PrEP, Health Disparities, and Future Directions

Patrick Sullivan, DVM, PhD
Rollins School of Public Health, Emory University

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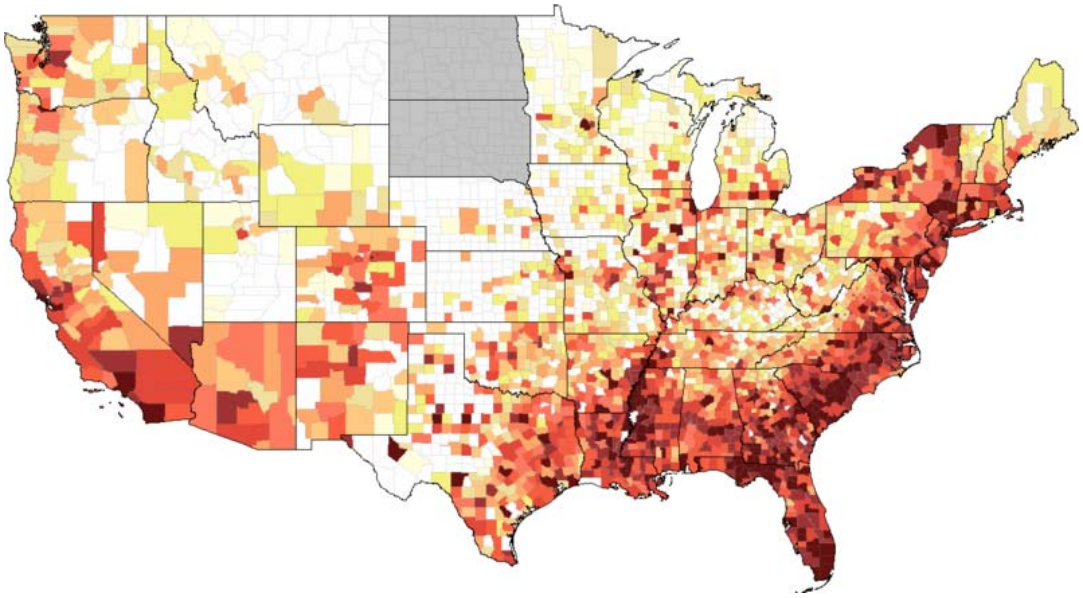
CFAR

PRISM HEALTH

Presentation Plan

- Health disparities
- Scaling prevention tools for MSM: what do we know?
- The PrEP Continuum
- PrEP Uptake
- HealthMindr: A comprehensive prevention app for MSM
- PrEP@Home

Rates of Persons Living with an HIV Diagnosis, by County, 2012



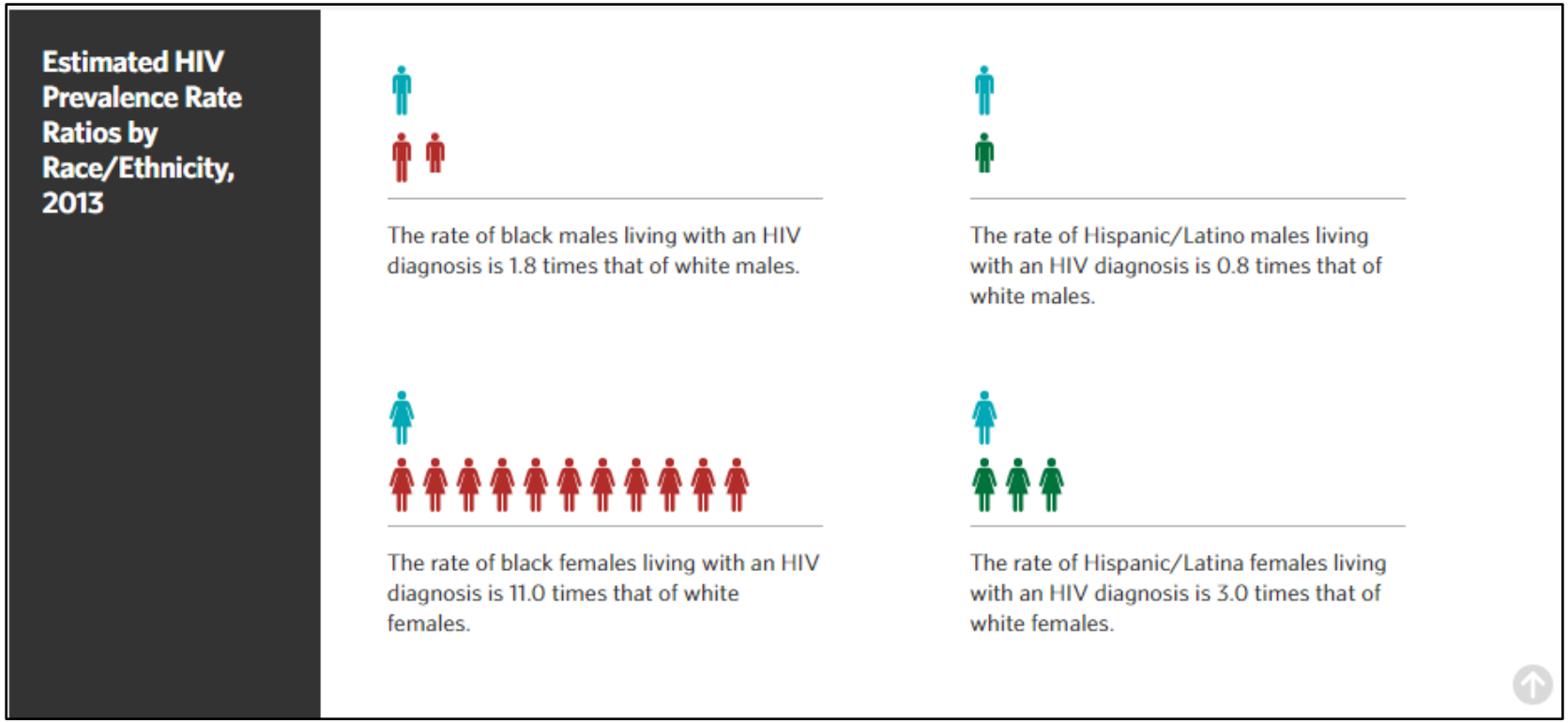
* Data are not shown to protect privacy. ** State health department requested not to release data.

