

Chapter 14

A Continuum of Care Model for HIV in Correctional Settings

Daniel J. O'Connell, Holly Swan, Steven S. Martin, Hilary L. Surratt,
Christy A. Visher, Carl Leukefeld, Faye S. Taxman, and Anne Rhodes

Abstract *The rates of HIV and Hepatitis C (HCV) in prisons in the United States exceed those among the general population. Prisoners represent some of the highest risk groups for HIV and HCV, notably injection drug users, sex workers, and substance-addicted persons. The high risk for disease transmission among prison inmates prior to their incarceration, as well as the relative ease in accessing these populations, underscores the importance of implementing HIV/HCV prevention/intervention services in incarcerated settings. An HIV/HCV Continuum of Care that includes testing, linkage to care for those who test positive, and prevention efforts prior to inmate release, provides a useful model. This chapter presents an overview of this model, as well as an example of a research project focused on one of its*

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D.J. O'Connell, Ph.D. (✉) • S.S. Martin, • C.A. Visher, Ph.D.
Center for Drug and Alcohol Studies, University of Delaware, Newark, DE, USA
e-mail: connell@udel.edu

H. Swan
Sociology and Criminal Justice Department, University of Delaware Newark, DE, USA

C. Leukefeld, Ph.D.
Department of Behavioral Science, University of Kentucky, Lexington, KY, USA

H.L. Surratt, Ph.D.
Center for Research on Substance Use and Health Disparities, Nova Southeastern
University, Coral Gables, FL, USA

F.S. Taxman, Ph.D. • A. Rhodes, M.S.
Criminology, Law and Society Department, George Mason University, Fairfax, VA, USA

components: prevention among inmates just prior to their release. First, HIV/HCV in prisons is discussed. Second, existing HIV/HCV intervention and prevention packages geared towards inmates are reviewed. Next, an HIV Continuum of Care model is presented, which includes various recommendations based on the immediate needs of the inmates, as well as evidence from a case study from the prevention aspect of the model. A discussion on the implications of the HIV Continuum and other similar programs concludes the chapter.

Human Immunodeficiency Virus (HIV) is a well documented problem in prisons in the United States (Center for Disease Control [CDC] 2009), while a growing, but less well documented problem is that of Hepatitis C (HCV) infections (Martin et al. 2008). Prisoners also represent some of the highest risk groups for HIV and HCV, notably injection drug users (IDUs), sex workers, and substance-addicted persons in general. While most agree that these conditions pose problems and opportunities for prison officials, how to develop proper responses to them is less clear (CDC 2009).

An examination of the literature and policies suggest the need for prison based HIV and HCV prevention, intervention and care models that: (1) screen all persons coming into prisons for HIV/HCV infection; (2) provide appropriate care to HIV/HCV positive persons in custody and link them to appropriate care upon release; and (3) provide HIV/HCV prevention programming for those about to be released. Such an approach would take advantage of one benefit high incarceration rates provide: access to HIV/HCV infected and populations at increased risk for exposure to these viruses. A program that tests as many people as possible, provides care through the reentry period for the infected, and informs those about to reenter the community of behaviors that increase risk for HIV/HCV *and* how to avoid them, as well as promotes overall public health and public safety, capitalizes on this accessibility.

This chapter first provides an overview of HIV/HCV in prisons in the United States. Then, recommendations from the CDC and the National Institutes of Health (NIH) are used to outline an HIV Continuum of Care model for correctional settings. Federal guidelines related to HCV prevention in correctional settings are less established than those for HIV for a number of reasons, including relatively sparse empirical examination of HCV services in correctional settings, as well as greater levels of limited correctional resources for HCV care than is available for HIV care (e.g., funding, facilities, and staff for HCV testing and treatment). As such, an HCV Continuum of Care for correctional settings has fewer grounds to be modeled on than HIV. An exception to this limitation is with respect to the prevention component of the continuum. In fact, the CDC has called for HCV prevention to be incorporated into existing and newly developed HIV interventions because the risk factors for these diseases are very similar (Weinbaum et al. 2003). To be sure, the CDC recommends testing and treatment for HCV in all high-risk settings, including corrections (Weinbaum et al. 2003), but how to implement these in an efficient and effective manner has yet to be determined. Based on this, we provide a detailed review of recommendations for each Continuum component for HIV, as well as evidence from a case study supporting the HIV/HCV

prevention component of the model. A discussion of the implications of an HIV model, a call for the development of a complementary HCV model, and similar programs concludes the chapter.

14.1 HIV and HCV in Prisons in the United States

The rate of HIV infection among prisoners is estimated at 2.5 times that of the general population: 0.43% for prisoners and 0.17% for the general population (Maruschak and Beavers 2009). Rates of HCV infection are also much higher among prisoners compared to the general population and are estimated to be between 20 and 40% of all inmates (Weinbaum et al. 2003). Moreover, both infections might co-occur. For instance, a sample of jails found that 38% of HIV positive inmates were also HCV positive (Hennessey et al. 2008). Studies have shown that not only are there higher rates of infectious diseases in the criminal justice population than in the general population, but also higher rates of IDUs, a particularly high-risk population for the contraction and spread of infectious diseases. Further, incarcerated IDUs have higher rates of infectious diseases than non-incarcerated IDUs (Andia et al. 2005; McBride and Inciardi 1990). The prevalence of infectious diseases such as HIV and HCV as well as intravenous drug use among incarcerated populations has led practitioners and researchers to view the criminal justice system as a key place to intervene with disease prevention and treatment programs (CDC 2009).

