HIV Prevention in Prisons and Jails: Obstacles and Opportunities

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Synopsis

High rates of human immunodeficiency virus (HIV) infection among jail and prison inmates suggest that HIV prevention efforts should focus on incarcerated populations. Overcrowding, the high prevalence of injection drug use, and other high-risk behaviors among inmates create a prime opportunity for public health officials to affect the course of the HIV epidemic if they can remedy these problems.

Yet, along with the opportunity, there are certain obstacles that correctional institutions present to public health efforts. The various jurisdictions have differing approaches to HIV prevention and control. Whether testing should be mandatory or voluntary, whether housing should be integrated or segregated by HIV serostatus, and whether condoms, bleach, or clean needles should be made available to the prisoners, are questions hotly debated by public health and correctional officials.

Even accurate assessment of risk-taking within the institutions leads to controversy, as asking questions could imply acceptance of the very behaviors correctional officials are trying to prevent. Education and risk-reduction counseling are the least controversial and most widely employed modes of prevention, but the effectiveness of current prevention efforts in reducing HIV transmission in this high-risk population is largely undetermined.

RESOURCES for preventing human immunodeficiency virus (HIV) transmission are extremely limited, so education and prevention programs should concentrate efforts on populations at the greatest risk for infection. The higher rates of infection among the incarcerated, as compared with the general public, indicate that HIV prevention programs should target persons serving sentences in correctional facilities. Recent studies show that female inmates, inmates ages 25 or younger, and African American and Hispanic inmates carry the greatest risks for infection; program planners should consider their special needs.

In this report, we estimate the magnitude of the HIV problem in prisons and jails, describe the major strategies for HIV prevention among inmates, define structural barriers to implementing certain preventive strategies, and identify factors that should be considered in serious attempts to reduce high-risk behavior in current and in former inmates. We conclude that to prevent the transmission of HIV among incarcerated persons and from those who serve time in corrections facilities to members of the general population, officials from the public health, corrections, drug treatment, and legislative systems must collaborate in program planning and implementation.

Magnitude of the Problem

Prisons and jails. During 1990, an estimated 1.1 million adults and approximately 6,000 juveniles were confined to local jails or to State or Federal prisons (*1*). As of 1989, an additional 94,000 juveniles, ages 10–17, were held in juvenile facilities (*2*). Jails are facilities designed for detaining people awaiting trial and for people serving sentences of less than 1 year. Prisons are for convicted felons serving sentences longer than 1 year. Juvenile facilities may include public or private detention centers, training schools, shelters, halfway houses, and the like. Some

Table 1. Profile of adult inmates, percentage distribution of inmate population by correctional system

Category	Federal 1991 [1]	State 1991 [2]	Jails 1989 [3]
Race:			
White, non-Hispanic	38	35	39
Black, non-Hispanic	30	46	42
Hispanic	28	17	17
Other	4	2	2
Sex:			
Male	92	95	90.5
Female	8	5	9.5
Age:			
24 years or younger	9	22	34
25–34 years	36	46	43
35 years or older	55	33	23
Offense:			
Violent offenses (murder, rape, robbery, and so forth)	17	47	23
Property offenses (burglary, theft, fraud, and so forth)	14	25	30
Drug offenses (possession, trafficking, and so forth)	58	21	23
Public order offenses [4]	9	7	23
Other	2	...	...
Total population (number)	54,006	711,643	395,554
Median maximum sentence (months)	84	108	6

[1] Data reported June 1991—sentenced inmates only (U.S. Department of Justice, Federal Bureau of Prisons' telefax, May 6, 1994).
[2] Data reported June 1991 (*4*).
[3] Data reported 1989 (*37*).
[4] Public order offenses include Federal—weapons, immigration, tax law violations, and so forth; State—weapons, driving under the influence (DUI), and so forth; Jails—weapons, obstruction of justice, DUI, and so forth.

juveniles are, however, detained in jails pending transfer to juvenile authorities.

Incarcerated adults are predominately male (approximately 93 percent); although from 1983 to 1991, the female population grew by 141 percent, compared with 80 percent in the male segment (*3,4*). As of 1991, white males constituted the largest proportion of Federal prison inmates and African American males constituted the largest proportion of inmates in Federal and State prisons and the jail systems (*4*). On average, county and local jail inmates are younger than prison inmates (*5*).

Drug offenses account for the single largest number of Federal crimes. More violent crimes were committed by, and longer sentences were imposed upon, inmates in the State system. Property crimes such as burglary, theft, or fraud account for a larger percentage of jail sentences (table 1).

In 1989, the juvenile offender held in a public facility was most likely a black male between the ages of 14 and 17 in custody for a delinquent offense, such as a property crime or a crime against another person. The private juvenile facility resident, on the other hand, was most likely a white male, ages 14–17, and in custody for a nondelinquent offense such as running away from home, playing hooky, or for unruly behavior (*2*) (table 2).

HIV and AIDS. Acquired immunodeficiency syndrome (AIDS) was first reported among U.S. prison inmates in 1983 (*6*). By 1992, there were an estimated 195 AIDS cases for every 100,000 persons incarcerated in a State or Federal prison, as compared with 18 cases for every 100,000 within the entire United States population (*7*). Between 1989 and 1992, seroprevalence studies conducted in 46 correctional facilities in 19 metropolitan areas found the median rate to be 1.7 percent, ranging from 0.0 percent to 20.6 percent for women and from 0.0 percent to 14.8 percent for men. The range for homosexual and bisexual men was 9.4 to 34.5 percent; it ranged from 0.6 to 43.1 percent for persons who injected drugs (*8*).

