

# HIV and Mass Incarceration: Where Infectious Diseases and Social Justice Meet

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**More than 1% of all adults in the United States are currently in a jail or prison. This mass incarceration, particularly of African American men, fosters conditions that facilitate the spread of HIV in communities where both HIV and incarceration are endemic. Recognition of the role of mass incarceration in the perpetuation of the HIV epidemic is essential to development of effective HIV prevention policies.**

**T**he United States is home to 5% of the global population but accounts for 25% of the world's prisoners [1]. Per capita, the United States incarcerates more of its own people than any other nation, with 1 in 99 adults currently behind bars, in either a jail or a prison; an additional 4 million people are supervised under parole or probation [1-3]. The consequences of this large-scale incarceration, beyond the considerable financial cost to taxpayers, are multiple and not always obvious. The policies that have led to mass incarceration have affected minorities and those living in poverty the most, and this unevenness in the application of the law has perpetuated economic and other disparities, as ex-offenders struggle to find work, housing, and stable medical care. In addition, the incarceration of a sizable proportion of the community causes societal disruptions that foster the spread of infectious diseases, including HIV.

This commentary describes how the coincident epidemics of incarceration and HIV infection have led to a concentration of HIV in US prisons and jails, which facilitates the spread of HIV infection in communities where both incarceration and HIV are prevalent.

## Mass Incarceration in the United States

Prior to 1970, the rate of incarceration in the United States was similar to that of other nations in North America and Europe. Then a succession of legislative and policy changes, crafted as a "war on drugs," began in the early 1960s and accelerated over the following 2 decades, resulting in a dramatic expansion of the criminal justice system and an increase in the number of people behind bars (Figure 1) [4, 5]. During this period, laws punishing illicit drug use were enacted and toughened, sentences were lengthened, and policing tactics became more aggressive. To house the resulting explosion in incarceration—a 700% increase from 1972 to 2013—more prisons were constructed [4, 5].

This shift toward a more punitive and less rehabilitative approach to public safety not only led to large-scale imprisonment but also disproportionately affected racial and ethnic minorities and people living in poverty. The United States currently incarcerates a greater proportion of its black population than did South Africa during the Apartheid era [6]. States with the highest rates of incarceration are found in the Southern region of the United States.

Drug laws, in particular, have led to a substantial increase in incarceration rates for African American men. In 2012, the incarceration rate per 100,000 African American men was 2,841, compared to 463 for white men [7]. African American men are estimated to have a lifetime risk of imprisonment of 1 in 3, compared to 1 in 6 for Latino men and 1 in 17 for white men [8]. Similar trends are seen among women, with an estimated lifetime risk of incarceration for African American women at 1 in 18, compared to 1 in 45 for Latina women and 1 in 111 for white women.

