional regulation and requires that the inmate be found guilty of the regulation infraction; and

WHEREAS, The reality of the correctional environment is that correctional employees interact with inmates in a variety of situations. Exposure to bodily fluids could result from recreational accidents, illness, or inmate work-related injuries, to name a few situations. Hence, exposure to bodily fluids may result often from situations other than regulation infractions. Furthermore, due to the close proximity in which correctional employees often must work with high medical risk inmate populations, the probability of staff contact with contaminated bodily fluids from inmates is great; now, therefore,

SECTION 1. BE IT ENACTED BY THE GENERAL ASSEMBLY OF MARYLAND, That:

EXPLANATION: CAPITALS INDICATE MATTER ADDED TO EXISTING LAW.
[Brackets] indicate matter deleted from existing law.
Underlining indicates amendments to bill.
...nt or deleted from the law by amendment.

(a) (1) There is a Task Force to Study HIV Exposure in Maryland Correctional Facilities.

(2) The Task Force shall be appointed by the Governor and consist of at least the following:

(i) two representatives of the Department of Public Safety and Correctional Services, one of whom shall be a current warden;

(ii) one representative of the Department of Health and Mental Hygiene;

(iii) one representative of the Maryland State AIDS Administration;

(iv) the medical director of the Maryland correctional facilities;

(v) an epidemiologist with expertise in HIV;

(vi) a behavioral scientist with expertise in HIV;

(vii) an occupational exposure expert with expertise in HIV;

(viii) a correctional officer;

(ix) a former inmate;

(x) one representative from the AIDS Legislative Committee;

(xi) a prisoner advocate; ~~and~~

(xii) an administrator of the local correctional facility;

(xiii) one representative of the Maryland Classified Employees Association; and

(xiv) one representative of the American Federation of State, County, and Municipal Employees (AFSCME).

(b) The study shall include:

(1) an assessment of the nature of potential and actual exposures between inmates and correctional officers;

(2) an assessment of HIV education and training for correctional officers and inmates, including defining and identifying exposure, preventing exposure and transmission, and protocols and intervention to treat actual exposures;

(3) the feasibility and cost–effectiveness of mandatory HIV antibody testing of inmates and correctional officers;

(4) the current status of treatment for HIV and AIDS infected correctional officers and inmates;

(5) the feasibility of and procedures for providing adequate and appropriate treatment to correctional officers and inmates who are infected with HIV; and

(6) findings and recommendations from relevant national advisory committees, federal agencies, and peer–reviewed medical, public health, correctional, and legal literature.

(c) The Task Force shall submit a report on the results of its investigation and study, together with any policy recommendations, to the House Environmental Matters Committee, to the Senate Economic and Environmental Affairs Committee, to the Governor, and, subject to § 2–1312 of the State Government Article, to the General Assembly on or before January 1, 1998.

SECTION 2. AND BE IT FURTHER ENACTED, That this Act shall take effect July 1, 1997. It shall remain effective for a period of 1 year and, at the end of June 30, 1998, with no further action required by the General Assembly, this Act shall be abrogated and of no further force and effect.

Approved:

_____

Governor.

_____

Speaker of the House of Delegates.

_____

President of the Senate.

## § 18-337. Positive test results.

(a) *Definition.* — In this section, "health care provider" means a physician, a physician's designee, or a designee of a health care facility licensed or otherwise authorized to provide health care services.

(b) *Notice to others by health care providers.* — If an individual informed of the individual's HIV positive status under § 18-336 of this title refuses to notify the individual's sexual and needle-sharing partners, the individual's physician may inform the local health officer and/or the individual's sexual and needle-sharing partners of:

(1) The individual's identity; and

(2) The circumstances giving rise to the notification.

(c) *Enforcement of §§ 18-208 through 18-213.* — When the local health officer is notified, the health officer shall enforce the provisions of §§ 18-208 through 18-213:

(1) Within a reasonable time; and

(2) To the extent feasible.

(d) *Referrals to appropriate services.* — Each local health officer shall refer the infected individual and any known sexual or needle-sharing partners of the individual to appropriate services for the care, support, and treatment for HIV infected individuals.

(e) *Liability of physician — Disclosure.* — A physician acting in good faith to provide notification in accordance with this section may not be held liable in any cause of action related to a breach of patient confidentiality.

(f) *Same — Nondisclosure.* — A physician acting in good faith may not be held liable in any cause of action for choosing not to disclose information related to a positive test result for the presence of human immunodeficiency virus to an individual's sexual and needle-sharing partners.

(g) *Liability of hospitals or other health care providers.* — A hospital or any other health care provider acting in good faith pursuant to a physician's order to perform or interpret a test for the presence of HIV may not be held liable in any cause of action related to:

(1) A breach of patient confidentiality; or

(2) A physician's decision to disclose or not to disclose information related to a positive test result to a local health officer and/or an individual's sexual and needle-sharing partners. (1989, ch. 789, § 2.)

**Cross references.** — See Editor's note to § 18-336 of this article.

## § 18-338. Inmates of correctional institutions.

(a) *Definitions.* — (1) In this section the following words have the meanings indicated.

(2) "Correctional institution" means a place of detention or correctional confinement operated by or for the State or a local government.

(3) "Correctional employee" means:

(i) A person who is employed by a correctional institution; or

(ii) A person who performs duties in a correctional institution by virtue of federal, State, or local government employment.

(4) "Exposure" means, as between a correctional employee and an inmate:

(i) Percutaneous contact with blood, semen, or blood contaminated fluids;

(ii) Mucocutaneous contact with blood, semen, or blood contaminated fluids;

(iii) Open wound, including dermatitis, exudative lesions, or chapped skin, contact with blood, semen, or blood contaminated fluids; and

(iv) Intact skin contact with large amounts of blood, semen, or blood contaminated fluid for a prolonged period.

(5) "Health care provider" means any person, including a physician or hospital, who is licensed or otherwise authorized in this State to provide health care services and is under contract with or operated by the correctional facility.

(b) *Sample to be furnished.* — An inmate shall furnish to the correctional institution a blood sample to be tested for the presence of human immunodeficiency virus (HIV) when:

(1) There has been an exposure involving the inmate;

(2) The exposure occurred in connection with the inmate's violation of institutional regulations;

(3) The inmate has been found guilty of the violation of institutional regulations described in paragraph (2) of this subsection;

(4) The correctional employee involved in the exposure has given written notice of the exposure to the managing official of the correctional institution, or the official's designee; and

(5) The exposure is confirmed by a health care provider.

(c) *Testing.* — The correctional institution shall collect the blood sample from the inmate, and shall have the sample tested for human immunodeficiency virus (HIV) by a test and test procedure approved by the Department.

(d) *Notice of results — In general.* — The correctional employee shall be notified of the results of the test for the presence of human immunodeficiency virus (HIV) conducted under the provisions of this section.

(e) *Same — Requirements.* — The notification required under subsection (d) of this section shall:

(1) Be made within 48 hours of confirmation of the inmate's diagnosis;

(2) Include subsequent written confirmation of the possible exposure to human immunodeficiency virus (HIV); and

(3) To the extent possible, be made in a manner that will protect the confidentiality of the correctional employee and the inmate.

(f) *Counseling.* — If the results of the blood sample test are positive for the presence of human immunodeficiency virus (HIV), then the correctional employee and the inmate shall be provided appropriate counseling.