HIV positivity rates of inmates entering State prisons have ranged from 0.0 percent in Idaho and Iowa during 1986 and 1987 to 18 percent in New York during 1989 (*9,10*). In 1991, 51.2 percent of all inmates in the State correctional systems reported having been tested for HIV, with a 2.2 percent seropositive rate (*11*). The seroprevalence rate for the Federal prisons in 1991 was less than 1.0 percent, based on blinded samples taken from entering inmates and from testing inmates at various times during the year (Mr. Tom Metzger, Office of Public Affairs, Federal Bureau of Prisons, September 1993). In 1989, rates of infection among women were as high as 25.8 percent in New York City jail facilities.

Drug use among inmates. High rates of HIV infection are not surprising in a population characterized by heavy involvement with illicit drug use. Although sharing of injection equipment is a well-documented mode of HIV transmission, the use of other illicit drugs is also an associated risk for the disease. This is due, in part, to the fact that many drug users exchange sex for drugs or money to support their habits, and do so without the protection of condoms (*12–14*). In 1989, jail inmates nationwide were twice as likely as those in the general population to have ever used drugs and were seven times more likely to have been users at that time. Seventy-eight percent had used drugs during their lifetime, 44 percent had used drugs in the month before their current offense, 30 percent daily or almost daily, and 27 percent were under the influence when they committed their current offense (*15*).

In 1991, 79 percent of State prison inmates indi-

cated they had at some time used illicit drugs; 21 percent were serving time for committing a drug-related offense (*11*). Approximately 2.5 percent of those inmates who reported having tested positive for HIV were drug users, compared with 0.8 percent of those who had never used drugs (*16*). Of the inmates who had used drugs in the month before their offense, 40 percent had injected primarily heroin, 28 percent other opiates, and 28 percent cocaine (*11*).

The HIV seropositivity rates were highest among inmates who reported they had used drugs in the month before their offense (2.8 percent), had injected drugs (4.9 percent), or had ever shared needles with other drug users (7.1 percent). Twelve percent of all inmates and 20 percent of those who used drugs in the month before their offense reported that they had shared a needle (*11*).

Despite the large number of drug users within incarcerated populations, drug-treatment programs are either not always available to inmates or are not utilized. Data on 16,998 intravenous drug users (IDUs) not in treatment were collected from 1987 to 1989. Of the 83 percent who reported spending some time in jail or prison, 81 percent had never participated in formal drug treatment while incarcerated (*17*).

In the "1992 Update: HIV/AIDS in Correctional Facilities" (*7*), the State correctional systems reported that an estimated 19 percent of male inmates and 15 percent of female inmates had a history of IDU. Among these systems, the percentage of inmates reported having received any type of drug treatment was 35 percent for males and 83 percent for females. In this 1992 report, 19 of 38 large jail systems reported that 27 percent of males and 34 percent of females had a history of IDU; 9 percent and 30 percent, respectively, had received treatment.

Even when services are available and are used by inmates, the treatment may not be appropriate to change the behaviors of the drug users or to prevent relapses of those persons who have made positive changes. For example, in 1989, of those convicted jail inmates who had used a major drug daily in the month before their offense, 48 percent had, at some time, participated in a drug abuse treatment program—27 percent, once; 8 percent, twice; 9 percent, three to five times; and 4 percent six or more times. Eighteen percent indicated they were most recently treated while incarcerated (*15*).

In 1992, 55 percent of 503 large jail jurisdictions were providing some type of drug treatment; however, only 8 percent of the population of approximately 362,000 had participated in the programs (*18*). The Federal Bureau of Prisons reported in 1994

Table 2. Profile of juvenile detention population, percentage distribution, by public and private facility, 1989 (*2*)

Category	*Total*	*Public*	*Private*
Race:			
White	48	40	60
Black	37	42	29
Hispanic	13	16	8
Other	2	2	3
Sex:			
Male	78	88	70
Female	22	12	30
Total nondelinquents [1]	27,813	3,086	24,727
Total delinquents	66,132	53,037	13,095
Delinquent offenses:			
Person crimes	25	27	19
Serious property crimes	28	29	26
Other property crimes	17	14	28
Alcohol, drug-related crimes	13	12	14
Public order offenses	5	5	2
Technical violations	8	9	2
Other	4	3	9
Total 1-day counts	93,945	56,123	37,822

[1] Nondelinquents include detainees held for reasons not considered crimes. These include dependency, neglect, abuse, emotional disturbance, retardation, and other.

that 52 percent of its inmates had substance abuse problems and that 70 percent had committed drug offenses (*19*). In 1991, the General Accounting Office (GAO) reported that only 1 percent of Federal inmates who had moderate to severe drug abuse problems had received appropriate treatment and that less than half of the treatment slots were filled. Also, for inmates who did complete the intensive treatment, there were no aftercare services in place to assist them in remaining drug free. The GAO report concluded that, particularly since the inmates may lack motivation to seek treatment, the lack of outreach and program information to prison staff may have contributed to the small number of inmates enrolling in the programs (*20*).

Among State facility inmates in 1991 who had used drugs during the month before their last offense, 48 percent had participated in drug treatment after receiving their current sentence. Of these, 31 percent had been in treatment before entering prison; 25 percent had been in such a program once or twice; and 6 percent, three or more times. Of these 48 percent, 32 percent had participated in group counseling, 12 percent in self-help and peer group counseling, and 7 percent in drug education programs. Only 11 percent had received inpatient drug treatment, and 5 percent had received individual counseling (*11*). According to a 1991 GAO report, less than 20 percent of State inmates who had drug abuse problems were receiving treatment (*21*).

