

Home testing for HIV: Feasibility, acceptability, implementation, and applications

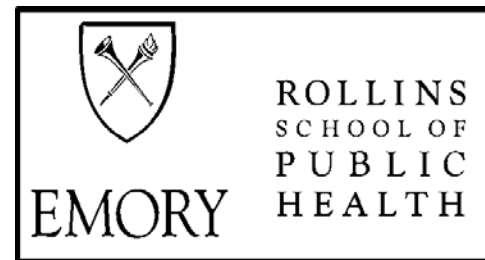
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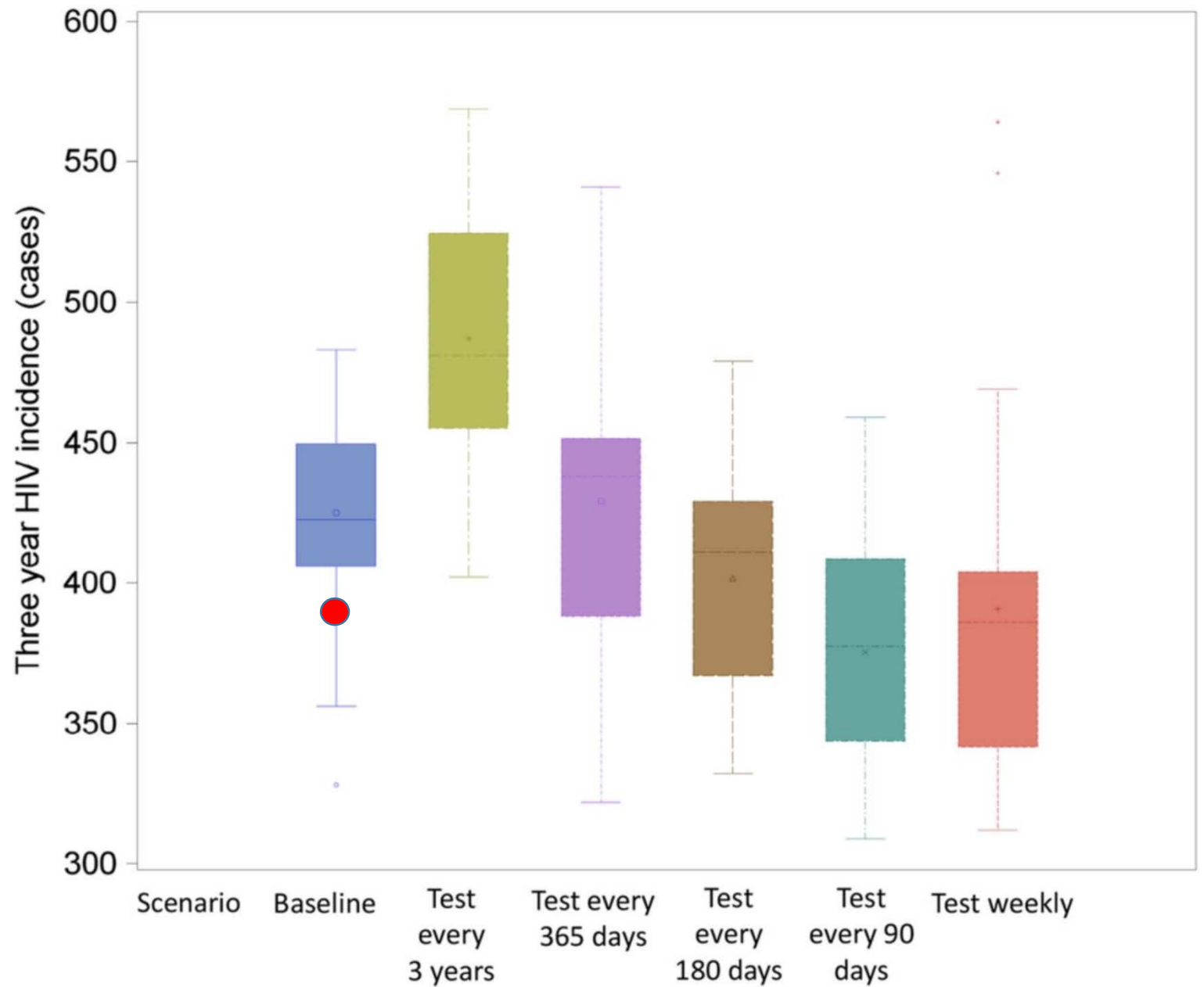


