

## Feasibility of using Grindr™ to distribute HIV self-test kits to men who have sex with men in Los Angeles, California

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**Abstract.** *Background:* Our study aimed to determine if Grindr™ is an effective means of reaching high-risk men who have sex with men (MSM) for HIV testing. In Los Angeles (LA), Black and Latino MSM have the highest rate of HIV infection, and Black MSM in LA are four-fold more likely than white MSM to not know they are infected with HIV. Those MSM are also major users of social networking apps. Grindr™ was used to provide access to free HIV self-testing. *Methods:* Free HIV self-test kits were advertised on Grindr™ from 13 October to 11 November 2014, consisting of 300 000 banner ads and three broadcast messages targeting a high-risk HIV population in LA. Eligible participants, Black or Latino, MSM and who were aged  $\geq 18$  years of age, were invited to take a survey 2 weeks after test delivery. *Results:* The website received 4389 unique visitors and 333 test requests, of which 247 (74%) were requests for mailed tests, 58 (17%) were for vouchers and 28 (8%) were for vending machines. Of the 125 participants, 74% reported at least one episode of condomless anal intercourse in the past 3 months, 29% last tested for HIV over 1 year ago and 9% had never been tested. *Conclusions:* It was feasible to use Grindr™ to distribute HIV self-test kits. Users are willing to provide personal information in exchange for a free self-test and found self-tests acceptable and easy to use. HIV self-testing promotion through apps has a high potential to reach untested high-risk populations.

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### Introduction

Mobile online social networking is becoming an increasingly common means for people to meet sex partners. The use of mobile networking applications (apps) among young adults between 18 and 29 years of age in the USA is nearly universal, with 89% using some form of social networking app in 2013.<sup>1</sup> Young men who have sex with men (MSM) are at a disproportionate risk of acquiring HIV infection, particularly Black and Hispanic men,<sup>2</sup> and are also frequent users of social networking apps.<sup>3</sup> One of the most commonly used apps for social and sexual networking among MSM is Grindr™, with over 5 million users in 192 countries.<sup>4</sup> Grindr™ users also have a high rate of sexual risk behaviour including condomless anal intercourse.<sup>5,6</sup> Few studies have investigated the use of apps to promote HIV testing and linkage to care interventions. Those studies have demonstrated that young, Black and Hispanic MSM, groups with low proportions of

HIV serostatus awareness, find apps to be an acceptable source for sexual health information.<sup>6,7</sup>

The United States Centers for Disease Control and Prevention recommends 3–6 month HIV testing for all MSM.<sup>8</sup> Among one study of Grindr™ users in New York City, nearly one-third had not been HIV tested within the past year. In a second study in Los Angeles, 17% reported not being HIV tested within the past year.<sup>5</sup>

Engaging Black and Hispanic MSM in HIV testing has been challenging because of the high prevalence of HIV-related stigma and the limited utilisation of primary medical care.<sup>9–12</sup> HIV oral-fluid self-testing might reduce the stigma associated with seeking HIV testing, improve access to testing and prevention services and increase population-level serostatus awareness rates.<sup>13</sup> Although concerns about test kit affordability have been raised, HIV self-tests have been found to be acceptable in high-risk communities.<sup>14,15</sup>

In early 2014, we piloted a program using Grindr™ to promote free access to HIV self-test kits. Participants could choose kits delivered through the US mail, vouchers redeemable at Walgreens® community pharmacies or access a local vending machine.<sup>16</sup> Obtaining kits through the mail was the preferred means of test access. To further our understanding of how best to deliver free tests, we conducted a second pilot study to streamline the availability of mailed tests and offer another test access modality; a commercial website to facilitate order fulfilment and shipping. As part of that second pilot study, we conducted a survey of young Black and Hispanic MSM to characterise test utilisation and outcomes including test positivity and linkage to care.