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Inmates who do participate in drug treatment programs while incarcerated quite often relapse upon release (*22*). In a 1993 study of 55 recently paroled HIV-positive New Yorkers, 67 percent had relapsed into using at least one drug of choice; 84 percent had participated in a drug treatment program in prison. Post-release relapse was found to be associated with poor housing status, limited social support, lack of drug treatment, and less frequent visits with case managers (*23*). These linkages to larger social issues suggest that if prevention efforts are to be effective, access to followup services needs to be addressed, as indicated in a 1993 memo from Lisa W. Scheckel, Acting Director, Center for Substance Abuse Treatment (CSAT), published in the CSAT communiqué (*22*):

> . . . offenders leaving a structured, institutional setting endure great stress—often with limited coping skills—and have a critical need to learn how to prevent relapse . . . .
>
> . . . a comprehensive approach is needed—many drug-abusing offenders lack adequate education, job skills, medical care, family support, or even a home as a backdrop for remaining sober or drug free.

The risky behaviors that lead to HIV infection may not stop once a person is behind bars. There is evidence that sex and drug use take place within correctional facilities. In a 1988 study of six South Carolina correctional institutions, more than 40 percent of inmates reported knowledge of needle-sharing, and more than 60 percent reported sexual activity among inmates in the past year. Eight percent of the responding inmates had injected drugs themselves; 40 percent had shared drug paraphernalia occasionally (*24*).

A Montreal study of recent IDUs (injected in the past 6 months) found that 8 percent of the males and 11 percent of the females had sexual relations while in jail. Those persons who indicated involvement in prostitution were more likely to have participated in sex while in jail (26 percent of 114 males and 15 percent of 99 females) and were significantly more likely to have been HIV positive at the time of the study (27 percent males and 9 percent females) (*25*).

Few studies have been conducted to determine whether HIV seroconversions take place during incarceration. Data from a study conducted between 1988 and 1990 of male inmates within the Illinois Department of Corrections support the opinion that transmission occurs within the prison. At baseline testing in 1988, 47 of 1,309 inmates were found to be HIV positive. One year later, blood samples were taken and 80 persons were found to be seropositive, 8 of whom had been HIV negative at baseline (*26*). A study conducted in the Maryland prison system in 1987 concludes that seroconversion in two inmates most likely took place within the prison (*27*).

Special Populations

Youth. Although young people, in general, seem to be informed about AIDS and HIV transmission, they are less aware of risk-reduction strategies. Incarcerated youth may be even less knowledgeable than public high school students about reducing risk of transmission. In a 1988 San Francisco study of high school students and youths in a juvenile detention center, 85 percent of the students acknowledged condom use as a means of reducing transmission, compared with 75 percent of the incarcerated teens. Only 62 percent of the incarcerated youths, compared with 80 percent of high school students, recognized that abstinence from sex lowered the risk of infection, and only 56 percent, compared with 72 percent of the high schoolers, were aware that avoiding sex with an IDU lowered the risk of infection (*28*).

In addition to being less knowledgeable about risk-reduction methods, incarcerated youth are at much greater risk for acquiring HIV because of their sex and drug behaviors. Fifty-two percent of the adolescents in the detention center were age 12 or younger when they had first had sex, compared with 26 percent of the high school sample. Ninety-nine percent of the incarcerated adolescents reported being sexually active; 73 percent reported two or more sex partners in the past year; and only 29 percent of those who were sexually active reported consistent condom use. This compares with 28 percent, 8 percent, and 37 percent, respectively, of the high school adolescents.

Thirteen percent of the incarcerated adolescents and 4 percent of the students reported having injected drugs (*28*).

In a 1987 survey of male and female inmates in the Cook County, IL, Department of Corrections, 17 percent of those who reported drug use with a needle were younger than 25 years. The survey also concluded that among females, younger inmates were more likely to have a lifetime history of injection drug use (*29*).

Of the 78 percent of jail inmates in 1989 who had ever used drugs, 33 percent were between the ages of 18 and 24 (*15*). A study of males in a mid-Atlantic juvenile detention center in 1986 revealed that 16 percent of the inmates were serving time for a substance abuse offense and 4 percent for a sex offense; 85 percent had prior offense histories (*30*).

A history of sexually transmitted diseases (STDs) has also been associated with risk for HIV seropositivity. A person with signs or symptoms of STD has usually engaged in activities that increase risk for HIV infection. A 1981 study of STDs in 100 females in a juvenile detention center found that 81 percent complained of vaginal discharge. Gonorrhea was found in 18 percent, and chlamydia in 20 percent, of detainees tested. Most (68 percent) of the respondents used no method of contraception (*31*).

A study of incarcerated female adolescents in Los Angeles County found that from 1989 to 1992 there was an increase in awareness of HIV high-risk behavior. However, though reported condom use for vaginal intercourse increased, STDs were even more prevalent in this population in 1992 than in previous years (*32*). Childhood sexual abuse has implications for HIV prevention in adolescents, as many of the high-risk behaviors displayed in adolescence are a result of earlier abuse. In 1984, the American Humane Association classified 13 percent of the official reports of child abuse and neglect as "sexual maltreatment," accounting for more than 100,000 children. This could be just the "tip of the iceberg" since many incidents are probably never reported. An estimate in 1984 was that "between 46,000 and 92,000 boys were victimized each year and the number of girls may be three times higher" (*33*).

