FINAL REPORT:
OREGON'S TECHNOLOGY-BASED
DEMONSTRATION PROJECT

December 2015

Table of Contents

Background

This report describes the outcomes and lessons learned from the Oregon Health Authority (OHA), HIV Prevention Program's Category C demonstration project. This initiative supported the Oregon State Health Improvement Plan priority area of protecting the population from communicable diseases.[1]

The project involved multiple technology-based initiatives (Table 1) funded under the PS12-1201 cooperative agreement between the Centers for Disease Control and Prevention (CDC) and OHA. Funding supported planning and start-up (2012), implementation (2013–2014) and evaluation and close-out activities (2015). These efforts were undertaken by OHA, YTH (youth+tech+health, formerly known as Internet Sexuality Information Services), HIV Alliance, Cascade AIDS Project (CAP) and the Multnomah County Health Department (MCHD).

Table 1. Oregon Category C Initiatives

Initiative	Intended outcomes	Strategies	Geographic area	Implemented by
Oregon Reminders	Increased frequency of HIV testing among high-risk populations Improved medication adherence among people living with HIV (PLWH)	Text/email/voice reminders to test for HIV/STDs every 3–6 months Text/email/voice reminders to take medications daily and refill prescriptions monthly	Statewide	YTH, OHA, CAP, HIV Alliance, MCHD
Structural changes to websites and mobile applications (apps)	Increased access to sexual health messages and information in online settings	Outreach to businesses and organizations to request the addition of HIV prevention badges or widgets on their websites	Statewide	CAP, HIV Alliance, OHA
Social Networks Strategy HIV Testing	Identification, linkage to care, and initiation of partner services for persons with previously undiagnosed HIV infection	Online and in-person peer recruitment for HIV testing, text communication with recruiters, online recruitment training videos	Lane, Douglas, Josephine, Coos, Curry, Jackson, Lake, Klamath, Marion and Lincoln counties Multnomah, Clackamas and Washington counties	HIV Alliance MCHD/CAP

Oregon Reminders

<u>Summary of initiative</u>

Oregon Reminders is a mobile health service that offers text, email and voice messages to support the health of people at risk for or living with HIV. The primary objectives of Oregon Reminders are 1) to increase the frequency of HIV testing among populations most impacted by HIV and 2) to improve medication adherence among people living with HIV. Anyone who visits www.OregonReminders.org can:

- Set up reminders for HIV/STD testing every three to six months
- Set up reminders to take medications one or more times per day
- Set up reminders to refill prescriptions monthly
- Receive weekly health tips via text message
- Choose English or Spanish messages
- Select the channel for the reminders: email, text or voice message
- Select standard messages or customize messages (e.g., "Refill meds and pay rent!")
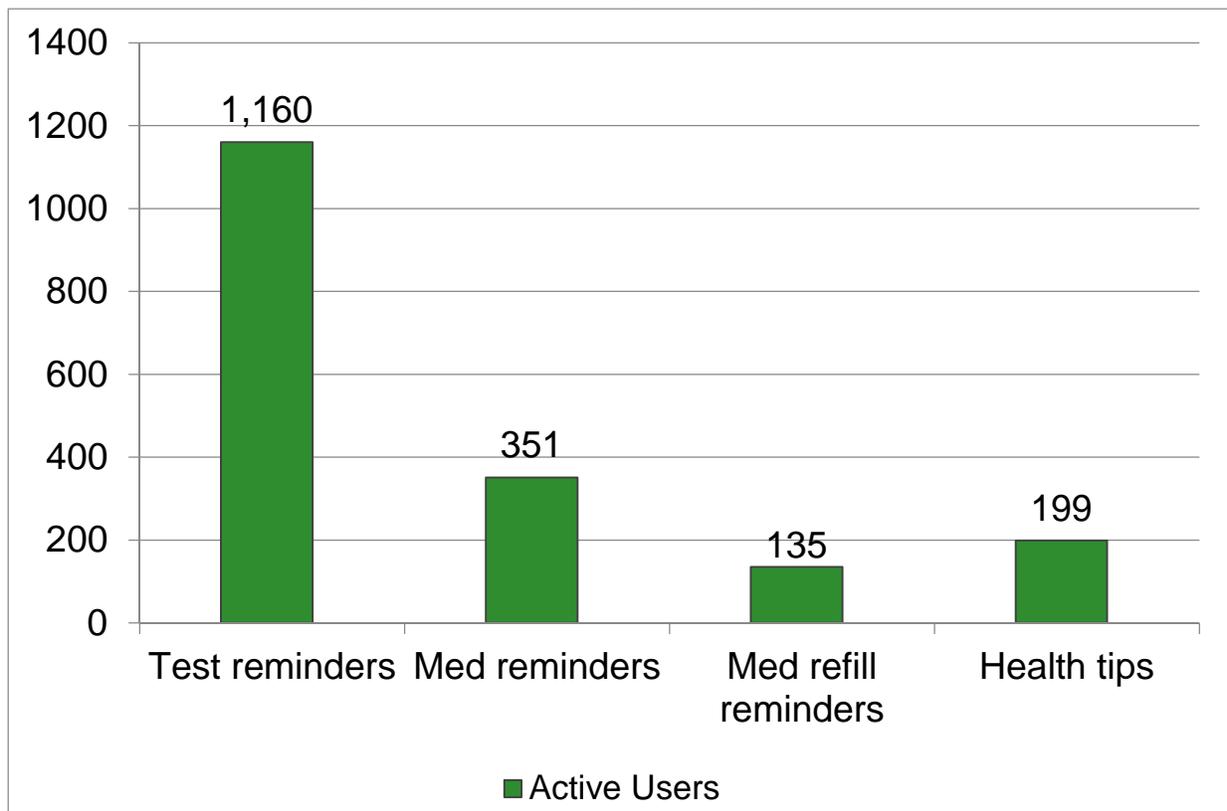
YTH developed and managed a marketing campaign promoting Oregon Reminders. The campaign included online advertisements and print materials. CAP, MCHD, and HIV Alliance distributed print materials, helped enroll clients, and promoted use of the service by other health care providers and community-based organizations. CAREAssist (Oregon's AIDS Drug Assistance Program) and the OHA HIV Community Services Program also played important roles promoting the service. The service, website and marketing materials were developed using community input (e.g., discussion groups, usability testing).

<u>Outcomes</u>

Usage

As shown in Chart 1, Oregon Reminders had 1,812 active users through July 2015. HIV/STD test reminders were the most popular service selected (1,160 users), followed by medication reminders (351 users), health tips (199 users), and prescription refill reminders (135 users). The total number of users is less than the sum of users receiving each type of message since some users are receiving multiple types of messages.

Chart 1. Oregon Reminders Usage through July 2015, N=1,812

As shown in Table 2, more than 90% of users who signed up for testing, medication, or refill reminders remained enrolled in the reminder services. Notably, none of the 304 users who customized or wrote their own medication or test reminder messages (20% of all medication and test reminder enrollees) opted out (data not shown in Table 2). This finding suggests that message customization may help meet users' unique needs and foster a sense of ownership in the intervention.

In contrast, approximately one in three (37%) users who signed up for weekly health tips opted out. These data suggest users were more interested in receiving reminders to help them achieve their health goals than in receiving health education. Health tip messages were evaluated during two community discussion groups with both HIV-negative and HIV-positive Oregonians (N=18) in May 2015. Each participant received a list of nine health tips and marked their favorite and least favorite tips. No clear themes emerged in the responses.

Table 2. Opt out rates, January 2013–July 2015

Oregon Reminders service	Ever enrolled	Opted out
HIV/STD test reminders	1,174	14 (1%)
Mediation reminders	375	24 (6%)
Prescription refill reminders	146	11 (8%)
Health tips	314	115 (37%)

Trends

Text message (69%) was the most popular message delivery method selected, followed by email (26%) and voice recording (5%). The service generated significant interest from other geographic regions, with nearly 1 in 3 (32%) users reporting a non-Oregon ZIP code.

Reach

Through July 2015, OregonReminders.org had more than 232,317 visits; 95% of those visits were from a mobile devices (e.g., smart phone, tablet computer).