## High Concentration of HIV Infection Within Correctional Facilities

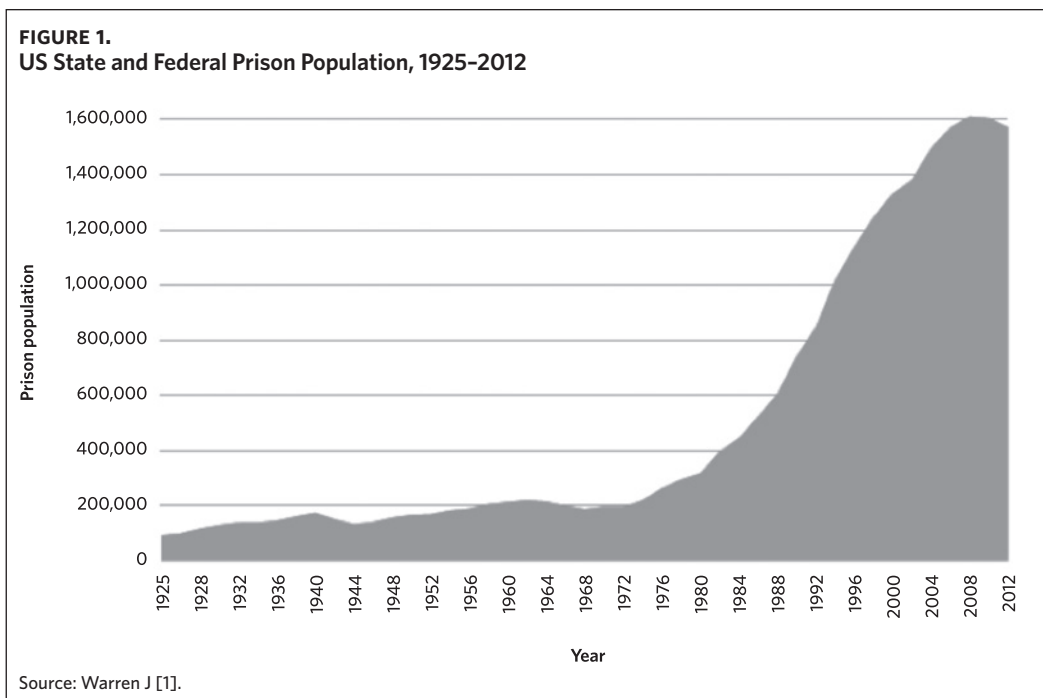
At the same time that incarceration rates were increasing in the United States, so too was the incidence of HIV infection. Initially confined to populations of men who have sex with men in large cities on the East and West coasts, HIV infection quickly entered into and spread among networks of injecting drug users and those using crack cocaine. Consequently, the policies that were established to arrest and imprison those involved in the use and trafficking of illicit substances inadvertently targeted for incarceration those with an elevated risk of HIV and viral hepatitis infections, including substance users, many of whom suffer from mental illness.

At present, the national prevalence of HIV infection in state and federal prisons is estimated at 1.5%—approximately 5-fold greater than the rate in the general US population—but rates vary greatly by state [9]. In a study

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performed by our group at the University of North Carolina (UNC) at Chapel Hill, excess blood specimens that remained after routine medical screening of over 23,000 adult men and women entering the North Carolina prison system in 2008–2009 were anonymously tested for HIV antibodies [10]. Overall, 1.45% of inmates entering the prison system during this period tested HIV seropositive; this rate is many times greater than the state’s HIV prevalence rate but on par with the average for prisons nationally.

The flip side of the concentration of HIV infection in our nation’s correctional facilities is the high prevalence of imprisonment among persons living with HIV. According to one study, an estimated 14% of all persons living with HIV infection in the United States, and 20% of African American HIV-infected individuals, pass through a jail or prison each year (as do one-third of all those identified with chronic hepatitis C virus infection) [11].

More recent data indicate that in North Carolina, and in the nation as a whole, incarceration rates have started to drop, as have the number of state and federal prison inmates with HIV infection. There are less data available on rates of HIV-infected persons in jails, which mostly house those who have not yet been tried or who have been convicted but are completing relatively short sentences. The high cost of maintaining jails and prisons and the overcrowding of correctional facilities have been the driving forces behind the small but meaningful decline in the incarcerated population.

### HIV Screening and Treatment During Incarceration

In terms of HIV prevention and treatment, incarceration provides opportunities as well as challenges. Ideally, HIV screening at the time of jail or prison entry can iden-

tify those with previously undiagnosed infection, allow for the initiation of secondary prevention counseling and treatment, and promote linkage to community care prior to release. Approximately 20% of those infected with HIV in the United States are unaware that they are HIV-positive [12], and screening for HIV infection at prison entry is seen as an opportunity to identify some of these undiagnosed individuals. In many states, including North Carolina, HIV testing is mandatory for all individuals entering prison. In our study, which collected and HIV-tested excess blood from over 23,000 prison entrants in North Carolina, we found 320 individuals who were HIV seropositive at screening [10]. However, all but 20 were already known to the state health authorities as being HIV-infected. Therefore, testing of prisoners, at least in North Carolina, is more likely to identify those already known to be infected rather than to detect undiagnosed cases. For jails, the situation may be different, given the larger number of people who are jailed. HIV screening procedures in jails vary, including among those in North Carolina. Short jail stays and limited resources for testing and discharge planning challenge HIV screening in jails, although many jails do provide rapid HIV testing.