Girls who have been sexually abused sometimes act out their hostilities through self-destructive behaviors such as running away from home, sexual identity conflicts, substance abuse, suicide attempts, and compulsive sexual behavior. Sometimes these problems continue into adulthood (*33*). Boys who have been victimized tend to become more aggressive in their "acting out." Manifestations of this behavior might include criminal acts such as molestation and rape (*34*). In an FBI study of 41 serial rapists, more than 50 percent reported they had repeated the abuse they received as children (*35*).

Additionally, drug use has been indicated as a direct result of abuse in at least one study of 34 adolescents, 6 or 8 years after they had been sexually abused. Alcohol and other drugs had been given to the child by the abuser to suppress tension, symptoms, and thoughts related to the abusive episodes. The children continued to use the alcohol and drugs to lessen the anxiety related to the exploitation (*36*).

Although there are few data on this subject, the correctional system population includes many survivers of sexual abuse. In a 1989 jail survey, 44 percent of females and 13 percent of males reported having been sexually or physically abused in the past (*37*); more than 31 percent of the women had been abused before age 18. Eighty-six percent of these inmates had used drugs in the past, compared with 77 percent of those inmates who indicated they had not been abused. Seventy-two percent of the abused inmates reported they had used drugs regularly, compared with 56 percent who had not been abused (*15*). Similarly, in 1991, 43 percent of females and 12 percent of males in State prison systems reported having been sexually or otherwise physically abused; one-third of the women indicated it had happened before they had reached the age of 18 (*11*). HIV prevention strategies will need to address not only risk-reduction methods, but also victimization issues and barriers to behavior change such as lack of self-esteem and low motivation for self-protection (*38*).

Women. The number of incarcerated women more than doubled between 1983 and 1991, from approximately 35,000 to 84,000 (*3*). Although HIV infection in women is on the increase, the rate in men remains higher in the general U.S. population. The rate of infection in the incarcerated population, however, is higher in females than in males. In the 1991 survey of State inmates, those who were ever tested for HIV and reported the results, women (3.3 percent) were more likely than men (2.1 percent) to have tested positive. Supporting these results is a study that assessed HIV seroprevalence in 10 prisons and jails throughout the United States between 1989 and 1992; women had higher rates of infection than men in 9 of the 10 systems (*8*).

High rates of HIV infection among incarcerated women are curious, given the higher rate of infection among men in the general population. The incongruity may be explained by the greater likelihood of women to be arrested for crimes related to drug

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use. In 1989, one of three jailed women were there for a drug-related offense, as compared with one of five men. From 1986 to 1991, there was a 432 percent increase in the number of women in the State prisons serving a sentence for a drug offense; in 1991, 82 percent of those women who committed a drug-related offense had used drugs in the past month (*11*).

Sixty-four percent of female inmates in the Federal prisons in 1991 were serving time for drug-related offenses (*39*). The Cook County, IL, study finds female inmates twice as likely as male inmates to report injection drug use (*29*). In 1991, female prison inmates were also more likely to have used a needle to inject drugs (7 percent) and to share a needle (10 percent) than men (5 and 7 percent, respectively).

Women in Federal custody are mostly of child-bearing age, 20–34. Eighty percent have children and 70 percent of those are single parents. Many have either had a child just prior to incarceration or are pregnant and give birth while incarcerated (*40*). Six percent of women entered the State prison system pregnant in 1991 (*11*). Along with the male inmates' needs for services and education, females need additional counseling related to perinatal HIV transmission and pediatric AIDS.

People of color. African Americans and Hispanics are still disproportionately affected by the AIDS epidemic. As of December 1992, they accounted for 51 percent of all AIDS cases reported in the United States, although together these two groups make up only 21 percent of the total population. Of the cumulative AIDS cases reported by the correctional systems in 1992 that included race or ethnicity information (81 percent of the total), 44 percent were African American, 42 percent were Hispanic, and 14 percent were white (*7*).

Vlahov's study of 10 prison systems throughout the United States found that overall HIV rates for nonwhites (4.8 percent) were higher than those for whites (2.5 percent). Of the State prison inmates in 1991 who had ever been tested for HIV and reported the results, 3.7 percent of Hispanic inmates and 2.6 percent of black inmates tested positive, compared with 1.1 percent of white inmates. The most alarming rates of infection were found among Hispanic women, who, with a rate of 6.8 percent, were more than three times as likely as white women (1.9 percent) to be infected with HIV (*11*).

In 1985, another study of the San Francisco high school adolescents found that black and Latino youth were almost twice as likely as white adolescents to have misconceptions about HIV and its transmission. This lack of knowledge was related to a lower perception of risk for being infected with HIV (*41*).

Impact on the community. By 1991, the average daily population of State and Federal prisons had more than doubled from 329,000 in 1980 to 804,000 (*42*), and the jail population had increased by 75 percent to 427,000 from 244,000 in 1983 (*18*). The New York State prison population, which rose from 20,000 in 1979 to 59,000 in 1991, is a vivid representation of this trend (*43*). The increase is at least partially the result of mandatory sentencing for drug-related crimes. Inmates sentenced for a drug-related offense accounted for 44 percent of the increase in the prison population from 1986 to 1991 (*11*).

At the end of 1992, State and Federal correctional facilities were between 23 and 46 percent, respectively, above the planned capacity. Fifteen percent of the State facilities had been cited for overcrowded conditions, 14 percent for conditions related to medical care, and 13 percent related to staffing (*44*).

The overcrowded facilities impact on the rotation of inmates in and out of the correctional system. For example, during 1991 the jail systems admitted and released approximately 10 million persons; the State systems admitted almost 700,000, and approximately 430,000 were released into the general population (*4*). In 1990, the Federal system admitted and released approximately 33,000 (*45*). This "revolving door" phenomenon has implications for HIV prevention and control for the communities into which the inmates are released. In 1991, 4,000 of the estimated 8,000 New York State inmates who were HIV-positive were released (*43*).

