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Infectious Diseases in Corrections

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ABOUT IDCR

IDCR, a forum for correctional problem solving, targets correctional physicians, nurses, administrators, outreach workers, and case managers. Published monthly and distributed by email and fax, IDCR provides up-to-the moment information on HIV/AIDS, hepatitis, and other infectious diseases, as well as efficient ways to administer treatment in the correctional environment. Continuing Medical Education credits are provided by the Brown University Office of Continuing Medical Education. IDCR is distributed to all members of the Society of Correctional Physicians (SCP) within the SCP publication, CorrDocs (www.corrdocs.org).

PROVIDER PERSPECTIVES ABOUT THE STANDARD OF HIV CARE IN CORRECTIONAL SETTINGS AND COMPARISON TO THE COMMUNITY STANDARD OF CARE: HOW DO WE MEASURE UP?

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***DISCLOSURES:** **Nothing to disclose*

There can be no doubt that HIV/AIDS care has dramatically improved in most correctional facilities since the time when the high prevalence of HIV in these settings was first recognized. Many correctional HIV providers still recall early struggles to bring HIV treatment "up to par" in prisons and jails, and have witnessed or actively participated in the gradual improvement of HIV medication access, distribution, and monitoring that has taken place over the past decade.

Given that so much has been accomplished in a relatively short period of time, a common opinion among correctional healthcare providers familiar with HIV care in correctional settings is that the facilities now provide care at or above the national standards of care. But how does correctional HIV care really measure up?

Defining current standards of HIV/AIDS care is a complicated problem. There are, arguably, an infinite number of factors that contribute to high-quality medical care. Not all factors can be measured easily or well. Furthermore, advances in and recommendations about treatment are constantly evolving as knowledge of the disease grows. Most HIV experts incorporate advances into their HIV treatment plans as they are discovered. Further, high-quality HIV care must be readily accessible to patients, continuous in its scope, and integrated into existing health care structures.[1]

Clinicians who provide HIV/AIDS care in the correctional setting often lack adequate clinical space, information technology (computers, PDAs, electronic medical records, etc.), ready access to diagnostic studies (lab work, imaging studies, etc.), access to medical specialists, and continuing medical education. In addition, security measures often impede the delivery of care, and patients have multiple co-morbidities such as mental health problems and substance use.

The HIV Standard

Despite the inherent complexities in doing so, defining a standard of HIV/AIDS care is essential to ensuring that comprehensive care is available to the populations that need it most. Access to potent combination antiretroviral therapy (also called HAART), medical providers well-versed in the management of HIV infection, clinical tests, and a variety of HIV-related services are critical components of HIV care. A range of definitions and descriptions for the standard of HIV care have been devised; most include the elements described in Table 1.[2-15]

We conducted a qualitative research project to explore HIV care and services available in correctional settings. The goal of this study was to examine the care that U.S. correctional facilities provide for HIV-infected inmates, and to compare this care to that provided by community clinics to previously-incarcerated individuals.

Methodology

During the National Commission on Correctional Health Care (NCCHC) Conference in Denver, Colorado from October 8-12, 2005, correctional healthcare providers including physicians, registered nurses, nurse practition-

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TABLE 1: ESSENTIAL COMPONENTS FOR THE STANDARD OF HIV CARE IN THE COMMUNITY

HAART	Drug availability; continuity of treatment regimen
Expert/specialist care	Level of expertise as based upon number of years treating HIV patients and number of HIV patients being treated currently; most would accept full-time responsibility for >25 patients per year as indicative of "HIV expertise"
Clinical tests	HIV resistance testing; viral load; CD4+ cell count
Additional HIV related services	Mental health counseling, substance abuse counseling, adherence counseling, dietary/nutritional counseling, HIV education, HIV case management, etc.

ers, administrators, and other individuals involved with the delivery of HIV care to incarcerated individuals were surveyed about the quality of HIV care provided at the facilities where they were employed. The survey was one page long, included 23 items, and was completed anonymously and in writing.

The survey was designed to evaluate measures of the standard of HIV care that had been previously described in the published literature. These measures included the availability of HAART, access to expert/specialist care, availability of specific clinical tests (CD4+ cell count and HIV viral load assays) and HIV-related ancillary services. To protect the anonymity of the corrections-based respondents, data on type of facility (i.e. jail or prison) at which they worked was not collected, although information on the state where their facility was located was asked. The survey forms were distributed at a pre-conference seminar prior to the national correctional health care meeting and also during the conference. Ninety-nine surveys were completed.

The same 23-item survey was then administered, via telephone, to healthcare providers involved with community-based HIV care. To determine which community-based healthcare workers should be included in the survey, individuals directly involved with correctional healthcare in the states representative of the majority of the survey respondents were contacted and asked to identify clinics in their respective geographic regions that provided HIV care to the ex-incarcerated population. Specifically, these correctional healthcare workers were asked, "Where do your HIV-infected inmates go to receive HIV care upon being released from jail or prison?" This information was solicited in an attempt to ensure that the demographics of the HIV-infected corrections- and community-based populations would be similar.

Telephone calls were then made to clinics located in more than 50 community-based sites (hospitals, private clinics, and public clinics) named by correctional healthcare workers. Thirty individuals representing 30 community-based clinics completed the survey over the telephone.