Overview

- Background of HIV home testing
- Acceptability of and preferences for home testing
- Results of home testing efforts from several PRISM research projects
- A few ways to bring home testing to scale
- Conclusions

Optimizing Human Immunodeficiency Virus Testing Interventions for Men Who Have Sex With Men in the United States: A Modeling Study

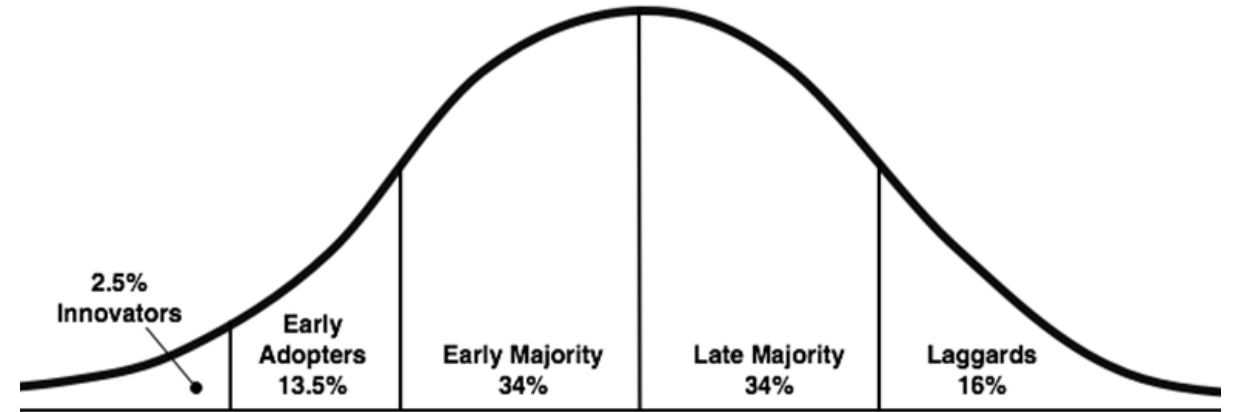
Kevin P. Delaney,¹ Eli S. Rosenberg,¹ Michael R. Kramer,¹ Lance A. Waller,² and Patrick S. Sullivan¹



Home testing could address concerns

- Known barriers to HIV testing

- Stigma
- Access
- Privacy/fear of disclosure



- Theoretically relevant: Diffusion of innovations

- Best to provide laggards control: how, when, where
- Perceived *relative advantage*
- *Compatibility* for young populations accustomed to mobile solutions
- *Trialability*: easy to try

Home HIV testing: What is it?

- Remote self-collection of a specimen that allows for an HIV test to be conducted
- Kits are mailed to recipients in a plain, unmarked box
- For mail-in specimen kits, dried blood spot cards are generally used for finger prick whole blood collection
 - Return mail can be standard, not classified as biohazard.
- For home test kits, an oral fluid (mouth) swab. Orasure has the only CLIA-waived test