Many correctional systems implement some HIV/HCV prevention and care services, but few approach them in an organized fashion to ensure that inmates are receiving the appropriate elements at the appropriate times. According to a research report submitted to the U.S. Department of Justice, the majority of systems at all levels make anti-retroviral treatment available to inmates who test positive for HIV; however, additional research has shown that the treatment regimens are less than what is recommended (Hammett et al. 2007). The regimens also tend to be narrower in city and county jail systems than state and federal systems (Hammett et al. 2007). With respect to medication administration, this report showed that HIV medications are typically administered through a pill line, but state and federal systems tend to also utilize keep-on-person methods of administration. Though city and county level systems tend to only use pill line methods of administration, they also tend to employ direct observation of administration, such as inspection of the mouth (Hammett et al. 2007). Very few sites employed pill counts as a method of monitoring treatment adherence, and the majority utilized pharmacy records and self-report. Finally, this report revealed that the majority of state and federal systems pay for HIV treatment out of their own budgets (81%) and less than half of the examined city/county systems pay out of their own budgets (42%; Hammett et al. 2007). Most states supply a minimal amount of medications and some provide a referral to service, but few follow up to ensure the people are linked into appropriate care. Some released persons relapse or drop out of sight of correctional agencies shortly after release, and many of those fail to link into proper care.

Although the implementation of prevention and intervention programs in prison systems is challenging for a number of reasons (i.e., lack of time and resources, contradictory missions between public health and corrections), the prevalence of infectious disease and the pivotal period of re-entry make it an important task (Hammett 1991, 2006). Despite higher rates of HCV than HIV among drug-using offenders, evidence-based interventions specifically designed for HCV prevention among the criminal justice population are even more lacking than HIV interventions. The risks involved in contracting and spreading HIV (e.g., unprotected sex, sharing needles) are quite similar to the risks for contracting and spreading HCV. Not surprisingly then, most HCV prevention interventions are incorporated into HIV prevention protocols (e.g., Grinstead et al. 2008). However, less is known about correctional protocols for testing inmates for HCV and care for those who test positive, but evidence suggests that these protocols are less established and even less complete than those for HIV (Weinbaum et al. 2003).

14.2 The HIV Continuum of Care Models for Correctional Populations

As part of the Criminal Justice Drug Abuse Treatment Studies (CJ-DATS), the HIV prevention research group worked to develop and implement a model program designed to deliver an HIV/HCV prevention intervention to prisoners about to reenter the community, as well as encourage them to be tested for HIV/HCV. A Continuum of Care model was used as the framework to develop this intervention. Although a Continuum of Care model for HCV might look similar to the model for HIV, this has been less established with the exception of the prevention component. As such, the model described here will only focus on HIV. The structure of a Continuum of Care model takes as its starting point the flow of persons through the correctional system, and can be conceptualized as a systems process that involves input (e.g., infected or at-risk persons), throughput (e.g., what happens in the system), and output (e.g. the released individual). For infected persons, this entails knowing their status, being on a health regimen, and being linked into a health care system upon release. For non-infected persons, throughput consists of prevention interventions to make them aware of health risks and provides strategies to avoid these risks.

Figure 14.1 diagrams the full HIV Continuum of Care model that is based on recommendations from the CDC and the NIH. As shown in Fig. 14.1, the starting point is intake. Ideally, all persons should be tested upon entry into the correctional system. Many systems currently test at some level, and 16 states claim to test all inmates (Maruschak and Beavers 2009). According to the CDC, 69% of state prison inmates, 77% of federal prison inmates, and 18.5% of jail inmates reported being tested for HIV since admission to the facility (CDC 2009). A census of state and federal prisons found that 79% of facilities offered some kind of HCV testing and 94% of all inmates were housed in facilities that offer HCV testing (Beck and Maruschak, 2004). Testing only those who report risk factors for HIV/HCV exposure,

A Full HIV Continuum for Incarcerated Persons

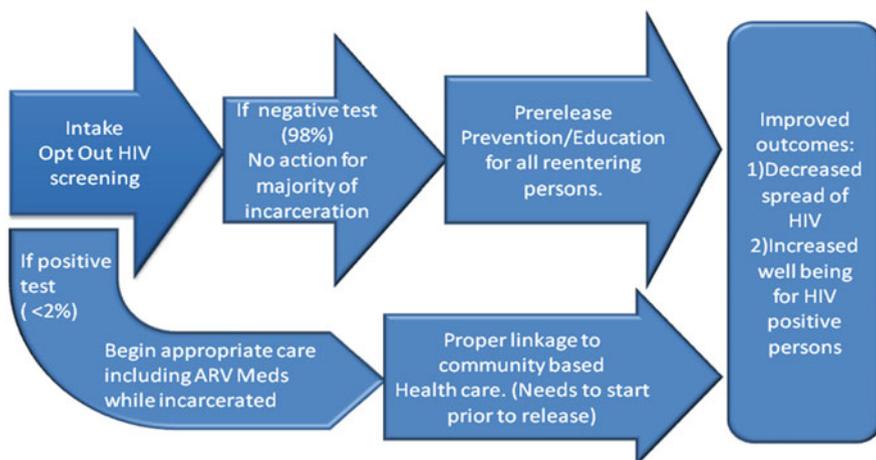


Fig. 14.1 A model HIV continuum of care for incarcerated persons

however, has been demonstrated to miss a large proportion of cases. For instance, a recent study in New York City jails found that testing only those who report risk factors missed 28% of HIV infections (Begier et al. 2009). Thus, a full Continuum of Care focuses on testing *all* persons at intake.

