HHS Public Access

Author manuscript

J Public Health Manag Pract. Author manuscript; available in PMC 2019 October 09.

Published in final edited form as:

J Public Health Manag Pract. 2015 ; 21(6): 526–530. doi:10.1097/PHH.0000000000000201.

Internet-Based Partner Services in US Sexually Transmitted Disease Prevention Programs: 2009-2013

Victoria Moody, DHA,
Division of STD Prevention, Centers for Disease Control and Prevention, Atlanta, Georgia

Matthew Hogben, PhD,
Division of STD Prevention, Centers for Disease Control and Prevention, Atlanta, Georgia

Karen Kroeger, PhD,
Division of STD Prevention, Centers for Disease Control and Prevention, Atlanta, Georgia

James Johnson, PhD
Central Michigan University, Mount Pleasant

Abstract

Background: Social networking sites have become increasingly popular venues for meeting sex partners. Today, some sexually transmitted disease (STD) programs conduct Internet-based partner services (IPS). The purpose of the study was to explore how the Internet is being used by STD prevention programs to perform partner services.

Methods: We assessed US STD prevention programs receiving funds through the 2008-2013 Comprehensive STD Prevention Systems cooperative agreement. We (1) reviewed 2009 IPS protocols in 57 funding applications against a benchmark of national guidelines and (2) surveyed persons who conducted IPS in jurisdictions conducting IPS in 2012.

Results: Of the 57 project areas receiving Comprehensive STD Prevention Systems funds, 74% provided an IPS protocol. States with IPS protocols had larger populations and more gonorrhea and syphilis cases ($t = 2.2$-2.6; all $Ps < .05$), although not higher rates of infection. Most protocols included staffing (92%) and IPS documentation (87%) requirements, but fewer had evaluation plans (29%) or social networking site engagement strategies (16%). Authority to perform a complete range of IPS activities (send e-mail, use social networking sites) was associated with contacting more partners via IPSs ($P < .05$).

Conclusions: This study provides a snapshot of IPS activities in STD programs in the United States. Further research is needed to move from assessment to generating data that can assist training efforts and program action and, finally, to enable efficient IPS programs that are integrated into STD prevention and control efforts.

Correspondence: Victoria Moody, DHA, Division of STD Prevention, Centers for Disease Control and Prevention, Mail Stop G-27, Atlanta, GA 30333 (vmoody@cdc.gov).

Three of the authors are government employees and do not have any financial conflicts of interest to disclose. There were no additional sources of funding supporting this work.

Keywords

Internet-based partner services; partner services; sexually transmitted diseases; social networking

Population mobility in recent years, access to sophisticated communication technology, and Internet-driven social connectivity have dramatically reduced geographical and technological restrictions on person-to-person communication and contact.[1] Many Web sites offer venues where participants can communicate around shared interests. Many of these Web sites provide venues for social networking where individuals can find and meet partners for sex.

Consequently, social networking sites (SNS) could facilitate the spread of STD.[2] For example, investigations in San Francisco revealed that gay, bisexual, and other men who have sex with men (MSM) newly infected with syphilis were meeting anonymous sex partners on the Internet.[3-5] Public health officials used screen names to trace sex partners on social networking Web sites identified by a patient with syphilis. Once contacted, these partners were encouraged to seek medical evaluation and treatment. Thus, as social networking technology played a role in syphilis transmission, it also facilitated the expansion of disease intervention efforts—here, partner services—to prevent and control those same infections.

Over time, Internet-based partner services (IPS) became increasingly more common in health departments.[6-11] The US Centers for Disease Control and Prevention (CDC), in collaboration with national partners, developed technical assistance and guidelines with detailed processes for planning and implementing IPSs.[12-15] For example, the National Coalition of STD Directors (NCSD) worked with grantees for overcoming barriers to implementing IPS and offered several webinars.[15] Most broadly, IPS could be construed as an operational expansion that simply allowed partner notification methods to keep abreast of innovation (the telephone was once novel as well). Because sex-seeking via the Internet and any subsequent STD spread is often associated with MSM-based sexual networks, IPS have often also become an avenue for disease intervention with MSM in particular.[16,17]

The purpose of this study was to learn how US STD prevention programs have implemented IPS protocols and are using IPS as a control strategy. We drew data from 2 sources: (1) IPS protocols submitted to the CDC in 2009 and, (2) a 2012 survey of staff from STD programs receiving CDC funding.