(g) *Procedures.* — All correctional institutions shall develop written procedures to carry out the provisions of this section.

(h) *Liability of health care provider — Disclosures.* — A health care provider acting in good faith to provide notification in accordance with this section may not be held liable in any cause of action related to a breach of patient confidentiality.

(i) *Same — Nondisclosure.* — A health care provider acting in good faith to provide notification in accordance with this section may not be held liable in any cause of action for:

(1) The failure to give the required notice, if the correctional employee fails to properly initiate the notification procedures developed by the correctional institution under subsection (g) of this section; or

(2) The failure of the managing official of the correctional institution within which the correctional employee is employed to subsequently notify the correctional employee of the possible exposure to human immunodeficiency virus (HIV).

(j) *Same — Samples or testing.* — A health care provider may not be held liable in any cause of action related to obtaining a blood sample or performing and interpreting an approved HIV test without the inmate's informed consent. (1989, ch. 789, § 2.)

**Cross references.** — See Editor's note to § 18-336 of this article.

## § 18-338.1. Health care providers.

(a) *Definitions.* — (1) In this section the following words have the meanings indicated.

(2) (i) "Body fluids" means:

1. Any fluid containing visible blood, semen, or vaginal secretions; or
2. Cerebral spinal fluid, synovial, or amniotic fluid.

(ii) "Body fluid" does not include saliva, stool, nasal secretions, sputum, tears, urine, or vomitus.

(3) "Exposure" means as between a patient and a health care provider:

(i) Percutaneous contact with blood or body fluids;

(ii) Mucocutaneous contact with blood or body fluids;

(iii) Open wound, including dermatitis, exudative lesions, or chapped skin, contact with blood or body fluids for a prolonged period; or

(iv) Intact skin contact with large amounts of blood or body fluids for a prolonged period.

(4) "Health care facility" means a facility or office where health or medical care is provided to patients by a health care provider, including:

(i) A health care facility as defined in § 19-101 (e) (1) of this article;

(ii) A facility operated by the Department or a health officer;

(iii) The office of a health care provider; or

(iv) A medical laboratory.

(5) (i) "Health care provider" means a person who is licensed, certified, or otherwise authorized under the Health Occupations Article to provide health or medical care in:

*Child Labor — Continued*

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## *Notice to Readers*

### Update: Provisional Public Health Service Recommendations For Chemoprophylaxis After Occupational Exposure to HIV

Although preventing blood exposures is the primary means of preventing occupationally acquired human immunodeficiency virus (HIV) infection, appropriate postexposure management is an important element of workplace safety (*1*). Information suggesting that zidovudine (ZDV) postexposure prophylaxis (PEP) may reduce the risk for HIV transmission after occupational exposure to HIV-infected blood (*2*) prompted a Public Health Service (PHS) interagency working group*, with expert consultation†, to update a previous PHS statement on management of occupational exposure to HIV with the following findings and recommendations on PEP (*1*).§

#### Background

Although failures of ZDV PEP have occurred (*3*), ZDV PEP was associated with a decrease of approximately 79% in the risk for HIV seroconversion after percutaneous exposure to HIV-infected blood in a case-control study among health-care workers (*2*). In a prospective trial in which ZDV was administered to HIV-infected pregnant women and their infants, a direct effect of ZDV prophylaxis on the fetus and/or infant may have contributed to the observed 67% reduction in perinatal HIV transmission (*4*); the protective effect of ZDV was only partly explained by reduction of the HIV titer

*The interagency working group comprised representatives of CDC, the Food and Drug Administration (FDA), the Health Resources and Services Administration, and the National Institutes of Health. Information included in these recommendations may not represent FDA approval or approved labeling for the particular products or indications in question. Specifically, the terms "safe" and "effective" may not be synonymous with the FDA-defined legal standards for product approval.

†CDC and the National Foundation for Infectious Diseases cosponsored a workshop, HIV Post-Exposure Management for Health Care Workers, on March 4–5, 1996; proceedings of the workshop will be published in the *American Journal of Medicine*.

§Single copies of this report will be available free until June 7, 1997, from the CDC National AIDS Clearinghouse, P.O. Box 6003, Rockville, MD 20849-6003; telephone (800) 458-5231 or (301) 217-0023.

*Occupational Exposure to HIV — Continued*

in maternal blood (*5*). PEP also prevented or ameliorated retroviral infection in some studies in animals (*6,7*).

The average risk for HIV infection from all types of reported percutaneous exposures to HIV-infected blood is 0.3% (*3*). In the case-control study (*2*), risk was increased for exposures involving 1) a deep injury to the health-care worker, 2) visible blood on the device causing the injury, 3) a device previously placed in the source-patient's vein or artery (e.g., a needle used for phlebotomy), or 4) a source-patient who died as a result of acquired immunodeficiency syndrome (AIDS) within 60 days postexposure (and therefore was presumed to have a high titer of HIV) (*2*). Identification of these risk factors in the case-control study suggests that the risk for HIV infection exceeds 0.3% for percutaneous exposures involving a larger blood volume and/or higher HIV titer in blood. The risks after mucous membrane and skin exposures to HIV-infected blood (on average, approximately 0.1% and <0.1%, respectively [*7*]) probably also depend on volume of blood and titer of HIV. The risk is probably higher for skin contact that is prolonged, involves an area that is extensive or in which skin integrity is visibly compromised, and/or involves a higher HIV titer.

Although information about the potency and toxicity of antiretroviral drugs is available from studies of HIV-infected patients, it is uncertain to what extent this information can be applied to uninfected persons receiving PEP. In HIV-infected patients, combination therapy with the nucleosides ZDV and lamivudine (3TC) has greater antiretroviral activity than ZDV alone and is active against many ZDV-resistant HIV strains without significantly increased toxicity (*8*). Adding a protease inhibitor provides even greater increases in antiretroviral activity; among protease inhibitors, indinavir (IDV) is more potent than saquinavir at currently recommended doses and appears to have fewer drug interactions and short-term adverse effects than ritonavir (*8*). Few data exist to assess possible long-term (i.e., delayed) toxicity resulting from use of these drugs in persons not infected with HIV.

In currently recommended doses, ZDV PEP usually is tolerated well by health-care workers; short-term toxicity associated with higher doses primarily includes gastrointestinal symptoms, fatigue, and headache (*3,7*). The toxicity of other antiretroviral drugs in persons not infected with HIV has not been well characterized. In HIV-infected adults, 3TC can cause gastrointestinal symptoms and, in rare instances, pancreatitis. IDV toxicity includes gastrointestinal symptoms and, usually after prolonged use, mild hyperbilirubinemia (10%) and kidney stones (4%); the latter may be limited by drinking at least 48 oz (1.5 L) of fluid per 24-hour period (*8*). During the first 4 weeks of IDV therapy, the reported incidence of kidney stones was 0.8% (Merck Research Laboratories, unpublished data, 1996). As stated in the package insert, the concurrent use of IDV and certain other drugs, including some nonsedating antihistamines, is contraindicated. Based on limited data, ZDV use in the second and third trimesters of pregnancy and early infancy was not associated with serious adverse effects in mothers or infants (*4,9*); data are limited regarding the safety of ZDV during the first trimester of pregnancy or of other antiretroviral agents during pregnancy. Although 3TC has been associated with pancreatitis in HIV-infected children (*8*), whether 3TC causes fetal toxicity is unknown.

