Opportunities for Addressing the STD Epidemic through Interventions Targeted to North Carolina's Incarcerated Populations

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The prevalence of sexually transmitted diseases (STDs) among inmates of jails, prisons, and juvenile detention facilities is many times higher than among the general population. Surveillance projects at the Centers for Disease Control and Prevention (CDC) have found high rates of chlamydial infection, gonorrhea, and reactive syphilis serology among inmates entering both adult and juvenile correctional facilities (Table 1).[1] The Bureau of Justice Statistics also reports that 1.8% of male prison inmates and 2.6% of female prison inmates in the US are infected with HIV.[2]

The association of STDs with incarcerated populations should not, however, imply that the infections were acquired in prison or jail. Although transmission can occur within such facilities, it is not common. Rather, correctional settings represent a unique opportunity to access populations that have a high risk for STD infections and offer screening, treatment, and education.

Why Are Incarcerated Populations at High Risk?

The risk of acquiring sexually transmitted infections has long been associated with illicit behaviors, such as prostitution and drug use. This pattern is especially true for syphilis and HIV infection which have occurred in similar populations since the earliest days of the HIV epidemic. Studies of HIV-infected populations have documented high rates of incident syphilis infection[3,4] and syphilis studies have established HIV infection as a consistent risk factor.[5-8] Syphilis and HIV have both been found to be associated with trading sex for drugs or money,[9-11] use of illegal drugs,[9-14] and a history of incarceration.[6,14] These risks are, in themselves, related as prostitution and drug possession/sale are among the most common reasons for arrest.[15]

Jail Versus Prison Settings – Implications for Screening Programs

Because STDs are highly prevalent in incarcerated populations, screening programs to identify new infections have been proposed and/or implemented in jails and prisons across the United States. Inmates are generally screened upon entry to the facility and receive treatment and/or referrals for any STDs detected. Screening in jails and prisons each has different goals and benefits, therefore it is important to distinguish the difference between these two types of institutions.

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Jails are locally operated (city or county) and serve to house persons arrested and awaiting trial as well as those sentenced to short terms of generally less than one year. The average inmate stays in jail for less than two days,[16] most posting bond and awaiting trial outside jail. In North Carolina, only about 23% of the jail population at any given time is serving sentences; the remainder are pre-trial detainees.[17]

Because most jail detainees are housed for only a matter of days, conditions are crowded and opportunities for inmate recreation are limited, decreasing the opportunities for sexual contact (and ongoing transmission) within the institution. In

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Table 1.
Median Prevalence of Sexually Transmitted Diseases among Populations Screened in US Correctional Facilities, 2004.

	Males		Females	
	Median %	Range %	Median %	Range %
ADULT				
Chlamydia	10.2	0.7 – 30.0	7.2	1.2 – 22.7
Gonorrhea	2.6	0.0 – 33.8	3.0	0.0 – 8.4
Syphilis	2.7	0.2 – 5.9	5.3	0.0 – 19.0
JUVENILE				
Chlamydia	5.8	1.0 – 27.5	14.0	2.4 – 26.5
Gonorrhea	0.8	0.0 – 18.2	4.5	0.0 – 16.5
Syphilis	0.5	0.0 – 2.4	0.7	0.0 – 5.1

Source: CDC STD Surveillance 2004[1]

such settings, STD screening programs serve as community-level screenings, reaching a population that often has limited contact with other healthcare services and screening opportunities. The net benefit of such programs is very much to the non-incarcerated community to which the detainees return.

Prisons are generally under state or federal control and are designed to house inmates sentenced to terms of one year or longer. Essentially all prison inmates will have spent some time in jail before trial, sentencing, and finally entering prison. Screening for STDs in these settings has very different functions: to maintain the health of the inmate population while they are in custody and to prevent ongoing transmission within the facility. Inmates benefit directly from detection and treatment of their disease. Upon release, the benefit transfers to communities where the risk of infection from a newly released inmate is decreased.

STDs in North Carolina Correctional Facilities

The prevalence of STDs among North Carolina's incarcerated populations is difficult to assess because few screening programs currently exist. In 2005, 256 cases of sexually transmitted diseases were reported from the state's correctional facilities (Table 2). These data should be viewed as an extremely low estimate of the true number of STD cases among incarcerated populations in North Carolina. Most reported cases are likely to be the result of sick inmates seeking care. Since the most prevalent reportable STD (chlamydia) is asymptomatic, most cases are not detected unless a screening program is in place. Inmates entering Department of Corrections (prison) custody are screened for syphilis. HIV testing is also offered on a voluntary basis. Screening programs in jails are far less common.

There are also some reporting issues associated with this data. Internal surveillance audits at the Branch have found that some STD reports listed as coming from county health departments were actually cases detected through the local jail. This occurs sometimes when a jail is not able to provide treatment on site and inmates are temporarily transferred to the local health department for care. The STD case report may be filled out at that time and come in to the Branch as a health department case. This bias does not appear to be present in reports coming from prison facilities.

