

Internet-based site-specific interventions for syphilis prevention among gay and bisexual men

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Abstract *Recent increases in syphilis in gay men in urban areas in the US and Europe have been associated with men meeting new sex partners on the Internet in chat-rooms and at websites that facilitate partner meeting. In response to the syphilis epidemic in San Francisco, the San Francisco Department of Public Health partnered with a community-based organization, Internet Sexuality Information Services, Inc., to develop, implement and evaluate a broad range of innovative Internet-based prevention interventions including the creation of a website, individual online outreach, banner advertisements, chats, an educational site, message boards, warnings and an online syphilis testing program. This paper documents the varied success of these interventions with process measures and calls for greater emphasis on impact measures in the evaluation of these types of intervention.*

Introduction

In the summer of 1999, the San Francisco Department of Public Health (SFDPH) traced an outbreak of syphilis among gay men to a chat-room on America On Line (Klausner *et al.*, 2000). Subsequently, early syphilis increased in gay men in San Francisco by over 1000%, from 32 cases in 1999 to 446 cases in 2003 (STD Prevention and Control Services, 2004). During the epidemic, an increasingly large number of case patients met recent partners through the use of the Internet (Figure 1) (CDC, 2003). Currently, a majority of incident syphilis cases meet new partners online. Through routine syphilis case interviews, SFDPH identified the four most frequently mentioned Internet service providers where gay or bisexual men with syphilis met their partners: Gay.com, AOL, M4M4Sex and Craigslist.

To address the role of the Internet in facilitating sex partnering and the transmission of syphilis, SFDPH in collaboration with Internet Sexuality Information Services, Inc. (ISIS, Inc.) (San Francisco, CA) initiated several interventions aimed to increase awareness of the epidemic, knowledge about syphilis transmission and syphilis testing in persons at risk for

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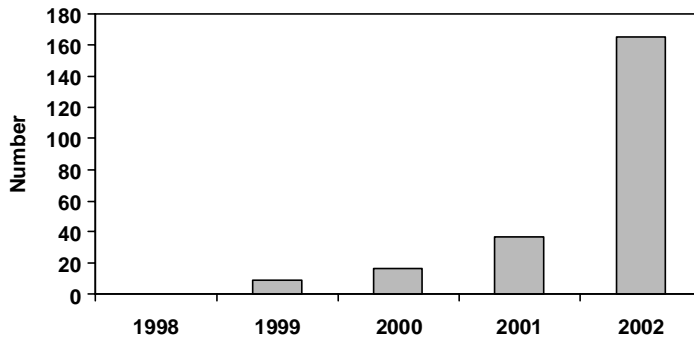


FIG. 1. Number of syphilis cases reporting Internet use for sexual partnering in San Francisco by year, 1998–2002.

infection. This paper describes these interventions and measures used to evaluate their potential impact.

Methods

Upon receipt of information from syphilis case-patients reporting specific Internet sites where they met recent sex partners, SFDPH contacted the principals at the Internet site—e.g. chief executive officer—requesting that the site collaborate with SFDPH to inform its members or patrons of the risk of syphilis infection. The Internet service provider, ISIS, Inc. and SFDPH staff then developed and implemented a range of interventions including: individual outreach, banner advertisements, chats, an educational site, message boards, warnings and online syphilis testing. Each intervention had an embedded and specific evaluation component enabling staff to track the number of participants, visitors, users, etc.

Individual outreach

SFDPH and ISIS, Inc. staff targeted one-on-one discussions via instant message and e-mail with persons online in San Francisco-specific chat-rooms on AOL, and via personal profiles on Craigslist (San Francisco) and M4M4Sex. Staff discussed the symptoms, transmission and treatment of syphilis and other STDs, including HIV infection, the location of testing sites, responded to questions about STDs and distributed syphilis fact sheets via e-mail. Staff also offered coupons available online as incentives to get tested for syphilis at the public STD clinic for a two-month period. A protocol and training manual for online outreach is available from ISIS, Inc. at training@isis-inc.org. SFDPH counted the number of outreach interactions and coupons redeemed.

