5-2006

IDCR: Infectious Diseases in Corrections Report, Vol. 9 No. 5

Infectious Diseases in Corrections

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INFECTIOUS DISEASES IN CORRECTIONS REPORT

FORMERLY HEPP Report

May 2006 Vol. 9, Issue 5

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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).

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IDCR is grateful for the support of the following companies through unrestricted educational grants:

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SPECIAL REPORT: TRANSMISSION OF HIV WITHIN A STATE PRISON *(MOTHER'S DAY EDITION TO BE PUBLISHED IN JUNE)*

David Alain Wohl, MD

DISCLOSURES:
Speakers' Bureau: Gilead Sciences, Bristol Myers Squibb, Abbott Laboratories, Roche Pharmaceuticals, Boehringer-Ingelheim.

Grant Support: Abbott Laboratories, Gilead Sciences, Roche Pharmaceuticals.

Although most incarcerated individuals with HIV infection acquire the virus prior to their imprisonment, the high prevalence of HIV infection and frequency of unprotected sex in correctional facilities suggest that spread of HIV within prisons also occurs. However, few studies have investigated intramural transmission of HIV infection in the U.S. and most of these, conducted early in the epidemic, reported a low incidence of HIV infection within prisons.[1-3] A more recent study of 446 incarcerated men in Rhode Island found no cases of HIV seroconversion after 694 person-years of in-prison follow-up; in contrast, transmission of hepatitis B virus and hepatitis C virus were observed.[4]

The primary challenge to determining the incidence of HIV during incarceration is the absence of HIV testing data at both the time of incarceration and release. Few correctional systems conduct testing at entry and exit, and those that do have not published their findings. More common is the performance of HIV screening of inmates at the time of their incarceration; among a subset requesting testing or for whom the test is clinically indicated, an HIV test is repeated during the incarceration.

Last month, the Centers for Disease Control and Prevention (CDC) reported in the *Morbidity and Mortality Weekly Reports (MMWR)* the investigation of 88 male inmates of the Georgia Department of Corrections who between 1992 and 2005 were found to have acquired HIV during their incarceration.[5] Those with documented HIV seroconversion while incarcerated all had previously been found to be seronegative at prison entry when they were tested as part of Georgia's policy of mandatory HIV testing of new prison inmates. Almost half (47%) were discovered to be HIV-infected during a program started in 2003 offering voluntary HIV testing annually to all inmates, while the remaining inmates were found to be HIV-positive after requesting to be HIV tested or receiving the test as part of their clinical care. This annual HIV testing program ended in 2005. Of the 88 inmates who seroconverted, the median age at time of the detection of HIV was 32 years (range: 21-58 years); 67% were black and 33% were white.

To examine risk factors associated with HIV infection during incarceration, the CDC conduct-

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ed two case-control studies to compare the men who acquired HIV in prison with inmates who remained HIV-uninfected. In the first, infected cases were compared to a random selection of unmatched, uninfected controls who resided in one of the seven facilities where most of the cases were believed to have become HIV-infected. In the second study, cases were contrasted to control subjects selected from the 31 state prison facilities in Georgia where case inmates were housed and matched by sentence length and time already served.

Multivariable analysis of the unmatched study found HIV seroconversion to be statistically significantly associated with self-reported male-male sex in prison, older age, having served >5 years of the current sentence, and having a body mass index (BMI) of <25.4 kg/m^2 on entry into prison. In a similar analysis of the matched study, self-reported sex with men in prison, receiving a prison tattoo, a BMI of <25.4 kg/m^2 on entry into prison, and black race were significantly associated with seroconversion. *(see Table 1)* Notably, 32% of the cases and 6% of the matched controls reported sex with a male staff member and 22% of cases and 9% of these controls stated they had sex with female prison staff. Of 43 inmates (34 cases and nine controls) who reported engaging in consensual sex, 13 (30%) said they used condoms or other improvised barrier methods including rubber gloves and plastic wrap.