The goal of this study was to provide a subjective "snapshot" of HIV care in correctional facilities in 2005, to compare the type of care and ancillary services available in correctional facilities and in the communities to which inmates returned, and to identify, based on this limited survey, areas of potential improvement for corrections-based HIV healthcare. Formal statistical tests were not performed given the small sample size and the qualitative nature of the data. This study received approval from the Brown University Institutional Review Board.

Results

With few exceptions, the polled respondents felt that the HIV care available in community-based clinics and hospitals surpassed that which was available to inmates in correctional facilities. These respondents also reported that the four essential components of HIV care, as defined in Table 1. were not as widely available in correctional settings as they were reported to be in community-based clinics. One measure on which correctional facilities, in the respondents' perception, might outperform community-based clinics was the perceived availability of substance abuse and mental health counseling in corrections.

Expert/Specialist Care

One of the requirements for HIV expertise, as defined by the HIV Medicine Association, is whether the clinician is responsible for the care of at least 25 HIV patients during the course of a year. This definition is based on published data demonstrating improved outcomes for

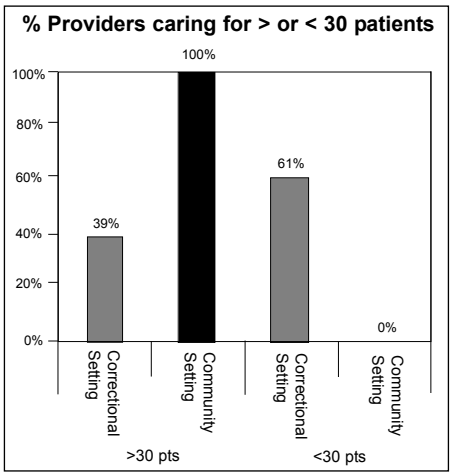

Figure 1. Level of HIV care

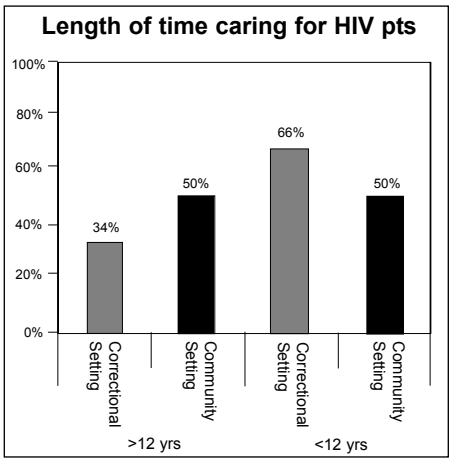

Figure 2. Number of years providing HIV care

patients cared for by HIV "experts" with this minimal patient load.[1,16]

For this survey, we used 30 patients as the cut-off for "experienced" care. Fewer individuals involved with corrections-based HIV care were caring for 30 or more HIV patients at the time they were surveyed, compared to those providing community-based care (Figure 1). Respondents providing corrections-based care also reported fewer years spent caring for HIV infected individuals as compared to community-based respondents, with only 34% having spent >12 years providing HIV care versus 50% of community providers (Figure 2).

In addition, according to 38% of correctional care providers surveyed, an HIV specialist was "never" available to see patients at the facility where they worked, whereas none of respondents involved with commu-

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Letter from the Editor

March 2006

Dear Corrections Colleagues,

This month, David Wohl brings us some highlights from the recent Conference on Retroviruses and Opportunistic Infections. And in our main article, Bernard, Sueker, Colton, Paris, and DeGroot report some fascinating information from their survey comparing health care available to incarcerated HIV infected persons to that offered in the free community. Although the study has a small sample size, it does illuminate some important disparities in access to essential diagnostic studies such as CD4 counts, HIV viral loads, and HIV resistance testing. Additionally, this survey documents the wide chasm that often exists between HIV treaters in the free community and their compatriots inside jails and prisons. Both groups have significant misconceptions about what is available for their patients on the other side of the fence. Clearly, there is a need for improved communication and collaboration between correctional public health clinicians and those working in free world public health. Although we provide care to many of the same patients, it is as if we exist in different dimensions and as a result our patients suffer from lack of continuity of care.

It is inexcusable that more than twenty years into the HIV epidemic, too many correctional clinicians are operating without the essential tools required to provide basic HIV care. The reality is that it is not just HIV care that is compromised. It is extraordinarily challenging to meet the "community standard" when some asthmatics cannot keep inhalers on their persons and most cannot keep personal peak flow meters (all available models have a steel rod inside, a potential weapon), many diabetics do not have access to appropriate dietary choices, most hypertensive inmates cannot keep blood pressure cuffs for self monitoring, some patients with angina are not allowed to keep sublingual nitroglycerin in their cells, many correctional systems have overly restrictive exclusionary policies for hepatitis C treatment, and many jails and prisons obstruct access to narcotics for the treatment of chronic pain.

Furthermore, correctional clinicians often spend less time dealing with true medical issues than they do authorizing or denying a myriad of paramedical items such as low bunks, pillows, hats, gloves, sunglasses, non-wool blankets, shaving exemptions, ice, showers, canes, crutches, walkers, etc. Many clinicians endure professional isolation while struggling in "clinics" that lack sinks, exam tables, common implements for examinations, computers, internet access, PDAs, electronic medical records, medical education, and timely access to diagnostic studies and specialists.