The assumption that HIV infection in prisons is of little concern to those who are not incarcerated ignores crucial facts (*46*):

> Prison walls effectively restrain criminals only for short time spans; they neither delimit nor contain the public health dilemmas of HIV infection. How we care for the incarcerated will in the future have direct effect on needed clinical and public health services in the community.

Overcrowding and the high HIV infection rate has a significant impact on the correctional system, and subsequently, the taxpayer, because the costs for treating inmates with AIDS can be overwhelming. For instance, the District of Columbia Correctional System estimates a yearly cost of $23,300 just to keep an inmate locked up; for an inmate with full-blown AIDS, the cost soars to $60,000 (*47*).

The correctional systems are caught in a "Catch-22" situation. If they treat the AIDS patients, the costs are astronomical. If they do not provide treatment, lawsuits are often brought against the jails and prisons on behalf of the inmates—litigations that can cost millions of dollars in awards for negligence. In the end, from a purely cost-benefit perspective, it is less expensive to treat the infected inmates than to ignore them.

What's Being Done

Education and prevention programs. Education and prevention counseling are at present the least controversial ways to control the spread of HIV infection. According to the "1992 Update: HIV/AIDS in Correctional Facilities," 98 percent of the State systems, 90 percent of the large jail systems, and the Federal system provide some type of HIV prevention and education program (*7*).

Whether these programs are effectively reaching the prison and jail populations for whom they are designed is unclear. One study of AIDS knowledge and attitudes of prisoners found that inmates had basic knowledge of AIDS equal to their same-sex counterparts in the general population (*48*). Nonetheless, more than half of the incarcerated drug abusers studied in 58 county jails did not know the length of the HIV incubation period or that an infected person can transmit the virus when they have no symptoms (*49*). Additionally, 44 percent of inmates in a North Carolina women's prison believed they were likely to be exposed to HIV in prison and 81 percent believed that AIDS education programs should discuss female-to-female transmission (*50*).

In addition to giving needed services to the correctional system population, HIV education and prevention counseling should be explored as a cost-reduction tool. More than 470,000 inmates entered the State prisons during 1990 (*1*). Using 2.2 percent as an estimated HIV seroprevalence rate for State prisons (*11*), approximately 10,340 persons would have tested positive. The Centers for Disease Control and Prevention (CDC) estimates that the cost of providing HIV prevention counseling to seropositive persons is approximately $92 per person per session, and $51 for HIV testing ($134 total); for seronegative persons, it is approximately $42 and $4 ($46 total). The estimated cost for providing prevention counseling to all 470,000 inmates (assuming all are at risk and agree to be tested) would be $22.5 million, with an average cost of $2,179 for identifying and counseling each seropositive person ($22.5 million ÷ 10,340).

This cost may seem high; however, in 1991 the estimated lifetime cost of treating a person with HIV was $85,000 (*51*). Based on these figures, 39 persons could be identified and counseled for the lifetime cost of treating a single case ($85,000 ÷ $2,179). Consequently, if, as a result of these services, even 1 of the 39 persons avoided transmitting HIV, the benefit would outweigh the costs.

Testing. Some prison officials have responded to the HIV epidemic by implementing mandatory HIV testing of inmates, either upon entrance into the system or during incarceration. The intent behind mandatory testing has been the subsequent segregation of those who tested positive from those who test negative. However, some correctional officials believe it is important to identify inmates who need such early intervention, prevention, and medical services as intensive risk reduction counseling, CD4 monitoring, drug therapy, psychosocial support services, access to experimental therapies, and clinical trials (*7*).

As of 1992, seven State correctional systems in the United States required mandatory testing upon entry; eight required testing upon entry and for all current inmates; one upon entry and release; and two upon entry, release, and for all current inmates. Twenty-four States offered "purely voluntary" testing; they included the six States that represent 65 percent of the AIDS cases—California, Florida, Illinois, New Jersey, New York, and Texas (*7*).

Comparisons of results of blind seroprevalence and voluntary testing of male inmates in Wisconsin and Oregon revealed that seroprevalence rates did not differ between the two testing results (mandated or voluntary testing). In addition, prisoners at highest risk for infection (that is, IDUs) were more likely to request an HIV antibody test, discounting some

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prison officials' fears that those most at risk would avoid testing if it were voluntary (*52*).

In a more recent study, however, between April 1990 and June 1992, 7.5 percent of the New York male prison inmates who volunteered to be tested were seropositive. This result compares with 14.9 percent positive rate in a blinded seroprevalence study conducted on inmates entering the New York prison system in 1990. The authors of that study suggest that at least some HIV-infected inmates in New York's prisons do not seek testing for fear of mistreatment should their status become known.

However, it was also pointed out that some persons want to be tested to prove to their fellow inmates that they are negative, which could drive up the testing rate. This theory was supported by a sample of tested inmates who chose to convert from anonymous to confidential status. Fifty-nine percent of those persons were found to be positive to receive early intervention services; 79 percent of the negative persons converted to receive a written negative test result (*53*).

Among the arguments against any of kind of HIV testing is the lack of confidentiality available to those inmates who test positive and the implications that a positive result may have on their release. The Federal Bureau of Prisons requires HIV testing for all inmates upon their release (*7*). Seropositive inmates are asked to notify their "significant others" of the results. If an inmate refuses to be tested, he or she may remain incarcerated. The Bureau strongly encourages released inmates who test positive to notify their sex partners of their status. Where applicable, health departments are notified, and they then initiate partner notification for releasees in their area (*54*).