Methods

Because the basic premise for the study was to learn about prevention programs, we assessed US STD prevention programs receiving funds through the Comprehensive STD Prevention Systems cooperative agreement effective between 2008 and 2013.[18] The study denominator was the sum total of the 50 states, the District of Columbia, and 6 large metropolitan statistical areas (n = 57 project areas). Initial review of project areas required to plan and implement an IPS protocol revealed that 2 cities funded for STD prevention followed their state IPS protocols and 2 states referred IPS duties to a neighboring state, reducing the

expected number of unique IPS protocols to 53. For each project area, we ascertained 2009 HIV, primary and secondary syphilis, and gonorrhea morbidity (case counts and rates), as well as the 2009 federal STD prevention funding level (as a proxy for STD program resources).[19] Protocol review was accomplished through a checklist based on 18 components of an IPS protocol described in national guidelines published by the NCSD with CDC collaboration (Table 1). One individual performed this clerical task, with a second checking a selection of this work.

Project areas were only required to submit an IPS protocol in 2009, so we developed a 21-question survey to administer to STD disease intervention specialists (DIS) who routinely performed IPS in 2012. Our primary purpose was to gather information about protocols, policies, and procedures, data similar to the 2009 protocol review. STD program managers were asked to identify 1 or 2 individuals who regularly performed IPS. Of 44 staff members identified, 38 (86%) agreed to complete the survey. Thus, we had data relevant to project area IPS protocols from 2 time periods: 2009 and 2012. Because the 2012 data were collected from individuals, we also asked some individual-level outcomes: in particular, how many partners the respondent contacted via IPS (last month) and which IPS related techniques they were permitted to use. Protocol review and survey data from 2009 and 2012 were combined into 1 data set, with each project area representing a line of data. We analyzed data in SPSS v20.0. The institutional review board at Central Michigan University approved the study protocol.

Results

Protocol review (2009)

We recorded 38 unique protocols among the planning documents (representing 42 of 57 project areas: 74%). They ranged from 1 to 45 pages in length. Most protocols were from individual grantees and represented the areas for which they had jurisdiction (states, District of Columbia, or individually funded cities). Two state grantees provided an IPS protocol from a large city or metropolitan area within the state in lieu of a statewide protocol. In addition, 2 state grantees provided a statewide protocol *and* a protocol from a large city or metropolitan area within the state.

Provision of a protocol was not associated with 2009 funding level, but when compared with those without IPS protocols, those with IPS protocols were more likely to be in areas with larger populations (this analysis was restricted to the 50 states and District of Columbia) (M = 6.13 million vs 2.63 million people; t_{49} = 2.20; P = .032). Provision was not associated with 2009 infection rates (gonorrhea, syphilis, or HIV) but was associated with 2009 gonorrhea cases (M = 7279 vs 3518 cases; t_{49} = 2.59; P = .013) and syphilis cases (M = 395 vs 85 cases; t_{49} = 2.54; P = .014).

On the basis of components listed in NCSD guidance, we divided protocol content into 4 areas: basics (eg, definitions and authorities), staffing resources, procedures (eg, for contacting partners), and examples of practice. Most protocols included an introduction and staffing requirements (both 92%) and specific procedures for health department staff action and documentation of actions taken (Table 1). These included guidance for contacting

partners via IPS (84%) and for documenting that contact (82%). Less common were evaluation plans (29%) and instructions for interacting with nonhealth department entities (eg, engaging Web site providers: 16%). About two-thirds of protocols included ethics standards (68%), but only 18% referenced public health regulations or statues. Only 50% of protocols included IPS training requirements. Sites with evaluation plans typically had protocols with all or almost all possible components found in national guidance, but no other clear patterns emerged.

DIS survey (2012)

The 38 individuals who accessed the IPS survey represented 68% of the 57 grantees; 36 completed the full survey. Twenty-three (61%) indicated that they worked at a state health department, and 17 (54%) reported performing IPS at a local or city health department or at a community-based organization. Only five (13%) of those completing the survey reported working in an STD clinic, and 2 (5%) conducted IPS in a community-based organization or university health clinic.

Responses to the survey questions provided insight into how IPS protocols were implemented by Comprehensive STD Prevention Systems grantees (Table 2). Most respondents (78%) reported that staff conducting IPS received training. Almost all respondents (92%) reported that IPSs were offered for HIV and syphilis cases; more than half reported that IPSs were also offered for gonorrhea (74%) and even chlamydial infection (66%). The majority (94%) of respondents reported that seeking contact information and sending e-mail were permitted IPS activities, but only 44% reported having access to the Internet outside a public health setting. While 89% of those completing the survey said they were permitted to access SNS, only 75% reported that they could actually contact partners via SNS. Just under two-thirds (63%) had social networking profiles identifying their public health position.

