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From HIV Therapy

HIV Treatment in US Prisons

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Abstract and Introduction

Abstract

Arguably one of the most marginalized populations in our society, prisoners bear a disproportionate burden of infectious diseases, particularly HIV. In addition, groups known to be at an inordinately higher risk of HIV, including minorities, the addicted, the mentally ill and the impoverished are overrepresented among incarcerated populations. This concentration of HIV among groups that have been historically difficult to reach, with limited intersections with healthcare, provides an opportunity for testing, diagnosis, treatment, linkage to care and prevention. Providing HIV care within correctional facilities poses unique challenges. Barriers to confidentiality, access to medication and prior records, and lack of comprehensive discharge planning can serve as obstacles to providing optimal care. This article discusses the public health implications and importance of providing HIV care to prisoners, and also discusses the practicalities of working within an environment that poses particular barriers to care.

Epidemiology of HIV in US Correctional Facilities

Incarcerated populations bear a disproportionate burden of infectious diseases, particularly HIV and HCV. In 1997, an estimated 20–26% of Americans living with HIV passed through a correctional facility.[1] This proportion decreased in 2006 to 17%; however, the burden among black men remained high with between 22 and 28% of HIV-infected black men passing through prisons or jails in 2006.[2] It has been argued that this concentration of HIV among prisoners is due to the high prevalence of risk behaviors, including drug use, untreated mental illness, prostitution, homelessness and poverty.[3] These risk factors similarly lead to a high prevalence of HCV, with one in three HCV-infected people imprisoned each year.[1]

While intraprison transmission has been a much-raised concern, US studies of sero-conversion have failed to document high rates of new HIV infection in incarcerated populations. Earlier studies in Nevada, Maryland and Illinois estimated the annual incidence of new infection to be between 0.17 and 0.40% within prison populations; however, a more recent study in Rhode Island, USA, of 587 inmates found no new infections over the course of 1 year.[4] Owing to a lack of safer injection equipment and condoms, prisoners undoubtedly have riskier practices when engaging in injection drug use or sexual activity. However, in spite of this, new transmission of HIV is exceedingly rare, most likely because the actual number of discrete episodes of risky behaviors on the inside is far lower in this population owing to the constraints of correctional control.

Racial disparities are seen in both our current HIV and incarceration epidemics. In 2003, an estimated 47% of the 1.2 million

persons in the USA living with HIV were non-Hispanic blacks.[101] While black people make up only 12% of the US population, they account for approximately half of new HIV infections and AIDS deaths every year.[102] Similar disparities are seen in incarceration. A 2007 report found that black people are incarcerated at nearly six-times the rate of white people and 900,000 of the total 2.2 million incarcerated Americans are black.[103] Among black men aged in their 20s, one in nine is currently incarcerated.[5]

In addition to racial disparities, the addicted and mentally ill are disproportionately represented among the incarcerated. In 2006, 56% of state prisoners, 45% of federal prisoners and 64% of local jail inmates were found to have a mental health problem.[104] Similarly, with the criminalization of addiction, more than 50% of inmates now meet Diagnostic and Statistical Manual of Mental Disorders (DSM IV) criteria for drug dependence or abuse, and more than two-thirds report using drugs regularly during their lives.[105] These comorbidities add an additional layer of difficulty and mandate a multidimensional care approach for HIV. However, incarceration offers a unique moment to capture this often difficult-to-reach population.

Testing within Correctional Facilities

Prisoners are arguably the most marginalized group in our society. Incarceration may be the only point of contact with the healthcare system for many in this transient and often inaccessible population. Given the high prevalence of HIV and the public health impact of undiagnosed infection on both the individuals and the communities they return to, HIV testing within prisons and jails is critically important. As of 2002, 37.1% of inmates remained untested for HIV.[2] With the risk of transmission highest among the untreated and undiagnosed when viral loads are high, as well as the demonstrated decrease in risk behaviors after diagnosis, testing for HIV has both individual and public health benefits.[6]

The new CDC guidelines recommend routine opt-out HIV testing for inmates.[106] Several studies have evaluated the feasibility of providing opt-out testing in correctional facilities. A study looking at initiation of routine testing in a New York jail found that 28% of HIV-infected inmates were undiagnosed, and only 11% endorsed intravenous drug use or any men who have sex with men (MSM) practices.[7] With a risk-based approach to screening, the 89% who did not endorse high-risk behavior in this sample would probably never have been identified. While prisons house sentenced inmates and thus serve as longer term centers of confinement, jails serve as detention centers for people awaiting trial. With short stays and high volume, jails are a logistically tricky place to institute testing given the rapid turnover and potential for loss to follow-up. Nevertheless, they also offer the most potential for detecting the greatest amount of undiagnosed infection. However, a key component of offering opt-out testing is the guarantee that those who test positive will be offered appropriate and confidential care.