Note. Data include persons with a diagnosis of HIV infection, regardless of the stage of disease at diagnosis, and have been statistically adjusted to account for reporting delays and missing risk-factor information, but not for incomplete reporting.

Data Source: Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of HIV/AIDS Prevention.

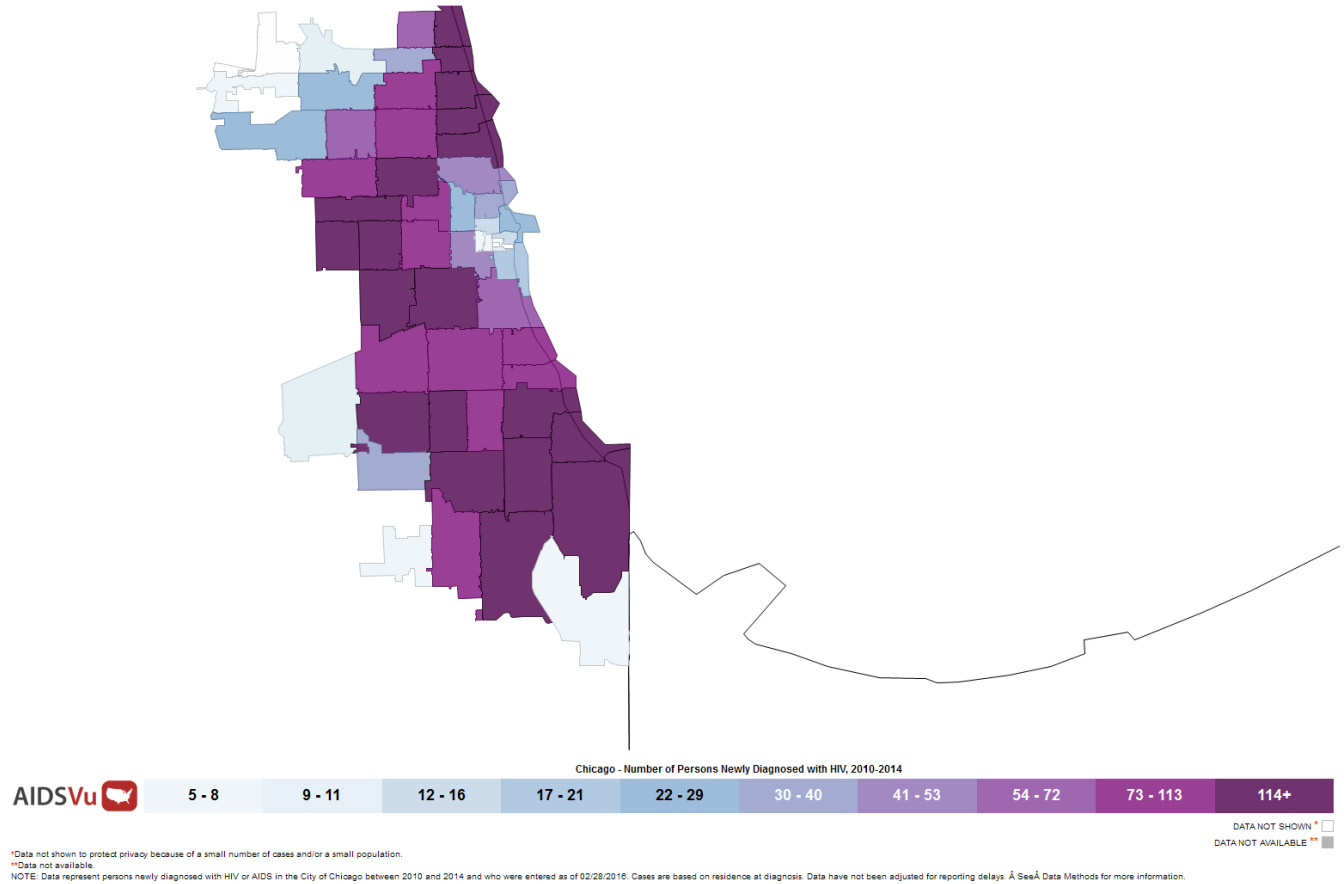
AIDSVu

HIV Prevalence Disparities by Race/Ethnicity, Chicago, 2013

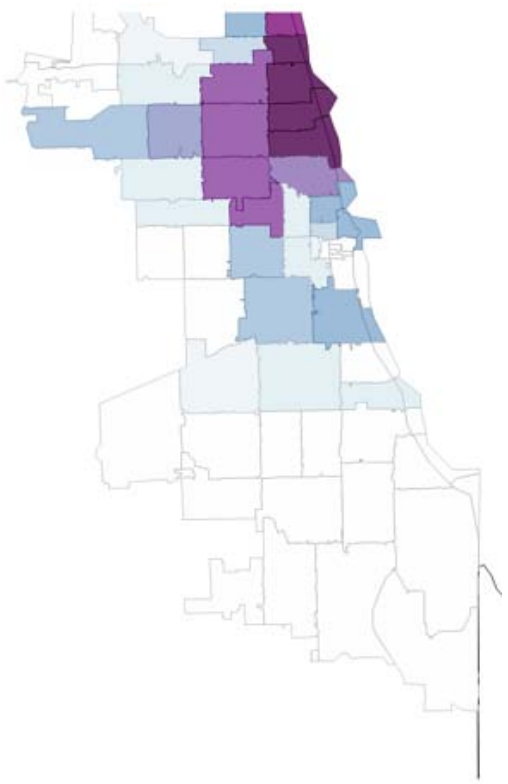


Source: www.aidsvu.org

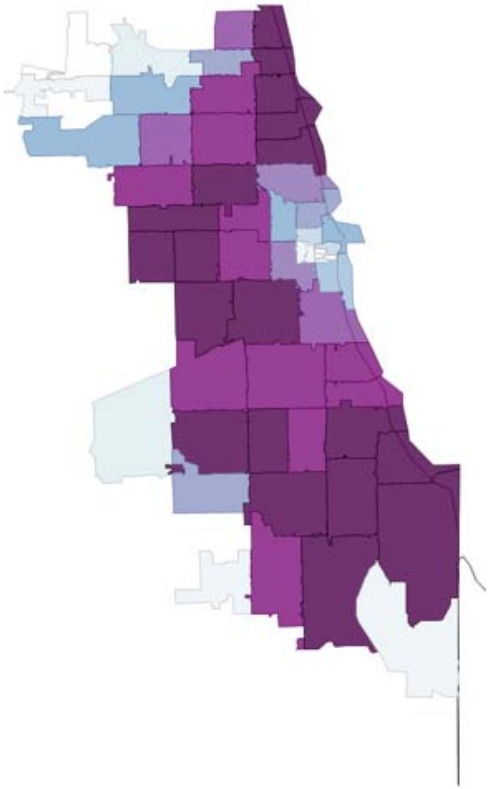
Rates of New HIV Diagnoses, Chicago, 2010-2014



