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## Correctional Facilities as Partners in Reducing HIV Disparities

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### Abstract

The U.S. now has the highest incarceration rate in the world. The majority of prison and jail inmates come from predominantly nonwhite and medically underserved communities. Although incarceration has adverse effects on both individual and community health, prisons and jails have also been used successfully as venues to provide health services to people with HIV who frequently lack stable health care. We review demographic trends shaping the difficulties in providing care to incarcerated people with HIV, and recommend the Centers for AIDS Research Collaboration on HIV in Corrections (CFAR-CHIC) as a model of interdisciplinary collaboration in addressing those difficulties.

### Keywords

incarceration; prisons; underserved communities; co-occurring conditions

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## Introduction

Two epidemics have converged in the U.S. over the past thirty years: mass incarceration and HIV. The U.S. now incarcerates a larger share of the population than any other nation in the world, and a larger percentage of our black population than South Africa did during apartheid.<sup>1</sup> Because incarceration is typically concentrated in low-income, medically-underserved communities, many inmates have no contact with the health care system prior to incarceration, and many of them are more appropriately candidates for mental illness or substance addiction treatment. Incarceration has significant adverse effects on both individual and community health. Paradoxically, though, jails (which typically hold those awaiting trial and those sentenced to under one year) and prisons also create an opportunity to provide much-needed health services to the medically underserved. Correctional facilities have thus proved important sites for HIV diagnosis, treatment, and research.

Although the prevalence of HIV infection has declined recently among inmates,<sup>2</sup> it remains disproportionately higher than in the general population. Fourteen percent of all Americans infected with HIV, and 20% of black Americans infected with HIV, pass through the correctional system each year.<sup>3</sup> Below, we identify several demographic trends and needs that in the absence of any fundamental change in national policy will continue to shape the potential for corrections-based research and treatment to reduce disparities in HIV.

## Racial/ethnic disparities

People of color are disproportionately represented in the correctional population. Approximately 60% of inmates in state or federal prisons with sentences of over a year are black or Hispanic.<sup>4</sup> According to the most recent data on the racial/ethnic characteristics of persons incarcerated in state and federal prisons, black non-Hispanic males had an imprisonment rate that was over 6 times higher (3110 per 100,000 US residents) than the imprisonment rate for white non-Hispanic males (487 per 100,000) and almost 3 times higher than the rate for Hispanic males (1193 per 100,000).<sup>5</sup> Black women are overrepresented in the U.S. state and federal prison population. At year-end 2009, one in 703 black females was imprisoned, compared to one in 1987 white females and one in 1356 Hispanic females.<sup>7</sup>

Communities of color also are disproportionately represented in the domestic HIV/AIDS epidemic. In 2009, blacks represented only 13% of the U.S. population, but accounted for 52% of all diagnoses of HIV/AIDS infection and a higher rate of HIV-related deaths (27.5 per 100,000) than any other racial or ethnic group.<sup>6</sup> Similarly, Hispanics comprise 14% of the U.S. population, but have the second highest HIV prevalence rates in the nation after blacks.<sup>6</sup> These racial/ethnic communities also represent the individuals most in need of healthcare coverage but least likely to have it. In turn they have limited access to HIV care<sup>7</sup> and other important health and social services, including addiction treatment, mental health services, and general primary care.<sup>8</sup> These communities also experience greater health risks and disease burdens when compared with the general populations living in the same metropolitan area, county, or state.<sup>9</sup>

## Women and adolescents

The vast majority of inmates are adult males, but the proportions of female and adolescent inmates have grown more rapidly in the past 30 years, and both groups present distinct health issues. The health profile of women inmates (who constitute about 12% of jail and 7% of prison inmates) is substantially worse than that of men.<sup>10</sup> Female inmates who have been tested have an HIV prevalence generally estimated at 1.9%, versus 1.5% among male

inmates. However, blinded seroprevalence studies in New York City in 2007-8 found that 5.6% of male inmates and 10.6% of female inmates were HIV positive.<sup>11</sup> Women inmates additionally exhibit high rates of mental illness, addiction, and histories of sexual abuse and trauma, all of which are associated with high-risk behaviors.<sup>12,13</sup>

Like women, adolescents are a relatively small segment of the incarcerated population but they are increasing more rapidly than adult males. In 2004, an estimated 800,000 people under age twenty spent time in correctional or juvenile justice facilities.<sup>14,15</sup> Incarcerated youth are disproportionately male, low-income, and black or Hispanic. Incarcerated youth are more likely to report risky sexual behavior such as low prevalence of consistent condom use, multiple sex partners, and sex while high on drugs or alcohol. Similarly, HIV, STD, and hepatitis C infection rates are higher than among other non-incarcerated youth.<sup>16,17</sup> Finally, more than two-thirds of incarcerated youth have one or more psychiatric disorders.<sup>18</sup> Rates of mild, moderate, and severe mental illness, from anxiety to posttraumatic stress disorders and psychosis, are generally higher among incarcerated compared with non-incarcerated youth.<sup>19,20</sup> Additionally, being incarcerated may be a significant factor contributing to subsequent engagement in risk behaviors and development of adverse health outcomes.<sup>21</sup> These excess rates of poor mental health in both women and adolescents complicate HIV treatment and prevention, and future research should emphasize integrated treatments tailored to the psychosocial needs of each group.