The Continuum of Care track splits depending on the intake test result. Based on this model, those found to be HIV-positive should begin appropriate care while incarcerated. This includes not only providing Antiretroviral Medication (ARV), but also educational programming to prepare infected persons for an ARV regimen. During our research, some physicians said they were hesitant to begin ARV regimens with inmates they felt were not prepared to maintain the program because starting and stopping an ARV regimen would lead to a resistance to certain strains of HIV medications. Regardless, at minimum, HIV-positive persons should have their viral loads and white blood cell counts monitored, and those who show signs of deteriorating conditions should be encouraged to begin an ARV regimen. HIV-positive persons should also be linked to appropriate care upon release. Two of the main types of risk behaviors for both HIV and HCV are intravenous drug use and unprotected sex. The extent to which prisoners engage in these risk behaviors before, during, and after confinement varies across jurisdictions. However, realizing that opportunities to engage in risky behavior are present at each stage (i.e., before, during, and after confinement) and need to be considered in a full Continuum of Care model is important (Arriola 2006; Beckwith et al. 2006; Chandler et al. 2009; Inciardi et al. 2007).

Although participation in risky behaviors tends to decline once an individual is incarcerated due to the reduction in access to the risky situations they encountered prior to incarceration, some evidence suggests that participation in risky behavior

can continue during incarceration (Arriola 2006; Beckwith et al. 2006). Engaging in risk behaviors during incarceration appears to be associated with prison policies. For example, one pattern that emerges from the literature is that, once sentenced to prison, IDUs tend to reduce their frequency of injecting. However, when they can inject, they increase the rate of lending and borrowing needles/syringes due to the limited access to injection equipment in correctional institutions (Shewan et al. 1994; Mahon 1996). Only a few prisons in selected countries (e.g., Switzerland) offer sterile injection equipment to prisoners, and needles/syringes are not distributed to inmates in prisons in the U.S. The availability of bleach for cleaning needles is restricted in all but 10 prison systems and eight jail systems in the U.S. Unclean needles are a leading agent for spreading both HIV and HCV, heightening the potential for infection among incarcerated populations (CDC 2009; Weinbaum et al. 2003).

In addition, men having sex with men may occur in correctional institutions (Brewer and Derrickson 1992; Lichtenstein 2000; Saum et al. 1995). Condoms, however, are available (at least officially, but not necessarily in practice) in only two prison systems in the U.S. (Vermont and Mississippi – and Mississippi, at least, restricts use to those in their conjugal visit program). Additionally, five jail systems reportedly supply condoms only to certain inmates (Los Angeles County, New York City, Philadelphia, San Francisco, and Washington, DC; Nerenberg 2002). Although the risk of HCV transmission through sexual contact is low, the same cannot be said for exposure to HIV. As such, the HIV infection potential through sexual transmission among incarcerated populations is considerable. To address heightened risks for infection during incarceration, the CDC recommends that correctional facilities with inmates from high prevalence communities routinely offer testing prior to release in addition to admission screening (Saum et al. 1995; see Sect. 14.2.1 below).

Critically important is the fact that HIV/HCV risk behaviors engaged in prior to incarceration typically resume and/or increase after release from the institution (Braithwaite and Arriola 2003). Especially troubling is that many offenders attempt to “make up for lost time,” which often involves seeking and engaging in risky sexual behavior and drug use (Inciardi et al. 2007; Chap. 7 by Miech et al., this volume; Seal et al. 2003). Findings from the CDC sponsored Project START indicate that 13% of parolees engaged in risky sex within one week of reentry into the community, and that 36% reported engaging in risky sex within six months of release (MacGowan et al. 2003). The reentry period is thus a pivotal one in which prevention efforts have the potential for significant impact. By engaging in safe sex and drug use practices upon release, non-infected individuals can reduce their exposure to HIV/HCV, and infected individuals can reduce the risk of spreading HIV/HCV to their sex and/or drug using partners (Grinstead et al. 2005; Kim et al. 2002; McBride and Inciardi 1990).

HIV/HCV prevention just prior to release can include a wide range of approaches, such as education, drug treatment, the provision of sterile needles and other injection equipment, as well as the distribution of bleach and condoms. In 2011, the National Institutes of Health (NIH) has again made the development, evaluation, and dissemination of HIV interventions for at-risk populations a priority (Whitescarver 2011). Although most HIV prevention programming for inmates are available immediately following upon entry into prison, considerably fewer seem to be offered as part of

pre-release, transitional, or post release programs. This is perhaps the most important time for risk reduction interventions to occur, since HIV/HCV risks likely increase as offenders return to the community (see Sect. 14.2.4 below).

Because of the described factors related to the heightened risks for HIV/HCV among incarcerated populations, the CDC and the NIH have developed recommendations for each of the four parts of the HIV Continuum of Care Model for correctional populations: testing; care during incarceration for those who test positive; linkage to care in the community after release for people who test positive; and prevention interventions at entry and release from custody. These recommendations are outlined below. The testing and linkage to care after release components of the Continuum of Care model have recommendations that are somewhat more feasible for HIV care in correctional settings than for HCV care. Regardless, the CDC and NIH recommendations for preventing and caring for both HIV *and* HCV are included below for consideration.