Clearly those of us working in jails and prisons face enormous challenges as we attempt to provide legally defensible treatment to those entrusted to our care. We have been tasked with providing complex medical care to a population that is disproportionately affected by severe chronic conditions such as HIV, TB, hepatitis, substance abuse, and mental illness. We must never stop challenging those who put our patients' lives and our professional reputations at risk by denying us the tools necessary to accomplish the mission that has been given us. Martin Luther King once said, "Our lives begin to end the moment that we become silent about things that matter." My less poetic version is that if we as correctional health care providers are not angry at least once a day, we probably don't care enough about what we are doing.

- Joseph Bick

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Faculty Disclosure

In accordance with the Accreditation Council for Continuing Medical Education Standards for Commercial Support, the faculty for this activity have been asked to complete Conflict of Interest Disclosure forms. Disclosures are listed at the end of articles. All of the individual medications discussed in this newsletter are approved for treatment of HIV and hepatitis unless otherwise indicated. For the treatment of HIV and hepatitis infection, many physicians opt to use combination antiretroviral therapy which is not addressed by the FDA.

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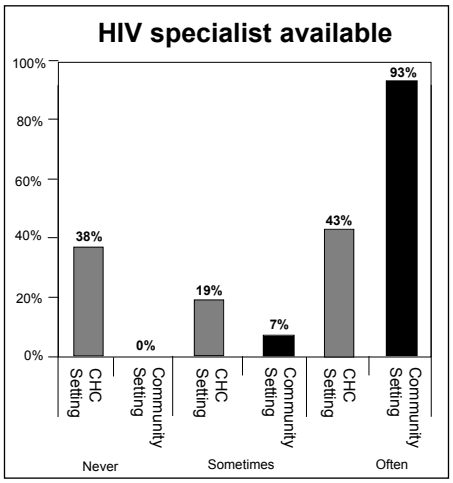

Figure 3. HIV Specialist Availability

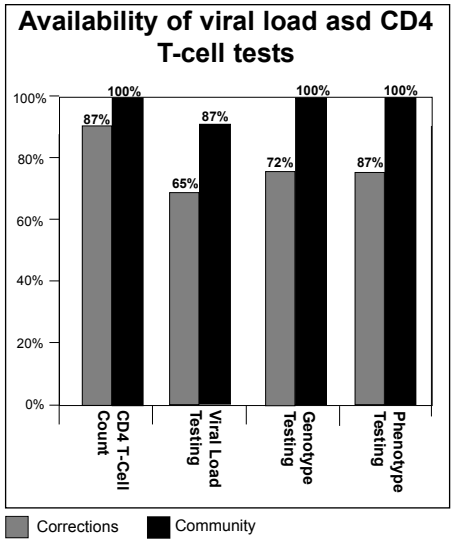

Figure 4. Clinical Tests Availability

nity HIV care reported that an HIV specialist was "never" available to see patients at the clinic/hospital where they worked. Forty-three percent of corrections-based respondents and 93% of community-based respondents reported that an HIV specialist was "often" available to see patients at the facility where they worked (Figure 3).

Clinical Tests

CD4+ cell count and HIV viral load testing were also reported to be more frequently available in community-based clinics/hospitals as compared to correctional facilities (Figure 4). The greatest discrepancy in testing availability was in plasma HIV viral load testing. While 87% of community-based clinicians reported access to this assay, only 65% of corrections-based providers reported that this test was available.

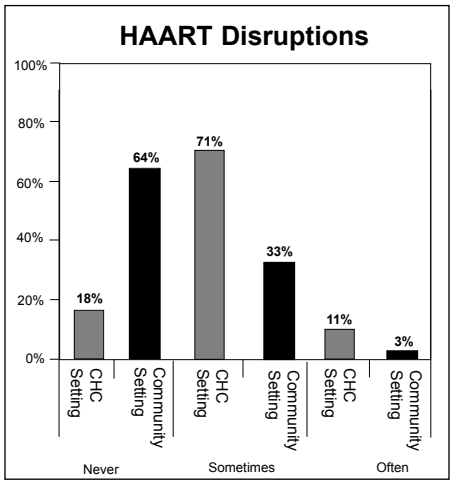

Figure 5. HAART Disruptions

HAART

Of the respondents involved with corrections-based HIV care, 18% reported that patients "never" experienced disruptions in HAART, compared to 64% of respondents involved with community-based HIV care (Figure 5). Seventy-one percent of corrections-based respondents reported that individuals "sometimes" experienced disruptions in HAART; 11% reported that patients "often" experienced disruptions. In contrast, 33% of respondents involved with community-based HIV care reported that patients "sometimes" experienced disruptions in HAART; 3% indicated that patients "often" experienced disruptions.

Mental Health and Substance Abuse Services

Both substance abuse counseling and mental health counseling were more available in the corrections-based HIV care setting compared to the community clinics (83% vs. 77%, and 100% vs. 97%, respectively).

HIV-Related Educational Services

In contrast, educational sessions/lectures on HIV, HIV case management, up-to-date HIV reading materials, dietary/nutritional counseling, HIV education, social work services, adherence counseling, and peer education were all more available in the community-based clinics and hospitals (Figures 6 and 7). Thirty-four percent of respondents involved with corrections-based HIV care reported the existence of educational sessions or lectures on HIV at their facility, as compared to 83% of respondents involved with community-based HIV care. Only 32% of respondents involved with corrections-based HIV care reported peer education at their facility, as compared to 64% of respondents involved with community-based HIV care.

