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Recruitment by a Geospatial Networking Application for Research and Practice: The New York City Experience

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To the Editors

Social networking using mobile phone-based applications (“apps”) has become widespread, with 89% of Americans ages 18-29 reporting that they use social networking sites.[1] Men who have sex with men (MSM) utilize social networking sites at high rates, in part because they are able to form private, anonymous and relatively safe communities on these sites.[2,3] A variety of niche sites like Grindr, Manhunt, Adam4Adam and Scruff have web pages and mobile phone-based applications for use by MSM, with a large proportion of MSM using such applications to find sex partners.[2-8] Several studies have documented the success of using social networking for HIV prevention[9-11] and recruitment for HIV prevention research. [12-14] Recently, researchers have reported the use of mobile phone applications for education[15] and as a tool to recruit MSM for research studies.[16]

Here we describe our experience using a geospatial social networking application (Grindr) for recruitment into three different HIV prevention projects, including an HIV testing program, a social epidemiological survey (NYCM2M) and an HIV vaccine trial (HIV Vaccine Trials Network 505 (HVTN 505)).

The HIV testing program was part of a national testing initiative with the goal of identifying undiagnosed HIV-infected MSM, with a specific focus on Latino and black men.

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Community-based organizations in approximately 20 cities across the United States participate in the testing initiative under a contractual relationship with Abt Associates. The testing program in New York City was implemented in 2012. Participants received a one-time risk-reduction counseling session and a rapid HIV antibody test at one of our two clinic sites or in our mobile van at various locations. MSM were eligible to participate if they were male at birth, had sex with men sometime during their lifetime, and were at least 16 years old. Participants were compensated with a $25 gift certificate or cash.

NYCM2M, a social epidemiological study conducted between October 2010 and June 2013, aimed to describe associations between neighborhood characteristics and sexual behaviors and mental health among MSM. Participants completed a neighborhood locator questionnaire, an Audio Computer-Assisted Self-Interview (ACASI), and a social and sexual network questionnaire, and received risk reduction counseling and a rapid HIV antibody test.[17] Eligibility criteria for NYCM2M were male at birth, at least 18 years old, having anal sex with a man in the past three months, and communicating in English or Spanish. Participants received $50 for an NYCM2M visit.

HVTN 505 was a phase 2B vaccine efficacy trial in 21 sites in the United States that enrolled 2,504 MSM and transgender women who had sex with men from June 2009 to March 2013.[18] Participants were randomized to receive 4 injections of vaccine or placebo over 6 months and were followed every three months for two years to complete a medical history, physical exams, risk-reduction counseling, and HIV testing and to provide blood specimens. Men and transgender women were eligible if they were 18-50 years old, HIV uninfected, circumcised, and met behavioral risk criteria indicating risk of HIV acquisition. Compensation for HVTN 505 ranged from $25 to $75 per visit, depending on the type of visit.

Prior to placement of the advertisements on the geospatial social networking application, the three projects utilized a variety of recruitment methods. For the HIV testing program, a mobile van was taken to various community and public settings to recruit MSM. For the social epidemiologic study, venue-based time-space sampling was conducted.[17] Recruitment for the HIV vaccine trial was conducted by local print advertising, street, venue and event outreach, participant referrals and centralized national web recruitment, predominantly on sites such as Facebook and Adam4Adam.[19]

To recruit men using the geospatial social networking application, we placed advertisements for each project for one 24-hour period in each of the months indicated. (Table) All the ads were text only (no images) and visible once to every user who opened the application in New York City during the 24-hour time period (see ads in supplemental materials). When the users clicked the ad (clicks), they were taken to a web page to learn more about the specific project. For the HIV testing program and the social epidemiologic survey, potential participants were asked to complete a brief survey that determined preliminary eligibility, and if eligible, provide their contact information on a contact form (contacts). For the vaccine trial, the participants were sent from the ad directly to a contact form (contacts). Potential participants were then scheduled for a study visit at the research site. The social epidemiologic survey and vaccine trial were approved by the New York Blood Center

(NYBC) Institutional Review Board (IRB); for the vaccine trial, approval was also obtained from the Fred Hutchinson Cancer Research Center and Columbia University IRBs. Because the testing project was a service delivery program, the NYBC IRB designated the program as non-research.