*Occupational Exposure to HIV — Continued*

**Recommendations**

The following recommendations are provisional because they are based on limited data regarding efficacy and toxicity of PEP and risk for HIV infection after different types of exposure. Because most occupational exposures to HIV do not result in infection transmission, potential toxicity must be carefully considered when prescribing PEP. When possible, these recommendations should be implemented in consultation with persons having expertise in antiretroviral therapy and HIV transmission. Changes in drug regimens may be appropriate, based on factors such as the probable antiretroviral drug resistance profile of HIV from the source patient; local availability of drugs; and medical conditions, concurrent drug therapy, and drug toxicity in the exposed worker. These recommendations were not developed to address nonoccupational (e.g., sexual) exposures.

1. Chemoprophylaxis should be recommended to exposed workers after occupational exposures associated with the highest risk for HIV transmission. For exposures with a lower, but nonnegligible risk, PEP should be offered, balancing the lower risk against the use of drugs having uncertain efficacy and toxicity. For exposures with negligible risk, PEP is not justified (Table 1). Exposed workers should be informed that a) knowledge about the efficacy and toxicity of PEP is limited; b) for agents other than ZDV, data are limited regarding toxicity in persons without HIV infection or who are pregnant; and c) any or all drugs for PEP may be declined by the exposed worker.
2. At present, ZDV should be considered for all PEP regimens because ZDV is the only agent for which data support the efficacy of PEP in the clinical setting. 3TC should usually be added to ZDV for increased antiretroviral activity and activity against many ZDV-resistant strains. A protease inhibitor (preferably IDV because of the characteristics summarized in this report) should be added for exposures with the highest risk for HIV transmission (Table 1). Adding a protease inhibitor also may be considered for lower risk exposures if ZDV-resistant strains are likely, although it is uncertain whether the potential additional toxicity of a third drug is justified for lower risk exposures. For HIV strains resistant to both ZDV and 3TC or resistant to a protease inhibitor, or if these drugs are contraindicated or poorly tolerated, the optimal PEP regimen is uncertain; expert consultation is advised[1].
3. PEP should be initiated promptly, preferably within 1–2 hours postexposure. Although animal studies suggest that PEP probably is not effective when started later than 24–36 hours postexposure (*6,7*), the interval after which there is no benefit from PEP for humans is undefined. Initiating therapy after a longer interval (e.g., 1–2 weeks) may be considered for the highest risk exposures; even if infection is not prevented, early treatment of acute HIV infection may be beneficial (*10*). The optimal duration of PEP is unknown; because 4 weeks of ZDV appeared protective (*2*), PEP should probably be administered for 4 weeks, if tolerated.
4. If the source patient or the patient's HIV status is unknown, initiating PEP should be decided on a case-by-case basis, based on the exposure risk and likelihood of HIV infection in known or possible source patients. If additional information becomes available, decisions about PEP can be modified.

[1]An HIV strain is more likely to be resistant to a specific antiretroviral agent if it is derived from a patient who has been exposed to the agent for a prolonged period of time (e.g., 6–12 months or longer). In general, resistance develops more readily in persons with more advanced HIV infection (e.g., CD4+T-lymphocyte count of <200 cells/mm$^3$), reflecting the increasing rate of viral replication during later stages of the illness.

*Occupational Exposure to HIV — Continued*

5. Workers with occupational exposures to HIV should receive follow-up counseling and medical evaluation, including HIV-antibody tests at baseline and periodically for at least 6 months postexposure (e.g., 6 weeks, 12 weeks, and 6 months), and should observe precautions to prevent possible secondary transmission (*1*). If PEP is used, drug-toxicity monitoring should include a complete blood count and renal and hepatic chemical function tests at baseline and 2 weeks after starting PEP. If subjective or objective toxicity is noted, dose reduction or drug substitution should be considered with expert consultation, and further diagnostic studies may be indi-

**TABLE 1. Provisional Public Health Service recommendations for chemoprophylaxis after occupational exposure to HIV, by type of exposure and source material — 1996**

| Type of exposure | Source material* | Antiretroviral prophylaxis† | Antiretroviral regimen§ |
|---|---|---|---|
| Percutaneous | Blood¶ | | |
| | Highest risk | Recommend | ZDV plus 3TC plus IDV |
| | Increased risk | Recommend | ZDV plus 3TC, ± IDV** |
| | No increased risk | Offer | ZDV plus 3TC |
| | Fluid containing visible blood, other potentially infectious fluid††, or tissue | Offer | ZDV plus 3TC |
| | Other body fluid (e.g., urine) | Not offer | |
| Mucous membrane | Blood | Offer | ZDV plus 3TC, ± IDV** |
| | Fluid containing visible blood, other potentially infectious fluid††, or tissue | Offer | ZDV, ± 3TC |
| | Other body fluid (e.g., urine) | Not offer | |
| Skin, increased risk§§ | Blood | Offer | ZDV plus 3TC, ± IDV** |
| | Fluid containing visible blood, other potentially infectious fluid††, or tissue | Offer | ZDV, ± 3TC |
| | Other body fluid (e.g., urine) | Not offer | |

*Any exposure to concentrated HIV (e.g., in a research laboratory or production facility) is treated as percutaneous exposure to blood with highest risk.

†*Recommend*—Postexposure prophylaxis (PEP) should be recommended to the exposed worker with counseling (see text). *Offer*—PEP should be offered to the exposed worker with counseling (see text). *Not offer*—PEP should not be offered because these are not occupational exposures to HIV (*1*).

§Regimens: zidovudine (ZDV), 200 mg three times a day; lamivudine (3TC), 150 mg two times a day; indinavir (IDV), 800 mg three times a day (if IDV is not available, saquinavir may be used, 600 mg three times a day). Prophylaxis is given for 4 weeks. For full prescribing information, see package inserts.

¶*Highest risk*—BOTH larger volume of blood (e.g., deep injury with large diameter hollow needle previously in source patient's vein or artery, especially involving an injection of source-patient's blood) AND blood containing a high titer of HIV (e.g., source with acute retroviral illness or end-stage AIDS; viral load measurement may be considered, but its use in relation to PEP has not been evaluated). *Increased risk*—EITHER exposure to larger volume of blood OR blood with a high titer of HIV. *No increased risk*—NEITHER exposure to larger volume of blood NOR blood with a high titer of HIV (e.g., solid suture needle injury from source patient with asymptomatic HIV infection).

**Possible toxicity of additional drug may not be warranted (see text).

††Includes semen; vaginal secretions; cerebrospinal, synovial, pleural, peritoneal, pericardial, and amniotic fluids.

§§For skin, risk is increased for exposures involving a high titer of HIV, prolonged contact, an extensive area, or an area in which skin integrity is visibly compromised. For skin exposures without increased risk, the risk for drug toxicity outweighs the benefit of PEP.

*Occupational Exposure to HIV — Continued*

cated. Health-care workers who become infected with HIV should receive appropriate medical care.