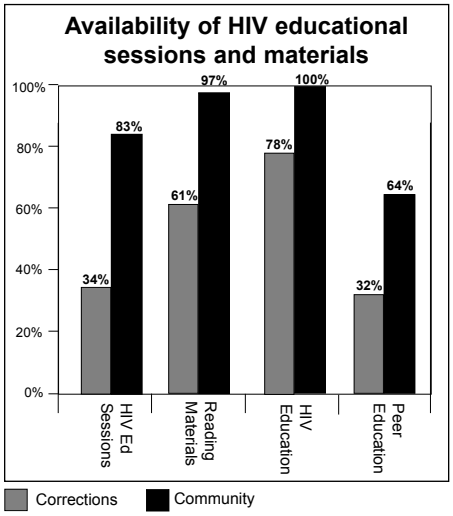

Figure 6. Available HIV Education Resources

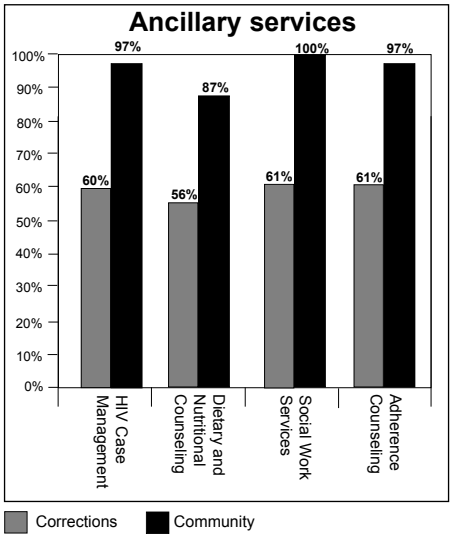

Figure 7. Ancillary HIV-related Services

Social Services

In the correctional setting, ancillary services were relatively limited when compared to community-based care. Specifically, 60% of respondents involved with corrections-based HIV care reported the existence of HIV case management at their facility, as compared to 97% of respondents involved with community-based HIV care (Figure 7). Sixty-one percent of respondents involved with corrections-based HIV care reported that their facility offered adherence counseling, as compared to 97% of respondents involved with community-based HIV care.

Respondents' Perceptions Regarding Quality of Care

Half of the corrections-based respondents believed that the HIV care available at the facility where they worked was "somewhat

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better" or "much better" than the HIV care available in community-based clinics or hospitals. Thirty-six percent thought the care was "equal," and 14% thought it was "somewhat worse" or "much worse." Eighty-three percent of community-based respondents felt that the HIV care available at the clinic or hospital where they worked was "somewhat better" or "much better" than the HIV care available within corrections while the remaining 17% felt the care was "equal;" none felt it was "somewhat worse" or "much worse."

Discussion

As judged by the criteria for a standard of high-quality HIV care (Table 1), there may be important differences in the quality of HIV care when comparing correctional facilities to community-based clinics. Most striking were differences between the settings in the experience of the HIV providers as measured by number of HIV-infected patients currently under care and years of experience as an HIV healthcare provider. Further, the absence of basic HIV testing modalities, most notably HIV viral load testing, in the sample of corrections-based clinicians was surprising and, if confirmed, identifies an area that requires urgent attention.

According to the survey results, HIV-infected prisoners experience greater disruptions in HAART. As mentioned above this may be multiply-determined; however, such interruptions in therapy can be deleterious regardless of cause. Further, supportive services, with the notable exception of mental health care, were less commonly reported as available in correctional settings. It is likely that the availability of such services in correctional facilities varies widely by the type of facility (jail versus prison), whether the facility is run by the state or federal government or a private healthcare company, and by the prevalence of HIV infection at that facility.

Despite these reported differences in care and services, the vast majority (86%) of respondents in the correctional setting felt that the care available at the facilities where they worked was at least as good as or better than that available outside of corrections. In contrast, the perception of community providers was almost the inverse, with 83% indicating they believed community HIV care was superior to such care delivered in correctional settings. Respondents may have compared in-custody care with care received by patients after they are released and not with care that is generally available in clinics on the outside. Despite the fact that good HIV care is available on the outside, many former inmates do not avail themselves of it when they leave. As previous studies have shown, many former inmates return to jail/prison with worse control of HIV disease than when they were released, suggesting that they may not have been able to integrate into the "outside" clinics.[17]

This survey was unable to address other key aspects of HIV care. For example, treatment and prevention of opportunistic infections was not covered although such care is a crucial element of HIV therapeutics. Similarly, oral/dental health services and ophthalmology were not included in the list of HIV-related services.

In addition, the survey was restricted in its ability to probe for additional information regarding the care being delivered. For example, in asking, "Do HIV-infected patients ever experience disruptions in their HAART?" we did not search for the predominant factor causing the disruption. Interruptions in HAART may have been a consequence of patients' decisions not to adhere to treatment, the unavailability of medication, or a lack of continuous medical care. While disruption in medication negatively impacts treatment regardless of its cause, a patient's refusal or inability to adhere to his/her regimen is very different in terms of identifying opportunities to redress gaps in quality of HIV care than a lack of access to medication.[18] While such additional data would be valuable to the aims of this investigation, the survey was

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REPORT FROM THE 13TH CONFERENCE ON RETROVIRUSES AND OPPORTUNISTIC INFECTIONS

David Alain Wohl, MD*
Speakers' Bureau: Gilead Sciences, Bristol Myers Squibb, Abbott Laboratories, Roche Pharmaceuticals, Boehringer-Ingelheim.
Grant Support: Abbott Laboratories, Gilead Sciences, Roche Pharmaceuticals.