Table 1. Multivariable analysis of characteristics and risk behaviors among inmates with HIV seroconversion in prison compared to matched controls

	Multivariable Analysis						
Characteristic/Behavior	**Cases (n=68)* No**	**%**	**Controls (n=68) No**	**%**	**Adjusted Odds Ratio**	**95% CI**	**p value**
Male-male sex in prison	45	*66*	9	*13*	10.1	3.0 - 54.9	<0.01
Received prison tattoo	40	*59*	28	*41*	13.7	1.5 - 390.6	0.01
BMI <24.5 kg/m^2	51	*75*	23	*34*	3.8	1.2 - 15.2	0.02
Black race	45	*66*	40	*59*	3.7	1.1 - 16.7	0.03

**Of the 88 HIV seroconverters, 11 were released from prison and two died before the start of the case-control study. Of the 75 remaining seroconverting inmates, 68 were enrolled in the case controlled studies.*

Modified from: CDC. HIV Transmission Among Male Inmates in a State Prison System --- Georgia, 1992--2005. MMWR Morb Mortal Wkly Rep. 2006;55(15):421-6.

See the Spotlight for two different perspectives on the results of the CDC investigation

The association between HIV in-prison seroconversion and low BMI may be due to the sexual victimization of smaller men; however, sex was overwhelmingly reported by participants to be consensual with only 9% of cases and 1% of controls reporting being a victim of rape during incarceration. In an accompanying editorial, the CDC recommended that HIV prevention efforts in prisons address male-male sex, injection drug use and tattooing, and that inmate-led interventions may be particularly effective. Reflecting the report by participants of sexual contact between staff and inmates, it was suggested that HIV education not be limited to only inmates. In addition, it was recommended that HIV testing at prison entry and exit should be conducted and voluntary testing offered regularly during the incarceration. The CDC was less direct regarding condom distribution in correctional settings. Noting that condoms are provided to some inmates in state prisons in Mississippi and Vermont and jails in Los Angeles, New York, Philadelphia, San Francisco, and the District of Columbia, the editorial recommended that these programs be evaluated and that departments of corrections "should assess relevant state laws, policies, and circumstances to determine the feasibility and benefits and risks of implementing such programs."

References:

1. Kelly PW, Redfield RR, Ward DL. Prevalence and incidence of HTLV-III infection in a prison. JAMA. 1986;256:2198-2199.
2. Brewer TF, Vlahov D, Taylor E, et al. Transmission of HIV-1 within a statewide prison system. AIDS. 1988;2:363-367.
3. Horsburgh CR Jr, Jarvis JQ, MacArthur T, et al. Seroconversion to human immunodeficiency virus infection in prison inmates. Am J Public Health. 1990;80:209-210.
4. Macalino GE, Vlahov D, Sanford-Colby S, et al. Prevalence and incidence of HIV, hepatitis B virus, and hepatitis C virus infections among males in Rhode Island prisons. Am J Public Health. 2004;94(7):1218-23.
5. CDC. HIV Transmission Among Male Inmates in a State Prison System --- Georgia, 1992--2005. MMWR Morb Mortal Wkly Rep. 2006;55(15):421-6. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5515a1.htm

LETTER FROM THE EDITOR SPECIAL REPORT

Dear Correctional Colleagues,

Last month the CDC's Morbidity and Mortality Monthly Report (MMWR) included a report on the documented serocoversion of 88 men incarcerated within the Georgia Department of Corrections. The report and an accompanying editorial by CDC authors raise important concerns regarding the spread of HIV within correctional settings and the appropriate measures to prevent such transmission. Since the release of the MMWR article, the IDCR board of editors has discussed the implications of the report and how the newsletter should respond. Through our conversations we have learned that among the members of the board there are strong yet diverse views on several issues raised by the article including the magnitude of intramural spread of HIV infection, who is responsible for preventing HIV transmission in correctional facilities and what is the role of interventions such as inmate access to condoms and sterile syringes in correctional settings.

Our opinions were most divergent on the issue of condoms. Some board members feel that the findings reported in the article are a wake-up call for greatly enhancing HIV prevention in

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Letter from the Editor *(continued from page 2)*

prisons and that a centerpiece of these efforts should be the distribution of condoms - an HIV and STD prevention tool that has been repeatedly demonstrated to be effective in a variety of settings. Arguments regarding any potential danger of condoms in the hands of prison inmates, these members felt, are short on data and long on misplaced moralizing. Other members counter that much is currently being done to prevent HIV transmission in prisons, that such transmission events are relatively rare and that future efforts to reduce intramural spread of HIV should focus on abstinence and perhaps being faithful (the A and B of the ABC prevention paradigm) rather than C, condoms. Several also caution that the CDC report was based on self-reported data from inmates and although these interviews were conducted using computer assisted techniques designed to reduce bias, the information collected remain self-reported and unsubstantiated. To these board members, the extremely troublesome reports of sex with prison staff by inmates in Georgia need to be taken with a heap of salt. However, we all agree that such documented contact between prison staff and inmates should be considered sexual abuse and punished accordingly.