We conducted a series of exact tests to see whether the program components or activities were associated with finding a greater number of partners (>8 per month) via IPS. Individuals in a program that permitted all 4 contact options (the first 4 items under activities in Table 2) were more likely to report notifying more than 8 partners via IPS (25% vs 0; $P = .034$). Due partly to small numbers and partly to high prevalence of many activities, we were unable to find clear distinctions between individual components, activities, and numbers of partners found through IPS. Training, evaluation planning, and the existence of a protocol were not associated with the chances of notifying a greater number of partners via IPS.

We examined the relationship between having an IPS protocol in 2009 and 2012 (27 areas had state-level data from both time points). In 2012, 22 of the 27 areas (81%) reported having a protocol. This figure included 8 areas that did not have a protocol in 2009. However, of the 5 areas reporting that they did *not* have a protocol in 2012, 4 had 1 protocol listed in their 2009 progress reports. When we examined training, we found similar results. Respondents from 20 of 27 areas (74%) in 2012 reported that they had received training. Thirteen of these 20 either had no protocol or no training requirements in their 2009 protocol (only 10 of 27 outlined training requirements in their 2009 protocols). Yet, among the 7

respondents from areas that reported no training in 2012, 3 were in areas with a 2009 protocol that indicated training requirements. Finally, 15 of 26 areas collected IPS data in 2012, 11 of which lacked a protocol or an evaluation plan in 2009. Of the 11 areas that did not collect data, only 2 reported having an evaluation plan in 2009.

The survey included 2 short-answer questions asking participants to identify barriers and methods for overcoming barriers. Responses were coded and analyzed for common themes. While 24 (67%) reported barriers to implementing IPS, only 18 (50%) of the respondents suggested ways to overcome barriers. Most respondents described a need for training in the use and application of wireless technologies and training to improve literacy among those who routinely communicate with sex partners on computers and smartphones. Several respondents suggested that IPS protocols include local public health policies regarding IPS implementation, including policies that address data security and confidentiality.

Discussion

As new communication technologies emerge, individuals will continue to use them to find potential sex partners. Public health programs appear to be following the same path in updating partner services. Our results show that, although many STD programs currently use the Internet to perform partner services, there is considerable variation in how they do so.

Approximately three-fourths of the STD programs receiving federal funding reported having an IPS protocol. Within protocols, content varied, more so in some domains than others. The most common elements across protocols were related to documentation of processes that are Internet analogies to traditional STD field activities (eg, finding contact information and contacting partners). These findings were replicated in the survey in which we found that nearly all health departments currently using the Internet allowed DIS to research the identity and location of anonymous sex partners and to send an e-mail to potentially exposed sex partners. This process has been evaluated in Texas, with findings indicating that fewer people respond to e-mail than to the phone, but that, once contacted, outcomes are similar.[20] These aspects of IPS are directly translatable from in-person or phone-based approaches used for partner notification.

On the contrary, as programs expand services into Internet domains, they encounter new SNS, web masters, and social networking providers: study results suggest that few programs have strategies for quickly identifying and engaging these potential partners for STD prevention and IPS. Because SNS service providers can facilitate access to contacts in an STD investigation, programs may need to strengthen processes for establishing partnerships with these providers. At least 1 recent evaluation shows that SNS use can facilitate partner notification.[21] Almost two-thirds of survey respondents reported that they had public health profiles on SNS, so the lack of documented protocol strategies reflected in this study may not adequately reflect the extent of the practice.

The second area in which both protocols and survey responses show variation among programs pertains to whether public health staff has the authority to practice IPS and the training and tools for the job. We found that DIS survey respondents authorized to use a

wider array of communication methods—e-mail, setting up profiles on SNS, texting—contacted more partners than respondents who could only look up contact information or send e-mails. That is, a protocol that grants authority for sending e-mails for partner notification is only using a part of the gamut of IPS approaches.