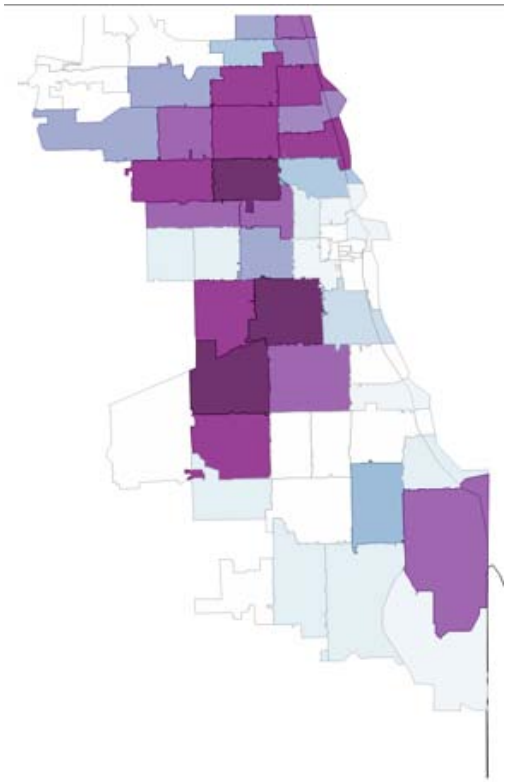
Rates of New HIV Diagnoses, by Race, Chicago, 2010-2014



