Journal of Correctional Health Care
Volume 12 Number 3
July 2006 203-213
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10.1177/1078345806292977
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HIV Counseling and Testing of Young Men in Prison

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HIV counseling and testing are the first steps to diagnosing and managing HIV infection. This article describes factors associated with HIV testing and counseling in prisons with different policies for HIV testing (voluntary, during medical evaluation; voluntary, during peer-led class; mandatory) and counseling (all counseled, or pretest counseling not required and posttest for positive only). Prisoner testing rates were 46% "voluntary, peer-led", 78% "mandatory", and 86% "voluntary, medical." Less than 50% received any counseling. Results suggest the potential value of coordinating HIV and STD/hepatitis services across all policies. Risk behaviors or demographic factors were only associated with one testing or one counseling policy. Prisons can achieve high rates of HIV testing by routinely offering voluntary HIV testing during the medical intake process, and this may result in increased diagnosis of HIV infection.

Keywords: HIV counseling; HIV testing; prison health care; correctional health

Early diagnosis of HIV infection has medical and public health benefits, including improved quality of life for the patient (Palella et al., 2003) and reduced transmission due to antiretroviral therapy and reduced risk behaviors (Janssen et al., 2001). In the United States, an estimated 25% of persons with HIV do not know that they are infected (Fleming et al., 2002), and approximately 40,000 people are newly infected with HIV each year (Centers for Disease Control and Prevention [CDC], 1999). Almost two thirds of new infections are transmitted from persons who do not know that they are infected with HIV (CDC, 2003a).

At year-end 2002, more than 2 million people were incarcerated in the United States, including 1.3 million in state and federal prisons (Harrison & Beck, 2003). At year-end 2003, 2.0% of the prison population, 23,659 individuals, were known to be infected with

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All authors contributed to the conceptualization of this article and have reviewed and approved the final draft. The findings and conclusions in this article are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention.

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HIV (Maruschak, 2005), a prevalence rate 5.5 times higher than for persons who are not incarcerated. Each year, more than a half million people are released from prison (Hammett, Harmon, & Rhodes, 2002).

Many prisoners are from communities where they have had limited access to primary medical care and prevention services (Glaser & Greifinger, 1993). Therefore, correctional systems can provide this population with access to medical and HIV prevention services during incarceration (Hammett et al., 2002). The CDC has recommended increased opportunities for voluntary HIV counseling and testing in correctional facilities (Janssen et al., 2001) to identify previously undiagnosed cases of HIV infection, to provide treatment for infected persons, and to reduce the number of new HIV infections.

Currently, all 52 prison systems in the United States offer HIV testing (Maruschak, 2002). However, local, state, and federal policies influence specific HIV testing procedures within each correctional jurisdiction. Prisoners may receive HIV testing if they request a test (46 systems), if they have clinical indications of HIV (46 systems), if testing was ordered by the court (43 systems), or if mandatory statutes require testing following an incident with exposure to blood or body fluids (41 systems). Prisoners are tested routinely for HIV on entering prison in 19 systems and on release in 4 systems. Although HIV counseling and testing policies provide a general description of procedures within correctional systems, factors such as overcrowding, staff availability, and fiscal considerations play critical roles in determining access to HIV testing and prevention services in prisons.

The purpose of this article is to identify organizational and individual factors associated with HIV testing, pretest counseling, and posttest counseling based on policies at state prisons in California, Mississippi, Rhode Island, and Wisconsin.

Method

Participants from 8 prisons were recruited into a longitudinal HIV/STD/hepatitis risk reduction intervention trial between May 2001 and November 2002 (Project START; see Wolitski, 2004). Universities funded to implement the research study selected the prisons based on their willingness to collaborate on a longitudinal intervention trial. In California, Mississippi, and Rhode Island, participants were recruited from one state prison; in Wisconsin, because of smaller facility populations, participants were recruited from five state prisons. Eligible participants were men who were 18 to 29 years of age, incarcerated for at least 90 days, classified at a minimum or medium security level, scheduled for release within 14 to 60 days, willing to provide community locating information, able to communicate in English, and scheduled for release within locally defined catchment areas.