14.2.1 Recommendation 1: Screening for HIV and HCV in Correctional Settings

In 2009, the CDC published guidelines for the implementation of HIV testing in correctional settings (CDC 2009). The literature on HIV testing in correctional settings has indicated that greater numbers of individuals are reached and tested when opt-out rather than opt-in HIV testing is routinely offered during the intake medical examination (CDC 2009; Desai et al. 2002). Though still voluntary, the opt-out option means that inmates will be tested with informed consent and without coercion unless they expressly choose not to be tested. Because of the benefits of opt-out testing, the CDC recommends this procedure, but also acknowledges that limitations of resources and security may require alternative testing procedures (CDC 2009). The alternative testing procedures that the CDC recommends when opt-out testing is not feasible are risk-based screening (i.e. when screening is routinely offered to high risk populations, but see Begier et al. 2009), clinical screening (i.e. screening based on clinical indication, such as pregnancy or tuberculosis), demographic screening (i.e. screening based on high risk demographics), custody-based screening (i.e. screening based on multiple incarcerations or specific high risk crimes such as drug offenses), and/or a combination of multiple testing and screening approaches (CDC 2009).

With respect to the actual testing procedures, the CDC (2009) has different recommendations based on the type of correctional facility. For prisons, where people are in one facility for extended periods, the CDC recommends conventional blood testing, which is considered the “gold standard” in HIV testing, but has a lengthy turnaround time for results; oral testing, which is quicker and not as invasive as blood testing, but more expensive; or rapid testing with blood/oral fluid confirmation. For jails, where turnover is rapid and people may only be confined for a short period of time, the CDC recommends rapid testing with blood/oral fluid confirmation. For correctional facilities with limited laboratory capacity (e.g., halfway

houses, drug treatment facilities), the CDC recommends rapid testing with oral fluid alone or with confirmation. Regardless of the setting, the CDC recommends a confirmatory test whenever rapid tests are used for screening.

As alarming as rates of HIV in corrections may be, rates of HCV are exponentially higher. In response, the CDC has recommended that inmates be screened upon entry into correctional facilities and that high-risk inmates are tested for HCV (Weinbaum et al. 2003). Similar to their recommendations for HIV screening, the CDC recommends that HCV testing should include both an antibody screening assay and supplemental or confirmatory assay testing in order to avoid false-negative results (Weinbaum et al. 2003). In recognizing variability in specific laboratory testing capabilities, the CDC concludes that supplemental testing should be performed on at least those inmates whose signal-to-cutoff ratio is low (Weinbaum et al. 2003).

Unfortunately, enzyme immunoassay tests are unable to differentiate between acute, chronic, and resolved HCV infection; moreover, HCV infection is often asymptomatic, making screening based on symptomatology problematic (Weinbaum et al. 2003). The CDC guidelines maintain that when symptoms *are* present, acute HCV should be included in diagnosis, but confirmation is needed. Confirmation of acute HCV infection can be achieved through (1) a negative test result for hepatitis A and hepatitis B (suggesting the need to test for these as well), and (2) a positive test result for the HCV antibody through supplemental testing or a high signal-to-cutoff ratio (Weinbaum et al. 2003). The CDC guidelines also note that, on occasion, symptomatology may be present prior to seroconversion and, as such, follow-up antibody testing may be necessary in order to confirm HCV infection (Weinbaum et al. 2003). Again, the presence of the HCV antibody alone cannot distinguish between acute and chronic HCV infection. CDC guidelines state that individuals testing positive for the HCV antibody for over six months can be diagnosed as having chronic HCV infection (Weinbaum et al. 2003). Finally, when an inmate is identified as being HCV positive, particularly if they have been incarcerated for more than six months, the CDC maintains that correctional officials and health authorities need to investigate the source of infection and depending on what they find, may need to test other inmates who were in contact with the infected inmate and/or the source of infection (Weinbaum et al. 2003).

Despite these recommendations, little is systematically known about testing protocols and practices that are actually being implemented in correctional settings, though our understanding is that not much testing for HCV is taking place for a number of reasons that have been mentioned. Increased efforts to address these shortcomings are sorely needed.

14.2.2 Recommendation 2: Care during Incarceration for People who Test Positive for HIV/HCV

Federal guidelines state that health care, including access to ARV medication, should be made available to all inmates who test positive for HIV (CDC 2009). As soon as possible after infection is detected, the inmate should be referred to an HIV specialist;

if this is not feasible, they should at least be referred to a health care provider with enough HIV expertise to offer an initial assessment, routine follow-up, and to determine appropriateness for ARV therapy (CDC 2009). Some physicians in correctional settings may be hesitant to begin ARV regimens with inmates they feel are not prepared to maintain the program or who will not be in custody long enough for them to monitor (Weinbaum et al. 2003). At minimum, though, positive persons should have their viral loads and white blood cell counts monitored, and those who show signs of deteriorating conditions should be encouraged to begin an ARV regimen.