## Methods

We placed daily continual banner advertisements and weekly full screen notifications that appeared upon app opening on Grindr™ between 13 October and 11 November 2014, for free HIV self-test kits (Fig. 1). The campaign consisted of 300 000 banner ad impressions and three broadcast notifications targeting Grindr™ users in high HIV incidence geographic areas in Los Angeles County; West Hollywood and Central Los Angeles. By clicking on the advertisement, users were linked to a study website (<http://freehivselftests.weebly.com>) where they could choose how to obtain a free HIV self-test

kit through three delivery methods. Those options included obtaining a single use promotional code for ordering and shipping on Walgreens.com®, receiving an electronic voucher redeemable at 12 local Walgreens® community pharmacies or receiving a four-digit personal identification number for use at a smart vending machine (UCapIt; Des Moines, IA, USA) located in the parking lot of the Los Angeles Gay and Lesbian Center.<sup>17</sup> We counted advertisement click-throughs, website utilisation and mode of test request. Internet protocol addresses were tracked to remove duplicate visits to the website and only unique visitors were included in the reported statistics.

Those who visited the study website were invited to participate in a survey on test utilisation. Eligible participants were Black/African-American, Hispanic/Latino MSM, 18 years of age or older.

Survey participants were asked to complete an online survey (SurveyMonkey®, Palo Alto, CA, USA) at the time of initial test request and a second survey 2 weeks later reporting testing experiences regarding test procurement, test utilisation and test outcomes following test delivery. SurveyMonkey® includes an email function and participants were sent reminder emails to complete the second survey. No incentives beyond the free HIV test were provided to participants. Analyses were conducted using Microsoft Excel® (Microsoft Corporation, Redmond, WA, USA), specifically to calculate the average number of website visitors per day. Website traffic and visitor information could be tracked using Google Analytics (Google, Mountain View, CA, USA) and directly imported into Microsoft Excel®.

## Results

During the 4-week free HIV self-test campaign on Grindr™, the study website received 4389 unique visits, an average of nearly 150 visits per day. Those visits resulted in 333 (7.6%) unique test requests. Of the 333 test requests, 247 (74%) were requests for promotion codes to obtain mailed test kits on Walgreens.com®, 58 (17%) were for vouchers redeemable at Walgreens® community pharmacies and 28 (8%) were for a personal identification number to utilise the vending machine.

Of those who requested tests, 125 participated in the online survey and 56 (45%) completed the follow-up survey 2 weeks following their HIV self-test request. Of the 125 baseline survey participants, 74% reported at least one episode of condomless anal intercourse within the past 3 months. Twenty-nine per cent of the participants had last tested for HIV over 1 year ago and 9% had never been tested for HIV (Table 1). Among the 56 follow-up survey participants, all reported using the test; 2 (4%) participants reported testing positive for HIV infection. Both reported seeking confirmatory HIV testing and medical care following the positive test result. Both reported initiating combination antiretroviral therapy with medications consistent with USA-recommended first-line therapy. We further analysed the survey participants' responses to ease of use of the self-test kit and found that 52 (93%) of the 56 found the test kit to be easy or very to use, and 43 (77%) preferred or somewhat preferred the self-test kit over conventional testing in a clinical setting (Table 2).



Fig. 1. HIV self-test kit advertisement on Grindr™.

**Table 1. HIV self-test program study participant characteristics (*n* = 125), Los Angeles, 2014**  
Data represent *n* and percentage

Baseline survey response	Total	
Age (years)		
18–30	79	63%
31–40	38	30%
41+	8	6%
Race/ethnicity		0%
Black/African American	27	22%
Hispanic/Latino	98	78%
Last HIV test		0%
<6 months	39	31%
6–12 months	39	31%
>12 months	36	29%
Never	11	9%

**Table 2. HIV self-test program testing experiences survey (*n* = 56), Los Angeles, 2014**  
Data represent *n* and percentage

Follow-up survey response	Total	
Ease of use of self-test kit		
Very easy	33	59%
Easy	19	34%
Neutral	2	4%
Hard	2	4%
Very hard	0	0%
Reported self-test result		0%
Negative	54	96%
Positive	2	4%
Testing preferences		0%
Prefer self-test kit	35	63%
Somewhat prefer self-test kit	8	14%
Neutral	6	11%
Somewhat prefer a clinic	3	5%
Prefer a clinic	4	7%

## Discussion

By using a popular social networking app, we provided HIV self-test kits to a high-risk population in high HIV incidence areas in Los Angeles. We identified newly diagnosed HIV-infected individuals who were subsequently linked to care. In a 4-week study period, the website had over 1000 unique visitors per week, with ~1 in 13 visitors making a test request. Among Grindr™ users, there was a clear interest in HIV self-testing.