Each month, prisons provided the study team with lists of potentially eligible participants. Each site attempted to enroll 10 participants per month. When the number of potential participants was fewer than the monthly enrollment quota, project staff attempted to recruit all. When the number exceeded the monthly enrollment quota, potential participants were selected randomly from the list (at two sites) or selected sequentially based on release date (at two sites). A monthly block assignment process was used to alternate recruitment into a comparison or treatment arm of the study. Recruitment was designed to enroll a maximum sample of 600 to meet the requirements of the intervention trial, with each site recruiting equal numbers.

All data were obtained during interviews with study participants. In Mississippi, Rhode Island, and Wisconsin, participants used laptop computers to complete audio computer–administered self-interviews. In California, data were obtained using interviewer-administered questionnaires.

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Table 1. HIV Counseling and Testing Policies at Intake in Eight State Prisons, 2001–2002

Policy	Description
HIV testing	
Voluntary, medical	Voluntary, offered, and consent form signed during medical evaluation at intake: Rhode Island, Wisconsin
Mandatory	Mandatory, during medical evaluation at intake, no consent obtained: Mississippi
Voluntary, peer led	Voluntary, offered, and consent form signed during peer-led health orientation class: California
HIV pretest counseling	
All counseled	All prisoners attending peer-led health orientation class/all prisoners tested for HIV: California, Wisconsin
Not required	Not required: Mississippi, Rhode Island
HIV posttest counseling	
All counseled	All prisoners tested for HIV: California, Wisconsin
HIV positive only	Required only for prisoners with HIV-positive test result: Mississippi, Rhode Island

Participants answered questions about sociodemographic characteristics; sexual behaviors; substance use; incarceration history; HIV, STD, and hepatitis testing and diagnosis; HIV pretest counseling; and HIV posttest counseling. Behavior questions assessed events that occurred during the 3 months before incarceration, during the participant's lifetime, or both. Information on sexual behaviors was obtained separately for main (emotional attachment or commitment) and casual partners. Participants were asked if they thought that their sex partners had any of the following risk characteristics: were HIV positive, had injected drugs, had smoked crack cocaine, had traded sex for money or drugs, had a history of STDs, or currently had sex with other partners. A partner with any of those characteristics was defined as a risky sex partner. The men also were asked if they had participated in any HIV, STD, or hepatitis prevention programs, including classes, counseling, or educational videos, during their incarceration. To determine exposure to HIV testing, pretest counseling, and posttest counseling during the present incarceration, participants were asked, "During this incarceration, were you tested for HIV?" "Did someone talk with you or give you counseling about HIV before you got tested?" and "Did someone talk with you or give you counseling about your test results?"

Although HIV testing was available in all participating prisons, policies for HIV testing varied (Table 1; Grinstead et al., 2003). In the California prison, HIV testing was offered to prisoners at the completion of a peer health orientation class at intake. Only prisoners who attended the orientation class were formally offered HIV testing on entry. Trained peer educators distributed consent forms at the end of the class to prisoners who volunteered to be tested. Signed consent forms were returned to the peer educators to be placed in the prisoner's medical chart. During the medical evaluation, additional blood was collected for those who had requested an HIV test.

In Rhode Island, testing was conducted routinely during the intake medical evaluation for all prisoners except those who refused testing; however, state law prescribes mandatory testing for persons who are later sentenced (Ramratnam et al., 1997). Written consent was obtained before the blood sample was drawn. In the Wisconsin prisons, all prisoners were offered the opportunity for HIV testing during the medical intake; written consent was obtained before the blood sample was drawn. In the Mississippi prison, HIV testing was mandatory for all prisoners during the medical intake, and written informed consent was not obtained. In all prison systems, prisoners could request HIV testing during their incarceration, and HIV testing could be required following court order.

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Wisconsin and Rhode Island prisons had similar testing policies and have been combined into "voluntary, medical" policy for the purpose of these analyses. California is labeled as "voluntary, peer-led" policy, and Mississippi is labeled as "mandatory" policy.

Policies for pretest and posttest counseling also varied across participating prisons (Table 1; Grinstead et al., 2003). In the California prison, all new prisoners attended an intake health orientation class that provided group pretest counseling delivered by peer educators. In Wisconsin, pretest counseling was provided individually by a nurse during the medical intake. For these analyses, these two prisons are labeled "all counseled" under HIV pretest counseling policy. In the Mississippi and Rhode Island prisons, pretest counseling was not required; thus, the pretest counseling policy is labeled "not required." In California and Wisconsin, the policy was that posttest counseling was required for everyone who received an HIV test; posttest policy for these two prisons is labeled "all counseled." In Mississippi and Rhode Island, posttest counseling was required only for prisoners who tested positive for HIV; thus, this posttest policy is labeled "HIV positive only." Across all prisons, individual posttest counseling from a health care provider or a state or local department of health disease intervention specialist was mandated for all prisoners who had a positive HIV test result.

