

Using HIV Testing History to Measure the Success of HIV Partner Services

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Abstract: We use HIV testing history of persons newly diagnosed with HIV through HIV partner services to identify persons who might not otherwise have tested. Seventeen percent had never been tested, 44% had not been tested in the previous 2 years, and none had been tested routinely. These data demonstrate that HIV partner services were successful in reaching persons who may not have initiated testing without this service.

It is estimated that 20% of the 1.2 million persons living with HIV in the United States are not aware of their infection,¹ and evidence suggests that most new HIV infections are acquired from such individuals.² Given that persons who are aware of their HIV status may reduce their risk of transmitting HIV,² increasing the proportion of HIV-infected persons who know their status is a critical public health strategy. National recommendation calls for persons at high risk for HIV infection such as men who have sex with men (MSM) and injection drug users (IDU) be tested for HIV at least annually.³ The San Francisco Department of Public Health (SFPDH) further recommends that persons at high risk for HIV infection be tested at least every 6 months.⁴

HIV partner services (PSs) can be an essential component in the control and prevention of HIV. Despite evidence showing its effectiveness in case finding⁵⁻⁸ and possible cost-effectiveness,⁹⁻¹¹ HIV PSs remain underused in the United States.¹² In 2008, the Centers for Disease Control and Prevention (CDC) issued updated "Recommendations for Partner Services Programs for HIV infections, Syphilis, Gonorrhea, and Chlamydia Infection" that strongly recommend that health departments provide PS to all persons newly diagnosed with HIV.¹³ The SFPDH has offered HIV PS since 2004. HIV PSs provide a broad range of services to persons newly diagnosed

with HIV, including ensuring receipt of positive HIV test results, discussion of notifying sex and needle sharing partners of possible HIV exposure, offering third-party confidential partner notification, and providing referrals to medical, mental health, substance abuse, and social services.

Previous analyses of PSs demonstrated its effectiveness at identifying new cases of HIV infection.⁵⁻⁸ However, these studies did not evaluate the likelihood that persons newly diagnosed through HIV PS had been tested routinely and would have taken advantage of other testing opportunities without HIV PS interventions. To be most cost-effective, partner notification must target individuals who are not reached by conventional testing efforts. We used the data collected from HIV case report and HIV PS to assess the HIV testing history among persons notified and diagnosed through HIV PS.

The SFPDH HIV PSs have been described in detail elsewhere.^{6-7,14} In brief, newly diagnosed county residents are interviewed by SFPDH staff and asked to name their sex and needle sharing partners in the past year. The SFPDH staff attempt to locate the named partners to confidentially notify them of potential HIV exposure, to encourage undiagnosed persons to get tested, and to provide risk reduction counseling and referrals to persons who are aware of their infection.

Persons diagnosed with HIV infection in San Francisco have been reported by name to the SFPDH since 2006. As part of CDC-funded HIV incidence surveillance activities, data on HIV testing history, including date of most recent negative HIV test result, the number of negative test results in the 2 years before diagnosis, and the reason(s) for testing, are routinely collected from newly diagnosed persons. Routinely ascertained reasons for testing include concern about HIV exposure in the 6 months before diagnosis, as part of routine testing (e.g., test every 6 months), to confirm HIV negative status, in response to court order, or as required for insurance or military service. Any other reasons for testing can be specified. HIV PS collects information on outcomes of partner notification efforts.

We matched the HIV case registry with the HIV PS database to examine the HIV testing history of persons known to have tested HIV positive after receiving HIV PS from 2006 through 2009. Records were matched by name, date of birth, sex, and race. The computer match and analyses were done using SAS version 9.1 (SAS Institute, Inc., Cary, NC).

There were 534 newly diagnosed HIV index patients who were offered HIV PS (Fig. 1), of whom, 494 (93%) were interviewed. These 494 patients named a total of 534 sex or needle-sharing partners. Ninety-nine (19%) of the 534 partners named could not be contacted. The remaining 435 partners were contacted, and of these, 164 (38%) reported that they were HIV infected, 84 (19%) reported a recent HIV negative test or refused testing, and 187 (43%) were tested after HIV PS informed them of the exposure. Of the 187 partners tested through HIV PS, 25 (13%) tested positive and were matched with the HIV case registry to assess HIV testing history. Seven (28%) did not