Faced with short incarceration stays in jails, some have argued for rapid testing, with the benefit of not needing to wait for test results. A study in Rhode Island demonstrated high rates of acceptability for rapid testing among jail inmates.[8] Other studies have demonstrated the feasibility and effectiveness of rapid testing in jails within 24 h of incarceration.[9] HIV testing upon incarceration, in addition to identifying new diagnoses, can re-enforce the need for care for those who have previously been tested positive, but are not engaged in care.

HIV Treatment in Correctional Facilities

HAART within correctional facilities has been shown to result in impressive viral load suppression and increased $CD4^+$ T-cell counts in HIV-infected prisoners.[10] When appropriate clinical HIV care is provided within corrections, outcomes are comparable to community cohorts.[11] Success of HIV treatment in prisons, as well as improvements in antiretroviral therapy in general, is evidenced by the dramatic decrease in AIDS-related deaths as a percentage of total deaths in state prisons from 34.2 to 4.6% between 1995 and 2006.[107] Despite documented feasibility of managing HIV within corrections, standardized care is still not the norm. A study in Texas, USA, found that only a third of inmates who met Department of Health and Human Services (DHHS) criteria for initiation of HAART were actually on therapy.[12] While some facilities employ dedicated HIV specialists from the community to provide optimal care for prisoners, many facilities lack even an onsite physician.[10] This tremendous variability results in dramatic differences in the provision of care and health outcomes.

While successful treatment of HIV in prisons is clearly possible, it carries with it a unique set of issues that must be addressed and managed. Maintaining confidentiality surrounding HIV care is important in all settings, but particularly within corrections where people may be stigmatized or even subjected to violence. Guaranteed confidentiality, as well as the opportunity for treatment, is also crucial in convincing prisoners that HIV testing is beneficial. Confidentiality can be difficult to maintain within

correctional facilities. Issues, ranging from rules prohibiting physicians from closing the door to speak to a patient privately to crowded medical facilities where other patients and correctional officers may be within earshot, can challenge confidentiality. In addition, if inmates are called down for HIV care at different times from when the general population is called down for medical care this alone may destroy confidentiality. To this end, HIV care should be administered at the same times and in the same infirmary where general care is provided, and inmates should be taken into examination rooms, ideally with doors, and out of earshot of other inmates.

Another issue related to confidentiality is the provision of medication. While newer regimens offer once-daily dosing, some inmates on HAART still require dosing of medications several times a day. Being called to the medication line multiple times a day may highlight their disease, making some reluctant to take medication while incarcerated. An alternative to this is 'keep-on-person' medications that the inmate can take on his or her own. Clearly the disadvantage to this is the inability to monitor for adherence, and studies have demonstrated improved outcomes with directly administered therapy.[13] However, wide variation exists in the provision of directly observed therapy between systems, and directly observed therapy does not guarantee adherence.[14] In addition, some facilities rely on correctional officers to administer medication, which results in dramatically reduced adherence owing to inmates' mistrust of correctional officers and fear concerning the lack of confidentiality.[10] Given the lack of standardization in distribution and issues of confidentiality, keep-on-person medications may be the better option for treatment and is preferred by many prisoners.[10] In addition, while some high-risk patients in the community setting receive directly observed therapy, the majority do not and it is reasonable to treat prisoners with the same standard of care. As the vast majority of prisoners will be released to the community and will have to manage their own medications, keep-on-person medications are also more similar to what most inmates will experience once released.