Social marketing

Oregon Reminders was promoted through a comprehensive social marketing campaign involving:
- Online advertisements;
- An online video;
- Emails promoting the service;
- Posters and cards; and
- Email signatures

Online advertisements (e.g., banner ads, pop-up ads) were placed on a variety of websites and apps (e.g., Facebook mobile, Grindr, Scruff), largely targeted to gay, bisexual and other MSM. Through July 2015, online ads for Oregon Reminders had 43,604,093 impressions (the number of times an ad appeared on a person's screen). These impressions resulted in 296,873 clicks (0.7% of all impressions), which directed viewers to OregonReminders.org to learn more and sign up.

To encourage peer-to-peer promotion of Oregon Reminders via social media and email communication, an online video was created and made available at OregonReminders.org and YouTube.com, and an automated and customizable email describing the service was made available for people to send to others via the campaign website. From 2012 through July 2015, the online video was viewed 1,156 times and 97 emails were sent to people through the Oregon Reminders website.

Through July 2015, approximately 68,000 cards and 1,300 posters promoting Oregon Reminders were distributed. OHA, local health departments and community-based organizations displayed or distributed these materials to clients and community members who might benefit from the service. Oregon Reminders cards were included in mailings to every CAREAssist (Oregon's AIDS Drug Assistance Program) client in the state.

Pictured above: Examples of online and print materials.

CAREAssist (Oregon's AIDS Drug Assistance Program) and HIV Community Services (Ryan White Part B) Program staff added messages and hyperlinks promoting Oregon Reminders in their email signature blocks. Specifically, contact information in the signature block was followed by the statement, "Never forget your meds again. Sign up for Oregon Reminders."

Survey data

Methods: We conducted a survey of Oregon Reminders users to assess the service's efficacy and user satisfaction. The survey's primary goals were to evaluate the extent to which Oregon Reminders influenced users' HIV testing behaviors and medication adherence. The survey also was designed to help us understand users' demographic characteristics, sexual and drug use risk behaviors, methods of learning about the service, and willingness to discuss HIV with others.

Oregon Reminders users were emailed requests to participate in an anonymous, voluntary, online survey administered through Survey Monkey. Users were grouped by the month they enrolled and invited to complete a survey at 6, 12 and 18 months following their month of enrollment. At each interval, the survey questionnaire remained identical (see Table 1). Users who only signed up for weekly health tips and did not elect to receive HIV test, medication, or prescription refill reminders were not invited to participate. For this analysis, responses to the 6-, 12-, and 18-month surveys were aggregated.

Participants: Through August 15, 2015, 1,077 users received at least one request to complete a survey, and 115 surveys were completed. The majority (58.2%) of survey responses were obtained following requests sent six months after enrollment (12 months after enrollment, 31.8%; 18 months, 10.0%). Responses were fairly evenly split among users receiving HIV/STD test reminders (55.5%) and users receiving HIV medication or prescription refill reminders (44.5%). Most respondents (88.2%) completed each measure on the survey. While the demographic characteristics of respondents were varied, the majority identified as white (non-Hispanic) men who have sex with men between 18–49 years of age (Table 3).

Results: Of the respondents receiving HIV medication or prescription refill reminders, nearly three-fourths reported that Oregon Reminders helps them remember to take their medication (72.3%) and that they miss dose of their medication less frequently since signing up (70.2%). Of the respondents receiving HIV/STD test reminders, the majority (57.1%) indicated that Oregon Reminders helps them remember to test for HIV/STDs, and one in eight (12.5%) reported testing for HIV more frequently since signing up.

Most respondents reported behaviors that could increase the risk of HIV/STD acquisition or transmission. The majority of respondents receiving HIV/STD test reminders and respondents receiving HIV medication or refill reminders reported sex without a condom in the past 30 days (70.4% and 54.3%, respectively) and many reported being drunk or high during sex in the past 30 days (37.0%, 8.7%). A small proportion reported injecting non-prescription drugs (3.7%, 6.5%). These findings suggest Oregon Reminders might be reaching a population for whom viral suppression and knowledge of HIV status are particularly important.

Many respondents appear to be fairly engaged around the topic of HIV. The majority (78.8%, 76.1%) reported talking with someone about HIV at least once in the past 30 days, with approximately one-third (32.6%, 39.1%) talking about HIV six or more times.

While respondents reported hearing about Oregon Reminders in a variety of ways, HIV service providers/staff were most commonly cited (90.4%, 41.3%). Other response options selected by a sizeable proportion of respondents include websites (13.5%, 15.2%), social media (13.5%, 15.2%), online ads (5.8%, 17.4%), and friends/partners/family (5.8%, 15.2%).