SAS software (Version 8.2; Cary, NC) was used to conduct all analyses. Univariate analyses used the χ^2 test to determine the associations between the outcomes of interest and independent variables. These variables were prison policy (testing and counseling), demographic (age, race/ethnicity), risk behaviors (any history of drug injection, sex during the 3 months before this incarceration with a casual partner and with a risky partner), service use (STD testing during the present incarceration; attending HIV, STD, or hepatitis prevention programs during the present incarceration), and lifetime history of STD.

Three logistic regression analyses were conducted to determine variables independently associated with HIV testing, pretest counseling, and posttest counseling during the present incarceration. Only men who reported an HIV test during the present incarceration were included in the counseling analyses. Because of differences in prison policies for testing and counseling, all analyses were conducted controlling for policy. Variables that were significant ($p < .05$) in the univariate analyses were tested in the multivariate models. The final models contained those variables that remained significant ($p < .05$).

Results

The prisons provided the names of 830 potential participants, of whom 106 (13%) were unavailable ($n = 88$) or refused ($n = 18$) to meet with project staff. Of the 724 who were approached for participation, 118 were ineligible and 45 refused to participate. Of the remaining 561 (77%) who consented to participate, prerelease assessment data were available for 547 participants.

Of the 547 participants, 467 (85%) were recruited from 3 sites (Wisconsin, Rhode Island, and California). The Mississippi site recruited fewer participants because recruitment began 6 months after the other sites. Demographic data showed that 70% of participants were aged 18 to 24 years, 88% were single (never married), and 52% were Black. Two (0.4%) reported that they were HIV positive. At time of enrollment, participants had been incarcerated from 2.8 to 120.6 months (mean = 15.9, median = 10.6, and mode = 5 months).

When asked about sexual behavior during the 3 months before incarceration, 2% reported sex with men, 70% with casual partners, and 65% with risky partners. Unprotected vaginal or anal sex during the 3 months before incarceration was reported by 86% of participants, and 47% reported unprotected vaginal or anal sex with a casual partner. A prior STD was reported by 21%

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and prior injection drug use by 8%. During this incarceration, 52% of participants reported being tested for STDs, and 31% attended an HIV/hepatitis/STD prevention program.

Most (85%) participants had been tested for HIV during their lifetimes, and of those participants, 86% had been tested multiple times. Reported rates of HIV testing during the present incarceration ranged from 46% of participants in California to 86% in Rhode Island. Of the 403 men (74%) tested during this incarceration, 41% reported HIV counseling, 15% both pretest and posttest counseling, 14% pretest counseling only, and 12% posttest counseling only.

Of the 144 (26%) participants who were not tested for HIV during this incarceration, 74 had never been tested for HIV, and 70 reported a previous HIV test (mean = 2.9 times, range = 1-30 times). Many participants who were not tested during this incarceration reported engaging in HIV risk behaviors during the 3 months before this incarceration: 84% reported unprotected vaginal or anal sex, 46% reported unprotected vaginal or anal sex with casual partners, 58% reported sex with risky partners, 23% reported a history of an STD, and 8% reported a history of injection drug use.

Univariate analyses (Table 2) indicated that prison policy and attending an HIV, STD, or hepatitis prevention program were significantly associated with HIV testing, pretest counseling, and posttest counseling. HIV testing differed significantly according to age, being tested for an STD in the current incarceration, having attended a prevention program, and report of a risky sex partner during the 3 months before incarceration. Pretest counseling and posttest counseling rates differed significantly according to race/ethnicity, having attended a prevention program, and history of injection drug use. In addition, pretest counseling was associated with the participant having ever been told by a clinician that he had an STD, and posttest counseling was associated with being tested for an STD during the present incarceration.