CROI, indisputably the most respected of the domestic clinical HIV conferences, was held last month a mile high into the atmosphere in Denver, Colorado. Most agree that this year's conference was notable not only for the relatively low oxygen content of the inspired air but also for the quality of the data presented. The following is a review of major themes emerging from this conference, with an emphasis on data that correctional clinicians managing HIV infection are most likely to find of interest.

The Changing Epidemiology of HIV Infection in New York State Prisons

The sole presentation involving inmates at the conference came from New York, the state with the highest number of HIV-infected men and women in the U.S.[1] Over 22,000 consecutive inmates entering four intake facilities from 1988-2003 were surveyed about their HIV status and injection drug use. During the course of the study, the prevalence of HIV infection dropped by 74% in men and almost 40% in women. However, while decreases in HIV infection at prison entry were observed in African-American, Hispanic and white men, among women the prevalence of HIV did not change in those who were African-American - remaining at about 15%. There was a striking decline in HIV prevalence at prison entry among injection drug users. From 1988 to 1992, almost half of male and female injection drug users tested were HIV-infected. By 2003, the rate of HIV seropositivity dropped to about 20% for injection drug users of both genders.

Summary: These data provide an important longitudinal assessment of the changing epidemiology of HIV infection in a large correctional system and suggest a potential impact of prevention efforts targeting users of injection drugs. While the decline in inmates self-reporting injection drug use was encouraging, the unchanged rate of HIV seropositivity among African-American women requires more attention given the rapid increase in infections in this group. Lastly, it is remarkable that more data from correctional sources were not presented at the conference given the number of persons with HIV infection living in prisons and jails. One hopes that corrections-based clinicians and researchers are saving their data for the World AIDS Conference this summer.

HIV Therapy: The Benefits of Starting Early and Not Stopping

The current antiretroviral therapy guidelines recommend the delay of treatment initiation in asymptomatic individuals until the CD4 cell count falls to at least 350/mm^3. A major rationale for postponing therapy has been the avoidance of treatment-related toxicity. To determine whether the CD4 cell count at the time HIV therapy was initiated predicted select toxicities - peripheral neuropathy, lipoatrophy and renal insufficiency - investigators from the HIV Outpatient Study (HOPS), a clinical cohort study from outpatient clinics across the U.S., examined records from over 2,200 patients seen at least twice from 1996 to mid-2005[2].

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considered more likely to be completed if it were brief and easy to answer.

In order to preserve anonymity, survey respondents were not asked to identify the name of the facility where they were employed at the time of the survey; hence, it is impossible to know whether the facility was a prison or a jail. This may obscure differences between these types of correctional facilities in regards to the quality of HIV care. Response bias may have been a factor in respondent's answers. Although surveys were anonymous, respondents may have desired to portray the HIV care in their own facilities in a positive manner.

Although the survey was administered at a national conference, respondents were not representative of every state. Only 33 states were represented in the responses and, therefore, their responses cannot be generalized to the nation as a whole. In addition, the survey participants represent a subset of correctional healthcare providers who had chosen to attend the national conference and their facilities may have differed from those of their colleagues who did not attend.

Selection bias also could have occurred in the sampling of the community-based providers who were approached about the survey, as recommendations from corrections-based HIV providers were used to determine which community-based organizations to contact. Additionally, due to the descriptive nature of this study and the relatively small sample size of community-based health care workers, statistical tests of the significance of the comparisons were not performed.

Finally, the survey results were inherently limited because they did not reflect patients' opinions. Discrepancies in patient and provider perceptions of HIV care-which inevitably exist-could not be detected by the survey.

Conclusions

As judged by the criteria for a standard of high-quality HIV care (Table 1) and this snapshot of medical services, the correctional facilities surveyed do not meet existing, well-accepted standards of HIV care, as reported by corrections-based healthcare providers. There is a perception among community providers of poorer care in the prison which cannot be substantiated by the current study, but which does bear further investigation. Additionally, the results suggest that the standard of HIV care in U.S. correctional facilities lags behind the standard of HIV care in non-correctional healthcare settings where former inmates receive care. For almost every survey question, responses showed appreciably better access to HIV services and clinical tests in the community-based clinics. The lack of access to some of these services may lead to compromised health and increased morbidity and mortality for incarcerated individuals.

And finally, were the results of this very limited survey of provider perceptions to be confirmed in future investigations, it would raise serious concerns regarding the infringement of inmates' constitutional rights currently defined as the ability to access the same level of care as is provided in the community. While the deficiencies were not large, some of the aspects of care that were missing would have large impact on clinical outcomes. These critically important aspects of HIV care that are "standard" in the community, but not apparently standard in correctional settings, include access to HIV expertise and to such routine tests as CD4+ cell counts, viral load testing, and genotype testing. Even relatively low cost interventions fall farther behind; the lack of access to up-to-date HIV educational materials, peer education, and HIV education in general, is troubling. Limited patient education is a reflection of their limited access to educational materials in correctional settings, but it is a deficiency that is easily addressed at low cost. Most troubling of all is the observation that healthcare providers in these correctional settings seem to be unaware that the standard of HIV care, as judged by the factors examined, in their facilities appears to be inferior to the standard of HIV care in non-correctional settings.