There was greater consensus on the value of HIV screening in prisons with most agreeing that HIV testing is an important component of HIV prevention in this setting. That half of the HIV seroconversions in the Georgia Department of Corrections were detected via an annual voluntary HIV testing program was an important finding of the MMWR report. States have individual approaches to HIV screening of prison inmates as described in detail in the April IDCR. Yet, the CDC is recommending all state prison systems expand HIV testing to include voluntary screening during incarceration.

To get their perspectives on the MMWR report we asked Joseph Paris, the former medical director of the Georgia Department of Corrections (who is also an IDCR board member), and Madeleine LaMarre, an author of the report, to provide their views on the implications of the results. The aim of our coverage is to permit IDCR readers a unique opportunity to become familiar not only with the details of the MMWR report but also the perspectives of these key individuals when considering their own response to the report. I suspect that like our board our readership will also have a range of responses to the MMWR findings. We continue to encourage you to write us with your views. Selected letters to the editor will be published on our new "reader response" page online at http://www.IDCRonline.org.

Lastly, CME questions regarding the MMWR report will address the main points that are covered in a brief summary article, including the type of study that was performed, the main findings of the study, and the recommendations that were provided by the accompanying editorial.

David Alain Wohl, MD

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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.

SPOTLIGHT: POINT - COUNTERPOINT

WHAT ARE THE IMPLICATIONS OF THE RESULTS OF THE STUDY CONDUCTED IN THE GEORGIA DEPARTMENT OF CORRECTIONS FOR HIV PREVENTION IN PRISONS?

Joseph Paris, MD
The author is former Medical Director at the Georgia Department of Corrections

The recent *MMWR* study regarding the Georgia Department of Corrections (GDC) is in many ways a first and brings about much food for thought. Inevitably, a study of this breadth and complexity may lead to misinterpretations and sensationalism. I was the GDC Medical Director during the last decade of the study period and I believe I have some understanding of the underlying issues.

As physicians and human beings, we should feel the pain of each intramural seroconversion, which is a very real, personal tragedy. Yet, in my opinion, the *MMWR* paper should have highlighted the relatively low number of intramural conversions. The study period was 17 years. If one assumes the rate of conversions was approximately even throughout, there were about 5.1 intramural HIV conversions per year. The GDC today has about 50,000 inmates, but this is a static number which does not reflect the fact that, in any given year, there is a turnover of approximately 25,000 inmates. Therefore, by each year's end, the GDC had provided medical care and HIV testing to some 75,000 persons (if every inmate were to accept annual voluntary re-testing; in practice, about 10% do not). Further, because of the nearly 50% yearly turnover, the GDC housed perhaps 6,000 or more HIV-infected individuals. Additionally, it is not known how many inmates may have been infected just prior to incarceration (i.e., during the window period).

With so many infected persons passing through the GDC, no cohorting of HIV-positive inmates, and a large number of susceptible inmates, why was intramural transmission so low?

I believe that the media will likely misinterpret the *MMWR* data on the route of infection for the intramural conversions. The figures given for prisoner risk activities like sex, injection drug use, and other behaviors were self-reported, with all the implications on their validity. Also, the number of seroconverted and matched non-seroconverted inmates interviewed was very small. Again, if these figures for risk behaviors are correct, why was the yearly rate of intramural seroconversions so small?

The paper discusses the pros and cons of cohorting to lower the already very low rate of intramural conversions. But, cohorting is not a real option. To cohort or segregate so as to ensure the existence of "guaranteed HIV-free prisons," one would have to consider the very real possibility that in such perceived "HIV-free prisons" inmates may forego precautions and embark in risky behavior because of the assumed safety. It is quite possible that in such facilities introduction of HIV by a single case within the testing window, or by infected staff (a risk acknowledged in the paper's editorial note), may spread the virus rapidly and infect large numbers of inmates. In order to guarantee that a prison is "HIV-free," one would have to test at intake--whether tested previously at another prison or not--re-test at the end of the window (e.g., at 6 months) and periodically re-test all inmates, perhaps as frequently as every 6 months. I posit that it would be very difficult and expensive to maintain a "guaranteed HIV-free prison."

Whether the authors considered the transmission rates to be high or low is not apparent from the paper. Further, the paper did not comment on the decision by GDC in 2005 to stop annual, voluntary, universal HIV re-testing. It seems that studies like this one, so very enlightening despite its limitations, will not be repeated in Georgia for some time.