White, non-Hispanic

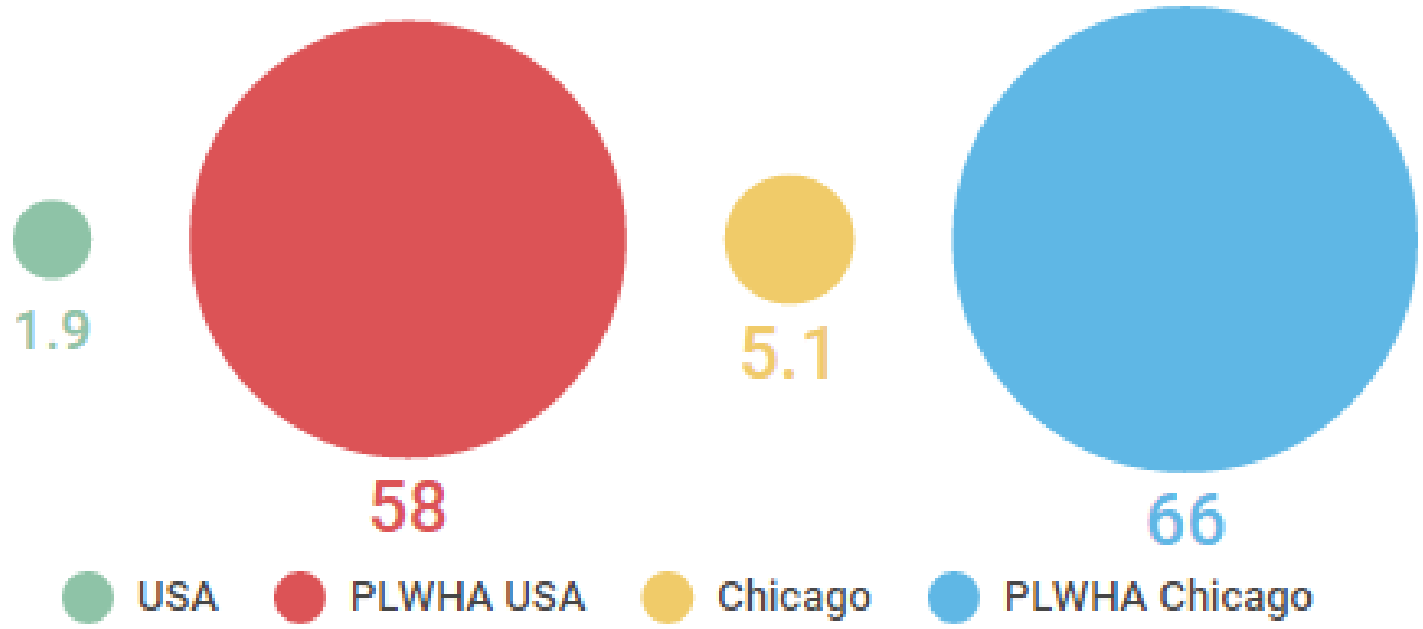


Black, non-Hispanic



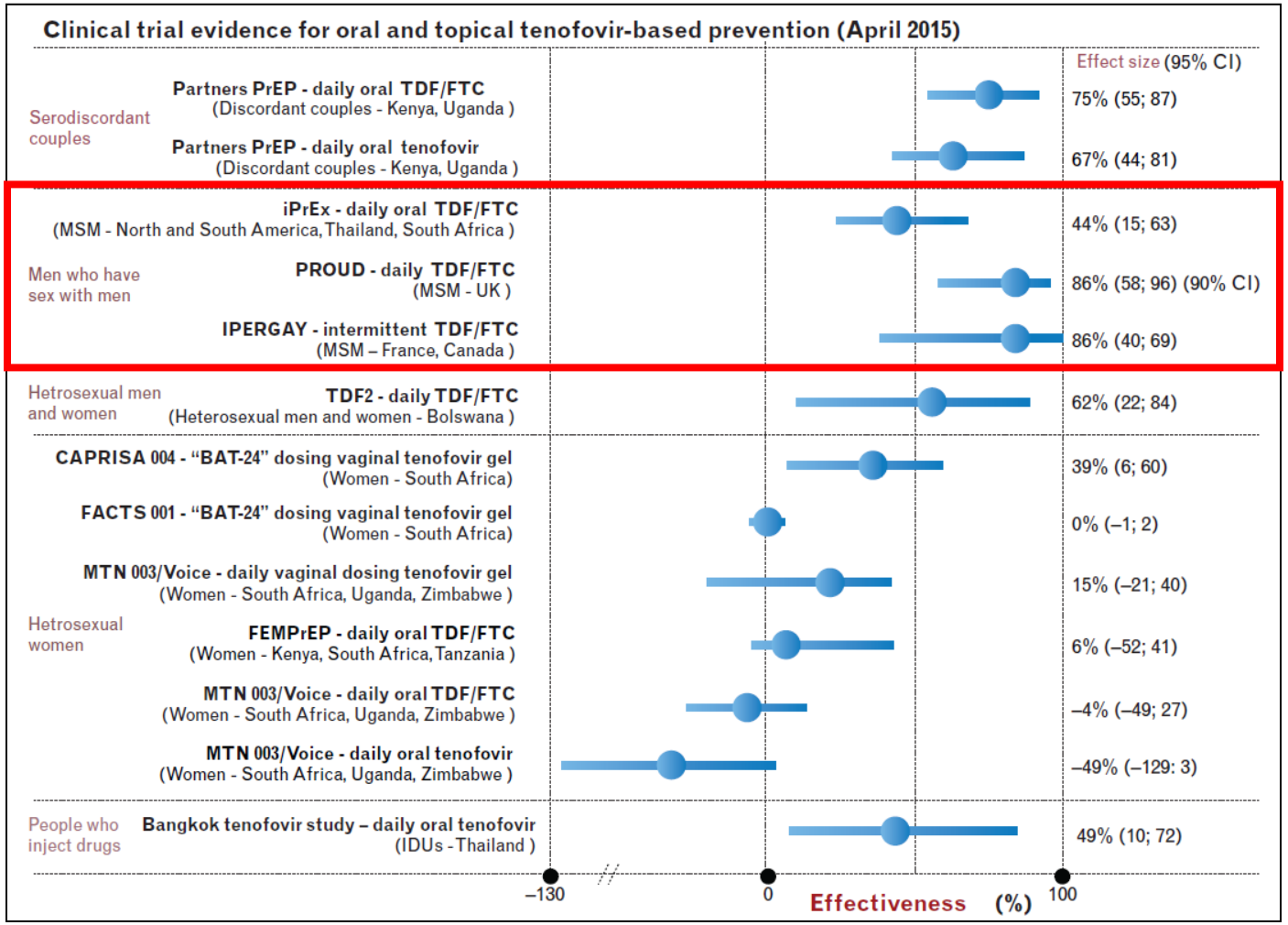
Hispanic

Percent of men who are MSM among population and people living with HIV/AIDS, United States and Chicago, 2014



Sources:

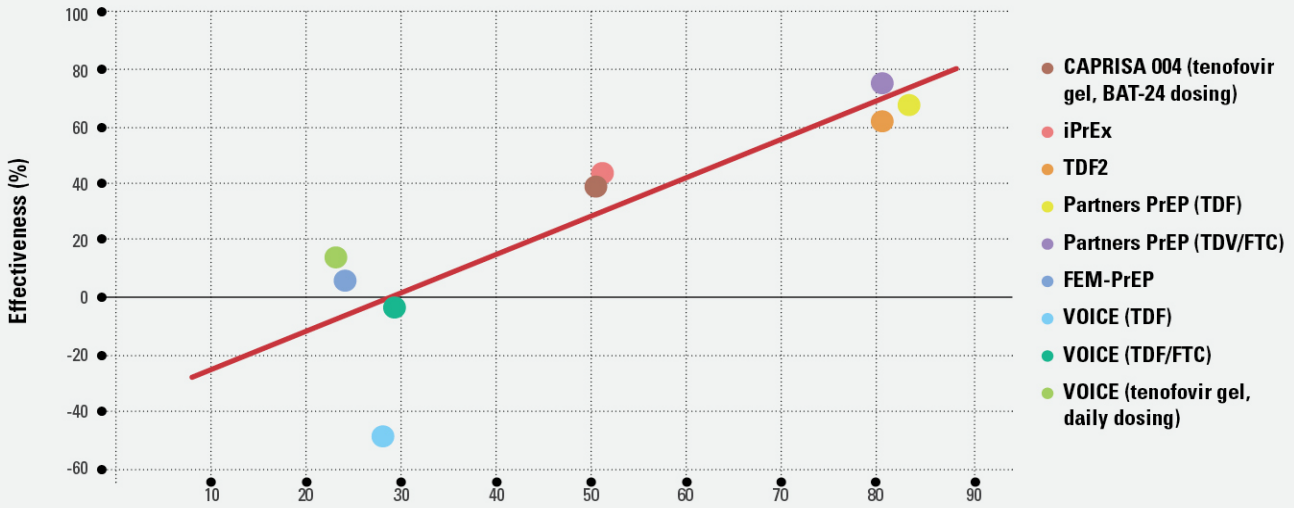
1. Purcell et al 2012; The Open AIDS Journal, 2012, 6, (Suppl 1: M6) 98-107.
2. Grey et al 2016; JMIR Public Health Surveill 2016;2(1):e14
3. Chicago Department of Public Health. HIV/STI Surveillance Report, 2015. Chicago, IL: City of Chicago; December 2015.
4. Centers for Disease Control and Prevention. HIV Surveillance Report, 2014; vol. 26. http://www.cdc.gov/hiv/library/reports/surveillance/. Published November 2015.



Mayer et, et al. *Curr Opinion HIVAIDS,* 2015, modified from Abdool Karim et al, *AVAC Report*, 2014

PrEP works, but adherence is key

Effectiveness and Adherence in Trials of Oral and Topical Tenofovir-Based Prevention



Trials of oral and topical tenofovir-based PrEP show that these strategies reduce risk of HIV infection if they are used correctly and consistently. Higher adherence is directly linked to greater levels of protection.