Limitations: Survey data are self-reported and subject to recall bias. Users who completed the survey may not be representative of all users. Users enrolled for at least 12 months received more than one survey request. Thus, is possible that some users may have responded to multiple survey requests and be over-represented in the findings. It is possible that respondents might be implementing a variety of other HIV prevention strategies (e.g., treatment as prevention, serosorting, pre-exposure prophylaxis), which we did not assess.

Table 3. Oregon Reminders User Survey Responses through August 15, 2015

	Respondents receiving HIV/STD test reminders (N=64)		Respondents receiving HIV medication or prescription refill reminders (N=51)		All respondents (N=115)	
	N	%	N	%	N	%
What is your gender?						
Male	45	75.0%	32	64.0%	77	70.0%
Female	14	23.3%	16	32.0%	30	27.3%
Transgender – Male to Female	0	0.0%	0	0.0%	0	0.0%
Transgender – Female to Male	1	1.7%	2	4.0%	3	2.7%
Other (please specify)	0	0.0%	0	0.0%	0	0.0%
What is your age?						
Younger than 18	0	0.0%	0	0.0%	0	0.0%
18–34	32	53.3%	14	28.0%	46	41.8%
35–49	22	36.7%	26	52.0%	48	43.6%
50 and older	6	10.0%	10	20.0%	16	14.5%
What is your race?						
American Indian / Alaska Native	2	3.1%	1	2.0%	3	2.6%
Native Hawaiian / Pacific Islander	2	3.1%	0	0.0%	2	1.7%
White	47	73.4%	44	86.3%	91	79.1%
Asian	4	6.3%	1	2.0%	5	4.3%
Black / African American	2	3.1%	1	2.0%	3	2.6%
Don't Know	4	6.3%	2	3.9%	6	5.2%
Other (please specify)	3	4.7%	2	3.9%	5	4.3%
What is your ethnicity?						
Hispanic/ Latino	2	3.4%	4	8.0%	6	5.5%
Not Hispanic or Latino	52	88.1%	43	86.0%	95	87.2%
Don't Know	4	6.8%	2	4.0%	6	5.5%
Other (please specify)	1	1.7%	1	2.0%	2	1.8%
Does Oregon Reminders help you remember to test for HIV/STDs?						
Yes	32	57.1%	NA	NA	NA	NA
No	20	35.7%	NA	NA	NA	NA
Unsure	4	7.1%	NA	NA	NA	NA
Since you signed up for Oregon Reminders, which of the following options best describes how often you get tested for HIV?						
More frequently	7	12.5%	NA	NA	NA	NA
Less frequently	12	21.4%	NA	NA	NA	NA
About the same as before signing up	37	66.1%	NA	NA	NA	NA
Does Oregon Reminders help you remember to take your medication?						
Yes	NA	NA	34	72.3%	NA	NA
No	NA	NA	13	27.7%	NA	NA

Unsure	NA	NA	0	0%	NA	NA

Since you signed up for Oregon Reminders, which of the following options best describes how often you have missed a dose of your medication?

More frequently	NA	NA	2	4.3%	NA	NA
Less frequently	NA	NA	33	70.2%	NA	NA
About the same as before signing up	NA	NA	12	25.5%	NA	NA

How did you hear about Oregon Reminders?

Website	7	13.5%	7	15.2%	14	14.3%
Poster	3	5.8%	1	2.2%	4	4.1%
Brochure	3	5.8%	5	10.9%	8	8.2%
Online ad	3	5.8%	8	17.4%	11	11.2%
Print ad	2	3.8%	2	4.3%	4	4.1%
HIV service providers/staff	47	90.4%	19	41.3%	66	67.3%
Friend/partner/family	3	5.8%	7	15.2%	10	10.2%
Email	1	1.9%	6	13.0%	7	7.1%
Online video	0	0.0%	1	2.2%	1	1.0%
Social media	7	13.5%	7	15.2%	14	14.3%
Other (please specify)	2	3.8%	4	8.7%	6	6.1%

In the past 30 days, how many times have you talked with someone about HIV?