Availability of condoms, bleach, and needles. One dilemma that prison officials face in the AIDS pandemic is how to prevent the transmission of HIV infection without acknowledging that drug use and sexual relations occur within correctional facilities or to appear to condone such activities. Injection drug use and unprotected sex within the prison walls have clear implications for HIV prevention. As of March 1993, only four jail systems and two State prison systems had policies of making condoms available within the institutions: District of Columbia, Mississippi, New York City, Philadelphia, San Francisco, and Vermont. In these correctional systems, there have been very few problems with condoms being used as weapons or for smuggling contraband, contrary to the arguments made by critics of condom availability policies (*7*).

None of the U.S. correctional systems have made bleach or clean needles available to inmates. In some correctional facilities, however, there is de facto bleach availability since it is widely used for normal cleaning functions (*7*). Though needles are not officially available inside prisons-jails, they can often be acquired through the prison black market. Generally, these needles can be obtained only at exorbitant costs ($34 inside one Canadian facility) and come with no guarantee of safety (*55*). As a result, shared needles are often the only needles that are available to prisoners, thus increasing their chances of acquiring the HIV infection. Since tattooing is common among prisoners, this can also be a source of HIV transmission. There have been at least two AIDS cases related to tattooing with unsterilized needles in a prison (*56*).

From a public health perspective, making condoms, bleach, and clean needles available within the correctional facilities would reduce the risk of HIV transmission in this setting. However, since security and law enforcement are higher priorities of the policy-making officials in correctional facilities, it is unlikely that these practices will be widely adopted as responses to HIV infection (*57*).

Segregated housing. The primary intent behind mandatory testing is the subsequent segregation of those who receive positive results from those who test negative. This policy fosters the false assumption that if inmates are in the general population, they are not infected. The resulting sense of security may lead to an increase in high-risk behaviors among persons who incorrectly assumes themselves or others to be free of HIV infection (*58*).

As of November 1992, five State or Federal prison systems (10 percent) still permanently segregated inmates with AIDS, down from nine in 1990. Two systems segregated all known HIV-infected inmates, including asymptomatic persons. Most other systems

either make a case-by-case determination based on medical, security, or other reasons (59 percent) or include persons with HIV in the general population without restrictions (28 percent) (*7*).

One argument for segregation is that infected prisoners need to be isolated for their own safety. A report by the Correctional Association of New York indicated that a diagnosis of HIV infection often leads to isolation within or exclusion from the general population. Infected inmates are sometimes shunned or attacked (*30*). In some cases, inmates may pressure the systems to house the seropositive inmates separately. For instance, in focus group interviews of 40 female prisoners, 94 percent felt that all inmates should be given HIV antibody tests upon entering the system, and 56 percent believed that seropositive inmates should be segregated from the general population (*50*).

On the other hand, some argue that segregating inmates with HIV is undesirable because it labels the inmates and makes them vulnerable to assaults, discrimination, and disparate treatment. The isolation is depressing for inmates and is counter productive to promoting health or behavior changes (*40*). Systems that use voluntary or random test results to segregate inmates support the erroneous assumption that inmates in the general population are not infected. The resulting false sense of security may lead to an increase in high-risk behaviors among a population that incorrectly assumes itself to be free of HIV infection (*58*). An opponent to segregation summed it up: "Automatic segregation of prisoners with AIDS is no more desirable or defensible in an institutional context than it is in the society as a whole" (*59*).

Summary and Implications for Prevention

Prisons and jails are critically important battlegrounds in the fight against HIV infection. While all inmates appear to be at elevated risk, the rates of HIV infection and risky behavior among incarcerated women and inmates younger than 25 suggest that particularly vigorous HIV prevention efforts should be mounted in facilities for these groups. Risk-reduction strategies should be tailored for African American and Hispanic inmates, for those with histories of prostitution, and for those involved in injection drug use.

Mandatory sentencing for drug offenses has surely changed the composition of the correctional institutions and increased substantially the risk of all inmates. Before and during an inmate's incarceration, risk accrues from sharing needles and works in injection drug use, and risk is compounded by unprotected sexual intercourse. Given the link between drug use and incarceration, it is evident that an HIV prevention program in a correctional facility must deal with drug dependency issues.

Often, a prisoner's stay in a correctional facility is brief. This temporal constraint complicates all rehabilitation efforts, including those focusing on drug problems. Corrections officials, already challenged by the task of limiting HIV transmission within their facilities, cannot afford to ignore the consequences of interrupted drug treatment. Lacking continued support, former inmates quickly relapse into drug use. It is necessary that public health officials and corrections officers work with substance abuse agencies to ensure that drug treatment continues to be available beyond the confines of correctional settings.

Similarly, other aspects of the broader social context that lead to incarceration have implications for HIV prevention, and they underscore the need for linkages between the corrections system and community services. Social services that may be required to support HIV prevention interventions with released prisoners include support groups, case management, and educational programming.

Even within the correctional system, collaborative action is hampered by the fragmentation of Federal, State, and local jurisdictions. Cooperative planning across systems is further impeded by a tangle of ethical questions related to the conflicts between individual and collective rights. Public health and public safety officials have competing ideologies and priorities. In order for those concerned to move towards consensus, empirical evidence of the safety and efficacy of contested prevention strategies is needed. In some cases, legislative mandates must be created or removed to allow such innovative interventions to be implemented and evaluated.