Source: Salim S. Abdool Karim, CAPRISA

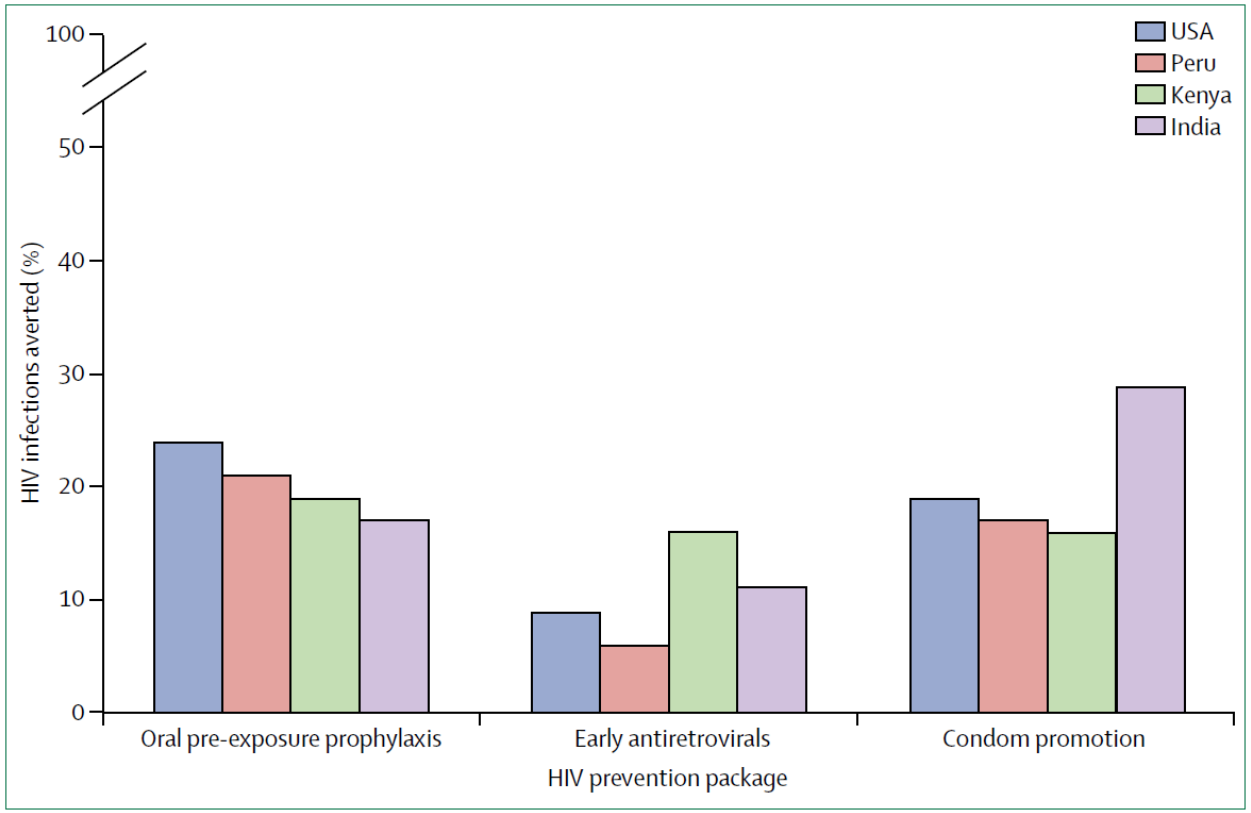
AVAC Report 2013: Research & Reality
www.avac.org/report2013

“Drugs don’t work in patients who don’t take them.”

- C. Everett Koop

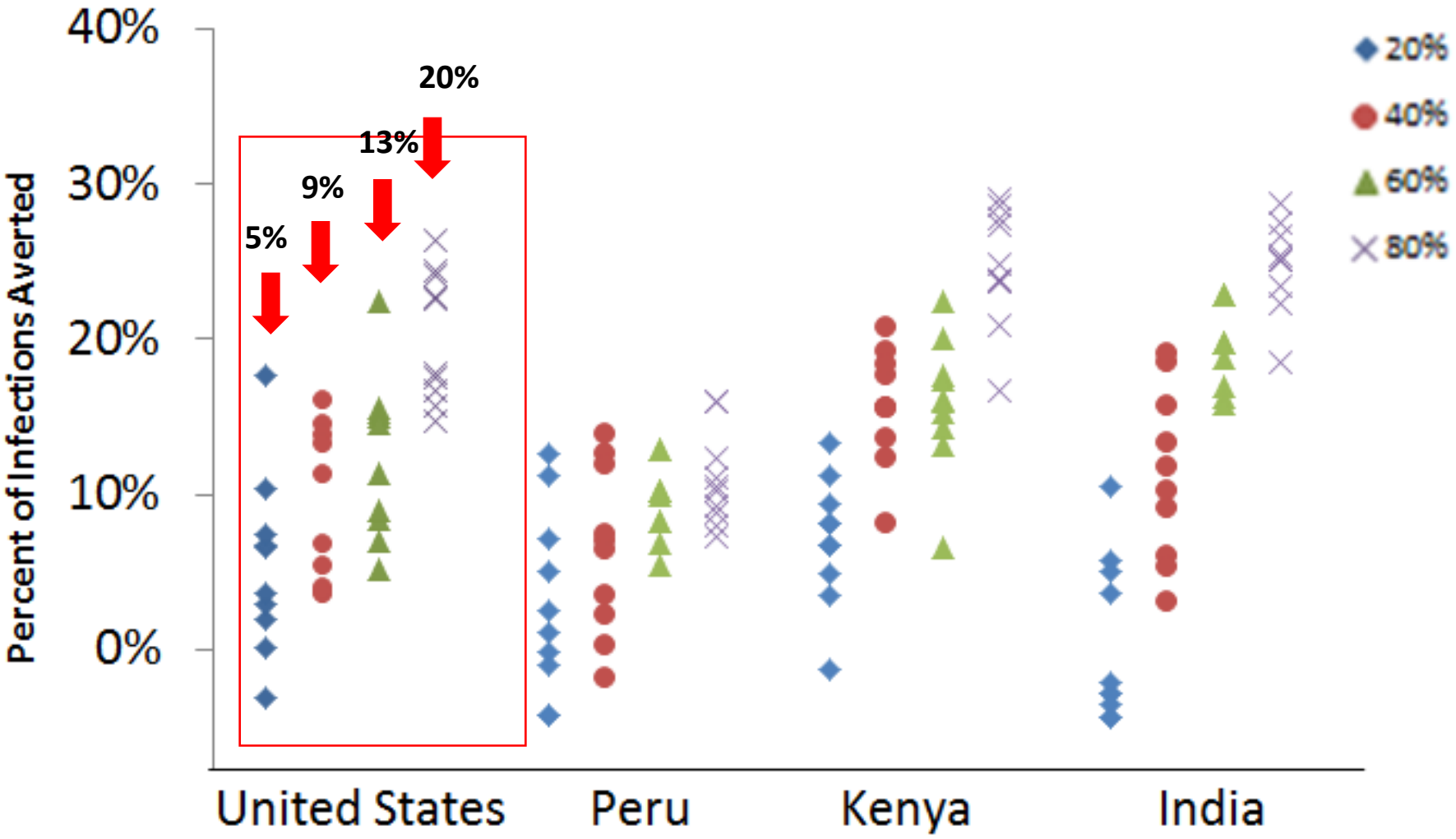
Scale of HIV Prevention Interventions for MSM: What Do We Know?