0	11	21.2%	11	23.9%	22	22.4%
1–5 times	24	46.2%	17	37.0%	41	41.8%
6–10 times	5	9.6%	6	13.0%	11	11.2%
11–15 times	2	3.8%	3	6.5%	5	5.1%
16 or more times	10	19.2%	9	19.6%	19	19.4%

How many times have you had sex without a condom in the past 30 days?

0	16	29.6%	21	45.7%	37	37.0%
1–5 times	24	44.4%	14	30.4%	38	38.0%
6–10 times	9	16.7%	5	10.9%	14	14.0%
11–15 times	0	0.0%	3	6.5%	3	3.0%
16 or more times	5	9.3%	3	6.5%	8	8.0%

How many times have you been drunk or high during sex in the past 30 days?

0	34	63.0%	42	91.3%	76	76.0%
1–5 times	15	27.8%	3	6.5%	18	18.0%
6–10 times	3	5.6%	0	0.0%	3	3.0%
11–15 times	0	0.0%	0	0.0%	0	0.0%
16 or more times	2	3.7%	1	2.2%	3	3.0%

Are you a guy who has sex with guys?

Yes	42	77.8%	33	71.7%	75	75.0%
No	12	22.2%	13	28.3%	25	25.0%

Do you ever inject non-prescription drugs?

Yes	2	3.7%	3	6.5%	5	5.0%
No	52	96.3%	43	93.5%	95	95.0%

Cost analysis

We conducted a cost analysis of Oregon Reminders, the largest component of our Category C project. The analysis sought to:

1) Describe costs for supporting Oregon Reminders during the implementation phase of the project (2013–2014)
2) Assess the cost per message
3) Assess the cost per enrollee
4) Compare costs by year

Methods: A cost analysis tool was developed in Microsoft Excel by the California STD/HIV Prevention Training Center. Cost data were entered by staff from OHA and YTH. Cost data were obtained from contracts, expenditure reports, and staff estimates of Category C funds spent on Oregon Reminders (i.e., excludes Social Networks Strategy HIV testing programs and structural changes in online settings).

Results: Oregon expended the majority of its Category C award on Oregon Reminders in 2013 ($334,621 of $466,000) and in 2014 ($324,478 of $470,925). Through December 2013, 1,197 people had ever enrolled in the service, and a total of 69,501 text, email and voice messages were delivered to users during the calendar year. Through December 2014, 1,968 people had ever enrolled, and a total of 324,377 messages were delivered during the calendar year. The majority of the messages delivered were daily medication reminders (90% in 2013, 93% in 2014). Messages sent less frequently included health tips (8% of messages in 2013, 3% in 2014), HIV/STD test reminders (1% in 2013, 4% in 2014) and prescription refill reminders (1% in 2013, 0.4% in 2014).

The cost per message sent to Oregon Reminders users declined from $4.81 in 2013 to $1.00 in 2014. The cost per enrollee declined from $279.55 in 2013 to $164.88 in 2014. Of the expenses related to Oregon Reminders, we estimated that nearly half were allocated to management (45% in 2013, 48% in 2014), more than one-third to marketing and promotion (40% in 2013, 39% in 2014), and the remaining (15% each year) to indirect costs. Management activities include oversight related to grants, contracts and technical operations, and monitoring and evaluation. Marketing costs include paid media (e.g., online advertising), as well as staff time developing marketing materials, presenting to stakeholders (gaining organizational "buy-in"), and encouraging enrollment (outreach to community members and "inreach" to existing clients).

The analysis includes some limitations. While this analysis included all people who had ever enrolled in and used Oregon Reminders in 2013 (N=1,197) and 2014 (N=1,968), it is notable that 86 of these enrollees opted out in 2013 and 67 opted out in 2014. The reasons for their discontinuation are unknown. We expect that, for some users, the reminders selected became unnecessary over time (e.g., after a routine was established or after a change in lifestyle or HIV status). However, the vast majority (92%) of users who have ever signed up remain enrolled in the service.

We observed notable declines in the cost per message and the cost per user between 2013 and 2014. With ongoing growth in the number of users, we expect that the cost per message and the cost per user will continue to decline in future years.