Further studies must be conducted to elaborate the full range of HIV programs in place in the correctional system. One such current study, under the auspices of the CDC, is using formative research to describe and evaluate the quality of HIV–AIDS prevention programs in a variety of incarceration settings. Further studies need to be conducted to determine the programs' impact on behavior. On a broad front, the roles of prostitution, drug addiction, poverty, limited life options, and previous trauma must be better understood.

In addition to HIV–AIDS, other sexually transmitted diseases and tuberculosis menace the health of prisoners and, in turn, the public health. The daunting challenges in this area present unparalleled opportunities to halt the progress of HIV transmission, to improve the lives of prisoners and their families and

partners, and to guard the safety of the general population. If correctional and public health officials can bridge barriers to coordinated action, they can have a significant and lasting impact on the spread of HIV–AIDS in the United States.

References

1. Bureau of Justice Statistics: Correctional populations in the United States, 1990. NCJ–134946, Washington, DC, July 1992.
2. Office of Juvenile Justice and Delinquency Prevention: National juvenile custody trends 1978–1989. Washington, DC, March 1992.
3. United States Bureau of the Census: Statistical abstract of the United States 1985. Table No. 312. Jails-summary: 1978 and 1983; Table No. 317. Prisons under jurisdiction of State and Federal correctional authorities-summary, by State: 1980 to 1983.
4. Bureau of Justice Statistics: Correctional populations in the United States, 1991. NCJ–142729, Washington, DC, August 1993.
5. Bureau of Justice Statistics: Women in jail 1989. NCJ–134732, Washington, DC, March 1992.
6. Hanrahan J. P., et al.: Prolonged incubation period of AIDS in intravenous drug abusers: epidemiological evidence in prison inmates. J Infect Dis 150: 263–266, August 1984.
7. Hammett, T.: 1992 Update: HIV/AIDS in correctional facilities. Abt Associates, Inc., Cambridge, MA, January 1994.
8. Withum, D. J., et al.: High HIV prevalence among female and male entrants to U.S. correctional facilities (1989-92): implications for prevention and treatment strategies. Presented at the 121st Annual Meeting of the American Public Health Association, San Francisco, CA, Oct. 24–28, 1993.
9. Glass, G. E., Hausler, W., Loeffelholz, P. L., and Yesalis, C.: Seroprevalence of HIV antibody among individuals entering the Iowa prison system. Am J Public Health 78: 447–449, April 1988.
10. Weisfuse, Isaac B., et al.: HIV–1 infection among New York City inmates. AIDS 5: 1133–1138 (1991).
11. Bureau of Justice Statistics: Survey of State prison inmates, 1991. U.S. Department of Justice, Washington, DC, March 1993.
12. Rolfs, R. T., Goldberg, M., and Sharrar, R. G.: Risk factors for syphilis use and prostitution. Am J Public Health 80: 853–857, July 1990.
13. Relationship of syphilis to drug use and prostitution—Connecticut and Philadelphia, Pennsylvania. MMWR Morb Mortal Wkly Rep 37: 755–758, Dec. 16, 1988.
14. Antibody to human immunodeficiency virus in female prostitutes. MMWR Morb Mortal Wkly Rep 36: 157–161, Mar. 27, 1987.
15. Bureau of Justice Statistics: Drugs and jail inmates, 1989. NCJ–130836, Washington, DC, August 1991.
16. Bureau of Justice Statistics: HIV in U.S. prisons and jails. NCJ–143292, Washington, DC, September 1993.
17. Risk behavior for HIV transmission among intravenous drug users not in drug treatment—United States, 1987–1989. MMWR Morb Mortal Wkly Rep 39: 273–276, Apr. 27, 1990.
18. Bureau of Justice Statistics: Jail inmates 1992. NCJ–143284, Washington, DC, August 1993.
19. Office of Public Affairs, Federal Bureau of Prisons: Judicial guide to the Federal Bureau of Prisons: drug, alcohol, and related treatment programs. Washington, DC, 1993.
20. United States General Accounting Office: Report to the Committee on Government Operations, House of Representatives. Drug treatment. Despite new strategy, few Federal inmates receive treatment. GAO/HRD–92–116, Washington, DC, September 1991.
21. U.S. General Accounting Office: Report to the Committee on Government Operations, House of Representatives. Drug treatment. State prisons face challenges in providing services. GAO/HRD–91–128, Washington, DC, September 1991.
22. Peters, R. H.: Relapse prevention approaches with drug-abusing offenders. Center for Substance Abuse's Treatment Improvement Exchange, Rockville, MD, spring 1993.
23. Mayer, J., et al.: Drug relapse among recently paroled HIV+ individuals. Abstract No. PO–D12–3693. Presented at the 9th International Conference on AIDS, Berlin, June 6–11, 1993.
24. Monroe, M. C., Colley-Niemeyer, B. J., and Conway, G. A.: Report of studies of HIV seroprevalence and AIDS knowledge, attitudes, and risk behaviors in inmates in the South Carolina Department of Corrections. December 1988, pp. 9–13.
25. Lamothe, F., et al.: Intravenous drug users (IVDUs) involved in prostitution in Montreal, Quebec, Canada. Abstract No. PO–D09–3648. Presented at the 9th International Conference on AIDS, Berlin, June 6–11, 1993.
26. Castro, K. G., Shansky, R., and Scardino, V.: Evidence of HIV transmission in correctional facilities. Abstract presented at the 31st Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), Chicago, IL, Sept. 29, 1991.
27. Brewer, T. F., et al.: Transmission of HIV–1 within a statewide prison system. AIDS 2: 363–367 (1988).
28. DiClemente, R. J., Lanier, M. M., Horan, P. F., and Lodico, M.: Comparison of AIDS knowledge, attitudes and behaviors among incarcerated adolescents and a public school sample in San Francisco. Am J Public Health 81: 628–630, May 1991.
29. Lampinen, T. M., Brewer, A., and Raba, J.: HIV in prison: a counseling opportunity. Letter to the editor. JAMA 266: 361, July 17, 1991.
30. Thompson, L.: Design of an information system to assess health status among youth offenders. Paper presented to Maryland Juvenile Services Administration, Baltimore, MD, Mar. 24, 1986.
31. Bell, T. A., et al.: Sexually transmitted diseases in females in a juvenile detention center. Sex Transm Dis 12: 140–144 (1985).
32. Baker, C. J., Morris, R. E., Huscroft, S. and Evans, C.: Four year variation in HIV risk behavior in detained minors. Abstract No. PO–D02–3462. Presented at 9th International Conference on AIDS, Berlin, June 6–11, 1993.
33. Rolf, J., et al.: AIDS and the sexually abused adolescent. *In* Troubled adolescents and HIV infection. Child and Adolescent Service System Program, National Institute of Mental Health. October 1989, pp. 107–121.
34. Finkelhor, D.: Child sexual abuse: new theory and research. Free Press, New York, 1984.
35. Burgess, A. W., et al.: Serial rapists: reenactment and repetition. *In* Human sexual aggression: current perspectives. R. A. Prentky and V. L. Quinsey, editors. Ann N Y Acad Sci 528: 277–295 (1988).
36. Burgess, A. W., Hartman, C. R., and McCormack, A.: Abused to abuser: antecedents of socially deviant behavior. Am J Psychiatry 144: 1431–1436 (1987).