Estimated percent of new HIV infections among MSM prevented by three prevention approaches, four countries



Source: Sullivan et al, Lancet 2012

Cumulative proportion of infections among MSM averted by early implementation of antiretroviral therapy for MSM living with HIV infection period at 4 levels of coverage in 4 countries

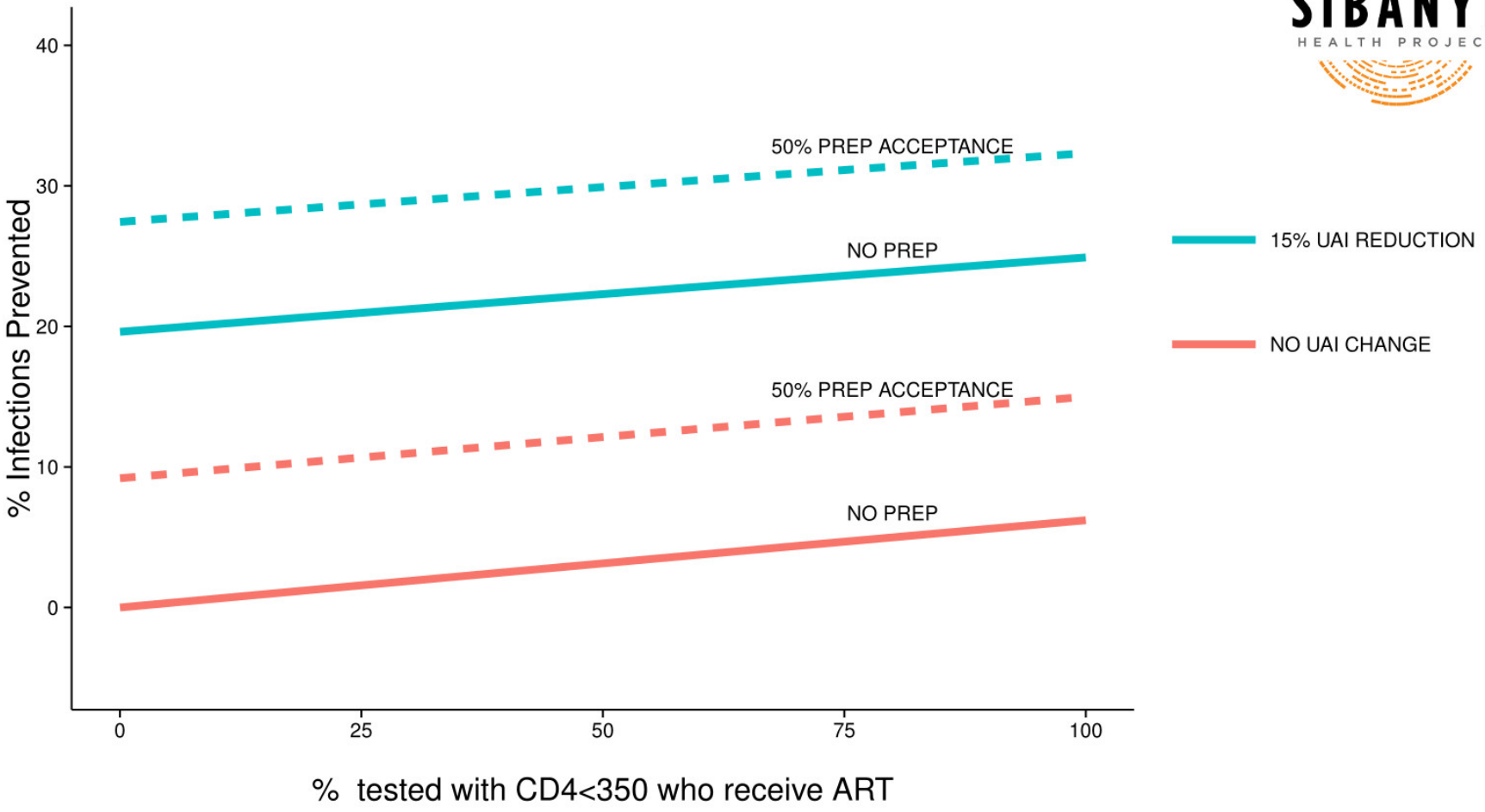


Source: Sullivan et al, Lancet 2012

Estimated percent of new HIV infections among MSM prevented by oral PrEP at varying levels of adherence, four countries

