WORLD 2015 STI & HIV CONGRESS
BRISBANE AUSTRALIA 13 - 16 SEPTEMBER

AUSTRALASIAN HIV&AIDS CONFERENCE 2015
16-18 SEPTEMBER 2015 BRISBANE AUSTRALIA

New Technologies and Innovative Methods to Facilitate HIV Prevention, Testing and Care

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UCLA FIELDING SCHOOL OF PUBLIC HEALTH

World STI and HIV Congress, Brisbane
Thursday Sept 17th, 2015
9:30-10:00 am

Disclosures

- Dr. Klausner is a faculty member of the University of California Los Angeles
- Dr. Klausner is a board member of YTH, Inc, non-profit
- Dr. Klausner is an unpaid medical advisor for Healthvana.com
- In the past 12 months:
  - Research funding or donated supplies from the US NIH, US CDC, AIDS Healthcare Foundation, Gilead Sciences, Hologic, Alere, Standard Diagnostics, Chembio, Cepheid and MedMira
  - Speakers bureau: None
  - Advisory board: None
  - Consultant activities: AIDS Healthcare Foundation, Flora Biosciences, Sentient Research, AIDS Project Los Angeles

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The Future of Healthcare is Mobile

People under 25
- Account for 50% of all new HIV and STD cases

↔

We live our lives on our mobile phones.

This is where we must engage patients.

↔

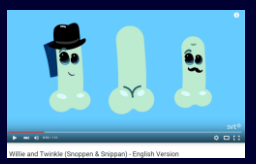
Information Communication Technology

Primary Prevention

- Exposure reduction
  - Education and health promotion
    - Delaying sexual debut and partner reduction
  - HIV and STD serosorting
  - Condom use

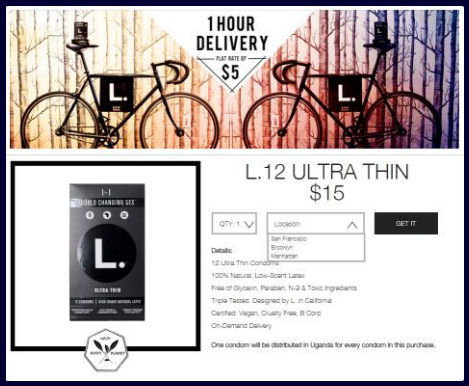
YouTube

>1900 views



>124,000 views

>589,000 views



ThisisL.com

HIV and STD status sorting

Social network apps
Self-report

Healthvana
Verified

Slide courtesy of Sandi McCoy, UC Berkeley

Playing it Safe—online game

Buzdugan and Grimball, UC Berkeley

Funding: BMGF and ISP Mexico

Hairdressers in Zambia were recruited to educate their customers on HIV/AIDS prevention.

Photo courtesy of Maria Ashraf

Society for Family Health (SFH)

Dr. Lisa Hightow-Weidman, UNC

http://www.povertyactionlab.org/evaluation/role-incentives-distribution-public-goods-zambia
https://www.caktusgroup.com/blog/2015/06/19/epic-allies-featured-mhealth-duke-2015-conference/

I Got Your Back

- A gamified intervention to encourage MSM aged 18-35 to:
  - recruit members of their social network
  - adopt safer sexual behaviors
  - regularly screen for HIV/STIs, and
  - stay free of HIV and other STIs.
- The intervention will include **prizes** and **lotteries** for material and non-material **rewards**, with probabilities that are affected by participants' individual and collaborative actions (via a **point system**), with participants' rankings displayed on a **leaderboard**

McCoy et al. NIMH 1R34MH106359-01A1

Berkeley School of Public Health

AHF

UCLA CHIPTS

Secondary Prevention

- Testing

HIV & STD Testing Locator

- Custom curated data across country
- Approx. 224K pageviews
- 2 min 25 seconds average time on site

HIV testing locators

HIV self-testing

US FDA approved, July 2012

16

Vending Machines

19

OPEN ACCESS Freely available online PLOS ONE

Acceptability of Using Electronic Vending Machines to Deliver Oral Rapid HIV Self-Testing Kits: A Qualitative Study

Sean D. Young[1*], Joseph Daniels[2], ChingChe J. Chiu[1], Robert K. Bolan[3], Risa P. Flynn[3], Justin Kwok[1], Jeffrey D. Klausner[2]

1 Department of Family Medicine, University of California Los Angeles, Los Angeles, California, United States of America, 2 Program in Global Health, University of California Los Angeles, Los Angeles, California, United States of America, 3 Los Angeles Gay and Lesbian Center, Los Angeles, California, United States of America

Abstract

Introduction: Rates of unrecognized HIV infection are significantly higher among Latino and Black men who have sex with men (MSM). Policy makers have proposed that HIV self-testing kits and new methods for delivering self-testing could improve testing uptake among minority MSM. This study sought to conduct qualitative assessments with MSM of color to determine the acceptability of using electronic vending machines to dispense HIV self-testing kits.