As mentioned previously, those in jail or prison who are identified as being HIV-infected, whether or not they are newly diagnosed, can be offered care during their incarceration. Effective HIV therapies are almost always available in prisons—both state and federal—and available data suggest that treatment for HIV-infected prison inmates is as good as, if not better, than treatment in community-based HIV clinics. Additionally, HIV-related mortality has declined among prisoners in parallel with the decrease seen in the general population [9, 13]. HIV treatment outcomes in the nation’s

many thousands of jails are harder to assess and are likely to vary greatly. Jails are operated by towns, municipalities, or counties and are not always able to or committed to making HIV therapy available to inmates in a timely manner. In addition, jail budgets may not be able to accommodate the relatively high cost of HIV medications. Therefore, interruptions in HIV therapy during jail stays are common.

### **Linkage to Community Care**

While HIV care in prisons is generally effective, a major challenge in HIV correctional care is maintaining the benefits of treatment achieved during incarceration following community reentry. Ample data demonstrate that a large proportion of HIV-infected individuals who leave state prisons experience a loss of control of their HIV infection [14-16]. We found that, among HIV-infected individuals who were released from prison and later re-incarcerated, plasma HIV RNA levels were significantly greater at the time of re-

incarceration than at the time of release [14]. Furthermore, rates of viral suppression are low for HIV-infected individuals who are frequently involved in the criminal justice system [17].

In Texas, HIV-infected prisoners are given a 10-day supply of their HIV medication when they are released from prison, and all qualify for free antiretrovirals via the state AIDS Drug Assistance Program. However, one study found that only 30% of HIV-infected individuals picked up their antiretroviral medication within 60 days following community re-entry (see Figure 2) [16].

As a result of this unsettling finding, our research group at UNC working with collaborators at Texas Christian University launched a study funded by the National Institute of Drug Abuse at the National Institutes of Health to develop and test an intervention to improve linkage to HIV care after release from prison. This randomized trial enrolled over 400 men and women with suppressed HIV viral load who

were being released from state prisons in North Carolina or Texas. The purpose of the intervention was to increase the motivation of individuals to receive HIV care after re-entering the community. Techniques included motivational interviewing, a reduction in barriers to care using brief case management, and support of adherence to HIV medications via study-supplied cell phones that would send reminders before scheduled doses. In comparison to a control group that received routine prerelease discharge planning, we found no significant effect of the intervention on the proportion of released individuals with an undetectable HIV RNA level 6 months after release [18]. These data echo results of a smaller study we conducted examining the effects of an intensive bridging case management program in North Carolina for HIV-infected men and women being released from state prison [19]. That study also found no difference in the rate of engagement in medical care after release

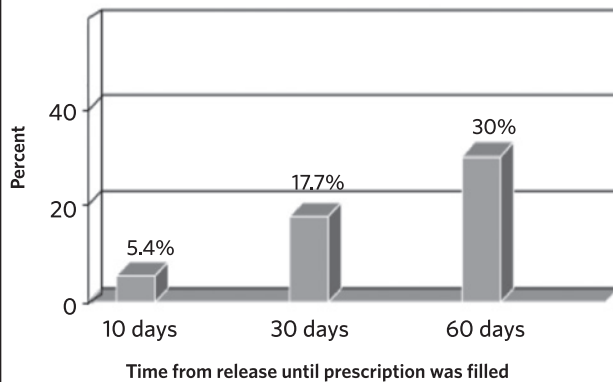
between a group that received the bridging case management and a group receiving standard discharge planning.

These findings suggest that interventions focused on motivation and facilitation, even those that are well designed and rigorously administered, are insufficient to overcome forces that impede ongoing adherence to HIV medications and care. Such forces are pervasive and include poverty, homelessness, discrimination, stigma, mental illness, and substance abuse. Societal remedies for such ills are typically nonexistent and, when present, are underfunded and difficult to access.