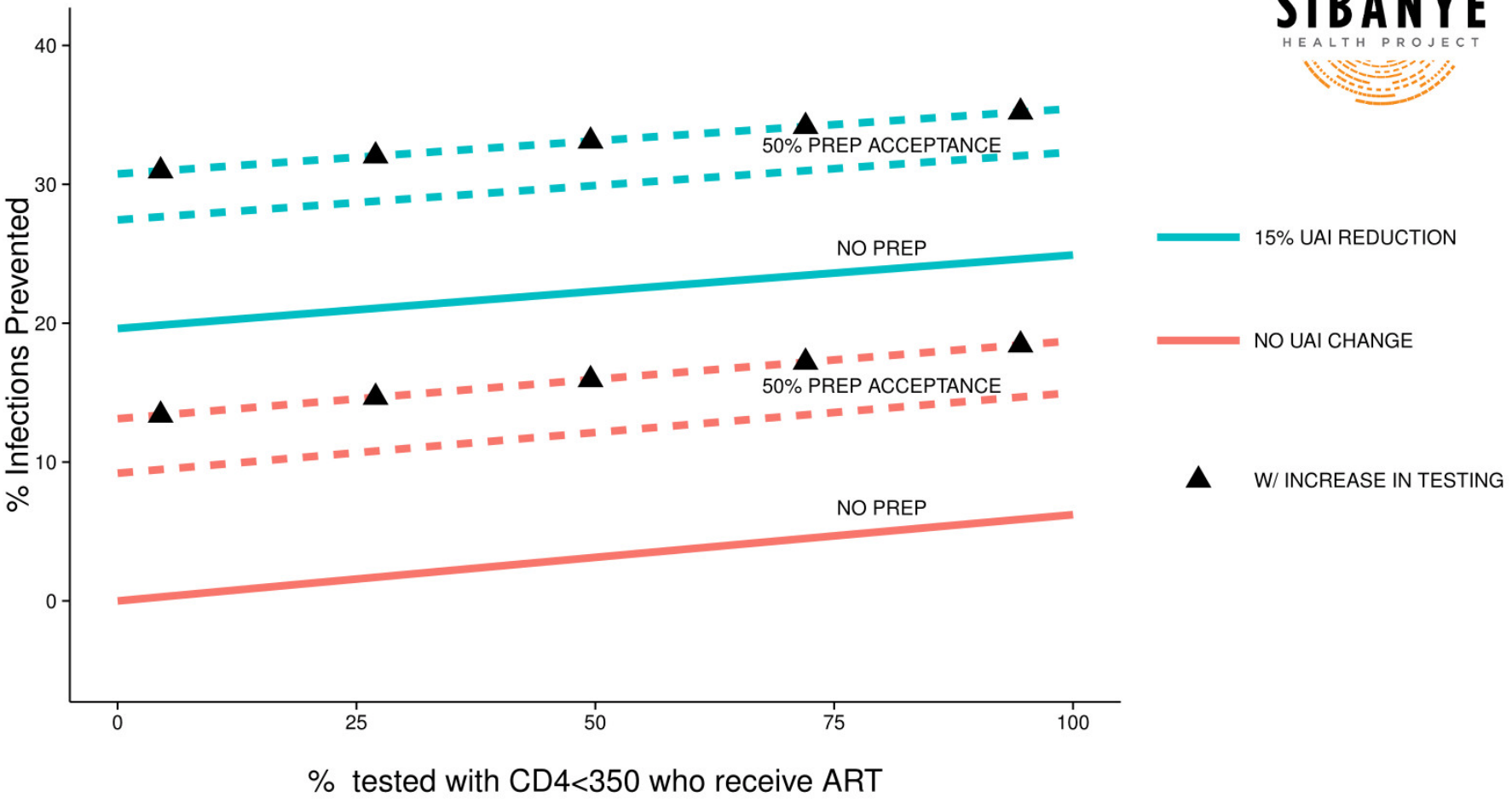
Source: Sullivan et al, Lancet 2012

HIV infections estimated to be averted by PrEP, reduction in UAI, and early ARV treatment in a stochastic simulation model of HIV transmissions among MSM in Africa