Materials and Methods: African American and Latino MSM were recruited using a participant pool from an existing HIV prevention trial on Facebook. If participants expressed interest in using a vending machine to receive an HIV self-testing kit, they were emailed a 4-digit personal identification number (PIN) code to retrieve the test from the machine. We followed up with those who had tested to assess their willingness to participate in an interview about their experience.

Results: Twelve kits were dispensed and 8 interviews were conducted. In general, participants expressed that the vending machine was an acceptable HIV test delivery method due to its novelty and convenience.

Discussion: Acceptability of this delivery model for HIV testing kits was closely associated with three main factors: credibility, confidentiality, and convenience. Future research is needed to address issues, such as user-induced errors and costs, before scaling up the dispensing method.

PLOS One July 2014

20

Table I: Vending Machine and HIV Test Kit Usage Behavior

Have you tested for HIV before?	8 Yes 0 No
How far do you live from the vending machine site?	Range: 5-15 miles Mode: 5 miles
What time of day did you use the vending machine?	Morning = 4 Afternoon = 4
Was using the vending machine a private experience?	Yes =5 No = 3
When did you use the test kit after receiving it?	Day of receipt = 6 Within a week = 2
Do you feel you need to test again after using the kit?	Yes = 0 No = 8
How much should someone pay for the test kit when buying it from a vending machine?	Range: $5-$25 Mode: $5

21

Sex Clubs

- High-risk population that 'cruise' for anonymous sex
- LA County requires sex clubs to provide HIV testing and education

McGrath M et al, CROI pre-meeting, 2015

23

Barriers to Sex Club Testing

- Sex club culture
- Client risk and demographics vary
- Busy hours at night versus tester availability during the day

McGrath M et al, CROI pre-meeting, 2015

24

Vended HIV Home Test Kit

Vending Machines

- Self-contained unit
- Remote monitoring
- Instructions posted
- Private area

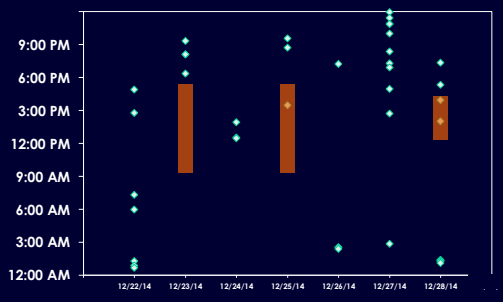
Initial Concerns

- Cost of HIV home test kits
- Emptying the vending machine
- Conflict with existing testing programs
- Home test kit window period
- Result anxiety
- Gateway to more comprehensive testing

Results

- Scatterplots by week
- Tester schedule (orange blocks):
  - Tuesday 9am-5pm
  - Thursday 9am-5pm
  - Sunday 12pm-4pm

Plot of vended tests vs. staff tests by time and date

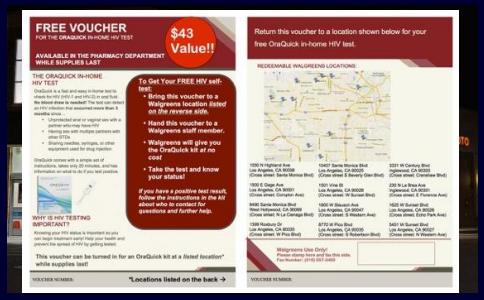


Results summary over 7 weeks

- Vending machine
  - 1,176 hours
  - 312 tests
- Traditional testers
  - 64 hours
  - 58 tests

Vouchers

July – November 2013



32

33

Marlin et al. BMC Public Health 2014, 14:1226
http://www.biomedcentral.com/1471-2458/14/1226

BMC Public Health

RESEARCH ARTICLE Open Access

Piloting an HIV self-test kit voucher program to raise serostatus awareness of high-risk African Americans, Los Angeles

Robert W Marlin*, Sean D Young[2], Claire C Bristow[1], Greg Wilson[3], Jeffrey Rodriguez[4], Jose Ortiz[5], Rhea Mathew[3] and Jeffrey D Klausner[1]

Abstract

Background: Up to half of all new HIV cases in Los Angeles may be caused by the 20-30% of men who have sex with men (MSM) with unrecognized HIV infection. Racial/ethnic minority MSM are at particularly high risk for being sero-unaware and due to stigma and poor healthcare access might benefit from novel private, self-testing methods, such as the recently FDA-approved OraQuick® In-Home HIV Test.