Multiple logistic regression analyses identified factors independently associated with report of HIV testing, pretest counseling, and posttest counseling (Table 3). Controlling for HIV testing policy, STD testing was associated with an HIV test across all three testing policies: voluntary, medical adjusted odds ratio (AOR) = 3.33; mandatory AOR = 9.77; and voluntary, peer-led AOR = 3.26. Under mandatory policy, men who reported sex with a risky partner were also more likely to report an HIV test than were those who did not report sex with a risky partner: AOR = 3.68. In the prison with the voluntary, peer-led testing policy, men who attended an HIV/STD/hepatitis prevention program during the present incarceration were more likely to report an HIV test than were those who did not attend a prevention program: AOR = 2.81.

Controlling for counseling policies, pretest counseling was significantly associated with attendance at a prevention program under both policies (Table 3). In prisons with the pretest counseling not required policy, Black (AOR = 19.70) and Hispanic (AOR = 13.46) participants were more likely to report pretest counseling compared to White participants. Posttest counseling was significantly associated with report of being tested for an STD during the present incarceration (Table 3) in prisons with posttest counseling HIV-positive-only policy.

Discussion

HIV Testing

Overall, the majority of participants responded that they were tested during the present incarceration. This study documents a range of HIV testing rates under different testing circumstances—mandatory testing at intake, voluntary testing at medical intake, and voluntary testing during a peer health orientation class—and a missed opportunity to provide HIV testing to prisoners who had never been tested for HIV. The rate of HIV testing was

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Table 2. Rates of Reported HIV Testing and Counseling Among Male Prisoners, Aged 18 to 29 Years, in Eight State Prisons

Characteristic	HIV Test (N = 547)		Pretest Counseling (n = 403)		Posttest Counseling (n = 403)	
	n	%	*n*	%	*n*	%
Site						
California	68/149	46*	22/68	32*	20/68	29*
Mississippi	62/80	78	19/62	31	13/62	21
Rhode Island	137/159	86	12/137	9	21/137	15
Wisconsin	136/159	85	64/136	47	57/136	42
Testing policy						
Voluntary, medical	273/318	86*				
Mandatory	62/80	78				
Voluntary, peer led	68/149	46				
Counseling policies						
All counseled (pretest and posttest)			86/204	42*	76/204	37*
Pretest not required			31/199	16		
Posttest HIV positive only					34/199	17*
Age group (years)						
18–24	298/385	77*	80/298	27	76/298	26
25–29	105/162	65	37/105	35	34/105	32
Race/ethnicity						
White	93/118	79	10/93	11*	14/93	15*
Black	205/284	72	79/205	39	74/205	36
Hispanic	61/80	76	20/61	33	12/61	20
Other	44/65	68	8/44	18	11/44	25
STD test during current incarceration						
Yes	247/287	86*	80/247	32	82/247	33*
No	156/260	60	37/156	24	28/156	18
Ever told by provider had STD						
Yes	82/116	71	35/82	43*	29/82	35
No	321/431	74	82/321	26	81/321	25
Attended prevention program during current incarceration						
Yes	140/169	83*	65/140	46*	48/140	34*
No	263/378	70	52/263	20	62/263	24
Any casual sex partner during 3 months before current incarceration						
Yes	290/384	76	92/290	32	79/290	27
No	113/163	69	25/113	22	31/113	27
Any risky sex partner during 3 months before current incarceration						
Yes	274/357	77	79/274	29	72/274	26
No	129/190	68	38/129	29	38/129	29
History of injection drug use						
Yes	33/44	75	3/33	9*	2/33	6*
No	370/503	74	114/370	31	108/370	29

*$p < .05$.

significantly lower in the prison in which HIV testing was offered after a peer-led health education program at intake, compared to the other prisons. Testing rates did not differ in prisons with voluntary testing offered during the medical intake compared to the prison with mandatory testing. When controlling for testing policy, the only factor consistently associated

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Table 3. Multiple Logistic Regression Analyses for HIV Testing, Pretest Counseling, and Posttest Counseling Reported by Men While Incarcerated in Eight State Prisons