Interruption to therapy is a very real dilemma in caring for incarcerated individuals with HIV. Frequently, medications are not continued at the time of confinement and often antiretrovirals are not available immediately onsite; for example, in Rhode Island, the Department of Corrections contracts with an out-of-state pharmacy that ships medications overnight. This arrangement results in a minimum of 24 h of interruption in therapy. In addition, frequent transferring between facilities, court appearances and punitive detention in segregation may all result in treatment interruption.

Another important issue that arises in continuing HIV treatment at the time of incarceration is ascertaining whether individuals were adhering to medication regimens prior to incarceration. In community samples, HIV-infected individuals across the board average a 70% adherence rate with medication.[108] Disadvantaged populations, such as those with mental illness or addiction, the unstably housed and women from ethnic minorities, have all been shown to have lower adherence rates.[15–17] Given that these populations are all over-represented within corrections, it is likely that adherence is lower among incarcerated individuals even prior to confinement. While longer prison sentences allow time for providers to access medical records and determine treatment adherence, this can be difficult in jail populations. Partnerships between correctional facilities and community and academic medical centers can help bridge this gap, both in attaining preincarceration records and in ensuring postrelease care.

Potential interruption in therapy and lower levels of adherence after release are important considerations in choosing HAART regimens for HIV-infected prisoners. Non-nucleoside reverse transcriptase inhibitors (NNRTIs) in particular have an unfavorable adherence–resistance relationship, where even single-dose or short-term therapy is enough to cause resistance to the whole class. This is thought to be due to a combination of factors. NNRTI resistance requires only a single point mutation, in contrast to the multiple mutations required for resistance to most other antiretrovirals. In addition, NNRTIs have a long plasma half-life and remain in the system for extended periods of time, enabling the virus to replicate in the setting of suboptimal drug concentrations.[108]

In general, approaches to antiviral therapy are otherwise the same in the incarcerated setting as they are in the community, and standard guidelines should be followed. Specialized issues other than the need for strict confidentiality and avoidance of resistance to NNRTIs include the use of generic medications and special considerations near the time of release. With antivirals coming off patent, and the fact that HIV medications are second only to psychiatric medications in total expense to most US correctional facilities, many more expensive fixed-dose medications will be broken into their component medications to decrease costs. This can confuse some patients about their medications. In addition, given the predictable chaos and dramatic change of routine immediately after release, sometimes it may be advisable to delay initiation of antiviral medications until after they are stabilized in the community. Conversely, from a public health perspective, being on antivirals with an undetectable viral load may reduce HIV transmission and, therefore, given the high rates of risky sexual and drug-using

behavior after release, it may be the optimal time to be on antivirals. Obviously, these are issues that need to be addressed individually between the provider and the patient.

Re-entry to the Community

The main failure of HIV treatment occurs at the point of transition of care from the correctional facility back to the community. A recent study found that only 5.4% of inmates filled their antiretroviral prescriptions within 10 days of release from prison, 17.7% within 30 days, and 30.0% within 60 days.[18] This lack of adherence following transition back to the community has also been demonstrated in the poor virological and immunological outcomes after release from prison. A 2004 study looking at HIV-infected prisoners who were treated effectively and then released to the community found that among the 27% who were reincarcerated 3 or more months after release, there was an average 80-cell decrease in $CD4^+$ T-cell counts and 1.14 $\log_{10}$ increase in viral load.[11] A smaller 2005 study similarly found release from prison to be associated with a mean 1.29 $\log_{10}$ increase in viral load.[19]

Prisoners face momentous challenges upon release to the community. In the 2 weeks following release, there is a 12.8-times increased risk for all-cause mortality.[20] Relapse to addiction is frequent, and untreated mental illness, homelessness and poverty all act as significant barriers to care. In many states, former inmates lose Medicaid benefits during incarceration and must reapply after release with an average 3-month delay before benefits are reinstated.[21] Former inmates convicted of a drug-related crime face additional barriers. Under the Welfare Reform Act, anyone convicted of a drug-related felony is banned from receiving food stamps or federal assistance, and under the Anti-Drug Abuse Act of 1988, public housing authorities are permitted to deny housing to anyone convicted of a drug-related crime.[22]