Willingness

Characteristic	Willing to Test at Home n (%)	Not Willing to Test at Home n (%)	Crude OR (95% CI)	Adjusted OR (95% CI)
Categorical Variables				
Incentive hypothetically offered to take a free home HIV test				
None	1184 (75)	399 (25)	Referent	Referent
\$10	1285 (84)	240 (16)	1.8 (1.5-2.2)	1.8 (1.5-2.2)
\$25	1314 (84)	246 (16)	1.8 (1.5-2.2)	1.8 (1.5-2.2)
\$50	1286 (86)	209 (14)	2.1 (1.7-2.5)	2.1 (1.8-2.6)
Race/ethnicity				
White, non-Hispanic	2179 (82)	482 (18)	Referent	Referent
Black, non-Hispanic	695 (85)	124 (15)	1.2 (1.0-1.5)	1.3 (1.1-1.7)
Hispanic	1602 (83)	332 (17)	1.1 (0.9-1.3)	1.1 (0.9-1.3)
Other ^b	593 (79)	156 (21)	0.8 (0.7-1.0)	0.9 (0.7-1.1)
Had unprotected anal intercourse^d with a male sex partner in the past 12 months				
Yes	3329 (84)	651 (16)	1.3 (1.1-1.5)	1.3 (1.1-1.5)
No	1740 (80)	443 (20)	Referent	Referent
HIV status^f (result of most recent HIV test)				
Negative	3449 (81)	789 (19)	Referent	Referent
Unknown	1620 (84)	305 (16)	1.2 (1.1-1.4)	1.2 (1.0-1.4)

J Int Assoc Physicians AIDS Care (Chic). 2011 Nov-Dec;10(6):357-64. doi: 10.1177/1545109711404946. Epub 2011 Apr 28.

Willingness to Take a Free Home HIV Test and Associated Factors among Internet-Using Men Who Have Sex with Men.

Sharma A¹, Sullivan PS, Khosropour CM.

Ranking	Overall preferences	Stratified by demographic and behavioral characteristics								
		HIV testing history		Had a main partner			Had unprotected anal intercourse with a male sex partner in the past 6 months			
		Never tested	Tested at least once	Yes, for ≥ 1 year	Yes, for < 1 year	No	Yes, with ≥ 2 men	Yes, with 1 man	No	
1	Home	Home	Physician	Home	Physician	Home	Home	Physician	Physician	
2	Physician	Physician	Home	Physician	Home	Physician	Physician	Home	Home	
3	Express	Express	Express	Express	Express	Express	Express	Express	Express	
4	VCT	DBS	VCT	VCT	VCT	VCT	VCT	VCT	VCT	
5	DBS	VCT	DBS	DBS	CHCT	DBS	DBS	CHCT	DBS	
6	CHCT	CHCT	CHCT	CHCT	DBS	CHCT	CHCT	DBS	CHCT	

Home Rapid home self-testing: Oral fluid	VCT Individual voluntary counseling and testing
Physician Testing at a physician's office	DBS Home specimen self-collection: Dried blood spot
Express Expedited/Express testing	CHCT Couples' HIV counseling and testing

Figure 2 Modified Borda Count ranking of different currently available HIV testing options if offered free of charge to 973 HIV negative or unknown status men who have sex with men in a national online health survey, United States, 2012.