	Adjusted Odds Ratio	95% Confidence Interval	Wald χ^2 *p* Value
Tested for HIV while in prison			
Voluntary, medical policy			
Tested for STD while in study prison	3.33	1.70-6.55	<.001
Mandatory policy			
Tested for STD while in study prison	9.77	2.68-35.62	<.001
Sex with risky partner 30 days before incarceration	3.68	1.01-13.41	.048
Voluntary, peer-led policy			
Tested for STD while in study prison	3.26	1.63-6.54	<.001
Attended prevention program while in study prison	2.81	1.09-7.24	.033
Received pretest counseling			
All counseled policy			
Attended prevention program while in study prison	3.12	1.74-5.59	.0001
Not required policy			
Race/ethnicity			.012
White, not Hispanic	Reference		
Black, not Hispanic	19.70	2.56-151.47	
Hispanic	13.46	1.38-131.32	
Other, not Hispanic	2.93	0.17-49.78	
Attended prevention program while in study prison	3.06	1.27-7.35	.013
Received posttest counseling			
All counseled policy			
Not required policy			
Tested for STD while in prison	2.31	1.04-5.14	.039

Note: "While in prison" means during current incarceration in study prison at time of interview.

with an HIV test was being tested for an STD during the current incarceration. HIV testing was not associated with report of risk behavior prior to incarceration.

The HIV testing rates in this study are comparable to rates of voluntary HIV testing (39%-84%) in other studies involving prisoners (Andrus et al., 1989; Behrendt et al., 1994; Burchell et al., 2003; Cotten-Oldenburg, Jordan, Martin, & Sadowski, 1999; Hoxie et al., 1998; Hoxie et al., 1990; Kassira et al., 2001). A prior study in Wisconsin reported that prisons that routinely offered voluntary HIV testing to all prisoners at medical intake achieved testing rates as high as 84% (Hoxie et al., 1998). In New York State prisons, where prisoners attended an AIDS education class at intake, similar to the process in the California prison, and at-risk prisoners were given the opportunity for HIV testing, only 22% of prisoners who attended the class were tested for HIV (Lachance-McCullough, Tesoriero, Sorin, & Stern, 1994).

In our study, after controlling for prison testing policies, prisoners who reported an STD test in the present incarceration were more likely to have been tested for HIV. Also, in the prison in which HIV testing was offered after a peer-led health orientation program, prisoners were more likely to be tested if they attended an HIV/STD/hepatitis prevention program. These two findings might suggest a coordination of HIV, STD, and hepatitis testing, education, and prevention services. However, data about the temporal relationships between these services and HIV testing were not obtained, and therefore we cannot deduce that participation in one program influenced participation in the other.

We did not find a consistent association between HIV testing and risk behavior across the three testing policies. Ironically, only in the prison with mandatory testing was sex with a risky partner before incarceration independently associated with HIV testing. Previous

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studies have reported inconsistent findings with respect to risk behaviors engaged in while in the community and HIV testing in prison (Andrus et al., 1989; Behrendt et al., 1994; Burchell et al., 2003; Cotten-Oldenburg et al., 1999; Hoxie et al., 1990). Our findings suggest that at least in the prisons with voluntary testing policies, preincarceration risk behavior is not associated with HIV testing in prison.

Most new HIV infections are transmitted by individuals who are unaware of their HIV infection, and CDC recently directed its efforts toward reducing barriers to HIV testing (CDC, 2003a). One recommendation was to incorporate HIV testing into routine medical care on the same voluntary basis as other diagnostic and screening tests (CDC, 2003a). In prisons, this strategy may reduce the stigma associated with requesting a test.

Close to one fourth of participants from the prison with mandatory testing did not report receiving an HIV test, and they may not have been aware that an HIV test was performed. This may be because written consent was not obtained for an HIV test, participants were not notified of their test results, or both. Providers of HIV testing should obtain written or verbal informed consent, provide prevention counseling, and ensure that the confidentiality of the client is protected (American Medical Association, n.d.; CDC, 2001). Prisoners should understand the potential implications of a positive test result before testing for HIV. This includes access to medical and other services, potential loss of work, or loss of other privileges for which there might be no medical justification.

HIV Counseling

The rates of counseling were not consistent with prison counseling policies: Less than half of the men who were tested for HIV reported receiving counseling. In the California and Wisconsin prisons, at which HIV pretest and posttest counseling was required for all prisoners tested for HIV, counseling rates were lower than expected. Participants in these prisons did not receive, recall, or consider what they received as counseling. At prisons in Mississippi and Rhode Island, at which pretest counseling was not required and posttest counseling required only for prisoners with a positive HIV test result, reported counseling rates were higher than expected. The associations between HIV pretest counseling and attending an HIV/STD/hepatitis prevention program and HIV posttest counseling and being tested for an STD also suggest some coordination between HIV, hepatitis, and STD services. It is possible that risk reduction counseling may have been provided in conjunction with HIV or STD testing, and this has been interpreted as HIV pretest or posttest counseling.