6. Beginning July 15, 1996, health-care providers in the United States are encouraged to enroll all workers who receive PEP in an anonymous registry being developed by CDC, Glaxo Wellcome Inc., and Merck & Co., Inc., to assess toxicity (telephone [888] 737-4448 [(888) PEP-4HIV]). Unusual or severe toxicity from antiretroviral drugs should be reported to the manufacturer and/or the Food and Drug Administration (telephone [800] 332-1088). Updated information about HIV PEP will be available beginning in early 1997 from the Internet at CDC's home page (http://www.cdc.gov); CDC's fax information service, telephone (404) 332-4565 (Hospital Infections Program directory); the National AIDS Clearinghouse, telephone (800) 458-5231; and the HIV/AIDS Treatment Information Service, telephone (800) 448-0440.

*Reported by: Center for Drug Evaluation and Research, Food and Drug Administration. AIDS Program Office, Health Resources and Svcs Administration. National Institute of Allergy and Infectious Diseases, Warren H. Magnuson Clinical Center, National Institutes of Health. National Center for HIV, STD, and TB Prevention (proposed); National Institute for Occupational Safety and Health; and National Center for Infectious Diseases, CDC.*

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# Profile of HIV Seropositive Inmates Diagnosed in Maryland's State Correctional System

NEWTON KENDIG, MD
TOM STOUGH, BA
PATRICIA AUSTIN, RN
LESLIE KUMMER, RN
ANTHONY SWETZ, PhD
DAVID VLAHOV, PhD

Dr. Kendig is Medical Director, Maryland Division of Correction. Mr. Stough is Administrator, Maryland Department of Public Safety and Correctional Services, Office of Research and Statistics. Ms. Austin was Infection Control Administrator, Mr. Kummer is Infection Control Administrator, and Dr. Swetz is Assistant Commissioner, Maryland Division of Correction. Dr. Vlahov is Associate Professor of Epidemiology, Johns Hopkins School of Hygiene and Public Health.

Tearsheets requests to Dr. Newton Kendig, Maryland Division of Correction, 6776 Reisterstown Road, Baltimore, MD 21215, tel. 410-764-5120.

## Synopsis

*Correctional systems increasingly serve as the health care nexus for the initial diagnosis and treatment of human immunodeficiency virus (HIV) infection, particularly among traditionally underserved populations. A survey was conducted to describe the clinical profile of inmates in a State correctional system diagnosed with HIV infection by various testing strategies.*

*Approximately 50 percent of the inmates diagnosed were potential candidates for anti-retroviral therapy, and 17 percent were severely immunocompromised. Implementation of voluntary HIV testing at prison entry increased the number of persons identified with HIV infection; however, since volunteers at entry had higher CD4 cell counts compared with infected inmates diagnosed by other methods, there was not a parallel increase in the percentage requiring immediate medical treatment.*

*These data are important for planning medical resources in the correctional setting and underscore the opportunity to provide prevention and therapy for a vulnerable population with HIV infection. Public health interventions within the correctional setting have a broader societal impact, since most infected inmates serve short sentences (median, 3 years). Clinical case management is critical for inmates with HIV infection released to the community so that linkages with primary care providers and support services can be established.*

SEROEPIDEMIOLOGIC surveys indicate that the prevalence of human immunodeficiency virus (HIV) infection among inmates entering correctional facilities is higher than in the general population (*1*). A 1992-93 survey by the National Institute of Justice described an aggregate incidence rate of acquired immunodeficiency syndrome (AIDS) of 363 cases per 100,000 for State and Federal correctional systems compared with a rate of 18 cases per 100,000 in the U.S. population. Moreover, among inmates with AIDS in this survey, 2,858 died while incarcerated, representing 2 percent of all AIDS deaths among American adults and adolescents (*2*).

Since prison entrants are generally medically underserved, incarceration provides a strategic opportunity for medical and public health interventions (*3*). The clinical staging of inmates with HIV infection, however, has not been widely reported. Yet these data provide an essential reference for correctional systems in allocating resources and planning health care delivery to inmates with HIV infection. The purpose of this survey was to characterize the HIV seropositive population in a State correctional system that diagnosed HIV infection through voluntary testing at prison entry and through clinically based evaluations during incarceration.

## Methods

The survey was conducted in the Maryland Division of Correction (DOC), a State prison system encompassing 23 institutions with a 1992 census of approximately 19,000 inmates. The study population included those HIV seropositive inmates incarcerated as of December 1992. In January 1991, the Maryland DOC implemented a voluntary HIV testing program

offered to all prison entrants that included group education and individual pre- and post-test counseling by DOC social workers. Additionally, HIV testing and counseling were offered to asymptomatic and symptomatic inmates after prison entry who presented to clinicians with a history or physical examination indicative of potential HIV infection. Prior to 1991, HIV testing was generally offered only to clinically ill inmates with symptoms of AIDS.

Inmates diagnosed with HIV infection were evaluated, monitored, and treated by a clinician in accordance with standardized DOC protocols, including the initial and periodic assessment of CD4 cell counts. Anti-retroviral therapy was offered to all infected inmates with CD4 counts of 500 cells per cubic millimeter ($mm^3$) or less; while *Pneumocystis carinii* pneumonia prophylaxis was offered to all inmates with CD4 counts of 200 cells per $mm^3$ or less or a prior episode of *Pneumocystis carinii* (*4,5*).

Through January 1993, all infected inmates were staged by a physician in accordance with the 1987 Centers for Disease Control (CDC) criteria (*6*). CD4 cell counts were abstracted from inmate medical records by nursing staff and maintained in confidential computer files. HIV testing and T-cell subset analyses were performed by the laboratories of the Maryland Department of Health and Mental Hygiene using CDC's testing guidelines. Reactive HIV–1 enzyme-linked immunosorbent assays (ELISAS) (*A*), were confirmed by Western blot (*B*).

T-cell subsets were measured by CDC and flow cytometric procedures. Frequency distributions of clinical staging characteristics were generated for HIV seropositives by method of ascertainment (that is, voluntary testing or clinically based testing) with chi-square, *t*-test, and nonparametric median tests used to facilitate interpretation.

## Results

We identified 666 inmates diagnosed with HIV infection and incarcerated as of December 1992. For this survey, data from 661 inmates were analyzed since CD4 cell counts were not obtained from 5 inmates prior to subsequent release. CDC's classification data were available for only 624 of the 661 inmates, since 37 inmates were awaiting physical examinations and classification at the time of data analysis or were released prior to evaluation.

Of the 661 inmates, 309 (46.8 percent) were diagnosed during 1991 and 1992 by voluntary testing at prison entry (Group 1), 244 (36.9 percent) were diagnosed during 1991 and 1992 as a result of clinical evaluations (Group 2), and 108 (16.3 percent) were inmates from the standing population who were diagnosed between 1985 and 1990 after presenting clinically with symptoms of AIDS (Group 3).

*'Among inmates identified at prison entry, 40.8 percent were potential candidates for anti-retroviral therapy, but only 8.1 percent were severely immunocompromised (CD4 counts less than 200 cells per $mm^3$).'*

The study population of 661 inmates was 91.7 percent male and 91.4 percent African American, with a mean age of 34.2 years. Female inmates with HIV infection were more likely to be diagnosed by voluntary testing at prison entry than male inmates. Inmates' sentence length was significantly related to method of HIV testing. Prison entrants diagnosed by voluntary testing had median sentences of 48 months compared with those inmates diagnosed by clinical evaluations (96 months) and as part of the standing population (147 months).