This survey should be considered a preliminary evaluation, at best, due to the large number of constraints on the study design. Future investigations are needed to further explore these findings and, in particular, should focus on the determinants of HIV treatment interruption in correctional facilities, the availability of laboratory tests that are considered essential to routine care in the community, and the training of clinicians providing HIV care in correctional settings. The survey also appears to highlight the importance of linkage to care in the community, following release. In addition, a broader assessment of supportive services in disparate correctional settings is required to identify areas where the greatest needs exist, yet are unmet.

Healthcare providers in correctional settings undoubtedly face challenges unique to their work environment. It is critical that these clinicians be provided with the essential tools and resources necessary to provide quality treatment to HIV-infected patients placed in their care. Studies designed to address the most cost-effective approaches to providing HIV care in the correctional setting are needed to answer some of these questions and to provide some insight as to how best to use the limited resources available.

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(continued from page 5)

Patients were stratified by CD4 cell count at time of treatment initiation. In addition, patients were categorized by whether they were receiving HAART more than or less than 95% of the time following treatment initiation. Mortality and incidence of opportunistic infections were lower when HAART was started at higher CD4 counts and when taken 95% or more of the time; increasing benefits of HAART were even evident among those starting therapy at CD4 cell counts above 350/mm^3.

Less anticipated was the effect initiating HAART at lower CD4 counts on the incidence of the toxicities studied. Of the 2,222 patients, 113 developed renal insufficiency, 301 developed neuropathy, and 176 lipoatrophy. The incidence of each of these conditions was lower among patients initiating HAART at higher CD4 counts. In multivariate analyses persons with higher pre-HAART CD4 counts were consistently less likely to develop any of these toxicities. In addition, persons who took HAART at least 95% of time were less likely to develop renal insufficiency and distal symmetrical polyneuropathy; however, the reverse association was seen for lipoatrophy where greater time on therapy, particularly with d4T (Zerit) and possibly indinavir (Crixivan) or nevirapine (Viramune), was associated with greater risk.

Summary: These results suggest that some of the most feared adverse effects of HAART may be prevented by early treatment initiation and maintenance of therapy to prevent loss of virologic and immunologic success. This conclusion jibes well with the results of the SMART Study, a trial of a strategy of HIV treatment conservation in which participants had their HIV therapy discontinued until CD4 counts fell to below 250/mm^3 and again stopped when reaching 350/mm^3[3]. Excess mortality and disease progression were observed among those randomized to the drug conservation arm. Remarkably, severe renal, cardiovascular and hepatic events were also more likely in those who discontinued HIV therapy.

The improved overall outcomes seen with early treatment initiation in this study are noteworthy and as therapies continue to become more potent and better tolerated, the tipping of the balance toward earlier administration of HIV therapy is likely. That near continuous HAART was found to be associated with better disease free survival and virologic and immunologic outcomes may have a direct bearing on correctional HIV care in light of the challenges jails and prisons often face in maintaining uninterrupted HIV therapy (see Main Article).

Tenofovir and the Kidney

Tenofovir (Viread, and a component of Truvada) is a potent and convenient antiretroviral agent that has become increasingly useful in the treatment of treatment-naïve and -experienced patients. It has been well appreciated that tenofovir can cause renal impairment in some patients, especially when the drug is not dose-adjusted for decreased creatinine clearance or when it is co-administered with nephrotoxic agents. In a recent study by Gallant and colleagues tenofovir was associated with to a small but measurable decline in creatinine clearance[4]. Several poster presentations at CROI also described changes in renal function among different clinical cohorts.

In a Center for Disease Control and Prevention (CDC) study of over 11,300 HIV+ patients with a glomerular filtration rate (GFR) >90 as calculated by the simplified modified diet in renal disease (MDRD) equation the drug was associated with an increased risk of a GFR <90 mL/min[5]. However, few of the patients experienced greater than moderate impairment and mild, moderate and severe impairment occurred in 35.1%, 6.4% and 2.6%, respectively. Lower CD4 cell count, hemoglobin, diabetes, and hypertension were predictive of renal impairment.

In a cohort of almost 390 patients treated with tenofovir at the University of Washington, 108 had a decrease in renal function as measured by MDRD and/or the more commonly used Cockcroft-Gault equation of creatinine clearance[6]. However, no data were presented on concomitant nephrotoxic drugs and, again, there was no control group. Interestingly, 17 subjects had a decline by Cockcroft-Gault alone, 55 by the MDRD alone, and 36 by both. The MDRD does not include weight and the Cockcroft-Gault does not include race. Increased age, didanosine (Videx), amprenavir (Agenerase), and white race were found to have a greater risk of developing renal dysfunction by one or both equations in this study.

A study from the Atlanta Veterans Administration Medical Center used a completely different definition of renal impairment among 222 patients receiving tenofovir[7]. Renal toxicity required either a 50% change in creatinine clearance by the Cockcroft-Gault equation or hypophosphatemia (defined as any phosphate level less than 2.0 mg/dL). During the year following initiation of tenofovir, a 50% change in creatinine clearance was observed in 4% and hypophosphatemia in 13% of patients. Once more, there was no comparator group and no information provided on the persistence of hypophosphatemia or concomitant medications.