Expansion of STD screening programs, especially in jails and juvenile justice settings, would likely detect a large number of cases of treatable STDs and contribute to decreases in ongoing transmission in the community. The HIV/STD Prevention and Care Branch has two major screening efforts underway that can provide a model for future programs.

Juvenile Justice Screening in North Carolina

Since October of 2003 the HIV/STD Prevention and Care Branch of the North Carolina Division of Public Health has partnered with the State Laboratory of Public Health and the Department of Juvenile Justice and Delinquency Prevention (DJJDP) to provide STD screening in several long-term facilities. Females at the Samarkand Facility and males at C.A. Dillon are screened upon entry for chlamydia, gonorrhea, and syphilis. In 2005, 371 young men were screened. Of these, 40 (10.8%) were found positive for chlamydia and two (0.5%) were positive for gonorrhea. The problem is even more pronounced among young women. Out of 48 screened in 2005, 10 (20.8%) tested positive for chlamydia, and two (4.2%) tested positive for gonorrhea. All of the juveniles were immediately treated for their infections. No cases of syphilis were detected.

The HIV/STD Prevention and Care Branch hopes to secure additional funds to allow for expansion of this program to additional facilities within DJJDP.

Syphilis Elimination Jail Screening in North Carolina

In 1998 CDC found that over 50% of reported primary and secondary syphilis cases in the United States came from just 28 counties. They launched an extensive campaign called the Syphilis Elimination Effort (SEE) in 1999 in response. North Carolina had five counties on that list, more than any other state, and has expanded the program to include six counties.

As part of the enhanced surveillance objective of SEE, North Carolina has instituted syphilis screening in seven jails in all six of the SEE counties. Several counties began screening in the early project years (1999-2001). However, it was not until 2002 that good data collection and evaluation procedures were put into place. By September 2002, all seven jails were screening for syphilis and collecting data for evaluation. Two of the jails also added HIV testing to their programs. Data from 2002-2004 indicate that 98% of inmates who agree to having their blood drawn for syphilis testing also agree to having an extra

tube drawn for HIV testing. During that time period the project identified 47 HIV-positive inmates (out of 4,655 screened) of which 25 were new reports.

From 2002-2005, the jail screening program tested 25,069 detainees for syphilis (20,311 males and 4,758 females). Overall, 932 inmates tested reactive and of these, 156 new cases of syphilis were identified (20 primary & secondary, 55 early latent, and 81 late syphilis). Females were more likely to be reactive than males (8.2% vs. 2.7%) and more likely to be a new case (1.2% vs. 0.5%). Female cases were also more likely to be primary, secondary or early latent (60% vs. 41% for males). In addition to greater rates of case detection, screening female inmates has a major additional benefit in that treatment can prevent possible cases of congenital syphilis.

The Syphilis Elimination jail screening project has been fruitful in identifying 156 previously undiagnosed cases of syphilis and 25 new cases of HIV infection. Undoubtedly many others were also identified through partner notification and contact tracing of those jail cases. The North Carolina Syphilis Elimination team has used the results of the evaluation to adjust our screening by increasing our emphasis on female inmates. We plan to continue syphilis screening in the jails and hope to expand the HIV screening component to additional jails.

Table 2.
Sexually Transmitted Diseases Reported in North Carolina, 2005

	Males			Females		
	All Cases	Corrections		All Cases	Corrections	
	N	N	%	N	N	%
Chlamydia	5,481	36	0.7	25,702	37	0.1
Gonorrhea	7,529	36	0.5	7,546	12	0.2
Early Syphilis*	343	22	6.4	146	18	12.3
HIV Disease**	1,308	79	6.0	498	16	3.2

Source: NC HIV/STD Prevention and Care Branch

* Early Syphilis = Primary, Secondary, & Early Latent Syphilis (<1 year duration)

** HIV Disease = First report of HIV infection, regardless of stage (includes some cases first reported as AIDS cases)

Policy Recommendations

Due to the high prevalence of sexually transmitted diseases among incarcerated populations, correctional settings provide a unique opportunity to reach a group of people at high risk and provide testing and treatment for their infections. Such programs benefit the inmates themselves, who may otherwise have poor access to healthcare, and the communities to which they return. This is particularly true for jail screening programs because detainees are often released within a matter of days. Expansion of the existing syphilis and HIV jail screening programs should be a major policy goal. Addition of chlamydia and gonorrhea screening to adult jail screening programs would likely detect a large number of cases and should also be explored. Younger populations are highly affected by these two STDs and special effort should be made to expand chlamydia and gonorrhea screening in juvenile correctional settings. **NCMedJ**

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