### **Mass Incarceration and the Spread of HIV**

Sexual transmission of HIV during incarceration is a concern given the potential “perfect storm” in many correctional systems of a relatively high prevalence of HIV infection coupled with policies that ban condoms and clean injecting

**FIGURE 2.**  
**Percent of HIV-Infected Individuals Released From Prison**  
**Who Filled an Antiretroviral Prescription in the Days**  
**Following Release (N = 2,115)**



Source: Baillargeon J, et al [16].

equipment. However, the extent to which HIV is acquired in jails and prisons is unclear, and the available data suggest that the overwhelming majority of HIV-infected persons in jails or prisons entered these facilities with HIV. Despite HIV testing of inmates being conducted at entry and release in many states, including North Carolina, reports describing seroconversion rates during incarceration have not been made public. Most experts in this field believe that HIV acquisition in prison and jails is rare and that public perceptions of this phenomenon are disproportionate to its frequency [20].

### Social Disruption in Communities

A potentially greater effect of mass incarceration on the spread of HIV infection, albeit one that is more difficult to measure, is the social disruption caused by the imprisonment of a large proportion of men in a community. In areas and populations where incarceration rates are high, the social order is altered as sex ratios shift and men go “missing” from their communities [21]. In many communities, particularly those that have a large African American population, there are only 6 to 8 men for every 10 women. Such an imbalance in the ratio of men to women can affect sexual behavior and has been associated with concurrency of partnerships, which can foster the transmission of HIV and other sexually transmitted infections. A scarcity of men places women at a disadvantage and can undercut their power to negotiate partner monogamy and condom use. Women faced with fewer options may also form partnerships with men of lower socioeconomic status, including those who are unemployed or who have been recently incarcerated [21-22].

Incarceration can also directly disrupt relationships that may have been protective against sexually transmitted infections. Work by Khan and colleagues in North Carolina describes how incarceration of a partner may end a relationship, leading the remaining partner to seek a new rela-

tionship [23-24]. In an area where sexually transmitted infections may be relatively prevalent, new relationships carry an increased risk of exposure and infection. Similarly, following incarceration and subsequent release, the individual who is re-entering the community may also form a new partnership, possibly risking exposure to sexually transmitted infections.

As stated above, suppression of HIV replication during incarceration is the rule rather than the exception. Upon release, it is the reverse, with the risk of viral rebound increasing over time. Coincident with a return of viremia is an increase in infectiousness. Therefore, the failure to maintain effective management of HIV infection following incarceration threatens not only individual health but also public health as released individuals return to their communities and establish or re-establish sexual partnerships.

### Interventions to Mitigate the Effects of Mass Incarceration on HIV Transmission

In highlighting the ways in which HIV and mass incarceration intersect, potential opportunities for intervention can be identified. As discussed, counseling and linkage programs for HIV-infected persons involved in the criminal justice system—while well-intentioned and pragmatic—have not been proven to be highly effective. Nonetheless, these initiatives may be beneficial to some, perhaps in ways that are difficult to measure, which may justify their continuation. Additional research may also lead to the development of scalable programs that could have greater impact. There is a clear need for jails to be empowered and funded to improve HIV screening, HIV care, and rudimentary community linkage to HIV services.

However, to achieve a major shift from the current cycle in which mass incarceration, particularly of racial and ethnic minority men, disrupts and tears at the social fabric, intervention needs to be large-scale and collective, rather than targeted and individualized. The most obvious place to start is with mass incarceration itself. Changes in public policy that reduce the staggering rate at which the country imprisons its citizens would be expected to impact the HIV epidemic. There is now growing support from across the political spectrum for criminal justice reform, given recognition that the current situation is unaffordable, unsustainable, and untenable. Changes in sentencing laws are starting to address racial and ethnic disparities, and the mandatory minimums that sent many low-level offenders to prison for years are being abandoned so that judges can apply their discretion when sentencing. Diversion programs are keeping more people from becoming incarcerated, and drug courts are helping to link those with substance use disorders to mandated care rather than time behind bars. These and other initiatives are behind the start of a downtrend in the number of people imprisoned in the United States. They can therefore be expected to reduce the profound disruptions caused by the mass incarceration that fosters HIV transmission.

## Conclusion

Mass incarceration in the United States powers the HIV epidemic. Policies and laws leading to high rates of incarceration, especially of African American men, have numerous adverse effects on communities and society, including the creation and promotion of circumstances that heighten the risk of transmission of HIV and other sexually transmitted diseases. To fully address the HIV epidemic, the epidemic of incarceration must be addressed. **NCMJ**

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