37. Bureau of Justice Statistics: Profile of jail inmates, 1989. NCJ–129097, April 1991.
38. Rolf, J., et al.: Issues in AIDS prevention among juvenile offenders. *In* Troubled adolescents and HIV infection: issues in prevention and treatment. CASSP Technical Assistance Center, Georgetown University Child Development Center, Washington, DC, 1989, pp. 56–69.
39. Kline, S.: A profile of female offenders in the Federal Bureau of Prisons. Federal Prisons J, Washington, DC, spring 1992, pp. 33–36.
40. National Commission on AIDS Report: HIV disease in correctional facilities. Washington, DC, March 1991.
41. DiClemente, R. J., Boyer, C. B., and Morales, E. S.: Minorities and AIDS: knowledge, attitudes, and misconceptions among black and Latino adolescents. Am J Public Health 78: 55–57, January 1988.
42. Bureau of Justice Statistics: National update. Vol. 1, No. 3, Washington, DC, January 1992, p. 3.
43. Glaser, J. B., and Greifinger, R. B.: Correctional health care: a public health opportunity. Ann Intern Med 118: 139–145, Jan. 15, 1993.
44. Bureau of Justice Statistics: Census of State and Federal correctional facilities, 1990. NCJ–137003. Washington, DC, May 1992.
45. Bureau of Justice Statistics: National corrections reporting program, 1990. U.S. Department of Justice, Washington, DC, May 1993.
46. Dubler, N. N., and Victor, W. S.: On research on HIV infection and AIDS in correctional institutions. Milbank Q 67: 171–207 (1989).
47. Intergovernmental AIDS Reports: In demand, but hard to find: complete statistics on HIV/AIDS correctional costs. Vol. 6, No. 5, Washington, DC, June 1993, pp. 4–5.
48. Brewer, T. F., and Derrickson, J.: AIDS in prison: a review of epidemiology and preventive policy. AIDS 6: 623–628 (1992).
49. Valdiserri, E. V., Hartl, A. J., and Chambliss, C. A.: Practices reported by incarcerated drug abusers to reduce risk of AIDS. Hosp Community Psychiatry 39: 966–972, September 1988.
50. Viadro, C. I., and Earp, J. A.: AIDS education and incarcerated women: a neglected opportunity. Women Health 17: 105–117 (1991).
51. Hellinger, F. J.: Forecasting the medical care costs of the HIV epidemic: 1991–1994. Inquiry 28: 213–225 (1991).
52. Hoxie, N. J., et al.: HIV seroprevalence and the acceptance of voluntary HIV testing among newly incarcerated male prison inmates in Wisconsin. Am J Public Health 80: 1129–1131, September 1990.
53. Lachance-McCullough, M. L., Tesoriero, J. M., Sorin, M. D., and Lee, C.: Correlates of HIV seroprevalence among male New York State prison inmates. Results from the New York State AIDS Institute Criminal Justice Initiative. J Prison Jail Health: Medicine, Law, Corrections, and Ethics, Vol. 12, No. 2. Winter 1993, pp. 103–134.
54. 28 CFR 549.16.
55. Thorne, S.: Education the main weapon as prison officials defend against AIDS threat. Can Med Assoc J 146: 578–580, Feb. 15, 1992.
56. Doll, D. C.: Tattooing in prison and HIV infection. Letter to the editor. Lancet 8575–6: 66–67, Jan. 2/9, 1988.
57. Brewer, T. F.: HIV in prisons: the pragmatic approach. AIDS 5: 897 (1991).
58. Farrell, M., and Strang, J.: Drugs, HIV, and prisons. Br Med J 302: 1477–1478, June 22, 1991.
59. Hanssens, C.: (1990) Testimony submitted to the National Commission on AIDS. *In* National Commission on AIDS Report: HIV disease in correctional facilities, March 1991, p. 23.