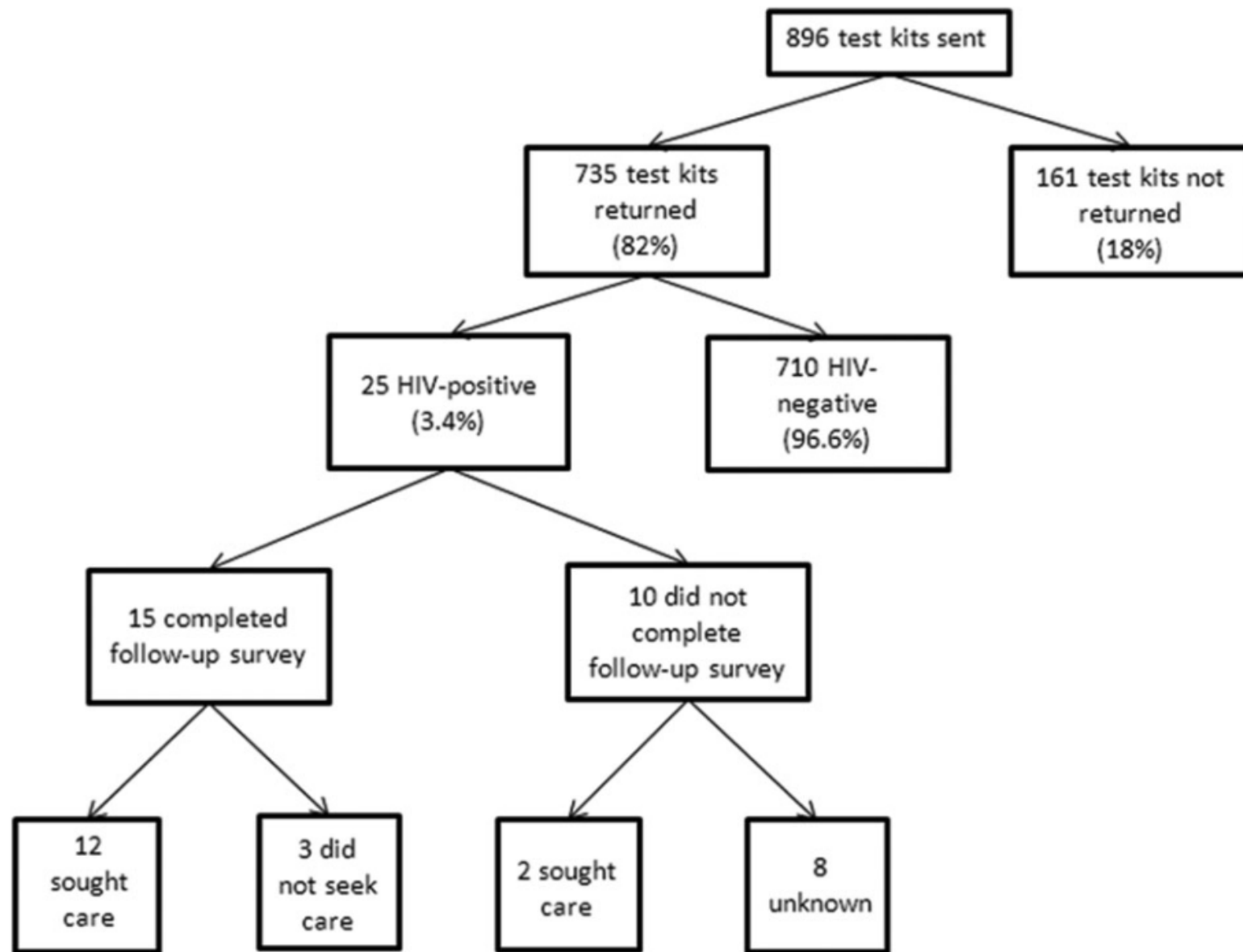
Acceptability and intended usage preferences for six HIV testing options among internet-using men who have sex with men.

Participant Characteristic	Returned Test Kit (n = 735)	Did Not Return Test Kit (n = 161)	cOR (95% CI)	Wald P Value	aOR (95% CI)
	n (%)	n (%)			
Race/ethnicity				.002	
White, non-Hispanic	481 (85)	83 (15)	Referent		Referent
Black, non-Hispanic	115 (73)	42 (27)	0.47 (0.31-0.72)		0.49 (0.31-0.78)
Hispanic	139 (79)	36 (21)	0.67 (0.43-1.03)		0.63 (0.40-1.00)
Highest level of education				.012	
College/postgraduate	275 (86)	46 (14)	2.21 (1.37-3.57)		1.76 (1.01-3.06)
Some college/associate degree	327 (82)	70 (18)	1.73 (1.11-2.70)		1.67 (1.03-2.69)
High school or GED	108 (73)	40 (27)	Referent		Referent
Less than high school or unknown	25 (83)	5 (17)	1.82 (0.66-5.17)		1.95 (0.63-6.22)
Had unprotected anal intercourse with a male sex partner in the past 12 months				.681	
Yes	449 (83)	95 (17)	1.30 (0.73-2.32)		1.34 (0.73-2.45)
No	62 (78)	17 (22)	Referent		Referent
Unknown	224 (82)	49 (18)	1.25 (0.68-2.33)		1.29 (0.68-2.47)

J Int Assoc Provid AIDS Care. 2016 Nov;15(6):463-469. Epub 2016 Sep 15.