The privacy of self-testing and the control users have over when and where to test are attributes that could help overcome HIV-related testing stigma, one of the major barriers to testing and serostatus awareness among disenfranchised groups and minority populations. As one study of MSM using Grindr™ conducted in Los Angeles demonstrated, the rate of untested Grindr™ users in LA was significant (one in six had not tested in the past year).<sup>5</sup> We found an even higher proportion of infrequent or never been tested HIV testers (38% of survey participants reported either having not tested in the past year or have never been tested). That difference in testing frequency

might be related to the differences in study populations. In the 2012 study, approximately one-third of participants were Latino and a large percentage were White (42%). In contrast, our study population excluded Whites, who are known to more frequently test for HIV infection.<sup>18</sup>

Since the introduction of the OraQuick® (OraSure Technologies, Bethlehem, PA, USA) HIV self-test kit in 2012, there are new opportunities for individuals to test privately without facing potential HIV-related testing stigma. Other authors have suggested that many at-risk individuals may prefer a private HIV self-test due to a decreased experience of stigma.<sup>19</sup> Black MSM experience high rates of stigma related to gay identity and HIV, and cite stigma as a major barrier to HIV testing.<sup>20</sup> HIV-related and gay-related stigma in Black and Latino communities is especially high,<sup>9,21</sup> making it important to develop solutions that reduce stigma and increase willingness to test for HIV infection. In high-risk populations including Black and Hispanic MSM,<sup>9–12</sup> we found that a significant majority of self-test users preferred to self-test versus test in a clinical setting. While the reason for testing preference was not determined in our study, we hypothesise that testing preference primarily relates to convenience and privacy issues. Our previous research has shown that lack of privacy and stigma are major barriers to HIV testing.<sup>20</sup> HIV self-test delivery through the mail also overcomes barriers of transportation and time required for an individual to present to a clinic setting. In keeping with that hypothesis, we found in our study that most of the users preferred mailed tests. That is most likely related to privacy and convenience, but may also be an extension of Grindr™ users' preferences for anonymity and online transactions. We further found that approximately half of the eligible study participants were willing to participate in a follow-up survey to provide personal information about sexual risk behaviour, HIV testing experiences and outcomes, including test result status and linkage to care.

HIV self-testing promotion through social networking apps has a high potential to reach untested high-risk populations.<sup>3</sup> We found that it was feasible to use a smartphone app to distribute HIV self-test kits. Grindr™ users were willing to provide personal information (name, address, etc.) when obtaining a free HIV self-test. Participants found self-test kits acceptable, easy to use and preferred test delivery by mail using a commercial website. The main limitations of our pilot study were the brief study period and small study population limiting the generalisability and precision of our estimates. Only 56 participants of the 333 (17%) who requested free tests provided completed follow-up surveys. Only two of those (56, 4%) MSM tested positive for HIV infection, highlighting the need for larger studies. While cost analysis was not part of this study, the identification of two HIV-positive participants may also indicate that additional measures must be taken to increase survey response. A clear next step for future research is linking our high-risk population to direct interventions to prevent the spread of HIV, in addition to increasing serostatus awareness. Such activities should include the provision of Pre-Exposure Prophylaxis (PrEP), as well as other sexually transmitted diseases (STD) testing. In summary, our study showed that social networking apps might be effective tools for the provision of HIV self-test kits to high-risk populations,

that Black and Latino MSM preferred obtaining self-test kits through the mail and that those who test positive can be linked to care.

### Conflicts of interest

None declared.

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