Madie LaMarre MN, APRN, BC
The author is the former Statewide Clinical Services Manager of the Georgia Department of Corrections. She is one of the co-authors of the MMWR report. This editorial represents her personal views and not that of any governmental agency.

Since the publication of the *MMWR*, some correctional health professionals and news media concluded that the study showed that the incidence of HIV infections in the Georgia Department of Corrections (GDC) is low. Specifically, Dr. Joseph Paris mischaracterizes the study as a disease incidence study and then draws the conclusion that HIV incidence is low in GDC prisons. It is important to clarify that data collected did not permit calculation of HIV incidence rates, since prior to 2003, inmates were tested only upon arrival into GDC and not tested again, unless they showed signs of illness or requested to be tested. During this time, thousands of inmates came into the system and departed without having another HIV test. If new infections occurred, they were unlikely to have been identified. Moreover, for those HIV infections that were detected, GDC did not have a centralized surveillance system to report and track new infections until 2003. Thus, it is not possible to draw any conclusion regarding the incidence of HIV infections in GDC from this report.

Since 1988, Georgia state law has required mandatory HIV testing of all newly admitted inmates. No further periodic testing was conducted until 2003 when voluntary, annual HIV testing was implemented in GDC. The rationale for this testing policy was provided when GDC mortality reviews identified several cases of inmates who died of HIV-related disease and were diagnosed at, or shortly before, death. In an effort to reduce HIV-related morbidity and mortality, GDC implemented annual testing to enable early identification, counseling and treatment of newly infected inmates.

This testing policy and surveillance program resulted in the identification of 88 inmates who seroconverted while incarcerated. GDC recognized that these inmates did not represent the sum of all inmates who acquired HIV infection while incarcerated, but it was this group of known seroconverters who served as the basis for the case-control study. The 88 seroconversions are not an insignificant number when one considers both the cost of medical treatment and potential sources of transmission to others. It also should be noted that 41 (47%) of the 88 HIV seroconverters in this study were identified during the two years in which annual testing was offered. Without periodic testing, many of these inmates would not have been diagnosed in a timely manner and provided access to medical care. In October of 2005, after the conclusion of this study, of 856 male inmates known to be HIV-positive in GDC, 76 (9%) had been infected during incarceration. Due to population turnover, this 76 included inmates who were part of the study as well as some who were diagnosed after the study began. It is noteworthy that almost ten percent of these prevalent HIV-infected male inmates acquired their infection during incarceration.

In the *MMWR* the CDC concludes that

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SPOTLIGHT...
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periodic HIV testing was useful and recommends that HIV screening be provided upon entry into prison, before release, and that voluntary HIV testing be offered periodically during incarceration. The CDC also recommends that correctional agencies assess the feasibility of implementing risk-reduction measures such as condom distribution to prevent disease transmission.