## Aging prisoners

Inmates over age 50 constitute the fastest growing age group of prisoners in the United States. By the year 2030, about one third of the U.S. prison population is expected to be 55 years of age or older.<sup>22</sup> The “graying” of the U.S. prison population is due to a combination of factors including stricter legislation that has led to longer sentences, mandatory-minimum sentencing, and tighter parole criteria.<sup>23</sup> In addition, as is true of the general population, older adults who have been incarcerated are living longer either while in prison or after release. Few facilities offer specialized geriatric services.<sup>24</sup> Yet acceleration in the rate of older inmates’ biological aging is well documented,<sup>25</sup> and prisoners over age 50 are more likely than their younger counterparts to have multiple illnesses that require treatment.<sup>26</sup> These conditions, in turn, complicate the diagnosis and treatment of HIV along with its co-morbidities.<sup>27</sup> These changing demographics have important implications for the structuring of prison health services including HIV prevention, treatment, and care as well as for the lives of the prisoners themselves.

Upon release from incarceration, poor integration between the correctional and public health systems can result in poor continuity of care for individuals, including older inmates, transitioning into the community.<sup>28</sup> Long-term prisoners who are released to the community as older adults face the challenges of re-entry into a now unfamiliar society that likely has changed substantially from when they were first incarcerated.<sup>29</sup> Health care, including ARV services for those who are HIV infected, needs to be accessed and undertaken within a new context and may differ by availability, provider, or regimen from what was available during incarceration. In addition, since both young and old former inmates typically are without immediate private or public health insurance upon release, interruption of antiretroviral therapy can negatively affect their clinical well-being.<sup>30,31</sup> Such findings point to the need to develop tailored discharge planning aimed at providing older inmates with structured plans, services, and skills to improve continuity of care for those living with HIV.

## Comorbidities

Aging is also a factor in the co-occurrence of other medical conditions that impact patients with HIV. A study of older (over age 54) patients with HIV in an urban clinic found that

89% had at least one comorbid condition.<sup>32</sup> However, comorbidities are not exclusive to older patients; a study of patients with HIV at a New York City clinic found that 92% had at least one comorbidity. In addition, only 84% self-reported their comorbid conditions, indicating that some clients may not have been aware of their chart-documented conditions.<sup>33</sup> Self-reporting was particularly low for obesity and hepatitis C. Hepatitis C is present in approximately 30% of all Americans with HIV,<sup>34</sup> but sensitivity of self-reported hepatitis C infection ranged from 66%-77% in three studies.<sup>33</sup>

Although there are limited data on coexisting medical conditions among prison and jail inmates with HIV, the rates of infectious and chronic conditions are significantly higher in correctional facilities than in the general population, along with the prevalence of HIV.<sup>35,36,37</sup> In particular, hepatitis C is present in 60-90% of IDUs,<sup>34,38</sup> who are overrepresented among the correctional population. Because patients co-infected with both HIV and hepatitis C have also been found to have more comorbidities than HIV mono infected patients,<sup>33</sup> it is likely that inmates with HIV have a greater burden of coexisting diseases..

The potential for physical comorbidities is further heightened for the many inmates who have a mental illness or addiction in addition to HIV infection. Well over half of inmates at any given time have a DSM-IV mental disorder and an estimated 16-24% have a serious mental illness.<sup>12</sup> Estimates of the number of the incarcerated meeting DSM-IV criteria for drug dependence or abuse vary but remain well above 50%.<sup>12</sup> A comprehensive, integrated approach to treating co-occurring conditions is critical, not only to forestall drug interactions but to ensure maintenance of treatment following release from prison or jail. Such an approach is even more critical in the case of mental illness or addiction co-occurring with HIV, as these comorbidities complicate treatments for HIV and hepatitis C which require a sustained adherence regime and careful monitoring for adverse drug interactions.<sup>34</sup>

## Linkage to care

The number of AIDS-related deaths among prisoners has declined markedly, from 100 per 100,000 in 1995 to 9 per 100,000 in 2007.<sup>11</sup> These declines are largely attributable to the provision of medical care in prison, which includes access to life-sustaining anti-retroviral therapy (ART). Although access to healthcare in prison can be challenging due to limited confidentiality, stigmatizing attitudes, and scarce resources, other attributes of incarceration such as the provision of basic necessities and diminished access to substances of abuse can benefit prisoners' health.