Summary: These studies indicate that there are some patients who may experience declines in renal function while taking tenofovir but the rate of moderate or serious renal impairment across these investigations was very low. Each of the studies suffered from one or more serious flaws including the lack of controls (changes in renal function have been observed in treated patients not taking tenofovir), selection bias (tenofovir receiving patients are more likely to be treatment-experienced and have more advanced HIV disease), and the use of different estimates of renal function. There was little to suggest that use of tenofovir should be modified. For patients with marginal renal function, the use of dose-adjusted tenofovir should be considered. Monitoring of creatinine clearance by the Cockcroft-Gault equation or MDRD (see Resources for online calculators) can easily be accomplished.

References:

[1]Wang L, Smith L, Wright L, et al. Disparity in Trends and Changing Patterns of Predictors of HIV Infection among Inmates Entering the New York State (NYS) Department of Correctional Services (DOCS): 1988-2003. February 5-8, 2006; Denver, Colo. Abstract 921.

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[5]Heffelfinger J, Hanson D, Voetsch A, et al. Tenofovir-induced nephrotoxicity in the first year of therapy. In: Program and abstracts of the 13th Conference on Retroviruses and Opportunistic Infections; February 5-8, 2006; Denver, Colo. Abstract 779.

[6]Crane H, Harrington R, Van Rompaey S, et al. Didanosine and lower baseline body weight are associated with declining renal function among patients receiving tenofovir. In: Program and abstracts of the 13th Conference on Retroviruses and Opportunistic Infections; February 5-8, 2006; Denver, Colo. Abstract 780.

[7]Guest J, Rimland D, Patterson B, et al.. Tenofovir-induced nephrotoxicity in the first year of therapy. In: Program and abstracts of the 13th Conference on Retroviruses and Opportunistic Infections; February 5-8, 2006; Denver, Colo. Abstract 778.

Save the Dates

NCCHC Conference
April 8-11, 2006
Las Vegas, NV
Visit:
http://www.ncchc.org/education/updates2006/lasvegas.html

American Correctional Association Conference
August 12-17, 2006
Charlotte, NC
Visit:
http://www.aca.org/conferences/summer06/

XVI International AIDS Conference
August 13-18, 2006
Toronto, Canada
Visit:
http://www.aids2006.org/

17th International Conference on the Reduction of Drug Related Harm
April 30-May 4, 2006
Vancouver, British Columbia, Canada
Visit:
http://www.harmreduction2006.ca/

Satellite Videoconference "Hepatitis B & C with HIV Co-infection"
April 19, 2006
12:30-2:30 EST
CME-accredited webstream of last conference available on-line
Visit:
www.amc.edu/patirnt/hiv/hivconf/index.htm

ACHSA 2006 Multidisciplinary Training Conference
May 11-13, 2006
Durham, North Carolina
Visit: www.achsa.org

News and Literature Reviews

California's New Director of Prison Healthcare Has Unprecedented Authority

Robert Sillen, chief of Santa Clara County's health department, has been appointed by a federal district judge to assume control over the healthcare in California's prisons. According to the San Jose Mercury News, Sillen will have almost complete authority over prison healthcare issues, from hiring and firing state employees to appropriating the healthcare budget. The appointment follows a recent review that determined that California's prison-based healthcare had not significantly improved following settlement of a 2001 class-action lawsuit filed by prisoners. Both Roderick Hickman, Secretary of Youth and Adult Corrections, and Governor Schwartzenegger have pledged their support for Sillen's work. (At press time, Secretary Hickman tendered his resignation, citing a lack of commitment for change from state government and the powerful prison guard union.)

California has approximately 168,000 inmates, whose prison-based healthcare has been described by Sillen as comparable to "Third World" conditions. System failures, reported by court-appointed experts, that Sillen says he will aim to correct include doctors' refusal to treat patients they believed were faking illness, extreme inattention to very ill patients, poorly stocked pharmacies, and examining rooms lacking sinks and medical equipment [1]. According to the news report, Sillen will face the challenge of recruiting doctors and nurses to work in a system with a reputation for inept healthcare, and where correctional officers and wardens have historically determined which prisoners receive medical attention[1].

[1]Ostrov BF, Bailey B. Sweeping power for new director of prison care. Mercury News. February 15, 2006:1A.

Self-Report vs. Voluntary Testing in Determining Inmates' HIV Status

Lyons et al. compared self-reported HIV status to HIV status determined by voluntary testing among 352 drug users incarcerated at the Cook County Jail in Chicago. Participants were interviewed about their HIV status and drug habits, and were offered HIV testing and a physical examination. One hundred ten participants (31%) accepted the voluntary HIV test; 100% of test results were negative. Seven participants (1.9%) reported during the interview that they were HIV-positive; all seven declined the voluntary HIV test. Six of these seven participants reported a history of injecting drugs, and five (71%) reported having shared needles. The authors conclude that those who indicate past drug use should be offered HIV testing yet, given the high prevalence of drug use among those incarcerated, offering HIV testing to all inmates seems more pragmatic.

The results underscored the challenge of voluntary HIV testing in a correctional setting and the need for greater exploration of the determinants of HIV testing acceptance among inmates.

Citation: Lyons T, Goldstein P, Kiriazes J. HIV in Correctional Facilities: Role of
Self-Report in Case Identification. AIDS Patient Care and STDs 2006;20(2):93-96..