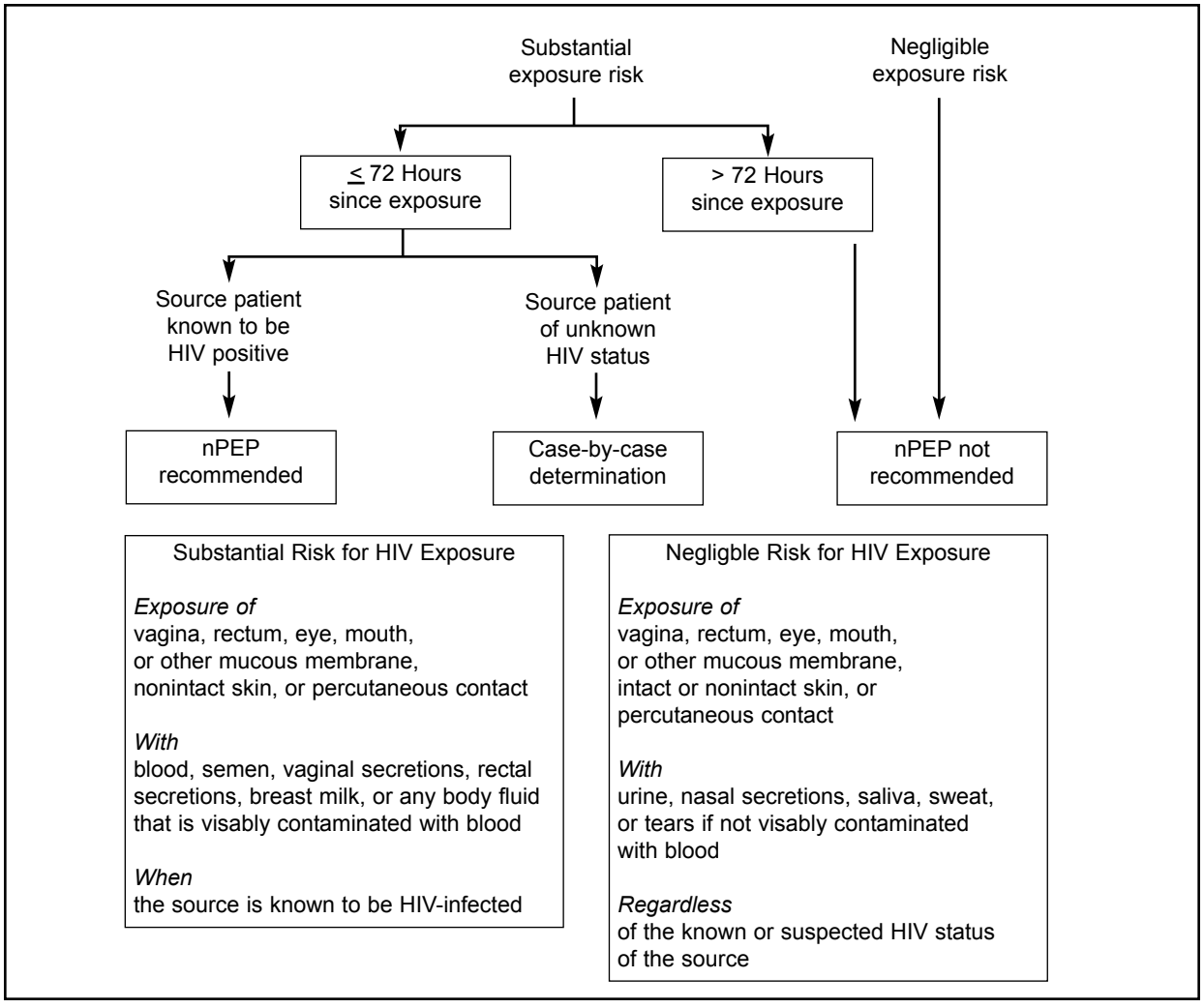
Unfortunately, in June 2005, the medical leadership of the GDC Office of Health Services discontinued voluntary annual HIV antibody testing. The result is that newly HIV-infected persons are unlikely to be identified, counseled and offered treatment. Further, it is likely that some inmates' infections will not be identified until they are hospitalized or have died. Other inmates will be released into communities and may unknowingly infect others. Lastly, no further data will be collected that could be used to calculate disease incidence or assess the effectiveness of HIV and other sexually transmitted and blood-borne disease prevention strategies. This represents a missed opportunity to protect the health of inmates and the community, and to contribute to the body of knowledge regarding communicable disease prevention in prisons and jails. Hopefully, this testing policy will be reconsidered by GDC leadership. It is further hoped that correctional agencies across the country will implement testing policies consistent with CDC recommendations and will develop comprehensive prevention strategies that include:

- Ongoing inmate and staff education regarding prevention of HIV and other sexually transmitted and blood-borne infections;
- HIV counseling and testing;
- Hepatitis B vaccination; and
- Access to risk-reduction measures (e.g. condoms, and bleach to disinfect drug injection and tattooing equipment.)

The challenges of delivering health care in correctional facilities often results in insufficient attention to disease prevention. Studies such as this are a call to action to correctional health leaders to strengthen disease prevention efforts.

IDCR-o-GRAM

Evaluation and Treatment of Possible Non-Occupational HIV Exposures



Source: CDC. Management of Possible Sexual, Infection-Drug-Use, or Other Nonoccupational Exposure to HIV, Including Considerations Related to Antiretroviral Therapy - January 21, 2005
http://aidsinfo.nih.gov/ContentFiles/NonOccupationalExposureGL.pdf

Save the Dates

Understanding Our Patients: HIV and Women in Corrections
June 16, 2006
Moody Gardens Resort and Conference Center
Galveston, Texas
For registration information, e-mail: vikorsch@utmb.edu

International Prisoner Health: Achieving International Standards in Prison Health Care
June 19-20, 2006
Tallinn, Estonia
http://www.tandfevents.com/prisonerhealth

African Women in the Diaspora Conference: Empowering African Women, Ensuring Africa's Future
June 22, 2006
Minneapolis, MN
http://www.mawanet.org/html/conference.htm