Factors Associated with Returning At-Home Specimen Collection Kits for HIV Testing among Internet-Using Men Who Have Sex with Men.

Ricca AV¹, Hall EW², Khosropour CM^{1,3}, Sullivan PS¹.



J Int Assoc Provid AIDS Care. 2016 Nov;15(6):463-469. Epub 2016 Sep 15.

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We can recruit MSM online in sufficient numbers to scale-up programs

- Web- and app-based recruitment methods yield large samples of MSM, for research and programmatic purposes
- Annual Men's Internet Survey: 10,000 MSM yearly
- eStamp:
 - Over 2,767 MSM participants recruited into RCT of HIV home testing versus standard of care
 - Over 11,000 HIV test kits distributed (results pending)



[JMIR Public Health Surveill.](#) 2015 Jan-Jun; 1(1): e3.
Published online 2015 Apr 17. doi: [10.2196/publichealth.4314](https://doi.org/10.2196/publichealth.4314)

PMCID: PMC4869242

The Annual American Men's Internet Survey of Behaviors of Men Who Have Sex With Men in the United States: Protocol and Key Indicators Report 2013

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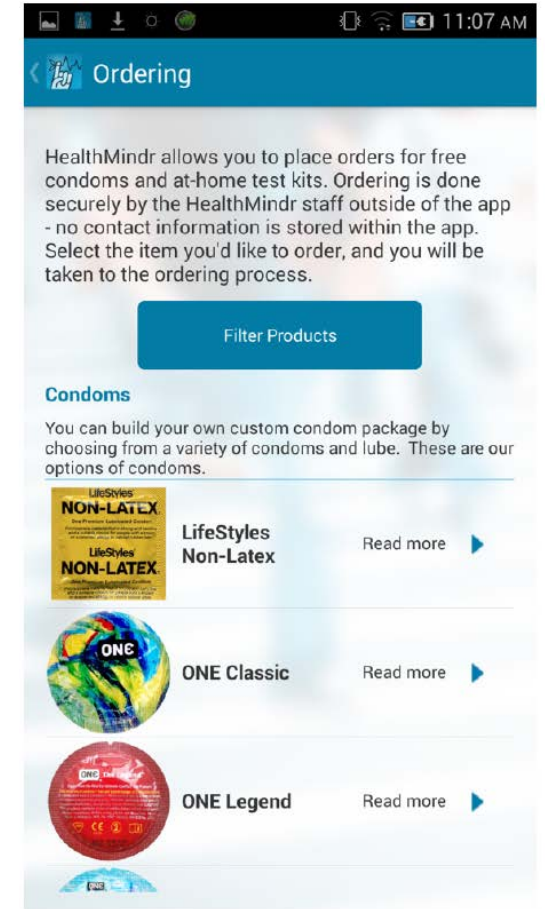
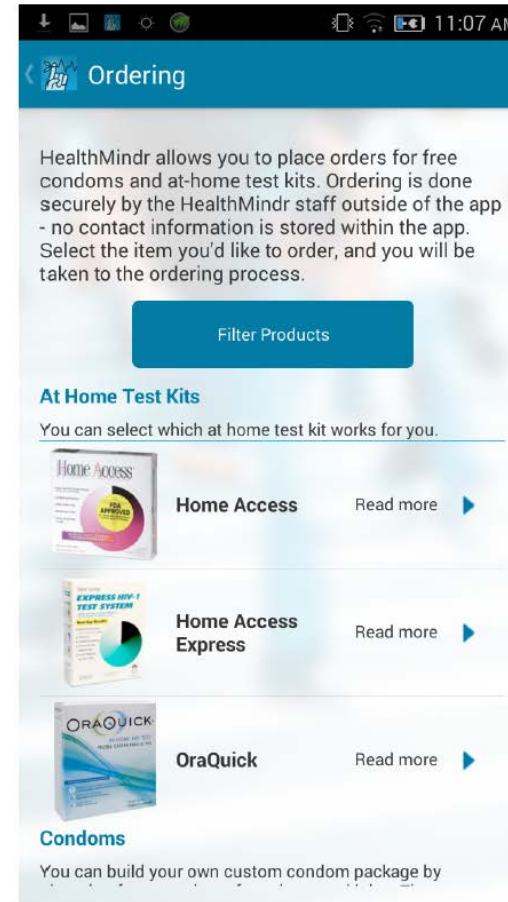
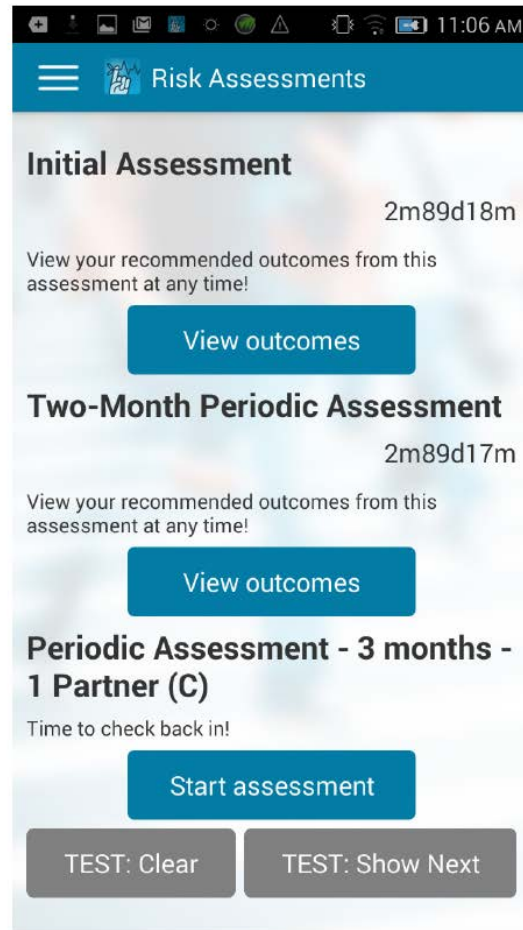
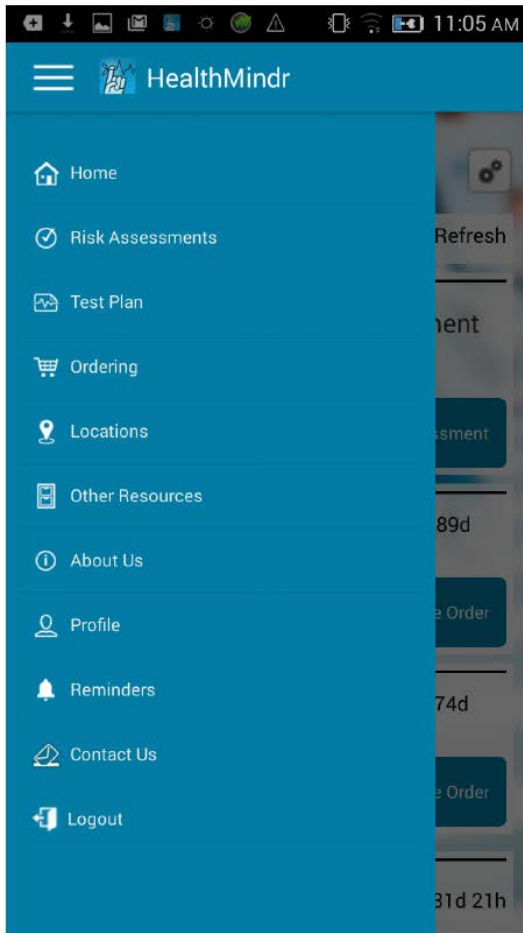
[Travis Howard Sanchez](#), DVM, MPH,^{✉1} [R.Craig Sineath](#), MPH,¹ [Erin M Kahle](#), PhD, MPH,¹ [Stephen James Tregear](#), DPhil,² and [Patrick Sean Sullivan](#), DVM, PhD¹

[JMIR Public Health Surveill.](#) 2016 May 25;2(1):e23. doi: [10.2196/publichealth.5476](https://doi.org/10.2196/publichealth.5476).