Banner advertisements

SFDPH and ISIS, Inc. staff developed, pilot-tested and paid for the placement of animated banner advertisements (see Figures 2a–e) in local San Francisco-specific chat-rooms and personal ads areas of Gay.com and all member-created rooms (not geographic specific) on AOL. Gay.com and AOL marketing staff reported to ISIS, Inc. the estimated number of impressions and click-throughs per banner advertisement in a given period. The cost of banner advertisements ranged from about \$1,000 per month (Gay.com) to \$10,000 per month (AOL).



FIG. 2. Select banner advertisements.

Chats

SFDPH and ISIS, Inc. staff coordinated the time and promotion of the SFDPH-physician facilitated, real-time, one-hour, auditorium-style chats with online members of Gay.com. Participants entered a virtual auditorium and posted questions that a moderator selected to be

answered by the expert. The expert followed with a posted answer. The auditorium room software records the number of participants at any given time during the chat period. Health education experts at SFDPH and ISIS, Inc. reviewed and edited transcripts for clarity, removed any online personal identifiers of persons asking questions and posted transcripts afterwards on Gay.com.

Educational site

SFDPH and ISIS, Inc. staff created and maintained a physician-level question and answer service, 'Ask Dr. K' on Gay.com, with periodic promotion of the site to the Gay.com online community by Gay.com. A physician and nurse-practitioner reviewed questions, responded daily and made weekly counts of questions. The 'Ask Dr. K' site can be viewed at <http://www.gay.com/health/hiv/?sernum=1866>.

Message board forums

SFDPH and ISIS, Inc. staff answered member-generated questions and archived responses on Gay.com and Craigslist. Gay.com no longer has their message boards available. Craigslist message boards can be viewed at <http://forums.craigslist.org/?forumID=3300>. Staff counted the number of messages monthly to determine the use of the forums.

Site-specific page warning

SFDPH and ISIS, Inc. staff, in collaboration with Craigslist, created and posted at the men seeking men Internet page a written warning box about the risk of multiple sex partners and transmission of syphilis, with embedded links to a sexual health education website and bulletin board. The Craigslist warning can be viewed at <http://www.craigslist.org/cgi-bin/personals.cgi?category=m4m&SID=0>.

Online syphilis testing

In June 2003, SFDPH launched an online syphilis testing program, STDTest.org, where persons can request a syphilis test from the SFDPH. The request resulted in a physician-ordered laboratory requisition being made available to the requestor. The potential tester received a unique identification number (UIN), completed the required information, printed the requisition slip and visited a local private laboratory for specimen collection. The laboratory reported the results back to the SFDPH, who then posted the results containing the test result and UIN on a web page. The online testing site can be viewed at <http://www.stdtest.org>. The syphilis test requisition form included educational information about syphilis, its signs and symptoms and recommendations for further evaluation and screening.

The evaluation of the Internet-based response to the syphilis epidemic was conducted as part of routine public health activities in compliance with Department of Health and Human Service guidelines for human subjects protections.

Results

During two months in 2002, staff conducted 57 hours of outreach on three Internet sites; resulting in 212 interactions: 124 on AOL; 21 on Craigslist; and 67 on M4M4Sex. Thirty-five (16%) persons redeemed incentive coupons at the municipal STD clinic. There were nine banner ad campaigns shown over 33 million times on Gay.com and AOL. These ads resulted in 32,270 (0.1%) click-throughs to SFDPH websites with syphilis information. The cost per click through varied from about \$0.05 to over \$10 depending on the Internet site and placement within the site. Banners on the personal ads area on Gay.com had the highest number of click-throughs. The most frequently clicked campaign was 'Got a sore or a rash?' (0.14%) and the least frequently clicked was 'Remember the 70s?' (0.05%).

There were seven one-hour chats on Gay.com, with ten to 50 people in the chat-room at any one time, averaging 120 visitors per session, with 15 questions answered per hour. An estimated 840 persons participated in these seven sessions. Message boards on Gay.com were available for 30 weeks in 2002, with 46 questions answered. The Craigslist forum was available for 12 weeks in 2003; 175 questions were answered. The warning on Craigslist remains posted. The 'Ask Dr. K' site receives about 100 questions a week, with the most frequently asked questions archived and posted.