Methods: From July-November 2013, we undertook a pilot study to examine the feasibility of a voucher program for free OraQuick® tests targeting African American MSM in Los Angeles. We determined feasibility based on: (1) the establishment of a voucher redemption and third-party payment system, (2) the willingness of community-based organizations (CBOs) to disseminate vouchers, and (3) the collection of user demographics, test and linkage-to-care results with an anonymous telephone survey.

Results: We partnered with Walgreens® to create a voucher and third-party reimbursement system for free OraQuick® tests. Voucher distribution was divided into two periods. In total, 641 vouchers were supplied to CBOs: 274 (42.7%) went to clients and of those 53 (19.3%) were redeemed. Fifty (18.2%) of the 274 clients were surveyed: 44 (88%) were African American, 39 (78%) reported being likely to repeat voucher use, 44 (88%) reported reviewing pre-test information, and 37 (74%) the post-test information. Three (6%) of 50 survey respondents reported newly testing HIV-positive of whom all (100%) reported seeking medical care. Two withheld their results, both of whom also sought medical care.

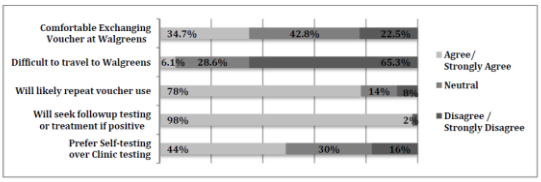
Survey of voucher redeems, n = 49

Survey Response For those that redeemed the voucher	Total (n=49)
Reported Test Result	
Positive	3* *(6.1%)*
Negative	44 *(89.8%)*
Not disclosed	2** *(4.1%)*
Activities Before taking the test:	
Engaged in Pre-Test Activity	44 *(89.9%)*
Activities After Taking the Test:	
Engaged in Post-Test Activity	37 *(75.5%)*

* All 3 reported linkage to care ** Both reported linkage to care

35

Figure 1: Opinions in HIV In-Home Self-Test Voucher Use Survey Attitudes (N=50), Los Angeles, 2013



36

Geosocial Networking Apps

Source: iTunes.com

Slide courtesy of Dr. Ian Holloway, UCLA

37

Social media promotion 1
April-May 2014

banner ad

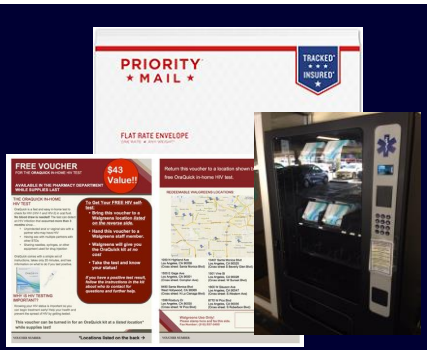
38

Social media promotion 1
April-May 2014

39

ISSTDR 2015, P17.08

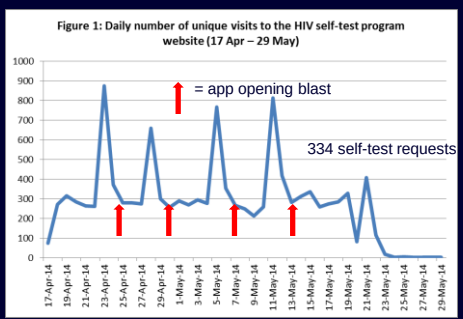
40



ISSTDR 2015, P17.08

41

11,939 website visits in 6 weeks



ISSTDR 2015, P17.08

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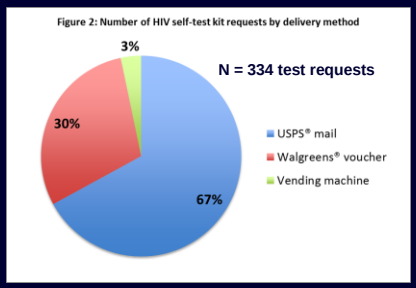
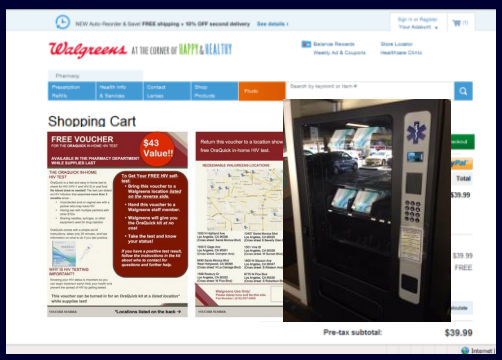