In addition to basic clinical HIV care and providing ARV medication when appropriate to people who are HIV positive, the CDC (2009) also recommends that care include counseling, co-morbidity referrals and treatments (e.g., mental health support), and supplemental care specific to HIV medical issues, particularly for pregnant women. Pregnant women are a unique population with respect to HIV issues as they have the potential of passing the virus to their child. The CDC recommends that females who test positive for HIV should be immediately tested for pregnancy as well (CDC 2009). For those who are pregnant, CDC guidelines indicate that they should be referred to an HIV specialist and started on ARV as quickly as possible to reduce the likelihood for mother-to-child transmission (CDC 2009). Like all inmates who test positive for HIV, pregnant women should receive prevention counseling and be linked to care either in the facility or in the community depending on their length of stay (CDC 2009).

Guidelines for caring for individuals who test positive for HCV are less explicit than those for HIV, particularly with respect to correctional populations. However, the basic premises of prevention counseling and access to antiviral medications outlined for HIV hold for HCV guidelines as well. Federal and CDC guidelines for caring for inmates who test positive for acute HCV indicate that antiviral treatment should begin immediately (Bureau of Prisons 2009; Weinbaum et al. 2003). For chronic HCV individuals, pre-treatment counseling and screening to discuss potential benefits and side effects of treatment, and to determine the presence of mental illness, substance use or alcohol use, and pregnancy are recommended by clinical guidelines (Bureau of Prisons 2009).

Treating an individual infected with both HCV and HIV with antiviral medications is even more complicated due to interactions between medications for each virus. The CDC contends that appropriate antiviral care for HIV/HCV comorbidity should be determined by health care professionals on a case by case basis (Weinbaum et al. 2003).

14.2.3 Recommendation 3: Linkage to Care for Inmates upon Release

In an effort to keep HIV/HCV positive inmates engaged in treatment and maintain health improvements that have occurred based on care received, linking these individuals to services in the community upon reentry is essential. However, explicit

recommendations for linking HCV positive inmates to care in the community have yet to be developed. As such, the following recommendations are specific to linking HIV positive inmates to HIV care in the community.

The CDC recommends a number of actions to assist the HIV positive inmate upon reentry to the community, including providing a list of treatment providers in the inmate's community, assisting them with scheduling, remembering their first appointment, filling out forms, and the utilization of case management services in order to assist in accessing HIV-related services (CDC 2009). One such service that inmates need to access is their ARV medication; regulations for providing HIV medications to former inmates vary by state. Upon release, individuals need to be informed of when and how to administer their ARV medications and when and how supplies can be obtained, especially in order to prevent resistance to their medications (Baillargeon et al. 2009; CDC 2009). The CDC also recommends that HIV positive inmates engage in Partner Services, a venue for assisting former inmates in the disclosure of their positive status to past and present sexual and needle-sharing partners. Each state has their own policies for referring inmates to Partner Services (CDC 2009).

Other efforts have also been put forth in designing case management interventions for former inmates who are HIV positive, such as the federally funded Project Bridge. Project Bridge is a demonstration project that was designed to intensively case manage HIV positive inmates being released to the community in Rhode Island (Rich et al. 2001; Zaller et al. 2008). Inmates who are HIV positive tend to have co-occurring issues, such as mental illness, substance abuse/addiction, and homelessness, thus creating a number of challenges regarding health services upon release into the community (Zaller et al. 2008). To address these challenges, Project Bridge was designed to provide intensive case management through a team consisting of a professional social worker and an outreach worker (Zaller et al. 2008). The intent of the case management was to promote continuity of medical care through a wrap-around approach designed to assist inmates in obtaining care in each area of need, thus producing a level of social stabilization on the part of the ex-offender (Rich et al. 2001). Indeed, this study showed that HIV positive former inmates, despite their heightened health and service needs, were able to achieve and maintain continuity of care when the resources and support needed were provided through ongoing case management following release from custody (Rich et al. 2001; Zaller et al. 2008). Such approaches may be expensive, but the savings in terms of preventing new infections and sustaining increased health for those infected are potentially substantial.

14.2.4 Recommendation 4: Offering HIV/HCV Prevention for Reentering Persons

Approximately 700,000 state and federal prisoners are released into the community each year (Guerino, Harrison, and Sabol 2011), and roughly 12 million individuals are released from local jails (Solomon et al. 2008). The period of reentry to the community from secure custody is of particular importance for disease prevention

efforts because offenders often return to previous patterns of high-risk behavior, or engage in even higher levels of risky behaviors (Inciardi et al. 2007; Chap. 7 by Miech et al., this volume). Re-entering persons are preparing to make a major life transition, patterns of old behavior have been interrupted by a period of incarceration, and many individuals may be amenable to considering behavioral change (Inciardi et al. 2007). Therefore, intervening just prior to release into the community has great potential for preventing or reducing risky sex and substance use. Several programs have been designed in an effort to prevent the contraction and spread of infectious diseases amongst former inmates upon release, and among their sex and drug partners (Barry 1999; Bauserman et al. 2003; Braithwaite et al. 2005; el-Bassel et al. 1995; Grinstead et al. 1999, 2001, 2008; Magura et al. 1994; Sifunda et al. 2008; Wexler et al. 1994; Wolitski and the Project START Writing Group 2006). However, many of these interventions require extensive time and resources on behalf of the criminal justice system and, as such, tend to reach fewer individuals than desired. The need for effective and brief prevention interventions is paramount considering that roughly 700,000 persons are released from prisons and 12 million are released from jails every year.