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

News and Literature Reviews

Directly Administered Antiretroviral Therapy (DAART) News

Amy Wohl et al.[1] enrolled 250 HIV-infected individuals from three Los Angeles HIV clinics into a randomized, controlled six-month trial that evaluated whether DAART or intensive adherence case management (IACM) had beneficial effects on patients' CD4+ cell counts and HIV viral load, as compared to the standard of care (SOC). Participants were both treatment-naïve (46%) (treatment <6 months) and treatment-experienced (54%); 57% spoke Spanish only and 73% were unemployed. The 82 persons assigned to the DAART arm received daily deliveries of their medications and took one dose, Monday through Friday, in the presence of a bilingual community worker. The 84 participants receiving IACM were instructed to take their medications without supervision and met on a weekly basis with a case manager. The 84 persons in the control (SOC) group were told to take their medications without supervision, and met with their clinics' case managers on a quarterly basis. Over the course of six months, overall retention was 78%. More patients in the DAART arm (18%), as compared to the SOC arm (4%), dropped out of the study early; 40% these DAART participants cited that they exited the study because it required too much time or did not fit into their schedules.

At six months, there was no significant difference between the three study arms in terms of the percentage of patients with an undetectable viral load (defined as <400 copies/mL), nor in terms of median CD4+ cell count, change of CD4+ cell count from baseline, or self-reported adherence to HAART. As a potential explanation, the authors propose that the adherence support provided by each of the three clinics was sufficient. They conclude that DAART may be most beneficial to patients with a history of adherence problems.

A second study addressed the impact of DAART among a population that traditionally has problems with adherence to HAART: injection drug users (IDU). Lucas et al.[2] compared medication adherence, HIV viral load, and CD4+ cell count among HIV-infected IDU attending three Baltimore methadone clinics and receiving DAART versus three groups of HIV-infected patients of the Johns Hopkins Clinic self-administering their HAART: patients with a history of IDU receiving methadone and HAART (n=75), patients with a history of IDU but not receiving methadone while on HAART (n=244) and patients with no IDU history and on HAART (n=490). The 82 participants in the DAART arm received one dose of HAART each morning that they went to their methadone clinic. The 809 participants in the three comparison groups self-administered their HAART regimens.

At 12 months, 56% of DAART participants had an undetectable viral load (<400 copies/mL); this proportion was significantly higher than the percentage in each of the three comparison groups (range 32-44%). DAART participants also experienced a significantly higher increase in median CD4+ cell count as compared to the comparison group participants. The authors conclude that methadone clinic-based DAART can potentially provide significant clinical benefit for HIV-infected injection drug users.

An editorial by Flanigan and Mitty[3] points us in the direction of future research: "…will community-based DAART provide a benefit to active substance users?" They propose that DAART may be most feasibly instituted as a short-term intervention for substance users, given the tendency of this population to cycle through correctional systems and to frequently change residences.

1. Wohl AR, Garland WH, Valencia R, Squires K, Witt MD, Kovacs A, Larsen R, Hader S, Anthony MN, Weidle PJ. A randomized trial of directly administered antiretroviral therapy and adherence case management intervention. Clin Infect Dis. 2006;42(11):1619-27.

2. Lucas GM, Mullen BA, Weidle PJ, Hader S, McCaul ME, Moore RD. Directly Administered Antiretroviral Therapy in Methadone Clinics Is Associated with Improved HIV Treatment Outcomes, Compared with Outcomes among Concurrent Comparison Groups. Clin Infect Dis. 2006;42(11):1628-35.

3. Flanigan TP, Mitty JA. The Good, the Bad, and the Ugly: Providing Highly Active Antiretroviral Therapy When It Is Most Difficult. Clin Infect Dis. 2006;42(11):1636-38.

Prison-Based HIV Prevention Intervention Analysis

Bryan et al.[4] assessed the efficacy of a six week, prison-based HIV prevention program and explored how race/ethnicity impacted prisoners' acceptance of the intervention. One hundred and ninety-six inmates (mean age 30 years, range 17-60; 90% male; 40% African-American, 28% Hispanic, 22% Caucasian) in Northeastern prisons voluntarily enrolled. According to pre-intervention questionnaire responses, 5% of participants were HIV-infected and 21% had injected drugs; of these, 83% had shared needles. The intervention utilized the teaching methods of the Connecticut Department of Corrections' Beyond Fear program, which educates inmates about HIV transmission, prevention and testing and aims to improve self-efficacy for HIV prevention while encouraging inmates to become peer educators.