Sentence length also correlated with stage of disease. Inmates with CD4 counts of less than 500 cells per $mm^3$ had significantly longer sentences than inmates with CD4 counts greater than 500 cells per $mm^3$, 84 months versus 60 months (data not shown).

Clinical staging of the study population was assessed by CD4 cell counts and CDC's classification comparing the three groups of HIV seropositive inmates by method of ascertainment (see table). Inmates diagnosed at prison entry during 1991 and 1992 (Group 1) had significantly higher CD4 cell counts than those inmates diagnosed after prison entry (Groups 2 and 3). Among inmates identified at prison entry, 40.8 percent were potential candidates for anti-retroviral therapy, but only 8.1 percent were severely immunocompromised (CD4 counts less than 200 cells per $mm^3$). In contrast among Group 2 inmates, who had initially refused HIV testing at prison entry but were later diagnosed as HIV seropositive, 55.3 percent were candidates for anti-retroviral therapy (that is, CD4 count less than 500 cells per $mm^3$), and 22.1 percent were candidates for *Pneumocystis carinii* pneumonia prophylaxis (that is, CD4 counts less than 200 cells per $mm^3$).

Inmates identified by AIDS symptoms prior to 1991 (Group 3) were the most severely immunocompromised. Compared with inmates from Groups 1 and 2, Group 3 inmates had significantly lower CD4 cell counts and were more often classified with CDC stage IV disease.

Maryland Division of Correction HIV seropositive population, percentages

| Demographic characteristics and diagnosis | Total (N=661) | Group 1 entry volunteers (N=309) | Group 2 clinical evaluations (N=244) | Group 3 standing population (N=108) | P values | | |
|---|---|---|---|---|---|---|---|
| | | | | | 1 vs 2 | 1 vs 3 | 2 vs 3 |
| Male | 91.7 | 86.1 | 97.1 | 95.4 | <.001 | <.01 | ... |
| Female | 8.3 | 13.9 | 2.9 | 4.6 | | | |
| Black | 91.4 | 91.9 | 92.2 | 88.0 | | | |
| White | 8.6 | 8.1 | 7.8 | 12.0 | | | |
| Age, years (mean) | 34.2 | 33.5 | 34.8 | 34.7 | <.02 | ... | ... |
| Sentence, months (median) | 72 | 48 | 96 | 147 | <.001 | <.001 | <.02 |
| CD4 count (cells per mm³): | | | | | <.001 | <.001 | <.02 |
| <200 | 16.6 | 8.1 | 22.1 | 28.7 | | | |
| 200–500 | 34.5 | 32.7 | 33.2 | 42.6 | | | |
| 500 | 48.9 | 59.2 | 44.7 | 28.7 | | | |
| Median | 500 | 550 | 460 | 380 | | | |
| CDC classification:[1] | | | | | NS | <.001 | <.02 |
| I | 0.5 | 0.7 | 0.4 | 0.0 | | | |
| II | 59.4 | 63.3 | 60.9 | 45.4 | | | |
| III | 28.2 | 28.7 | 26.5 | 31.5 | | | |
| IV | 11.9 | 7.3 | 12.2 | 23.1 | | | |

[1] Percentages based on a total of 624 inmates, since 37 were awaiting CDC classification at the time of data analysis: for Group 1 = 286, Group 2 = 230, Group 3 = 108.

NOTE: NS = not significant.

## Discussion

The American College of Physicians, National Commission on Correctional Health Care, American Correctional Health Services Association, American Public Health Association, and World Health Organization have highlighted the public health impact of the HIV epidemic on correctional health care services. They have called for increased voluntary HIV testing and counseling, innovative prevention strategies, and bolstering of medical resources within prisons (*7,8*). Implementing these recommendations is especially critical, since prison entrants are traditionally medically underserved, yet they have significant health care problems. As local, State, and Federal correctional systems expand HIV voluntary testing programs, assessing the medical needs of HIV-infected incarcerated populations will be essential for targeting prevention and treatment strategies.

In the Maryland correctional system, the clinical status of infected inmates was comparable to HIV-infected persons diagnosed at Baltimore sexually transmitted disease (STD) clinics (*9*). Although the guidelines for initiating anti-retroviral therapy continue to evolve based on the results of recent European and Australian clinical trials (*10,11*), approximately 50 percent of the 661 Maryland inmates diagnosed with HIV infection were potential candidates for anti-retroviral treatment (CD4 counts less than 500 cells per mm³). Slightly more than 16 percent of infected inmates were severely immunocompromised, at risk for AIDS-related complications, and were candidates for *Pneumocystis carinii* prophylaxis. (The number of Maryland inmates diagnosed with AIDS would be predicted to increase by approximately 81 percent with application of the 1992 revised CDC's classification system [*12*].)

Based on quality assurance audits, the majority of Maryland inmates (85 percent) who were candidates for anti-retroviral therapy and *Pneumocystis carinii* prophylaxis actually received medically indicated treatments; the remainder either refused treatment or were still being evaluated at the time of the survey (data not shown).

Providing medically indicated treatments to Maryland inmates was dependent on the effective implementation of HIV counseling and testing programs at prison entry and after incarceration through clinical evaluations. The voluntary HIV testing system identified approximately 34 percent of all infected Maryland prison entrants when 1991 data from concurrent anonymous testing were evaluated (*13*). Sample surveys at prison entry suggest that many inmates refused HIV testing because of fear of a positive result or denial of HIV risk (*13*). These barriers to HIV detection are being addressed through a revised HIV education program that will be more peer-oriented, culturally-sensitive, and targeted toward those prison entrants at highest risk (that is, injection drug users).

During 1991 and 1992, approximately 50 percent of Maryland prison entrants were requesting HIV testing, requiring the allocation of resources for the counseling and testing of approximately 4,600 in-

mates annually. Although implementation of voluntary testing has significantly expanded the number of identified HIV-infected inmates, the growth of the HIV seropositive inmate population attributable to entry testing has not been associated with a parallel increase in inmates eligible for treatment since, as a group, prison entrants are diagnosed at an earlier stage of disease and have shorter sentences.

Through December 1992, HIV testing at prison entry has increased the number of diagnosed inmates by 88 percent, but has resulted in only a 60 percent increase in the number of infected inmates who are candidates for therapy. From a fiscal perspective, implementation of a voluntary HIV testing program in the Maryland State correctional system has not in and of itself required large adjustments to clinical staffing and treatment budgets.

Since many HIV seropositive inmates are not diagnosed at prison entry, this survey emphasizes the need for ongoing clinical evaluations and HIV testing for inmates during incarceration so that infected persons in need of critical medical interventions are readily identified. The differential in the percentage of persons eligible for therapy related to testing strategy does not in any way negate or even minimize the value of voluntary testing programs. These data do suggest that reliance upon data from voluntary testing alone will provide a biased perspective on the medical needs of a prison population. However, the value of voluntary testing at prison entry is not only to identify asymptomatic candidates for treatment but also to identify persons in the early stages of HIV infection who, although not immediately eligible for chemotherapy, can benefit from (*a*) behavioral interventions to limit the transmission of HIV infection, (*b*) counseling about medical treatments and prophylaxis to facilitate access to health care services, and (*c*) case management interventions to establish aftercare plans that provide primary care and support services upon release from prison.