As for having the necessary training and tools, we found that less than half of survey respondents reported having Internet access while conducting field visits. Disease intervention specialists who are limited to conducting IPS in an office experience barriers that DIS with access to mobile technology (eg smartphones, tablets) are able to overcome. Lack of mobile communication technology in the field may limit DIS knowledge of communities at risk, an important aspect of STD disease intervention work.[22]

Limitations

The protocol checklist was developed using content found in national guidance for IPS. Because the CDC did not specifically require these elements, some sites may have varied in what they chose to report as well as what they actually practiced. We did not collect data on effectiveness beyond being able to collect or use data to associate some IPS activities with contacting a higher number of partners. Although the protocol data were comprehensive (ie, all 57 jurisdictions of interest), they date from 2009 to 2010 whereas the survey data are from 2012. These limitations point to future research and evaluation directions. Prospective analyses of implementation of tools and expansion of authorities could estimate the incremental value of adding or expanding IPS in STD prevention programs and then inform essential elements of IPS protocols. Research on how communication is affected by technology in the context of IPS would also help. Finally, although much of the IPS research is centered on MSM,[23,24] neither Internet-based sex partners nor IPS are exclusive to MSM. In the longer term, the efficient use of the Internet, an understanding of how individuals communicate on SNS, and knowledge of evolving communication technologies may significantly improve STD and HIV case-finding among MSM and other communities vulnerable to HIV and STD transmission.

Conclusions

These analyses provide a broad national-level base-line for research, evaluation, or program action; more needs to be done. Ongoing activities include a more detailed survey and updates to IPS guidelines. Overall, results suggest that a comprehensive approach to IPS is needed, including timely access to emerging technologies, augmented by appropriate tools and training. Protocols can ensure that IPS are truly integrated into partner services investigations as a disease intervention activity. Finally, if programs providing data are supported and involved in the research and evaluation questions that arise from the data, then the answers to those questions could be more readily integrated into program operations.[25,26]

Acknowledgments

The authors acknowledge and thank Jennine Kinsey for her assistance collecting and collating data from IPS protocols.

The findings and conclusions in this report are those of the authors and do not necessarily represent views of the Centers for Disease Control and Prevention.

REFERENCES

1. Theimann C, Theis F, Grady D, Brune R, Brockmann D. The structure of borders in a small world. PLoS One. 2010;5:e15422. doi:10.1371/journal.pone.0015422. [PubMed: 21124970]
2. Lewnard JA, Berrang-Ford L. Internet-based partner selection and risk for unprotected anal intercourse in sexual encounters among men who have sex with men: a meta-analysis of observation studies. Sex Transm Infect. 2014;90:290–296. [PubMed: 24518249]
3. Klausner JD, Wolf W, Fisher-Ponce L, Zolt I, Katz MH. Tracing a syphilis outbreak through cyberspace. JAMA. 2000; 284:443–446. [PubMed: 10904506]
4. Centers for Disease Control and Prevention. Internet use and early syphilis infection among men who have sex with men—San Francisco, California, 1999-2003. MMWR Morb Mortal Wkly Rep. 2003;52(50):1229–1232. [PubMed: 14681596]
5. Klausner JD, Kent CK, Wong W, McCright J, Katz MH. The public health response to epidemic syphilis, San Francisco, 1999-2004. Sex Transm Dis. 2005;32(10):S11–S18. [PubMed: 16205286]
6. Bull SS, McFarland M, Lloyd L, Rietmeijer C. The process of seeking sex partners online and implications for STD/HIV/AIDS prevention. AIDS Care. 2004;16(8):1012–1020. [PubMed: 15511733]
7. Centers for Disease Control and Prevention. Using the Internet for partner notification of sexually transmitted diseases—Los Angeles County, California, 2003. MMWR Morb Mortal Wkly Rep. 2004;53:129–131. [PubMed: 14981362]
8. Kim AA, Kent C, McFarland W, Klausner JD. Cruising the Internet highway. J Acquir Immune Defic Syndr. 2001;28:89–93. [PubMed: 11579282]
9. McFarlane M, Bull SS, Rietmeijer CA. The Internet as a newly emerging risk environment for sexually transmitted diseases. JAMA. 2000;284:447–448. [PubMed: 10904507]
10. McFarlane M, Bull SS, Rietmeijer CA. Young adults on the Internet: risk behaviors for sexually transmitted diseases. J Adolesc Health. 2002;31:11–16. [PubMed: 12090960]
11. Rietmeijer CA, Bull SS, McFarlane M. Sex and the Internet. AIDS. 2001;15:1433–1444. [PubMed: 11504965]
12. National Coalition of STD Directors. National Guidelines for Internet-Based STD and HIV Prevention: Accessing the Power of the Internet for Public Health. Washington, DC: National Coalition of STD Directors, 2012.
13. Centers for Disease Control and Prevention. Recommendations for partner services programs for HIV/AIDS infection, syphilis, gonorrhea, and chlamydial infection. MMWR Recomm Rep. 2008;57(RR-9):1–83.
14. National Association of State and Territorial AIDS Directors. TA meeting on reaching gay men using the Internet. http://www.nastad. Published 3 29,2009 Accessed November 21, 2014.
15. National Coalition of STD Directors. Webinars: Internet-based partner services. http://www.ncsddc.org/what-we-do/technical-assistance-training-and-health-equity-promotion/internet-partner-services. Accessed November 24, 2014.
16. Gratzer B. Community-based-organization-delivered Internet partner services: the Howard Brown Model (Chicago); Paper presented at: the NASTAD Technical Assistance Meeting “Reaching Gay Men Using the Internet”; 2009. http://www.nastad.org/resources.aspx?searchkey=Internet%20partner%20services.
17. Ehlman DC, Jackson M, et al. Evaluation of an innovative Internet-based partner notification program for early syphilis case management, Washington, DC, January 2007-June 2008. Sex Transm Dis. 2010;37(8):478–485. [PubMed: 20539261]
18. Centers for Disease Control and Prevention. Funding Opportunity Announcement: CDC-RFA-PS09-902. http://www.cdc.gov/od/pgo/funding/PS09-902.htm. Accessed October 12,2012.
19. Centers for Disease Control and Prevention. NCHHSTP Atlas. http://www.cdc.gov/nchhstp/atlas. Published 2013 Accessed November 24, 2014.