The Annual American Men's Internet Survey of Behaviors of Men Who have Sex with Men in the United States: 2014 Key Indicators Report.

[Sanchez T](#)¹, [Zlotorzynska M](#), [Sineath C](#), [Kahle E](#), [Sullivan P](#).

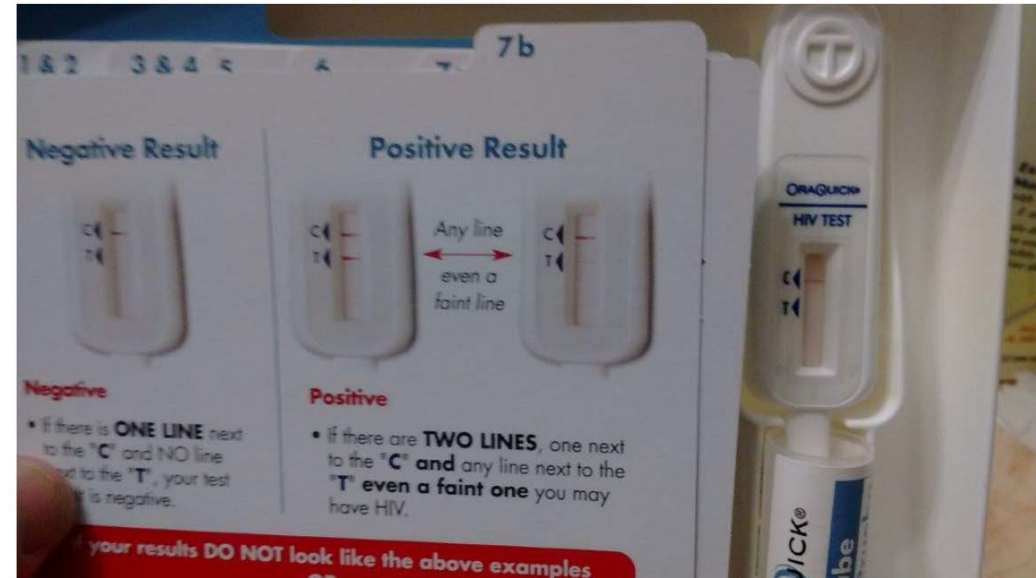
Dissemination of home HIV testing services: Healthmindr



- 4-month pilot assessment of app
 - 64/121 (53%) ordered home HIV tests
 - 2/3 of orders had not intended to test

- 77/121 (66%) ordered condoms

- Question: How to verify use of home test?
- Answer: Participant mobile photos
 - Note: Photo purpose is to show test has been used. Positive results may not be visible



TOTAL: 491 returned / 801 kits sent, 63%

		Incentive (USD)		
\$0	\$10	\$20	\$40	\$100
189/ 349, 53%	110/ 172, 64%	158/ 228, 69%	18/ 28, 64%	20/ 24, 83%



Conclusions

- *HIV testing is cornerstone* of entry into treatment/prevention cascades
- Home testing *has potential to reach novel populations*, including those who have not previously tested
- *A majority of MSM in the US are willing* to perform home testing
- MSM in the US *prefer oral fluid home testing* over other HIV testing alternatives, including in-person options
- With appropriate follow-up
 - Over 80% of participants returned HIV home tests
 - *Remote linkage to care was conducted and shown to be feasible*
- *Scale is possible*: App- and web-based advertising mechanisms can be used to promote uptake of home HIV testing to large groups of at-risk MSM

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