Following a post-intervention assessment, the authors concluded that the intervention was most successful at influencing beliefs and behaviors regarding peer education, less successful at influencing ideas about condom use, and least successful regarding needle-sharing behaviors--though it is noteworthy that participants who had shared needles did indicate a greater intent to not share needles. Female participants demonstrated a greater knowledge gain following the intervention as compared to men, as did younger participants with respect to older ones. Caucasian and African-American participants showed an increase regarding to self-efficacy related to condom use, while Hispanic participants showed a decrease; Caucasians showed the highest increases related to intentions to use condoms. The authors suggest that future HIV prevention interventions may benefit from a higher degree of cultural relevance, and the Beyond Fear program has been revised in response to Hispanic inmates' suggestions.

4. Bryan A, Robbins RN, Ruiz MS, O'Neill D. Effectiveness of an HIV Prevention Intervention in Prison Among African Americans, Hispanics, and Caucasians. Health Education & Behavior. 2006;33(2):154-177.

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Save the Dates

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

11th World Conference on Public Health
August 21-25, 2006
Rio de Janeiro, Brazil
http://www.saudecoletiva2006.com.br/ingles/presentation.php

Correctional Medicine Institute's 2006 Intensive Review in Correctional Medicine
September 15-17, 2006
Baltimore, MD
http://www.cmi2006.org/

American Public Health Association 134th Annual Meeting and Exposition
November 4-8,2006
Boston, MA
http://www.apha.org/meetings/

News and Literature Reviews *(continued from page 6)*

Tenofovir's Genital Tract Successes

Several studies point to the potential use of tenofovir as a pre-exposure prophylaxis to prevent HIV infection.

Vourvahis et al.[5] conducted the first study to measure tenofovir extra- and intra-cellular concentrations in men's and women's genital tracts from Day 1 to a steady-state. Twenty-two HIV-infected individuals participated; at enrollment, nine were not taking antiretrovirals (ARVs) and 13 were on a stable ARV plan. The nine individuals were treated with tenofovir monotherapy for 14 days; the 13 participants had tenofovir added to their regimen for greater than 20 days.

Tenofovir levels were significantly greater in the genital tract than in the blood in both men and women at Day 1 and at steady-state levels. In the genital tract, high concentrations of tenofovir were found both extra- and intracellularly in men, and extra-cellularly in women. Additionally, tenofovir monotherapy significantly reduced HIV-1 RNA both in the blood and genital tract over a period of 14 days in both men and women. Clinical trials are underway in the U.S. and the developing world to examine the safety and effectiveness of both tenofovir and truvada as pre-exposure prophylaxis.

In the first Phase I clinical trial to study an ARV as a potential vaginal microbicide, Mayer et al.[6] showed vaginal application of a tenofovir-containing gel to be safely tolerated by HIV-infected and uninfected women. Eighty-four women (24 HIV-infected, 60 HIV-uninfected; 24 sexually active, 60 abstinent; 45% African American, 35% Caucasian, 19% Latina) were assigned to use varied doses of the study product for 14 days. A 1% tenofovir gel used twice daily was as well tolerated as once- or twice-daily 0.3% regimens used by the 48 HIV-uninfected sexually abstinent women, establishing the highest practical dose and frequency. The authors stated, "Though 92% of the women reported at least one adverse event, the majority were mild (87%) and involved the genitourinary tract (70%), and specific adverse event patterns were not associated with gel concentration, sexual activity, or HIV status." Serum tenofovir levels were measured in 25 women; 14 (56%) revealed low but detectable serum levels. Among the HIV-infected women, no new reverse transcriptase resistance mutations were detected in HIV RNA after 14 days of tenofovir gel use, and none had detectable cervicovaginal HIV RNA at Day 14. Of the 81 women (HIV-infected and un-infected) who completed the 2 week course, 76 (94%) fully adhered to the study and 94% said that they would definitely or probably use the gel if it were available and they wanted to prevent HIV transmission; 81% of their male partners agreed that they would use the gel under similar circumstances. Given their results, the researchers support the expansion of safety and effectiveness testing and development of effective microbicide delivery devices.

5. Vourvahis M, Tappouni H, Patterson K, Chen Y, Rezk NL, Fiscus S, Kearney BP, Rooney JF, Cohen M, Kashuba ADM. A Pharmacologic Basis for the Use of Tenofovir in Pre- and Post-Exposure Prophylaxis: Intra and Extracellular Genital Tract Pharmacokinetics and Pharmacodynamics from First Dose to Steady State in HIV-1 Infected Men and Women. Presented at the 13th CROI, Denver, Colorado. February 5-8, 2006.