20. Vest JR, Valadez AM, Hanner A, Lee JH, Harris P. Using email to notify pseudonymous partners. Sex Transm Dis. 2007;34:840–845. [PubMed: 17621245]

21. Hunter P, Oyervides O, Grande KM, et al. Facebook-augmented partner notification in a cluster of syphilis cases in Milwaukee. Pub Health Rep. 2014;129(suppl 1):43–49. [PubMed: 24385648]

22. Potterat JR, Rothenberg R, Woodhouse DE, Muth JB, Pratts CI, Fogle JS II. Gonorrhea as a social disease. Sex Transm Dis. 1985;12:25–32. [PubMed: 4002091]

23. Charter R, Ware G, Luerssen S. A tale of six cities: partner s: partner services through the eyes of gay men and other men who have sex with men. Poster presentation: 2014 STD Prevention Conference; June 9-12,2014; Atlanta, GA.

24. Hogben M, Paffel J, Broussard D, et al. Syphilis partner notification with men who have sex with men: a review and commentary. Sex Transm Dis. 2005;32(suppl 1):S43–S47. [PubMed: 16205292]

25. Aral SO, Blanchard JF. The programme science initiative: improving the planning, implementation and evaluation of HIV/STI prevention programmes. Sex Transm Inf. 2012;88:157–159.

26. Hogben M, Hood J, Collins D, McFarlane M. Assessing the role of prevention partnerships in STD prevention: a review of comprehensive STD prevention systems progress reports. Sex Transm Inf. 2013;89:590–594.

Table 1

IPS Components Found in STD IPS Protocols[a]

Protocol Component (NCSD Guidelines)	n (N = 38)	%
Basic elements		
Introduction	35	92
Confidentiality and ethics standards	26	68
Legal authorities	7	18
Types of partner notification	20	53
Internet partner services/notification definitions	11	29
Resources		
Staffing requirements	35	92
Training requirements	19	50
Protocols		
IPS documentation processes	33	87
Step-by-step procedures	16	42
Protocols for contacting partners	32	84
Protocols for documenting contact	31	82
Protocols for creating screen names	18	47
Strategies for engaging Web site providers	6	16
Evaluation plans	11	29
Examples		
Sample confidentiality agreement	21	55
Sample IPS forms	18	47
Sample e-mail or text messages	32	84
Resource list for referrals	1	3

Abbreviations: IPS, Internet-based partner service; NCSD, National Coalition of STD Directors; STD, sexually transmitted disease.

[a]Protocol components are those described in the National Guidelines for Internet-Based STD and HIV/AIDS Prevention: Accessing the Power of the Internet for Public Health.

Table 2

IPS Program Activities in 2012

IPS Program Activities	n (N = 38)	%
Program resources		
Protocol	29	81
Training	28	78
IPS data collection (required for evaluation)	18	51
Internet access in field	16	44
IPS conducted for HIV/syphilis/gonorrhea	35/35/28	92/92/74
Protocols		
Staff may find contact information on the Internet	34	94
Staff may send e-mail to partners	34	94
Staff may access social networking sites	32	89
Staff may contact partners via social networking sites	27	75
Staff may have a profile on social networking sites	22	63

Abbreviation: IPS, Internet-based partner service.