The ad for the social epidemiology study received the highest number of clicks during a 24-hour period, (Table). The number of contacts received was similar for the testing program and the social epidemiology study but considerably lower for the HIV vaccine trial. The number of contacts needed to have a completed study visit was highest for the HIV vaccine trial, followed by the social epidemiology study and lowest for the testing program. With repeated ads for the social epidemiology study, the number of contacts per visit increased.

The ads had the greatest impact on the rate of completed study visits for the testing program and the social epidemiology study. Prior to the ad, the average number of completed testing encounters for the testing program was 23 per month; after the ad was placed, the average number of testing encounters increased to 127 per month – a 4.5 fold increase. Similarly, for the social epidemiology study, the average number of study visits completed per month more than doubled, from 99 per month to 239 per month. The ad did not have such an effect on the average number of completed vaccine trial visits (pre: 7 per month; post: 8 per month).

For the testing program, men recruited through the application were significantly younger than men recruited through the mobile van (median age = 27.9 vs. 31.1 years; p=0.002) and were less likely to be black compared to those recruited through the mobile van (31% vs. 51%; p<0.001). No differences were found in the percent of men who were Latino (44% vs. 47%; p=0.449).

For the social epidemiology study, no differences were found in the median age of men recruited through the application compared to men recruited through venue-based time-space sampling (p=0.508). Overall, 65% of the men recruited through the application were men of color compared to 67% of men recruited through venue-based time-space sampling (p=0.536) with a somewhat lower percentage of black men (20% vs. 24%; p=0.042).

To our knowledge, this is the first analysis to compare use of a geospatial social networking application across different types of HIV prevention programs and research studies. Whereas temporal variations may have explained the observed differences, the type of project (testing, epidemiologic, clinical trial) appears to have had a strong influence on the responsiveness to such ads, as illustrated by the number of contacts received and the study visits completed per contact. These differences in the success of the ads are likely a reflection of the distinctive features of each project, such as eligibility criteria, whether eligibility was assessed online, level of participant commitment, participant burden and perceived risks of participating, in particular for studies involving biomedical interventions such as vaccines.

We found that the geospatial social networking application ads resulted in enrollment of a high proportion of men of color, but with a lower proportion of black men enrolled compared to other approaches, similar to results reported by Burrell et al (2012).[16] The

difference was larger for the HIV testing program than for the social epidemiologic survey, in part due to the focus on black and Latino men in the HIV testing program efforts. An age difference was also observed for the men recruited for the HIV testing program through the geospatial social networking application, with a higher proportion of younger men, also similar to previous research.[16] However, we did not see such a difference for the social epidemiologic study. For future efforts, it will be important to document how methods of recruitment using such applications affect participation of subgroups of MSM, with attention to the type of study.

We achieved a high level of exposure using this particular geospatial social networking application, as demonstrated by the larger number of contacts received, making this approach very efficient. While this approach can have a large positive effect on reaching recruitment goals, sufficient staff are needed to quickly respond to all inquiries in a timely manner and to perform tasks of the project. Future recruitment efforts using this strategy need to consider the changing popularity of specific social networking sites, the appeal and freshness of the advertisements in particular to offset ad 'fatigue' over time, specific populations to be reached and the willingness of these sites to work with researchers to increase awareness of and to recruit for HIV prevention and research.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

1. Brenner, J. [Accessed 18-Nov-2013] Pew Internet: Social Networking. Pew Internet. 2013. http://pewinternet.org/Commentary/2012/March/Pew-Internet-Social-Networking-full-detail.aspx
2. Liau A, Millett G, Marks G. Meta-analytic examination of online sex-seeking and sexual risk behavior among men who have sex with men. Sexually transmitted diseases. Sep; 2006 33(9):576–584. [PubMed: 16540884]
3. Benotsch EG, Kalichman S, Cage M. Men who have met sex partners via the Internet: prevalence, predictors, and implications for HIV prevention. Arch Sex Behav. Apr; 2002 31(2):177–183. 2002. [PubMed: 11974643]
4. Bolding G, Davis M, Hart G, Sherr L, Elford J. Gay men who look for sex on the Internet: is there more HIV/STI risk with online partners? Aids. Jun 10; 2005 19(9):961–968. 2005. [PubMed: 15905678]
5. Horvath KJ, Rosser BR, Remafedi G. Sexual risk taking among young internet-using men who have sex with men. Am J Public Health. Jun; 2008 98(6):1059–1067. 2008. [PubMed: 18445804]