6. Mayer KH, Maslankowski LA, Gai F, El-Sadr WM, Justman J, Kwiecien A, Masse B, Eshleman SH, Hendrix C, Morrow K, Rooney JF, Soto-Torres L; HPTN 050 Protocol Team. Safety and tolerability of tenofovir vaginal gel in abstinent and sexually active HIV-infected and uninfected women. AIDS. 2006;20(4):543-551.

Man charged for unprotected sex with women in Wisconsin

According to a report in the Janesville Gazette,[7] in 1996, a Wisconsin man was sentenced to six years imprisonment for having unprotected sex without disclosing his HIV infection to three partners. Ten years later, he has been accused of repeating that behavior. According to a search warrant affidavit, the man told a woman he had met in a bar that she "did not need to worry about" having unprotected sex with him. The woman's friends recognized the defendant from coverage of the 1996 case, yet when she asked him about his identity he denied being that person. The woman looked up the case at her public library, and eventually the man admitted his identity and HIV-status to her. He qualified his admission by stating that his HIV infection was "under control" and that his "blood levels were not at a contagious level," according to court records.

In 1996, the man pleaded no-contest to three felony charges of reckless endangerment; he is now expected to plead no-contest to second-degree reckless endangerment, using his prior time served in prison to his favor.

7. The Janesville Gazette. Available at http://www.gazetteextra.com/hivcharges040706.asp. April 7, 2006.

Resources

CDC. Advancing HIV prevention: new strategies for a changing epidemic
United States, 2003.
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5215a1.htm

CDC. Comprehensive HIV Prevention: Essential Components of a Comprehensive Strategy to Prevent Domestic HIV, 2006,
April 2006
http://www.cdc.gov/hiv/resources/reports/comp_hiv_prev/pdf/comp_hiv_prev.pdf

CDC. Revised Guidelines for HIV Counseling, Testing, and Referral -
November 09, 2001
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5019a1.htm

CDC. Management of Possible Sexual, Infection-Drug-Use, or Other Nonoccupational Exposure to HIV, Including Considerations Related to Antiretroviral Therapy
January 21, 2005
http://aidsinfo.nih.gov/ContentFiles/NonOccupationalExposureGL.pdf

A Rapid Review of Rapid HIV Antibody Tests (PDF only - 232 KB, 7 pages)
Current Infectious Disease Reports 2006;8:125-131
http://www.cdc.gov/hiv/rapid_testing/materials/rapid_review.pdf

MMWR: Notice to Readers: Protocols for Confirmation of Reactive Rapid HIV Tests
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5310a7.htm

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 October 31, 2006. The estimated time for completion of this activity is one hour and there is no fee for participation.

1. Which of the following is TRUE regarding a recent study of the incidence of HIV, hepatitis B virus (HBV) and hepatitis C virus (HCV) among prisoners in Rhode Island
   A. There were no cases of new HBV or HCV infection
   B. There were no cases of HIV seroconversion detected during the study period
   C. All prisoners acquiring HIV in prison also had HBV co-infection
   D. Due to wide spread HBV vaccination, there were no cases of HBV but HCV seroconversion was observed
   E. None of the above

2. In the MMWR report on HIV transmission in the Georgia Department of Corrections each of the following was found to be associated with HIV seroconversion in prison EXCEPT:
   A. Male-male sex
   B. Obtaining a tattoo in prison
   C. Low body mass index
   D. Being incarcerated for a drug-related offense

3. To assess risk factors associated with acquiring HIV infection in the Georgia prison system the CDC conducted which type of study/studies:
   A. A case control study
   B. A randomized controlled trial
   C. A prospective cohort study
   D. A and B
   E. A and C

4. In an accompanying editorial to the MMWR report, CDC authors recommended which of the following:
   A. Prisons should consider HIV prevention programs that incorporate peer-led interventions
   B. Prison staff should be trained in HIV prevention mea sures
   C. HIV testing at prison entry and exit should be conducted and testing offered regularly during the incarceration
   D. All of the above

5. According to the MMWR report, of the 88 inmates document ed to have experienced HIV seroconversion while in prison all of these infections were detected from 2003 to 2005 when HIV testing was offered to inmates annually (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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2. Do you feel that IDCR helps you in your work?
   Why or why not?

3. What future topics should IDCR address?

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5. Do you have specific comments on this issue?

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