Research in a variety of health-related fields indicates that to reach the largest number of individuals receiving an evidence-based intervention, a focused intervention requiring no more than one or two sessions is ideal (Barry 1999). Yet, most of the programs that have established effectiveness in reducing HIV/HCV-related risk behavior post-release (e.g., increased condom use, reduction in needle sharing) require extensive time and resources for implementation in a criminal justice setting (Bauserman et al. 2003; Braithwaite et al. 2005; Grinstead et al. 2001; Magura et al. 1994; Sifunda et al. 2008; Wolitski and the Project START Writing Group 2006). For instance, one protocol involved 24 small group sessions over eight weeks and 48 h of staff time (Wexler et al. 1994) and another required 16 two-hour sessions (el-Bassel et al. 1995). The least involved protocol consisted of two sessions inside the institution and four sessions post release (Wolitski and the Project START Writing Group 2006). While many of these interventions have shown signs of efficacy, few were in widespread use due to constraints of the correctional environment.

One protocol, designed by Grinstead and colleagues (1999), has met the brief intervention standard (it included only a single 30 min session) and provided some evidence that a brief intervention can be effective on post-release risk behaviors related to HIV/HCV amongst inmates (see Martin et al. 2008 for a review). However, findings from a study published later that showed greater effectiveness of six group sessions, plus an additional 60–90 min personalized session, and four post-release sessions compared to a single 60–90 min session (Grinstead et al. 2008). While this finding is not surprising, it poses the same problem as the previously mentioned protocols in that it requires time and resources that correctional systems often lack.

A recent study by Copenhaver et al. (2009) sought feedback from prisoners and providers to adapt HIV interventions to correctional population. Table 14.1 summarizes the needed elements for an HIV intervention as reported by prisoners and providers in this study. As illustrated, implementing a full HIV or HCV Continuum of

Table 14.1 Prisoner and provider reports of needed elements in brief interventions^a

Prisoners	Providers
Intervention needs to cover safe sex and drug behaviors, specifically condom use and needle cleaning, and needs to enhance motivation to practice safe behavior	Intervention should include information about safe sex and drug use
Intervention needs to help with overcoming stigma attached to HIV + status	Sessions should be 35–45 min
Group settings are preferred over individualized settings, but privacy about status needs to be ensured and maintained; also, having an option for group or individual (flexible intervention) is optimal for reaching the greatest number	Prefer group settings, but also believe applicability to group or individual setting is ideal
They are more likely to opt-in to coping rather than prevention – prevention needs to be motivating	Intervention material should be at the 8-10 th grade education level
Videos and PowerPoint are preferred because they're engaging and active – handouts are discouraged, tend to be thrown away and not read	PowerPoint and video are preferred
	Basically, the intervention should be brief, engaging, and tailored to the population

^aSource: Copenhaver et al. (2009)

Care model that addresses prevention, testing and care requires time, resources, and commitment by corrections agencies that may not consider HIV/HCV a priority. Accordingly, health practitioners in this environment need to accommodate the constraints of working in correctional settings.

14.3 The CJ-DATS DVD Based Intervention for Reentering Persons: A Case Example

14.3.1 Background

The research study presented next was conducted as part of the first phase of the CJ-DATS Cooperative (CJDATS1).¹ NIDA provided funding for CJ-DATS1, which included the participation of nine research centers and a coordinating center located in different cities across the nation. The stated vision was to conduct studies in multiple sites with the goal of improving substance abuse-related outcomes for incarcerated persons. The first phase was conducted over ten multi-site research projects and focused on the assessment and treatment of adult and juvenile incarcerated drug users. A key focus of CJ-DATS1 was the improvement of HIV/HCV care in corrections.

¹ The Cooperative has continued into a second phase, CJ-DATS2, focusing exclusively on implementation science related to drug abuse issues in criminal justice See <http://www.cjdats.org> for more information.

The goal of the CJ-DATS HIV/HCV study was to develop a prevention program that had the potential to be delivered in correctional settings with high fidelity and low cost to a wide audience.

For broad adoption, programs that have a high level of practical generalizability are logically more likely to be implemented. The program cannot be too intensive or it will become cost prohibitive, nor can it be so time consuming that it will not fit seamlessly into the reentry process. Thus, many correctional systems are unlikely to implement multi-session prevention programs for those leaving their institutions. Therefore, single or two session interventions are simpler to implement, more cost effective, and have greater capacity to reach larger audiences. The tradeoff is the strength of effect, but on balance, a brief intervention for reentering persons possesses great potential. Manualized interventions designed for widespread use often suffer from fidelity issues; the developer conceives how an intervention should be implemented, but counselors in the field adapt it to their own techniques (Angotti 2010; Chap. 4 by Clark and Humphries, this volume). Interventions are tools used by counselors, but whether the adaptations are effective is often unclear, even though the tested intervention may possess significant demonstrated efficacy (Angotti 2010).