Black and Hispanic communities are disproportionately affected by the HIV epidemic (CDC, 2003a). It is possible that in prisons that did not require pretest counseling for all inmates, prison medical staff or HIV counselors provided pretest counseling to Black and Hispanic prisoners whom they may have perceived to be at greater risk.

The low rates of HIV counseling reported in this study indicate missed opportunities to provide prisoners with risk reduction counseling. Likewise, service providers in these prisons have expressed their concerns about missed opportunities to provide HIV counseling to prisoners during incarceration (Grinstead et al., 2003). Quality counseling has been shown to benefit persons at risk for HIV infection (Kamb et al., 1998), and the CDC (2001) has recommended prevention counseling for all persons at risk for HIV. Providing prevention counseling to prisoners who are HIV negative, even in low-prevalence settings, may prevent a significant number of new infections (Varghese & Peterman, 2001). Despite the potential value of expanding HIV counseling services in prisons, the low rates of counseling may be a result of insufficient resources. More research is needed on innovative approaches—including group, video, and peer led—to provide cost-effective HIV prevention counseling in prison.

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There are several limitations to this study. First, study participants may not represent all prisoners in these facilities. Second, data were obtained from participants and are subject to reporting bias. During prison intake medical evaluations, numerous health-related laboratory tests were performed, including routine testing for syphilis (Grinstead et al., 2003). Some participants may have been unaware that they had been tested for HIV or STDs. Finally, validity of data may have been influenced by differences in data collection methods (audio computer–administered self-interviews vs. interviewer administered).

Given the individual and public health benefits of knowing that one is infected with HIV, at-risk individuals should be given the opportunity to receive testing and have access to timely medical care and prevention services (CDC, 2003a). Critical opportunities to link individuals with HIV to appropriate medical care, treatment, and prevention services are missed when persons with HIV remain undiagnosed. Prisons provide an important venue for HIV case finding, referral to medical and other services, and opportunities for prevention education for individuals at risk for HIV. Prisons that provide HIV, STD, and hepatitis programs are providing a valuable service to prisoners and the communities to which they return. Prisons can achieve high rates of HIV testing by routinely offering voluntary HIV testing during the medical intake process, and this may result in increased diagnosis of HIV infection.

Human Participant Protection

All research activities were approved by institutional review boards at the CDC, Jackson State University, Medical College of Wisconsin, Brown University/Miriam Hospital, and the University of California, San Francisco. All participants provided written consent. As an additional safeguard, the project received a Federal Certificate of Confidentiality.

Acknowledgments

This study was funded through Cooperative Agreement Nos. 414879, 514804, 114812, and 914806 from the Centers for Disease Control and Prevention, under Program Announcement #97050.

The authors thank the study participants and the members of the Project START Study Group for their contribution in conducting the study. Project START Study Group members are John Askew, Lisa Belcher, Jessica Berzowski, Gina Best, Diane Binson, Don Bourque, Jeff Buckles, Mark Charles, Achintya N. Dey, Melissa Dispigno, Gloria Eldridge, Christine Fitzgerald, Timothy Flanigan, Marty Fortenberry, Juarlyn Gaiter, Kellie Green, Olga Grinstead, Jacki Hecht, Kashif Iqbal, Daryl Johnson, Jaclynn Kurpewski, Deborah Kacanek, Anthony King, Carolyn King, Katie Kramer, Melanie Krapf, Annette Lerma, Ricky Lugo, Moribe Lumumba, Robin MacGowan, Kelly Malen, Andrew Margolis, Tim McAuliffe, Kathleen McCartney, Jax McKee-Shapter, Kathleen Morrow, Susan Moss, Mobette Nacua, Jill Nealey-Moore, Ann O'Leary, Stephanie Paton, Michael Patterson, Barbara Reed, Ricardo Reed, Merjo Roca, Noel Rosado, David Seal, Rodney Simms, James Sosman, Kimberly Starr, Daniel Strother, Jerry Vardaman, John M. Williamson, Richard Wolitski, Meghan Woods, William Woods, and Barry Zack.

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