6. Landovitz RJ, Tseng CH, Weissman M, et al. Epidemiology, Sexual Risk Behavior, and HIV Prevention Practices of Men who Have Sex with Men Using GRINDR in Los Angeles, California. J Urban Health. Sep 15.2012 2012.
7. Mustanski B, Lyons T, Garcia SC. Internet use and sexual health of young men who have sex with men: a mixed-methods study. Arch Sex Behav. Apr; 2011 40(2):289–300. 2011. [PubMed: 20182787]
8. Chiasson MA, Hirshfield S, Remien RH, Humberstone M, Wong T, Wolitski RJ. A comparison of on-line and off-line sexual risk in men who have sex with men: an event-based on-line survey. Journal of acquired immune deficiency syndromes. Feb 1; 2007 44(2):235–243. 2007. [PubMed: 17179769]
9. Ybarra ML, Bull SS. Current trends in Internet- and cell phone-based HIV prevention and intervention programs. Current HIV/AIDS reports. Dec; 2007 4(4):201–207. [PubMed: 18366952]
10. Jenkins RA. Recruiting substance-using men who have sex with men into HIV prevention research: current status and future directions. AIDS and behavior. Aug; 2012 16(6):1411–1419. [PubMed: 22016329]
11. Du Bois SN, Johnson SE, Mustanski B. Examining racial and ethnic minority differences among YMSM during recruitment for an online HIV prevention intervention study. AIDS and behavior. Aug; 2012 16(6):1430–1435. [PubMed: 21986869]
12. Chiasson MA, Hirshfield S, Rietmeijer C. HIV prevention and care in the digital age. Journal of acquired immune deficiency syndromes. Dec; 2010 55(Suppl 2):S94–97. [PubMed: 21406996]
13. Bull SS, Lloyd L, Rietmeijer C, McFarlane M. Recruitment and retention of an online sample for an HIV prevention intervention targeting men who have sex with men: the Smart Sex Quest Project. AIDS Care. Nov; 2004 16(8):931–943. [PubMed: 15511725]
14. Raymond HF, Rebchook G, Curotto A, et al. Comparing internet-based and venue-based methods to sample MSM in the San Francisco Bay Area. AIDS and behavior. Feb; 2010 14(1):218–224. [PubMed: 19160034]
15. Muessig KE, Pike EC, Legrand S, Hightow-Weidman LB. Mobile phone applications for the care and prevention of HIV and other sexually transmitted diseases: a review. J Med Internet Res. 2013; 15(1):e1. [PubMed: 23291245]
16. Burrell ER, Pines HA, Robbie E, et al. Use of the location-based social networking application GRINDR as a recruitment tool in rectal microbicide development research. AIDS and behavior. Oct; 2012 16(7):1816–1820. [PubMed: 22851153]
17. Koblin BA, Egan JE, Rundle A, et al. Methods to measure the impact of home, social, and sexual neighborhoods of urban gay, bisexual, and other men who have sex with men. PloS one. 2013; 8(10):e75878. [PubMed: 24146785]
18. Hammer SM, Sobieszczyk ME, Janes H, et al. Efficacy Trial of a DNA/rAd5 HIV-1 Preventive Vaccine. N Engl J Med. Oct 7.2013
19. Im, S. [Accessed 19-Nov-2013] How Apple, Facebook and Google influence marketing of HIV vaccines. 2012. http://hvtn.org/meeting/ppt/may12/P3/Soyon_Im_MAY30_FINAL.pdf

Table

Type of study	Date of ads	Clicks	Contacts	Study visits/testing events	No. of contacts per completed visit
HIV testing program	Feb 2013	719	520	368	1.4
Cross-sectional social epidemiology (NYCM2M)	Dec 2012	1376	390	156	2.5
	Mar 2013	1338	561	182	3.1
	Apr 2013	1298	478	143	3.3
	May 2013	1282	516	141	3.7
Longitudinal HIV vaccine trial (HVTN 505)	Jan 2013	757	130	8	16.3

p<0.0001 comparing proportion of visits or testing events among contacts collected by type of study