Table 1b: HIV self-test program testing experiences survey (N=56), Los Angeles, 2014

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		
Negative	54	96%
Positive	2	4%
Testing preferences		
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%

Social media promotion-2
October-November 2014



HIV self-testing summary

- Pilot projects using vending machines, vouchers and US mail delivery
  - 732 HIV self-tests delivered
    - 51 vending, 210 vouchers, 471 mail
  - Of 159 surveyed, 6 (3.8%) newly HIV+
  - 100% linked to care

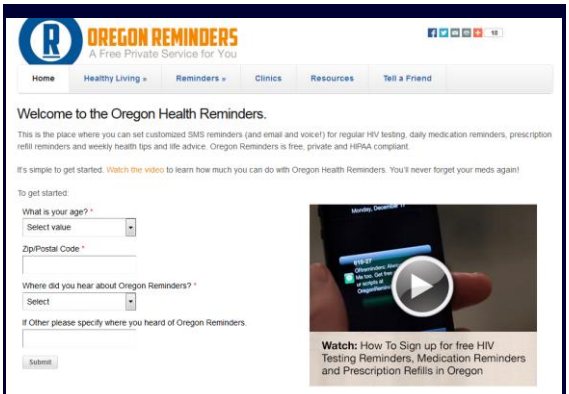
Adherence and Retention

Effects of a mobile phone short message service on antiretroviral treatment adherence in Kenya (WelTel Kenya1): a randomised trial

Richard T Lester, Paul Ritvo, Edward J Mills, Antony Kariri, Sarah Karanja, Michael H Chung, William Jack, James Habyarimana, Mohsen Sadatsafavi, Mehdi Najafzadeh, Carlo A Marra, Benson Estambale, Elizabeth Ngugi, T Blake Ball, Lehana Thabane, Lawrence J Gelmon, Joshua Kimani, Marta Ackers, Francis A Plummer

	SMS group (number [%])	Control group (number [%])	RR (95% CI)*	p value
Primary outcome				
Intention-to-treat analysis†				
Self-reported adherence (>95%)	168 (62%)	132 (50%)	0·81 (0·69–0·94)	0·006
Viral suppression (<400 copies per mL)	156 (57%)	128 (48%)	0·85 (0·72–0·99)	0·04
Complete-case analysis‡				
Self-reported adherence§	168 (91%)	132 (91%)	1·00 (0·94–1·07)	0·94
Viral suppression¶	156 (75%)	128 (66%)	0·88 (0·77–1·00)	0·047
Secondary outcomes				
Total attrition (missing)	53 (19%)	61 (23%)	1·24 (0·82–1·89)	0·31
Loss to follow-up	17 (6%)	27 (10%)	1·69 (0·91–3·23)	0·094
Mortality	25 (9%)	30 (11%)	1·27 (0·72–2·22)	0·42
Withdrawal	7 (3%)	3 (1%)	2·26 (0·59–8·67)	0·34‖
Transfer out	4 (1%)	1 (0%)	0·25 (0·19–2·17)	0·38‖

Lester RT et al. Lancet 2010



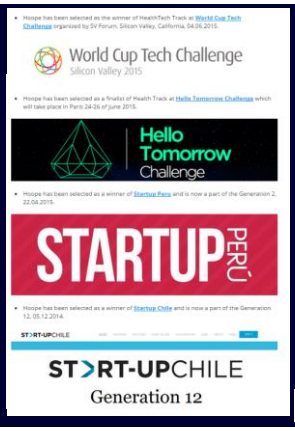
mHealth to improve health: effectiveness of a weekly text messaging intervention to improve ART adherence and HIV viral load in a Canadian context, Vancouver

N = 85 high-risk patients, VL > 200 copies

- Weekly interactive SMS x 1 year
- ART adherence increased: 62% -> 68%
- Population VL declined 0.36 log
- 45% became undetectable

Murray MCM, et at. IAS Vancouver, 2015

Future ?



Future

- "Digital Big Brother" - the pill bottle will communicate with your phone and if you leave home without it, you will be reminded to go back
- Geo-mapping of STI test results to track where new infections occur
- Home PCR testing for STIs/HIV
- Tele-health for PrEP

Thank you