Aggressive case management and linkage to care with attention to addiction and mental health issues has been shown to be an effective means for engaging HIV-infected inmates in care after release.[23] Project Bridge, a multidisciplinary team-based approach in Rhode Island, provides care for addicted and mentally ill HIV-infected inmates upon release. Initially started in 1996 as a Ryan White Special Project of National Significance, Project Bridge provides linkage for HIV-infected inmates between the Rhode Island Department of Corrections and The Miriam Hospital Immunology Center, an affiliate of Brown University. HIV-infected inmates begin working with Project Bridge 30–90 days prior to discharge and are followed for 18–24 months postrelease, meeting first daily and then weekly with case managers. Social workers attend every medical appointment with clients, serving as a liaison between the provider and the patient and helping clients navigate through healthcare agencies. In addition to help in the medical context, Project Bridge provides legal, mental health, housing and other case-management services.[23]

The clientele that Project Bridge serves is 75% male; more than 50% are black and 86% are functionally homeless, 14% of whom are released from prison to no address and live on the streets. Nearly 70% of their clients struggle with mental illness, approximately 10% are schizophrenic, 100% have some history of substance use, and 87% have a history of injection drug use. In addition, 32% of clients acknowledge having traded sex for money, drugs, shelter or other needs. At baseline, Project Bridge clients have an average of 3.7 prior incarcerations. Using a model of nonjudgmental outreach and intensive case management in a harm reduction framework, Project Bridge has provided extraordinary care to a patient population that has historically been dismissed as impossible to adequately serve. An impressive 96% of Project Bridge clients were regularly receiving medical care at 12-month follow-up.[23]

Providing opiate substitution therapy with methadone or buprenorphine has been shown to improve HIV clinical end points.[24] Drug relapse is one of the primary reasons for lack of adherence to HIV therapy following release from prison.[25] Initiating opiate substitution therapy with methadone or buprenorphine prior to release has been shown to reduce recidivism and increase the likelihood that participants will follow-up with drug treatment in the community.[26,27] In community samples, maintenance on opiate substitution therapy in HIV-positive samples has been associated with adherence to HAART and viral load suppression.[28] Providing prerelease methadone or buprenorphine for HIV-infected inmates prior to release offers an effective means of improving HAART adherence and linkage to care.

Conclusion

Prisoners continue to bear a disproportionate burden of HIV, due in large part to the overrepresentation of the addicted, the mentally ill and minority populations within corrections. Diagnosis, treatment and discharge planning are all key components of

providing meaningful HIV care within corrections. Special attention needs to be paid to maintaining confidentiality, with consideration to medication administration and testing. While successful treatment during incarceration has been well documented, particularly when provided by community HIV clinicians, much of the benefit of adequate virological suppression is lost upon release when individuals face often insurmountable barriers to care. Successful discharge planning and intensive case management during the transition from corrections to the community is critical to ensure adherence to HAART and linkage to care. Particular attention needs to be paid to treating mental illness, offering opiate substitution therapy and addictions treatment, and addressing issues of housing instability and punitive laws barring access to public assistance.

Sidebar

Executive Summary

Epidemiology of HIV in US corrections

- One in seven people with HIV passed through a correctional facility in 2006. Prisoners with HIV are more likely to be African–American, have comorbid conditions of viral hepatitis, mental illness and addiction, and many do not know they have HIV.

Testing within correctional facilities

- Correctional facilities concentrate high-risk individuals and, thus, represent a tremendous opportunity for HIV diagnosis, and yet more than one in three individuals remain untested.

HIV treatment in correctional facilities

- Successful treatment during incarceration has been well documented, including a dramatic drop in mortality with the advent of HAART.

Re-entry to the community

- Much of the benefit of adequate virological suppression is frequently lost upon release when individuals face often insurmountable barriers to care. Successful discharge planning and intensive case management during the transition from corrections to the community is critical to ensure adherence to HAART and linkage to care. Particular attention needs to be paid to treating mental illness, offering opiate substitution therapy and addictions treatment, and addressing issues of housing instability and punitive laws barring access to public assistance.

Conclusion

- Prisoners continue to bear a disproportionate burden of HIV, due in large part to the over-representation of the addicted, the mentally ill and minority populations within corrections. Diagnosis, treatment and discharge planning with linkage to care after release are all key components of providing meaningful HIV care within corrections. Special attention needs to be paid to maintaining confidentiality, with consideration to medication administration and testing.

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