Early public health and treatment interventions have a broader societal impact since Maryland inmates with HIV infection have a median sentence length of 72 months and would be expected to serve about only half of their sentence. Asymptomatic inmates (CD4 counts greater than 500 cells per $mm^3$) and inmates diagnosed at prison entry had even shorter median sentence lengths of 60 months and 48 months, respectively. Since HIV-infected prison entrants tend to serve short sentences and to have high CD4 cells, many of these inmates would be released to the community prior to requiring antiretroviral therapy, but still in need of primary medical care.

*'Providing case management services to HIV-infected inmates prior to release is critical considering the formidable barriers faced by most released inmates in accessing health care, financial assistance, drug treatment, housing, and other support services.'*

Providing case management services to HIV-infected inmates prior to release is critical considering the formidable barriers faced by most released inmates in accessing health care, financial assistance, drug treatment, housing, and other support services. Studies evaluating zidovudine usage in Maryland indicate that minorities and injection drug users—populations overrepresented in prisons—are less likely to receive treatment and have an overall decreased survival, further emphasizing the crucial role of case management for HIV seropositive inmates returning to the community (*14*).

In Maryland, release planning has been implemented by DOC social work staff who develop aftercare plans with HIV infected inmates approximately 3 months prior to anticipated release. Accessing community resources has been facilitated by (*a*) proactively predicting release dates so that inmate needs can be assessed and workable aftercare plans developed, (*b*) networking with community agencies resulting in established interagency agreements and standardized referral practices, (*c*) collaborating with universities to enable HIV-infected inmates to participate in clinical trials before and after release, and (*d*) developing an intradepartmental agreement with the Maryland Department of Human Resources permitting application of entitlements prior to inmate release. With these efforts, the Maryland prison system has increasingly been viewed as part of the State HIV-service community, resulting in a continuum of health care delivery for inmates entering and leaving the correctional setting.

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### *Equipment*

*A.* Genetic Systems, 6565 185 Ave. NE, Redmond, WA.
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I certify that the above statement made by me are correct and complete.

Marian P. Tebben, Executive Editor

# ¶1718 Policy Statement on the Administrative Management of HIV in Corrections

*The following policy statement was issued September 22, 1991 by the National Commission on Correctional Health Care (NCCHC). It is reprinted here with their permission. For further information, contact NCCHC, 2105 North Southport, Chicago, IL 60614, (312) 528-0818.*

## POLICY STATEMENT REGARDING THE ADMINISTRATIVE MANAGEMENT OF HIV IN CORRECTIONS

The National Commission on Correctional Health Care (NCCHC) is a not-for-profit 501(c)(3) organization whose board of directors is comprised of individuals named by 33 professional associations -- most of which are in the health care field. The Commission's primary purpose is to work toward improving health services in the nation's jails, prisons, and juvenile facilities. Toward that end, the Commission has published standards and offers an accreditation award to facilities that voluntarily choose to meet those standards.

Occasionally, a problem arises that has not been addressed by the Commission's standards. One such issue is the administrative management of Human Immunodeficiency Virus (HIV) positive inmates and health care workers (HCWs) and those with AIDS (Acquired Immune Deficiency Syndrome). Accordingly, NCCHC has adopted the following policy statements to assist correctional facilities in designing their own procedures regarding the administrative management of HIV-positive inmates and HCWs.

Please note that the Commission's policies do not address the medical management of HIV-positive inmates or correctional staff, since this information is available from other national agencies such as the Centers for Disease Control (CDC) in Atlanta. The Commission's Board of Directors believes that the medical management of HIV-positive inmates and HCWs should parallel that offered to individuals in the non-correctional community. Also note that these policy statements have been approved by the Commission's Board of Directors but do not necessarily reflect the position of the supporting organizations who named those individuals to the Commission's Board.

I. HIV Testing

a. Testing for HIV is valid as a diagnostic tool. With advances in the diagnosis and treatment of HIV, it is important that those who are seropositive be identified early. Accordingly, voluntary testing for the purpose of initiating treatment should be available to persons who request it, others with clinical indications of the disease and individuals who engage in high risk behaviors. While recent research has demonstrated that early treatment can delay the progression of the disease, it is not clear that large scale screening is efficacious.

II. Special Housing

a. The Commission does not advocate segregated housing for HIV-positive inmates who have no symptoms of the disease. Since HIV is not airborne and is not spread by casual contact, HIV-positive inmates can be maintained in the general population in whatever housing is appropriate for their age, custody class, etc. However, patients with AIDS may require medical isolation for their well-being as determined by the treating physician.

III. Special Precautions

a. The NCCHC supports and recommends strict compliance with the Centers for Disease Control (CDC) statement on Universal Precautions in all settings within corrections:

"All HCWs should adhere to universal precautions, including the appropriate use of hand washing, protective barriers, and care in the use and disposal of needles and other sharp instruments. HCWs who have exudative lesions or weeping dermatitis should refrain from all direct patient care and from handling patient-care equipment and devices used in performing invasive procedures until the condition resolves. HCWs should also comply with current guidelines for disinfection and sterilization of reusable devices used in invasive procedures." (Centers for Disease Control, Recommendations for Preventing Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Patients During Exposure Prone Invasive Procedures, 1991)

b. Except under unusual circumstances (e.g., the inmate is violent), correctional staff need not take special precautions in managing HIV-positive inmates. Masks, gowns, and/or gloves are not required in performing routine duties such as feeding, escorting or transporting HIV-positive inmates.

c. Medical staff need not take special precautions in performing routine, non-invasive procedures on HIV-positive inmates such as interviews or examinations. However, for any invasive procedure (e.g., blood drawing, intravenous placement, draining of abscesses, suturing, excisions, biopsies, dental work), all inmates should be considered potentially HIV-positive and all staff should take precautions as recommended by the CDC. The CDC's recommendations also should be followed in the medical management of inmates with AIDS.

IV. Education/Counseling

a. HIV/AIDS education should be provided to all staff and inmates in jails, prisons, and juvenile confinement facilities. This education should include information on modes of transmission, prevention, treatment, and disease progression. It is highly recommended that information on the psychosocial implications of HIV infection as well as resources available to the infected person be included as well. Staff should also receive training on confidentiality as it applies to HIV disease.

b. All HIV-positive inmates and those with AIDS should receive counseling to help them adjust to their conditions and to alert them to behavioral changes that may be required to prevent future contagion of others. Additionally, such inmates should be encouraged to voluntarily contact sexual or drug use partners and advise them of their condition.

V. Prevention

a. Massive educational efforts should be undertaken to inform all inmates and all staff (correctional and medical) about HIV disease and the steps to be taken to prevent its spread. Further, while the Commission clearly does not condone illegal activity by inmates, the terminal absoluteness of this disease, coupled with the potential for catastrophic epidemia, require (consistent with security) the unorthodox conduct of making available to inmates whatever appropriate protective devices can reduce the risk of contagion.

VI. Confidentiality

a. Recognizing that being labeled as HIV-positive may put an inmate in a correctional institution at undue risk for compromised personal safety, it is particularly important that the rules of physician/patient confidentiality regarding HIV test results and diagnoses of AIDS be followed. Further, since the legal status regarding the confidentiality of such information varies from state to state and from time to time, the facility should keep informed of any changes enacted by legislatures or determined by the courts.

VII. Special Correctional Programs

a. HIV-positive inmates and those with AIDS who otherwise meet eligibility criteria for special correctional programs (e.g., parole, medical reprieve) should be given the same consideration as are other inmates.