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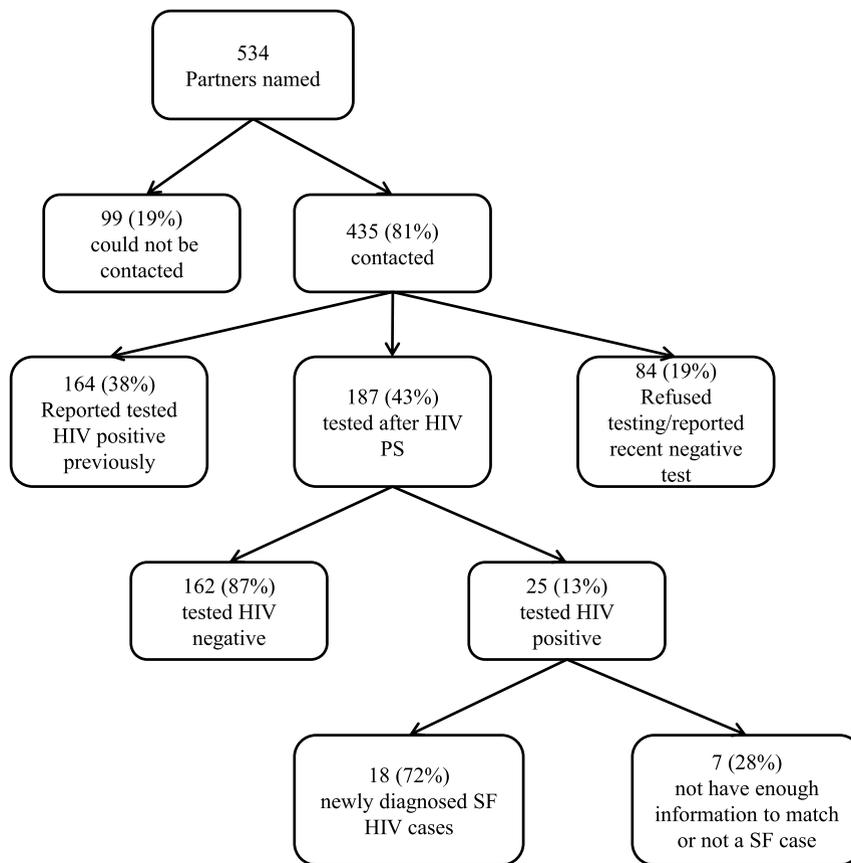


Figure 1. Partner services outcomes for the sex and needle-sharing partners named by persons newly diagnosed with HIV, San Francisco, 2006 to 2009. PS = partner service. SF = San Francisco.

have enough identifying information to successfully match, and 18 (72%) were newly diagnosed with HIV.

Of the 18 newly diagnosed HIV-infected partners who were successfully matched, 17 (96%) were men, 12 (67%) were white, 10 (56%) were between 30 and 39 years old (median, 35 years), and 16 (89%) were MSM (Table 1). Although 13 (72%) of those partners had a previous negative HIV test, only 1 (6%) reported testing more than once in the prior 2 years. Among those who had tested HIV negative previously, the median time since the last negative test result was 13 months (range, 4–35 months). No one reported testing routinely. Eight (44%) of 18 partners notified reported testing because of concern about a recent exposure, and 4 (22%) specifically stated that they were tested in response to partner notification by HIV PS.

The HIV testing history of sex and needle-sharing partners who were tested HIV positive after a receipt of HIV PS indicates that HIV PS was successful in reaching persons who may not have initiated testing without this service. Although most newly diagnosed partners had had at least 1 previous negative HIV test result, the time between diagnosis and most recent negative test result was long. Close to half of the partners had not been tested in the previous 2 years, and none reported testing on a regular basis, although testing guidelines in San Francisco recommend that persons at high risk for HIV infection be tested at least every 6 months for HIV.

In addition to identifying HIV infection among persons who were unlikely to be tested without notification from HIV PS, 164 partners who are aware of their infection were also contacted. Thus, HIV PS staff can reach those who remain at high risk for transmitting HIV and provide them with case management, risk reduction intervention, and referrals to medical care and other services.

Our findings are subject to limitations. In San Francisco, HIV infection occurs predominately among MSM, and HIV testing rates in high-risk groups are higher than those in the nation as a whole.^{15,16} In addition, compared with other risk groups, MSM are more likely to have ever tested for HIV.¹⁷ Thus, our findings might not be generalizable to geographic areas where the distribution of transmission risk and testing behaviors differ from those in San Francisco. Our sample of newly identified HIV-infected persons was small; continued evaluation of HIV PS outcomes should allow for more robust data with which to monitor the effectiveness of this intervention.

Despite these limitations, these data support the value of HIV PS as a mechanism for effectively identifying persons who may be HIV infected and are not aware of their status. In addition, our analysis suggests that were it not for HIV PS, several HIV-infected persons may have experienced even longer delays in being identified as HIV infected and subsequently linked to medical care and services. HIV PS also provides

TABLE 1. Characteristics and HIV Testing History of Partners Testing Positive for the First Time Through PS, San Francisco, 2006 to 2009

	n	%
Total	18	
Sex		
Male	17	94
Female	1	6
Race		
White	12	67
Hispanic	5	28
Black	1	6
Age at diagnosis, y		
19–29	4	22
30–39	10	56
40–49	4	22
Risk		
MSM or MSM/IDU	16	89
IDU	1	6
Heterosexual	1	6
Previous HIV testing		
No previous negative test result	3	17
Ever had a previous negative test result	13	72
Unknown	2	11
No. negative test results in 2 y before diagnosis		
0	8	44
1	7	39
2	1	6
Unknown	2	11
Months since last negative test result*		
Median (range)	13 (4–35)	
Self-reported reason for testing at diagnosis†		
Testing routinely	0	0
Exposure to HIV in the 6 mo before first positive test result	8	44
Other		
Partner notification	4	22
STD related	1	6
Pneumonia	1	6
Unknown	7	39

*Exclude 3 patients who never had a negative test result, 2 patients who had unknown number of negative test results, and 2 patients who were missing the date of last negative test result.

†Patients may report more than 1 reason.

STD indicates sexually transmitted disease.

opportunities to reach those at high risk for transmitting HIV and in need of risk reduction interventions. As such, HIV PS should be an integral component of any HIV control and prevention strategy.

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