<u>Lessons learned</u>

Oregon Reminders yielded a number of important lessons:
- Text and email are desirable methods of health communication;
- While sexual health promotion efforts have historically focused on providing education to encourage healthy behaviors, there is a need and interest in tools that help people actually implement those behaviors;
- Face-to-face interaction is important, even for a technology-based initiative. Staff providing HIV prevention and care services played a key role promoting Oregon Reminders;
- Enthusiastic staff are critical to successful recruitment and enrollment;
- Offering clients options to tailor an intervention to meet their unique needs might help increase interest and motivation to change behavior;
- A mobile-friendly website is important;
- Community input during intervention development and implementation is a key component of quality assurance and improvement;
- With a steady increase in the number users, there is a corresponding decline in the cost per message and cost per user over time;
- Technology-based services that are available to anyone with access to the internet or a cell phone can help fill gaps in service by geographic location.

<u>Sustainability</u>

OHA has identified alternative funding that will support YTH to maintain, promote and further develop Oregon Reminders. This funding will help ensure that users enrolled through 2015 continue to receive reminder messages and that interested persons who might benefit from the service can continue to enroll. Recent and future Oregon Reminders services will include PrEP reminders, syphilis testing reminders and reminders related to CAREAssist services (Oregon's AIDS Drug Assistance Program). We will continue to monitor progress related to Oregon Reminders, which is now part of Oregon's State Health Improvement Plan.[1] Moreover, YTH has received funding to develop similar reminder systems for other jurisdictions (e.g., Colorado).

Structural changes to websites

<u>Summary of initiative</u>

We encouraged external organizations and businesses that do not traditionally focus on sexual health to embed a badge (i.e., image with a link to a website) or a widget (i.e., a small application that can be embedded) promoting HIV prevention on their websites or mobile applications (apps). This effort sought to mobilize the business community and implement online structural changes. These structural changes were intended to increase access to sexual health information in online settings where users may not initially be seeking such information.

CAP and HIV Alliance developed and promoted HIV prevention web badges. OHA staff contacted adult dating and sex-seeking apps used by MSM to encourage them to share the HIV services locator widget developed by AIDS.gov.

Pictured above: A badge developed by HIV Alliance directing users to www.HIValliance.org when clicked (left) and a badge developed by Cascade AIDS Project directing users to www.OregonReminders.org when clicked (right).
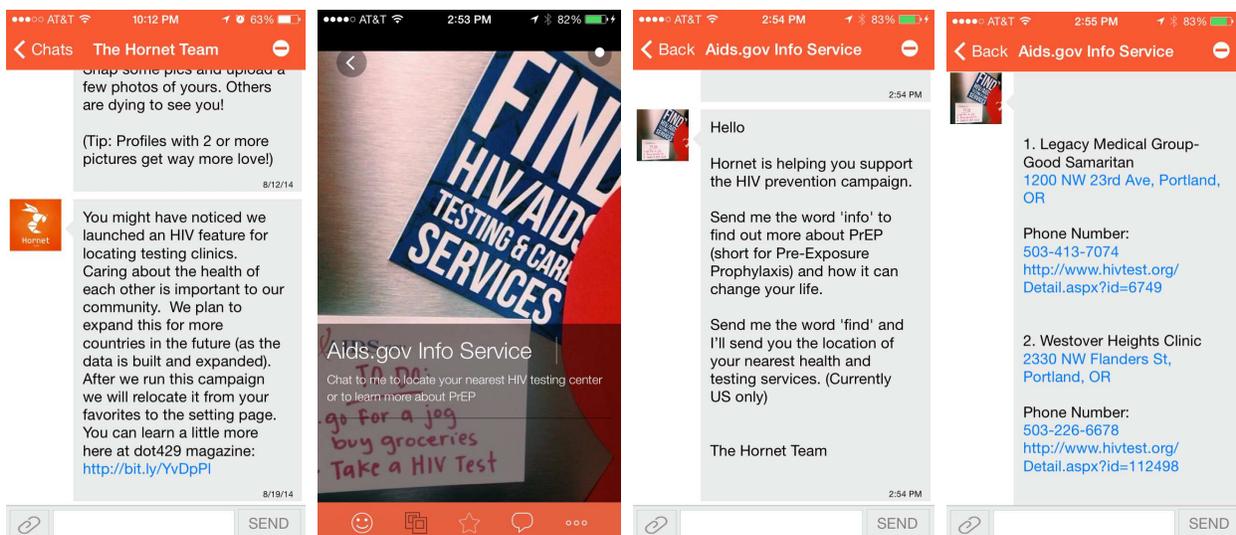
Outcomes