VIII. The HIV-Positive Correctional Health Care Worker

a. Mandatory testing of correctional HCWs for HIV infection is not recommended.

b. Correctional HCWs who are HIV-positive have a right to continue their career in the health care field in a capacity that does not pose an identifiable risk of HIV infection to their patients. HCWs who are HIV-positive should not be required to disclose their HIV status if their work does not include involvement in invasive procedures as defined by the CDC.

c. HCWs who are involved in the performance of invasive procedures should disclose their seropositive status to the appropriate institutional medical and administrative authorities in his/her facility. Decisions on HCWs ability to perform specific procedures should be decided on an individual, case by case, basis.

Adopted by the Board of Directors of the National Commission on Correctional Health Care at its annual meeting on November 8, 1987.

Amended: April 20, 1989
April 29, 1990
September 22, 1991

CDC HIV/AIDS PREVENTION

CENTERS FOR DISEASE CONTROL AND PREVENTION

*Facts about*

# The Human Immunodeficiency Virus and Its Transmission

Research has revealed a great deal of valuable medical, scientific, and public health information about the human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS). The ways in which HIV can be transmitted have been clearly identified. Unfortunately, some materials that conflict with the scientific findings have been widely dispersed. The Centers for Disease Control and Prevention (CDC) provides the following information to correct a few misperceptions about HIV.

## *Transmission*

HIV is spread by sexual contact with an infected person, by sharing needles and/or syringes (primarily for drug injection) with someone who is infected, or, less commonly (and now very rarely in countries where blood is screened for HIV antibodies), through transfusions of infected blood or blood clotting factors. Babies born to HIV-infected women may become infected before or during birth, or through breast-feeding after birth.

In the health-care setting, workers have been infected with HIV after being stuck with needles containing HIV-infected blood or, less frequently, after infected blood contacts the worker's open cut or splashes into a mucous membrane (e.g., eyes or inside of the nose). There has been only one demonstrated instance of patients being infected by a health-care worker; this involved HIV transmission from an infected dentist to six patients. Investigations have been completed involving more than 22,000 patients of 63 HIV-infected physicians, surgeons, and dentists, and no other cases of this type of transmission have been identified.

Some people fear that HIV might be transmitted in other ways; however, no scientific evidence to support any of these fears has been found. If HIV were being transmitted through other routes (for example, through air, food, water, animals, or insects), the pattern of reported AIDS cases would be much different from what has been observed, and cases would be occurring much more frequently in persons who report no identified risk for infection. All reported cases suggesting new or potentially unknown routes of transmission are thoroughly investigated by state and local health departments with the assistance, guidance, and laboratory support from CDC; *no additional routes of transmission have been recorded,* despite a national sentinel system designed to detect just such an occurrence.

The following paragraphs specifically address some of the more common misperceptions about HIV transmission.

## *HIV in the Environment*

Scientists and medical authorities agree that HIV does not survive well in the environment, making the possibility of environmental transmission remote. HIV is found in varying concentrations or amounts in blood, semen, vaginal fluid, breast milk, saliva, and tears. (See page 3, *Saliva, Tears, and Sweat.*) To obtain data on the survival of HIV, laboratory studies have required the use of artificially high concentrations of laboratory-grown virus. Although these unnatural concentrations of HIV can be kept alive for days or even weeks under precisely controlled and limited laboratory conditions, CDC studies have shown that drying of even these high concentrations of HIV reduces the amount of infectious virus by 90 to 99 percent within several hours. Since the HIV concentrations used in laboratory studies are much higher than those actually found in blood or other specimens, drying of HIV-infected human blood or other body fluids reduces the theoretical risk of environmental transmission to that which has been observed—essentially zero. Incorrect interpretation of conclusions drawn from laboratory studies have unnecessarily alarmed some people.

Results from laboratory studies should not be used to assess specific personal risk of infection because 1) the amount of virus studied is not found in human specimens or elsewhere in nature, and 2) no one has been identified as infected with HIV due to contact with an environmental surface. Additionally, HIV is unable to reproduce outside its living host (unlike many bacteria or fungi, which may do so under suitable conditions), except under laboratory conditions, therefore, it does not spread or maintain infectiousness outside its host.

## *Households and Other Settings*

Although HIV has been transmitted between family members in a household setting, this type of transmission is very rare. These transmissions are believed to have resulted from contact between skin or mucous membranes and infected blood. To prevent even such rare occurrences, precautions, as described in previously published guidelines, should be taken in all settings—including the home—to prevent exposures to the blood of persons who are HIV infected, at risk for HIV infection, or whose infection and risk status are unknown. For example, gloves should be worn during contact with blood or other body fluids that could possibly contain blood, such as urine, feces, or vomit. Cuts, sores, or breaks on both the care giver's and patient's exposed skin should be covered with bandages. Hands and other parts of the body should be washed immediately after contact with blood or other body fluids, and surfaces soiled with blood should be disinfected appropriately. Practices that increase the likelihood of blood contact, such as sharing of razors and toothbrushes, should be avoided. Needles and other sharp instruments should be used only when medically necessary and handled according to recommendations for health-care settings. (Do not put caps back on needles by hand or remove needles from syringes. Dispose of needles in puncture-proof containers out of the reach of children and visitors.)

There is no known risk of HIV transmission to co-workers, clients, or consumers from contact in industries such as food-service establishments (see information on survival of HIV in the environment). Food-service workers known to be infected with HIV need not be restricted from work unless they have other infections or illnesses (such as diarrhea or hepatitis A) for which any food-service worker, regardless of HIV infection status, should be restricted. The Public Health Service recommends that all food-service workers follow recommended standards and practices of good personal hygiene and food sanitation.

In 1985, CDC issued routine precautions that all personal-service workers (e.g., hairdressers, barbers, cosmetologists, massage therapists) should follow, even though there is

no evidence of transmission from a personal-service worker to a client or vice versa. Instruments that are intended to penetrate the skin (e.g., tattooing and acupuncture needles, ear piercing devices) should be used once and disposed of or thoroughly cleaned and sterilized. Instruments not intended to penetrate the skin but which may become contaminated with blood (e.g., razors) should be used for only one client and disposed of or thoroughly cleaned and disinfected after each use. Personal-service workers can use the same cleaning procedures that are recommended for health-care institutions.

### *Kissing*

Casual contact through closed-mouth or "social" kissing is not a risk for transmission of HIV. Because of the theoretical potential for contact with blood during "French" or open-mouth kissing, CDC recommends against engaging in this activity with an infected person. However, no case of AIDS reported to CDC can be attributed to transmission through any kind of kissing.

### *Biting*

Recently, a state health department conducted an investigation of an incident that suggested blood-to-blood transmission of HIV by a human bite. There have been other reports in the medical literature in which HIV appeared to have been transmitted by a bite. Severe trauma with extensive tissue tearing and damage and presence of blood were reported in each of these instances. Biting is not a common way of transmitting HIV. In fact, there are numerous reports of bites that did not result in HIV infection.

### *Saliva, Tears, and Sweat*

HIV has been found in saliva and tears in very low quantities from some AIDS patients. It is important to understand that finding a small amount of HIV in a body fluid does not necessarily mean that HIV can be ***transmitted*** by that body fluid. HIV has ***not*** been recovered from the sweat of HIV-infected persons. Contact with saliva, tears, or sweat has never been shown to result in transmission of HIV.