In addition to the intensiveness of the prevention program, the approach used in delivering the program is also relevant for a program's success or failure in reducing risk behaviors. Existing data from the Delaware Department of Correction's KEY and CREST Outreach Center therapeutic community programs suggest that HIV prevention programs that are typically provided to clients in treatment had little or no lasting effects on sexual risk behaviors. These data demonstrate that only small proportions of the sample reported always using condoms at 18 and 42 months; multiple sex partners appeared to be the norm at each contact; and significant proportions reported trading sex for money (Martin et al. 1999). However, because these individuals were in structured therapeutic community treatment programs, drug-related risk behaviors were significantly reduced (Martin et al. 1999). These findings suggest that the conventional educational HIV prevention initiatives used in the KEY and CREST programs - professionally-led or peer-led, non-interactive, didactic seminars in a group format using readily available HIV prevention materials - are generally ineffective in reducing sexual risk behaviors. Unfortunately, the prevention approach used in the KEY and CREST programs is similar to that used in many correctional institutions and drug treatment programs.

14.3.2 Intervention Development

Development of the HIV Continuum of Care intervention proceeded in phases. First, the design of the intervention was modeled after the NIDA Standard Intervention for HIV and modified for a criminal justice population. Early work on the original (Version 1) NIDA Standard Intervention found that intervention and post-test counseling produced reductions in drug-using behaviors for at-risk clients in a variety of community settings (Coyle 1993). However, few significant changes

in sexual risk behaviors were evident (Broadhead et al. 1998; Cottler et al. 1997). The NIDA Standard Intervention was subsequently expanded and revised (Version 2) by investigators under the auspices of NIDA's AIDS Cooperative Agreement to include more information on sexual risks (Wechsberg et al. 1997), and again in 2000 to include information on HBV and HCV infection (Version 3; NIDA 2000). In a recent study of probationers in Delaware, Martin and colleagues (1999) further refined the NIDA Standard Intervention Version 3 to make the material more relevant to correctional clients. This Version 3 was contrasted with a "Probationer Focused Intervention," that incorporated personalized strategies for protecting the individual and their partners from HIV infection, using a technique known as "thought mapping" (Knight et al. 1994; Leukefeld et al. 2001). This was one of the first trials to comply with federal guidelines that require a "meaningful" intervention to *all* subjects in an experimental trial. Significantly, both interventions also included a booster session 3 months after the post-test counseling session.

The results were encouraging in terms of improvements in both drug use and sexual risk behaviors, but no significant benefits were observed for the "Probationer Focused" intervention compared to the NIDA Version 3. Both interventions led to reductions in the percentage of probationers using heroin or cocaine, injecting drugs, engaging in transactional sex, or having multiple sex partners; the mean number of unprotected sex acts also decreased for both groups during the follow-up period (Knight et al. 1994; Leukefeld et al. 2001). Although the probation focused additions to the intervention did not produce significant improvements over the NIDA Version 3 intervention, both interventions produced positive outcomes. They demonstrated that one-on-one interventions that are designed specifically with the target population in mind and implemented by someone trained in the intervention *and* accustomed to working with this population can be effective in reducing high risk behaviors in criminal justice clients.

For CJDATS1, in late 2003 and early 2004, the Delaware CJ-DATS1 investigators conducted focus groups and in-depth interviews with 110 correctional clients in Delaware and Florida for the purpose of amplifying the NIDA Version 3 intervention to address risk reduction issues and barriers of concern specific to community corrections populations. The intervention was then augmented by video components designed to create buy-in, make the message relevant, and engage the client. The result was a DVD-based, peer delivered protocol to be conducted immediately prior to an inmate's return to the community (Inciardi et al. 2007; Martin et al. 2008). The focus of the intervention was the reentry period, and clients were provided the opportunity to consider the issues they would likely face upon release. The intervention included education on facts about HIV/HCV, as well as strategies to avoid exposure to these infections. The intervention was also tailored to the unique culture of the target population and encouraged testing in compliance with CDC recommendations (CDC 2009). While not designed to eliminate counselor input altogether by essentially locking the key intervention content into the DVD, counselors are less able to skip elements of the intervention. This helps ensure that everyone receives the full "dose", and reduces a potential fidelity issue. Moreover, while some efforts have shown promise for reducing risk

behaviors after release from custody (e.g. Project START), the CJDATS1 DVD intervention was designed as a more limited intervention that would hopefully, if shown to be effective, lend itself to more widespread implementation in community supervision settings.

In order to address situations that persons reentering the community may encounter that put them at-risk for HIV/HCV and substance abuse, the team needed a sense of what individuals experience when they are about to be released from incarceration and the challenges they face once released. Therefore, in the second phase of development, focus groups with formerly incarcerated substance abusers in residential community treatment facilities were conducted to ascertain a descriptive account of the experiences before and during the reentry process. The results pointed to specific situations that reentering individuals found challenging upon their release from incarceration. Meeting old friends who still used drugs and/or had unprotected sex were the most difficult situations faced by reentering offenders who were trying to limit their at-risk behaviors. These situations became the two at-risk scenarios in the intervention. Focus groups members also indicated that they would like to see individuals who they could relate to talk about HIV and HCV. As a result, individuals who had a history of being incarcerated and were substance abusers were identified and recruited to be actors in the DVD components of the intervention, and asked to provide commentaries and offer testimonials about their experiences. In addition, people who were HIV and HCV positive (race and gender specific) were recruited to tell their stories in the HIV and HCV video components.

Based on race and sex profiles of the participants in the focus groups, four DVD tracks were created: African American male, White male, African American female, and White female.² Each race/sex track of the intervention contained five types of video components: (1) an introduction video delivered by a former substance abuser/offender; (2) demonstration of the needle cleaning process; (3) testimonials from HIV and HCV positive persons; (4) vignettes that demonstrated condom negotiation and confronting a friend who possess drugs; and (5) positive and negative commentaries that showcase what other substance abusers/offenders have done in situations that may have exposed them to HIV/HCV.