During the reporting period, we approached 124 non-traditional partners and an additional 62 traditional partners. Traditional partners were defined as those with a mission or services that support sexual health or sobriety (e.g., health departments, health care organizations, substance abuse treatment agencies), and non-traditional partners were defined as those with a mission or services that do not focus on supporting sexual health or sobriety (e.g., dating apps, bars, sex clubs). Of the 124 non-traditional partners approached, 19 (15%) added an HIV prevention badge or widget to their website or app. Of the 62 traditional partners approached, 4 (6%) added an HIV prevention badge or widget to their website. Many of the organizations and businesses that added an HIV prevention badge or widget had an interest or focus on health or on lesbian, gay, bisexual, transgender and queer (LGBTQ) populations (Table 4).

Table 4. Businesses/organizations that added an HIV prevention widget to their website

Business/organization	Website
Compassion Center	www.compassioncenter.net
Waterfall clinic	www.wfall.org/
Community Alliance of Lane County	www.calc.orghttp://myemail.constantcontact.com/CALC-Calendar--Film--The-Invisible-War--Play--Pouring-Tea-and-more--.html?soid=1102478490200&aid=n_rdLBWKA4c
Soromundi	http://wbdzinr.wix.com/soromundi
Downtown Initiative for Visual Arts (DIVA)	divacenter.org
Queer Eugene	www.queereugene.com
UOUT (LGBTQ student group)	http://lgbt.uoregon.edu
Oregon Safe Schools Coalition	www.oregonsafeschools.org/services
Southern Oregon LGBTQ Resource Center	http://sou.edu/wrc/advocacy
Lotus Rising	http://lotusrisingproject.org/lrp
Maslow Project	http://maslowproject.com/
Oregon Coast Pride	http://www.oregoncoastpride.com/
Imperial Sovereign Court of the Willamette	http://iscwe.wordpress.com
Lane County	www.lanecounty.org
Sponsors Inc	www.sponsorsinc.org
Gay and Lesbian Archives	info@glapn.org
Wesley Center	http://www.uowesleycenter.blogspot.com
CODA (treatment center)	http://www.codainc.org/resources/
Coalition of Community Health	http://staging.coalitionclinics.org/health-care-resources/sexual-health

Clinics	
Virginia Garcia Memorial Health Center	http://virginiagarcia.org/for-patients/new-patient-guide/community-resources/
Queer Eugene	info@queereugene.org
Linn County Public Health Department	http://www.co.linn.or.us/health/public_health/ph_all_links.htm
Hornet	http://gthrnt.com/ (download app to see the widget)

Notably, Hornet, an app used by gay and bisexual men with approximately four million users worldwide (about one-third in the U.S.), agreed to integrate the AIDS.gov HIV services locator widget. OHA staff connected the owner of Hornet with AIDS.gov staff to assist with this process. In August 2014, Hornet users were notified that they could now use the app to obtain information about HIV testing locations, as well as PrEP. The owner of Hornet reported that, approximately one month after integrating the AIDS.gov widget, nearly 350,000 Hornet users had used the widget at least once.

Pictured above: Screenshots of HIV testing and PrEP information on the Hornet app.

We were pleased with our success rates, given that structural change is often modest and incremental. We were somewhat surprised that the success rate was higher for non-traditional partners (15%) compared to traditional partners (6%). However, we believe it is possible that many of the non-traditional partners (e.g., businesses) had more staff and technical expertise to add a widget or badge to their website than many of the traditional partners (e.g., non-profit organizations).

In addition to the online structural changes described above, some partners chose to post a badge on their social media accounts instead of their website. While the reach of social media posts are limited to a brief time period (e.g., a couple days), we believe these efforts helped extend the reach of prevention messages and represented notable support from partners.

<u>Lessons learned</u>

This project was time intensive, but yielded significant gains, including new partnerships that may prove beneficial during future initiatives. Strategies that helped lead to the addition of a badge or widget include repeated outreach to partners and making code easily available for web managers to copy and paste. Moreover, some partners were motivated to add a badge to improve the look of their websites. Businesses and organizations that focus on health or on LGBTQ populations may be particularly likely to support sexual health promotion initiatives.