Transitioning back into the community is difficult for many released prisoners. Released prisoners often resume lives which were chaotic prior to their imprisonment, in addition to which they must secure food, shelter, and employment; negotiate relationships strained by the prisoner's absence; confront issues of substance dependence and mental health; and abide by restrictions of parole and other legal sanctions.<sup>39,40</sup> Not surprisingly, these issues often take precedence over efforts to establish healthcare in the community.<sup>41</sup> Expedient resumption of healthcare also may be inhibited by the common state policy of disenrolling Medicaid recipients upon incarceration.<sup>42</sup> As a consequence, prisoners who received Medicaid prior to their imprisonment often lack this important source of health insurance upon their release,<sup>43</sup> a time when they could arguably benefit from it the most. The Ryan White Care Act provides funding for medication and medical care for impoverished HIV-infected individuals, but a lag time between release from incarceration and program enrollment could similarly disrupt continuity of care and adherence to ART, though this is less likely than with Medicaid. It is unclear what will happen to the Ryan White Care act once the Affordable Care Act is implemented, but there is concern that shifting clients from

Ryan White funding to Medicaid may cause additional disruption of care for patients transitioning from correctional facilities back to the community.

At the time of release, HIV-infected prisoners are typically provided a referral to a community physician and a short supply of ART. Existing data suggest that these modest gestures are insufficient in bridging care from prison to the community. In perhaps the most dramatic documented example, less than 5% of HIV-infected inmates released from the Texas state prison system filled a free prescription for ART in time to avoid a disruption in medication,<sup>30</sup> and only 28% enrolled in a community HIV clinic within 90 days following their release.<sup>44</sup> The imperative to continue care, and in particular ART, among released prisoners is underscored by a recent multi-national study demonstrating that initiation of ART among HIV-infected individuals resulted in a 96% reduction in transmission to their uninfected sexual partners.<sup>31</sup> In addition to the deleterious (personal and public) health consequences that can result from lapses in care, these lapses also undermine the substantial financial investments by correctional systems in providing adequate HIV care for infected inmates.

Data exist on only a handful of programs to enhance continuity of care among released HIV-infected prisoners. These programs, which are largely based on a model of bridging case management, have demonstrated some ability to link released prisoners into care and to provide for other needs which are traditionally unmet.<sup>45</sup> However, none of the programs have yet demonstrated favorable outcomes for adherence or viral burden.<sup>46,47</sup>

Addressing this need, several NIH-funded projects are currently assessing promising strategies to enhance released prisoners' continuity of care and to reduce their infectivity. Among others, the projects include interventions using peer-based support, pharmacological treatment of substance dependence, patient-centered adherence counseling, transition case management services, and telemedicine; projects are also examining state-wide patterns of linkage to care and the costs associated with linkage interventions. To avoid the myopic implementation of individual projects, investigators are coordinating survey instruments and outcomes across studies so that the results will be mutually informative and have a stronger effect on HIV prevention and patient care.

## CFAR-CHIC

The Centers for AIDS Research (CFARs) are funded by the National Institutes of Health to support and nurture translational research among institutions scattered across the nation. The twelve core facilities work together and with other institutions to provide expertise, resources, and services that have proved difficult to coordinate under more traditional funding streams. Recognizing the value of drawing correctional facilities into translational HIV research, the CFAR Collaboration on HIV in Corrections (CFAR-CHIC) was formed in 2009. By facilitating collaboration among basic and clinical investigators and the criminal justice system, CFAR-CHIC can contribute to the development of new paradigms for the prevention, diagnosis and treatment of HIV and associated conditions (including linkage to care after release) for individuals who are frequently medically complex and medically underserved.

## Conclusion

Medical professionals must remain alert to the ethical dilemmas of working with institutions that contribute to health disparities by disproportionately incarcerating those who often more properly belong in treatment for mental illness or addiction. At the same time, partnerships between academic researchers and corrections have the potential to make inroads on the continuing disparities that exist in HIV diagnosis and treatment. Incarcerated individuals



with HIV represent a medically complex and underserved population, and correctional facilities provide a means of reaching not only them but the communities to which 95% of them will return. As those communities are frequently medically underserved as well, medical-correctional partnerships may prove a valuable contribution to the National HIV/AIDS Strategy of the United States, especially its goals of reducing HIV-related health disparities.

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