While from June 2003 to mid-January 2004 there were thousands of visitors to STDTest.org, only 140 completed syphilis testing. Of these 140, six (4.3%) new syphilis infections were identified: four infectious and two latent; five were in gay men, of whom one was HIV-positive, two HIV-negative and two unknown. All received medical evaluation and treatment.

Discussion

The initial response to the problem of Internet-based sex partnering and potential disease transmission was the development of a public health website (Klausner, 1999). However, the subsequent epidemic of syphilis and other sexually transmitted diseases associated with specific Internet sites required direct interventions within the Internet sites where partnering was occurring. Our evaluations demonstrated that some Internet-based interventions were more successful than others depending on the specific Internet site and the type of intervention. While widely advertised, the facilitated chats at Gay.com had fewer attendees than expected and attendees were from many different areas. The banner ads reached more persons than the facilitated chats and message boards. However, the content of chats and message boards is available for review later and can be accessed multiple times. The educational site regularly reaches a large number of persons both at low and high risk for syphilis from a wide variety of locations.

Because the implementation of the banner ads was not done in a randomized or controlled manner, the results must be interpreted cautiously. The variation in click-through rates by the type of banner ad suggests that the advertisement using clinical images was superior to the advertisements using humor ('70s is back') or more positive framing ('Like to suck'). One could infer that the target population was medically curious and did not avoid 'scary pictures' that were factual and straightforward. Honest communication in health promotion appeared to be valued.

One important consideration of online interventions is the difficulty in targeting the campaign to specific geographic populations like residents of San Francisco. The use of interventions like 'Ask Dr. K', or the online auditorium by non-San Francisco residents can consume local staff resources. However, because individual outreach workers can interact

with specific individuals online and work in specific geographically-defined chat-rooms, online outreach may be more successful in reaching the local target population. The quality of outreach can be variable in any setting and effective quality assurance procedures need to be in place including staff training, review of the transcripts of interactions and the sharing of effective and problematic online interactions.

The evaluation of the Internet-based interventions was substantially limited by the lack of measurements of specific impact on awareness, education and syphilis testing behavior. While the process measures—in particular the number of coupons redeemed, the number of outreach interactions and the number of click-throughs—support that the interventions were being utilized, there were no data available to determine how these measures compare to other interventions in other venues or how these interventions resulted in behavioral change or reduced risk for syphilis. In addition, we did not systematically ascertain the resident status of outreach participants. Routine collection of resident status may aid future evaluation efforts to determine the proportion of outreach participants in a specific geographically-determined target population.

Evaluation and research continues to measure the impact of Internet-based interventions using street- and clinic-based surveys of the target population. These data will provide additional insights into the success of Internet-based prevention as measured by awareness, education and syphilis testing behavior. While only a modest (140) number of persons utilized the online testing program for syphilis testing in the six-month period of evaluation, there was a relatively high case identification rate (>4%). Over time there will likely be a continued increase in utilization of this program as the target population become more aware and more comfortable with it.

A variety of recent studies have demonstrated the use of the Internet for sex partnering and its association with increased sexual risk behavior and STDs (Ashton *et al.*, 2003; Kim *et al.*, 2001; McFarlane *et al.*, 2002). It is imperative that disease control agencies and prevention organizations capitalize on the potential of the Internet to provide information, education and referrals to resources not easily available or not routinely accessed because of concerns of stigma or embarrassment. The 'Ask Dr. K' site provides easy access for populations to medical and prevention professionals yet its educational capacity is under-utilized given its limited placement and visibility.

Conclusion

We conducted Internet-based prevention for syphilis during a period of increasing Internet use for sex partnering and syphilis transmission. The evaluation measures support appropriate targeting and uptake by the at-risk population, however behavioral and disease impact measures were lacking. Given the difficulty restricting Internet-based prevention interventions to specific geographic areas, other communities with large increases in syphilis and/or other STDs, including HIV infection, should consider pooling limited resources to develop activities to reach a wide cross-section of Americans at risk for these infections.

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