<u>Sustainability</u>

While this activity was discontinued, we expect that much of the online sexual health content added during the demonstration project period represents structural change that will be sustained. After a badge or widget has been added to a website or mobile application, it will remain available until the business decides to remove it.

Social Networks Strategy

<u>Summary of initiative</u>

HIV Alliance, MCHD and CAP (an MCHD subcontractor) implemented Social Networks Strategy (SNS) HIV testing programs that targeted MSM and utilized technology for recruitment and training. MCHD developed SNS promotional and training videos, which were available online, and used text messaging to communicate with and support recruiters on an ongoing basis. During the project period (September 2012 through December 2014), there were 36 recruiters, many of whom were recruited from venues serving high-risk populations (e.g., STD clinic, Grindr). Of the 417 network associates tested, 113 (27%) were recruited online or via text message, suggesting technology has been a helpful tool for SNS recruitment. An additional 47 (11%) were recruited through multiple communication methods, which might have included online or text message communication, and 62 (15%) had no recruitment method captured.

<u>Outcomes</u>

Of the 417 network associates tested for HIV, five tested HIV-positive; four were newly diagnosed and one was previously diagnosed. The newly diagnosed positivity rate found in the Category C-funded SNS projects (1%) was higher than that of all Category A-funded HIV testing during 2013 and 2014 (0.6%) (Table 5); the rate was higher in the Portland area (1%) than in the Eugene area (0.2%) (data not shown). Approximately two-thirds of clients tested through both Category C (70%) and Category A (63%) programs reported previously testing for HIV. However, among those who reported a previous HIV test, the mean number of years since last test was more than three times greater among Category C-funded SNS clients (7.4) than Category A clients (2.2 years).

Table 5. Characteristics of clients tested for HIV, Category C vs. Category A

Characteristic	Category C (SNS network associates, Sept. 2012–Dec. 2014)	Category A (All clients, 2013–2014)
HIV test events	417	18,333
Previously tested for HIV (ever)	291 (70%)	11,479 (63%)
Mean time since previous HIV test (excluding those with no previous test)	7.4 years	2.2 years
Newly diagnosed*	4 (1%)	110 (0.6%)
Newly-diagnosed & linked to HIV medical care	3 (75%)	68 (61%)
Previously diagnosed*	1 (0.2%)	16 (0.1%)
Previously-diagnosed out of medical care & linked or re-engaged in HIV medical care	1	12
HIV-positive persons** that were interviewed for Partner Services	3	84
Partners elicited from these HIV-positive persons	9	91 (25 were previously diagnosed with HIV)
Partners elicited that were tested for HIV	5	34
Newly-diagnosed confirmed HIV-positive test events from these elicited partners	1	7

*Includes unconfirmed preliminary positive test events plus confirmed positive test events

**Includes confirmed newly-diagnosed and previously-diagnosed HIV positive persons

Lessons learned

SNS yielded a number of important lessons:
- SNS is a valuable strategy for engaging people who might otherwise delay HIV testing.
- Online and text message communication can aid in SNS recruitment.
- SNS recruiters who are enthusiastic about the project and have a strong belief in the importance of testing tend to be most successful in recruiting network associates, regardless of network size.
- Identifying people with undiagnosed HIV infection is increasingly challenging, even with strategies such as SNS. We believe this is due to Oregon's progress addressing HIV in recent years. Both the estimate of the proportion of people with undiagnosed HIV infection and the annual number of reported HIV cases in Oregon have declined.

Sustainability

At this time, HIV Alliance and MCHD do not have plans to continue implementing SNS HIV testing programs. However, SNS is an option for contractors and subcontractors receiving Category A funding for HIV testing. OHA will continue to discuss the potential use and outcomes of this strategy with contractors.

Conclusion

This project affirmed the importance of considering how mobile communication, websites and apps can be used to reach large audiences and improve health outcomes for populations at high risk for HIV and for people living with HIV. While this initiative focused on the use of technology, our successes can be partially attributed to more traditional communication methods, such as face-to-face and phone conversations. Just as clients' online and in-person experiences are interconnected, there should be synergy between traditional and technology-based services. Public health interventions must exist in both realms, in a complementary and coordinated manner.