### *Insects*

From the onset of the HIV epidemic, there has been concern about transmission of the virus by biting and bloodsucking insects. However, studies conducted by researchers at CDC and elsewhere have shown no evidence of HIV transmission through insects—even in areas where there are many cases of AIDS and large populations of insects such as mosquitoes. Lack of such outbreaks, despite intense efforts to detect them, supports the conclusion that HIV is not transmitted by insects.

The results of experiments and observations of insect biting behavior indicate that when an insect bites a person, it does not inject its own or a previously bitten person's or animal's blood into the next person bitten. Rather, it injects saliva, which acts as a lubricant or anticoagulant so the insect can feed efficiently. Such diseases as yellow fever and malaria are transmitted through the saliva of specific species of mosquitoes. However, HIV lives for only a short time inside an insect and, unlike organisms that are transmitted via insect bites, HIV does not reproduce (and, does not survive) in insects. Thus, even if the virus enters a mosquito or another sucking or biting insect, the insect does not become infected and cannot transmit HIV to the next human it feeds on or bites. HIV is not found in insect feces.

There is also no reason to fear that a biting or bloodsucking insect, such as a mosquito, could transmit HIV from one person to another through HIV-infected blood left on its

mouth parts. Two factors serve to explain why this is so—first, infected people do not have constant, high levels of HIV in their bloodstreams and, second, insect mouth parts do not retain large amounts of blood on their surfaces. Further, scientists who study insects have determined that biting insects normally do not travel from one person to the next immediately after ingesting blood. Rather, they fly to a resting place to digest this blood meal.

## *Effectiveness of Condoms*

The proper and consistent use of latex condoms when engaging in sexual intercourse—vaginal, anal, or oral—can greatly reduce a person's risk of acquiring or transmitting sexually transmitted diseases, including HIV infection.

Under laboratory conditions, viruses occasionally have been shown to pass through natural membrane ("skin" or lambskin) condoms, which may contain natural pores and are therefore not recommended for disease prevention (they are documented to be effective for contraception). On the other hand, laboratory studies have consistently demonstrated that *latex* condoms provide a highly effective mechanical barrier to HIV.

In order for condoms to provide maximum protection, they must be used *consistently* (every time) and *correctly*. Incorrect use contributes to the possibility that the condom could leak or break.

*When condoms are used reliably,* they have been shown to prevent pregnancy up to 98 percent of the time among couples using them as their only method of contraception. Similarly, numerous studies among sexually active people have demonstrated that a properly used latex condom provides a high degree of protection against a variety of sexually transmitted diseases, including HIV infection.

Condoms are classified as medical devices and are regulated by the Food and Drug Administration. Condom manufacturers in the United States test each latex condom for defects, including holes, before it is packaged. Several studies of correct and consistent condom use clearly show that condom breakage rates in this country are less than 2 percent. Even when condoms do break, one study showed that more than half of such breaks occurred prior to ejaculation.

*Latex condoms are highly effective in preventing pregnancy and most sexually transmitted diseases, including HIV infection, but only if they are used consistently and correctly.*

For more detailed information about condoms, see *"Facts about Condoms and Their Use in Preventing HIV Infection and Other STDs."*

## *The Public Health Service Response*

*The U.S. Public Health Service is committed to providing the scientific community and the public with accurate and objective information about HIV infection and AIDS.* It is vital that clear information on HIV infection and AIDS be readily available to help prevent further transmission of the virus and to allay fears and prejudices caused by misinformation. For a complete description of CDC's HIV/AIDS prevention programs, see *"Facts about The Centers for Disease Control and Prevention's (CDC) HIV/AIDS Prevention Activities.*

***For more information:***

| | |
|---|---|
| *CDC National AIDS Hotline:* | *1-800-342-AIDS (2437)* |
| *Spanish:* | *1-800-344-SIDA (7432)* |
| *Deaf:* | *1-800-243-7889* |

*CDC National AIDS Clearinghouse*
*P.O. Box 6003*
*Rockville, MD 20849-6003*

- *Johns Hopkins Study of Maryland Correctional Health Care Workers*

  - Of 230 workers surveyed (using a self-administered questionnaire), these exposures were reported for a six month period:

    | | |
    |---|---|
    | 14 | needlesticks |
    | 25 | eye/mouth splashes |
    | 17 | contacts with intact skin |
    | 17 | cuts/lacerations |
    | 73 | total number of exposures |

  - Of these, approximately 60% were ever reported to Infection Control.

  - HBV vaccination in Correctional Health Care Workers ranged from 7% (Hagerstown) to 70% (Easton).

***What is known about Correctional Officers?***

Very little information is available on Correctional Officers, including Maryland Correctional Officers. In Maryland, Correctional Officers are provided with the HBV vaccine (at no cost) and approximately 95% of Correctional Officers are believed to be vaccinated.

# *Governor's Task Force Meeting on Occupational Exposure in Correctional Facilities*

*November 20, 1997*

- Risk of Bloodborne Pathogens Infections Related to Occupational Exposure
- Risk of Bloodborne Pathogens Infection Related to Alternate Modes of Transmission
- Correctional Setting Bloodborne Pathogens Risk Factors

Robyn R.M. Gershon, MHS, DrPH

*phone: (410) 955-3046 fax: (410) 955-0617*

*e-mail: rgershon@jhsph.edu*

***What is occupational exposure to bloodborne pathogens?***

An occupational exposure includes:

- Needlesticks
- Contact with mucous membranes
- Contact with non-intact skin

Sources of bloodborne pathogens include:

- Blood
- Bloody body fluids
- Semen
- Vaginal fluid
- Body tissue
- Amniotic fluid

***What is the risk of infection with bloodborne pathogens given the various types of occupational exposures?***

The highest risk of infection is associated with needlesticks. For example:

HIV Transmission Through

- Needlesticks: **3** out of every **1,000** HIV contaminated needlesticks results in an infection
- Mucosa: **1** out of every **1,000** HIV contaminated exposures results in an infection

HBV Transmission Through

- Needlesticks: **20-30** out of every **100** contaminated needlesticks results in an infection

HCV Transmission Through

- Needlesticks: **3-4** out of every **100** contaminated needlesticks results in an infection

***What is an alternate mode of HIV transmission?***

In addition to the three well known modes of transmission of HIV (i.e., sexual, parenteral, and perinatal), there are some rare anecdotal reports of spread through unusual ways. These include: human bites, acupuncture, tatooing, and deep kissing. In fact, these unusual modes of spread are related to either parenteral or mucosal routes. There are no reports of spread through truly "casual contact" either at work or at home. For instance, no spread has been identified through sharing utensils, sinks, toilets, beddings, food, nail clippers, towels, water fountains, etc. None of these forms of social contact or shared use has ever been associated with HIV spread. There have not been any reports of transmission through prolonged exposure and/or contact with feces and urine (e.g., day care worker).

***Correctional Setting Information***

- *Police Officer Data, Colorado Study, 1989-1991*
  - Data on 48 exposures to blood or saliva.
  - Thirty-two source persons had voluntary testing-of these, five (16%) were HIV positive.
  - The rate of exposure was quite low per person (roughly one chance every 40 years of working).
  - Most exposures occurred because officer did not have time to put on protective gear.