The third phase of development was filming the video segments. The material was only minimally scripted, and selected participants were asked to speak freely about their experiences in the commentaries and testimonials. These dialogues were edited later. With respect to the acted out scenarios, participants were told what the scene was and directed as to the action that was to take place. They were free to use their own language throughout in an attempt to maintain a sense of genuineness in the scenario. The end result was a series of race and sex tracked, DVD based interventions that speak to the target population from the perspective of the target population (see Inciardi et al. 2007 for a complete review of the development of the DVD intervention).

² Versions for other race/ethnicities were not created because the study population did not include many other than White and African American to test hypotheses.

Table 14.2 Proportion of unprotected sex acts in the 90 days post-release by Race and Sex

Proportion of sex acts w/o Condom 90 days	DVD group mean	Comparison mean	Std. dev.	Cohen's D
<i>Full Sample</i>				
DVD vs. NIDA standard	.31	.40	.46	-.20
DVD vs. conventional video	.31	.43	.46	-.26
<i>African American</i>				
DVD vs. NIDA standard	.30	.42	.44	-.27
DVD vs. conventional video	.30	.40	.44	-.23
<i>White</i>				
DVD vs. NIDA standard	.32	.36	.46	-.09
DVD vs. conventional video	.32	.48	.46	-.35
<i>Female</i>				
DVD vs. NIDA standard	.36	.32	.45	.09
DVD vs. Conventional video	.36	.46	.45	-.22
<i>Male</i>				
DVD vs. NIDA standard	.31	.43	.44	-.27
DVD vs. conventional video	.31	.41	.44	-.23

14.3.3 Outcome Analysis

The HIV/HCV DVD was tested in a three-site (Delaware, Kentucky, and Virginia) clinical trial framework as part of CJ-DATS. Just prior to release from prison, inmates were randomized to one of three conditions where they received either: a conventional video that follows CDC “standard” protocols intervention; the NIDA Standard intervention in cue card format delivered one-on-one by a health professional; or the DVD based intervention delivered one-on-one by a peer interventionist. All subjects were provided with HIV and HCV testing and post test counseling. Institutional Review Board approval was granted prior to the start of the study.³

For the study, inmates were interviewed prior to randomization and 30 and 90 days after release from incarceration. From December, 2006 through June, 2008, 685 persons were randomly selected: 97 did not receive the intervention due to release or transfer, and 54 were lost to follow up, leaving a sample of 534 (Inciardi et al. 2007). To measure the main effect outcome – proportion of protected sex acts – subjects were asked how many sex acts they had engaged in and on how many of those occasions they used a condom. This was used to form the proportion of unprotected sex acts in the 90 days just after release from prison. Table 14.2 reports the results of this variable and the corresponding effect size. As shown, the DVD intervention provided a modest effect size when compared to both the NIDA Standard condition and the conventional video group. In the full sample, the DVD

³For a complete and detailed review of the three conditions, see Inciardi et al. 2007.

group reports 31% of sex acts were unprotected at 90 days post release, while 40% of the NIDA Standard group and 43% of the conventional video group's acts were unprotected. Utilizing Cohen's D effect sizes, this translated into a $-.20$ comparing the DVD to the NIDA Standard and $-.26$ comparing the DVD to the conventional video.

The differences between groups were similar across race and sex when comparing the DVD intervention to the conventional video. Comparisons between the DVD and the NIDA Standard were modest in the African American and male sample, but very small in White and female samples. Thus, the DVD intervention's effects were consistent across race and sex groups compared to a conventional video. The NIDA Standard intervention performed almost as well as the DVD for the White sample and actually performed marginally better among females.

In all, the project demonstrated that delivering a low cost client centered intervention that is race and sex specific in a way that retains fidelity and possesses the capacity of large-scale distribution is possible.

14.4 Discussion

The HIV Continuum of Care model is an example of how an intervention can be developed at a moderately low cost, potentially reach a large number of inmates, and fit within the framework of the reentry process. Such interventions are best if kept brief, conducted in the language of the target audience, and culturally competent in terms of race and sex, but also in recognizing the prison/jail culture and reentry process. The brief nature of this type of intervention has resulted in modest effects, but such programs that are designed to reach large audiences can have a truly high impact through the size of the audience reached. Thus, such an approach should be considered modest effect-high impact.

The nature of HIV/HCV in prisons continues to pose both problems and opportunities. The problems stem from treating people with infections and the challenges of linking them to appropriate care upon release. Access to this afflicted population through their incarceration presents an important public health opportunity. A truly functioning HIV Continuum of Care approach could potentially test all persons entering the correctional system. Proper care for those found to be positive coupled with programs to link and retain them in care upon release can reduce the likelihood of further transmission, as well as improve the health of those currently afflicted. Providing intervention programs as part of reentry services can prepare those who have been out of their community to be ready for the risk situations they are likely to encounter upon release from incarceration. While much of this is being done in a largely ad-hoc basis in many correctional systems, combining all three elements - testing, linkage to care, and prevention - into one unified Continuum of Care model has the potential to significantly impact the spread of HIV and HCV among incarcerated populations.

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