HIV Care Costs Have Decreased

Over the past twenty-five years, the average annual cost of caring for an HIV-infected individual has decreased, approximately, from $100,000 to $13,900-$36,500, depending on patients' CD4 counts. HAART treatment, at roughly $10,500 per year, is the major HIV care expenditure for HIV patients with CD4 counts greater than 350, while hospitalization expenses predominate for those with lower CD4 counts.

Ironically, the successes of HIV care cast doubt on whether this pattern of decline will continue in the near future. As patents expire and generic forms become available, the cost of antiretroviral drugs may decline in the next several years. Yet at the same time, HIV patients who benefit from HAART continue to live longer, thereby increasing the number of co-morbid conditions and complications of HIV infection necessitating medical attention. Mayer and Chaguturu[1] alert clinicians to the successes of HIV treatment in the 21st century and also to the continued need for highly trained HIV specialists in an era of increasingly complicated HIV infection.

Chen et al.[2] note that only 2% of HIV care costs (about $370 per patient per year) are attributable to physician expenses. This figure highlights inadequate support for HIV specialists who require certifications and training-necessary, professional costs that are not sufficiently covered by this 2% of expenditures. In an era when military expenses are swallowing up federal money that could otherwise support the programs that cover the majority of HIV-related expenses-Ryan White Act programs and Medicaid-physicians should anticipate cuts to their federal reimbursement.

[1]Mayer KH, Chaguturu S. Penalizing Success: Is Comprehensive HIV Care Sustainable? Clin Inf Dis. 2006 Apr 1;42(7):1011-3. Epub 2006 Feb 22.

[2]Chen RY, Accortt NA, Westfall AO, Mugavero MJ, Raper JL, Cloud GA, Stone BK, Carter J, Call S, Pisu M, Allison J, Saag MS. Distribution of Health Care Expenditures for HIV-Infected Patients. Clin Infect Dis. 2006 Apr 1;42(7):1003-10. Epub 2006 Feb 22.

Resources

American Academy of HIV Medicine website.
http://www.aahivm.org
Conference on Retroviruses and Opportunistic Infections (CROI) website.
http://www.retroconference.org
Online calculator for creatinine clearance
http://www.intmed.mcw.edu/clincalc/creatinine.html
Online calculator for MDRD
http://www.nephron.com/mdrd/default.html
National Commission on Correctional Healthcare. Management of persons with HIV infection. 2001
http://www.ncchc.org
New York State Department of Health AIDS Institute. HIV clinical practice guidelines.
http://www.hivguidelines.org
AIDSinfo: A Service of the U.S. Department of Health and Human Services. 2005. http://aidsinfo.nih.gov or http://www.hivatis.org
Stephenson B, Leone P. HIV Care in U.S. Prisons: The Potential and Challenge. 2005;14(4).
http://www.acria.org/treatment/treatment_edu_fallupdate2005_challenge.html

Self-Assessment Test for Continuing Medical Education Credit

Brown Medical School designates this educational activity for one hour in category one credit toward the AMA Physician's Recognition Award. To be eligible for CME credit, answer the questions below by circling the letter next to the correct answer to each of the questions. A minimum of 70% of the questions must be answered correctly. This activity is eligible for CME credit through February 28, 2006. The estimated time for completion of this activity is one hour and there is no fee for participation.

1. Each of the following should be considered an essential com ponent of HIV care in the U.S. EXCEPT:
   A. HIV viral load testing
   B. CD4 cell count testing
   C. Care by a board certified Infectious Diseases physician
   D. Availability of combination antiretroviral therapy

2. Bernard and colleagues found which of the following in their survey:
   A. Corrections-based respondents judged HIV care to be better in correctional facilities than in the community
   B. Community-based respondents judged HIV care to be better in the community than in correctional facilities
   C. HIV viral load testing was reportedly available in 100% of the correctional facilities surveyed
   D. Corrections-based respondents reported less access to case management than community providers
   E. All of the above

3. Data from New York State's Department of Corrections on the epidemiology of HIV from 1988 to 2003 found which of the following:
   A. The proportion of inmates entering the system with HIV infection has decreased
   B. HIV infection rose in all racial and ethnic groups during the course of the study
   C. There was a decline in the HIV prevalence among male and female inmates reporting injection drug use
   D. A and B
   E. A and C

4. Recent data regarding tenofovir indicate that:
   A. Tenofovir can cause decreases in renal function when the dose of the drug is not appropriately adjusted for creatinine clearance
   B. Tenofovir may be more likely to cause changes in renal function among treatment experienced patients with low CD4 cell counts
   C. Although renal impairment in patients receiving tenofovir seems to be rare, all patients administered the drug should have renal function monitored using Cockcroft-Gault or MDRD equations
   D. All of the above

5. In the HOPS study of the timing of HIV treatment initiation starting HIV therapy at a lower CD4 cell count and treatment interruption were associated with a higher risk of renal prob lems and peripheral neuropathy (TRUE or False)?
   A. True
   B. False

IDCR Evaluation

5 Excellent 4 Very Good 3 Fair 2 Poor 1 Very Poor

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	educational value	clarity
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In the News	5 4 3 2 1	5 4 3 2 1
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2. Do you feel that IDCR helps you in your work?
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3. What future topics should IDCR address?

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5. Do you have specific comments on this issue?

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