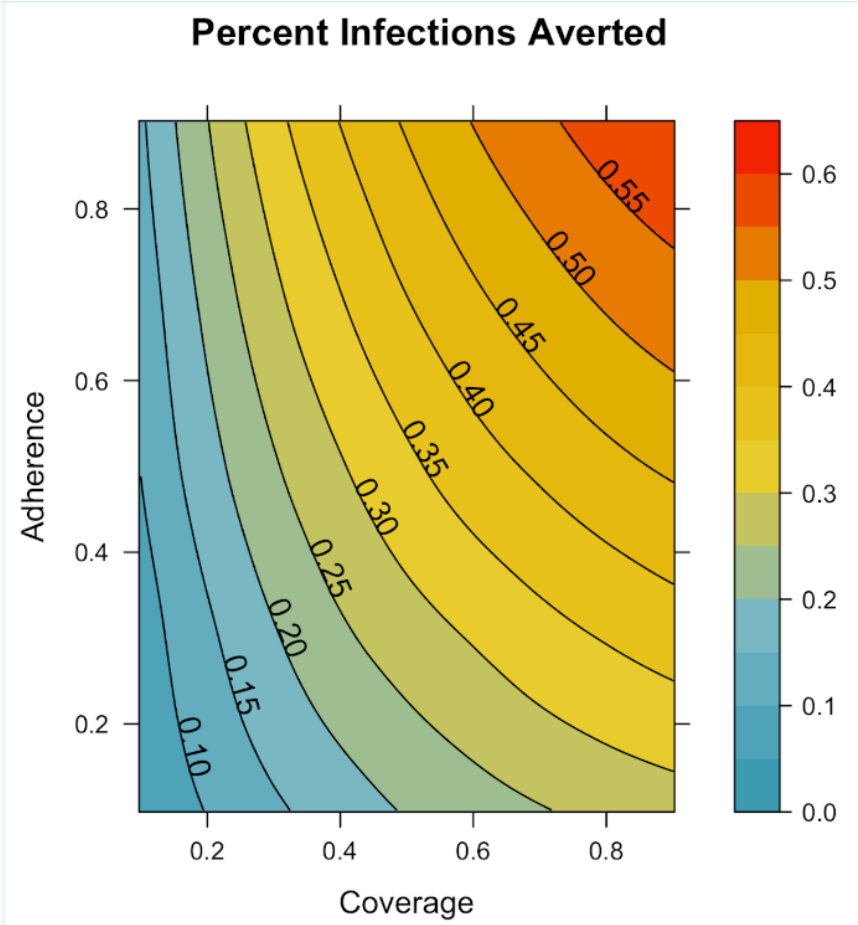
Source: Brookmeyer et al, PLoS ONE 2014

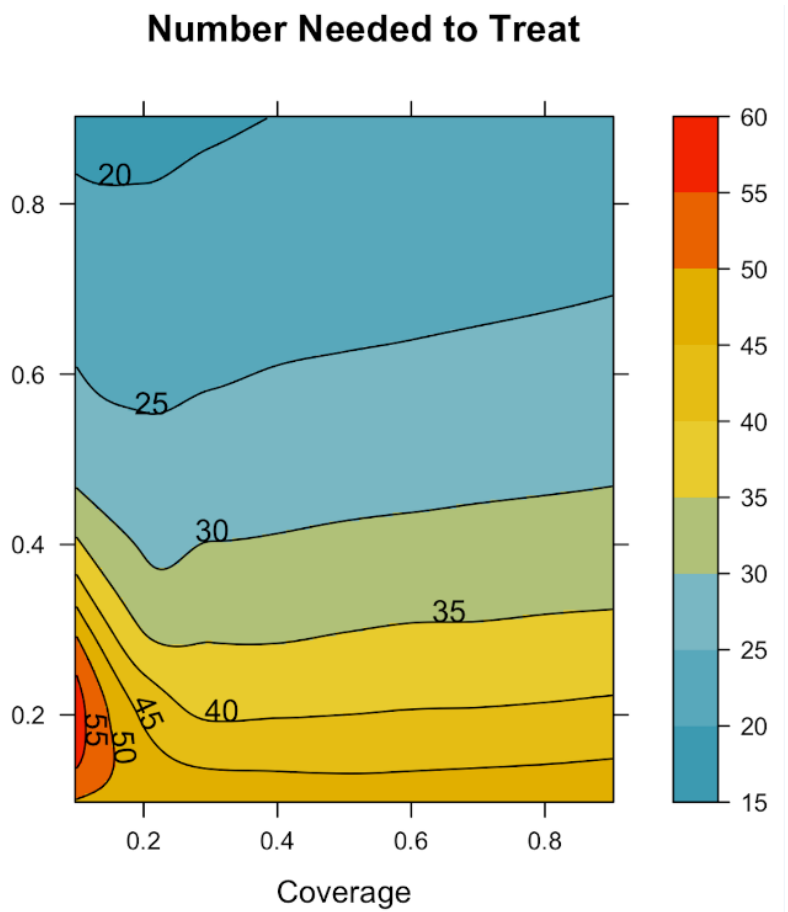
HIV infections estimated to be averted by PrEP, reduction in UAI, increased HIV testing, and early ARV treatment in a stochastic simulation model of HIV transmissions among MSM in Africa



Source: Brookmeyer et al, PLoS ONE 2014

PrEP Coverage, Adherence, and Impact



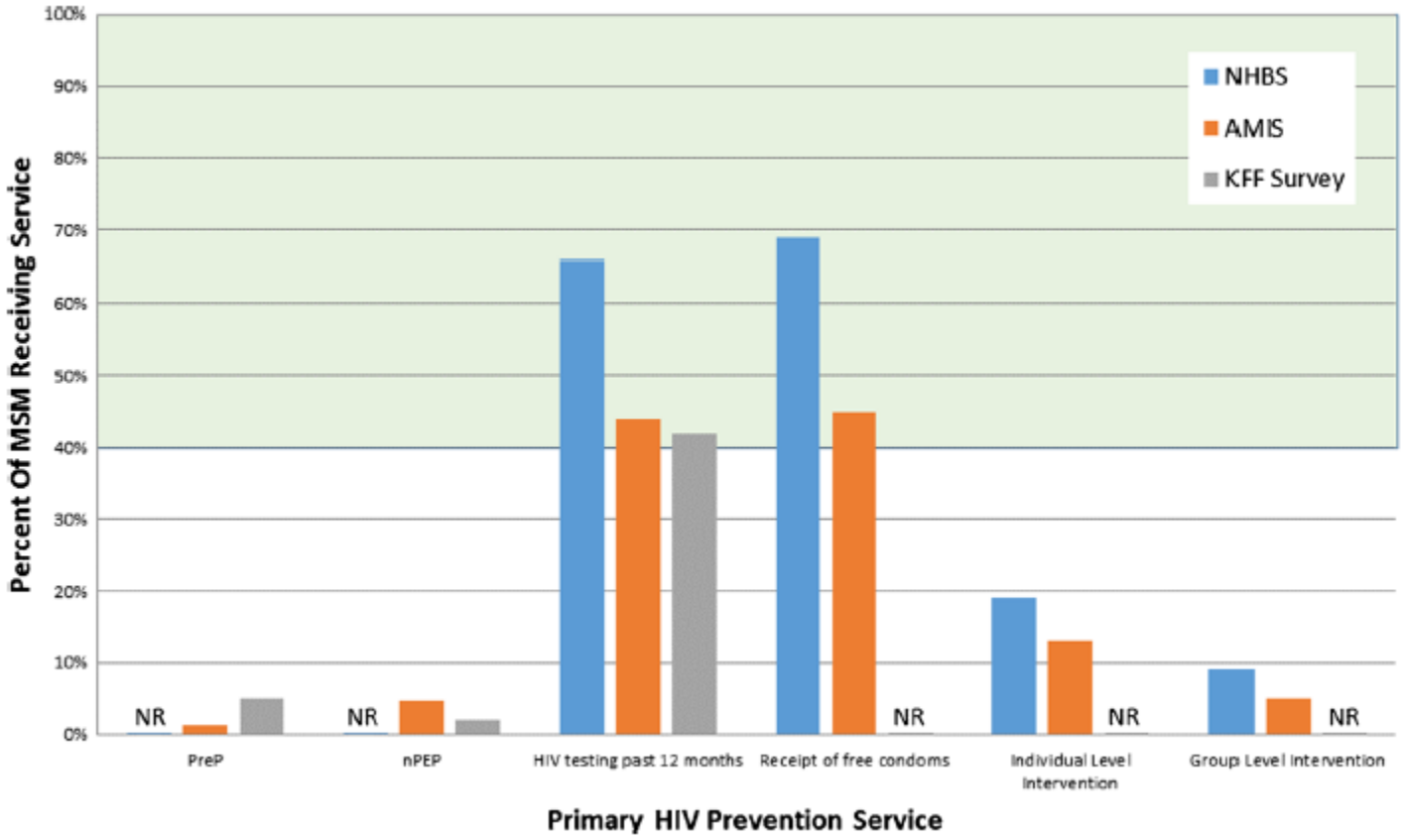


Jenness et al, J Infect Dis 2016, in press

To make modest impacts on HIV transmissions among MSM, we will need to achieve 30-50% coverage of multiple interventions

So how are we doing?

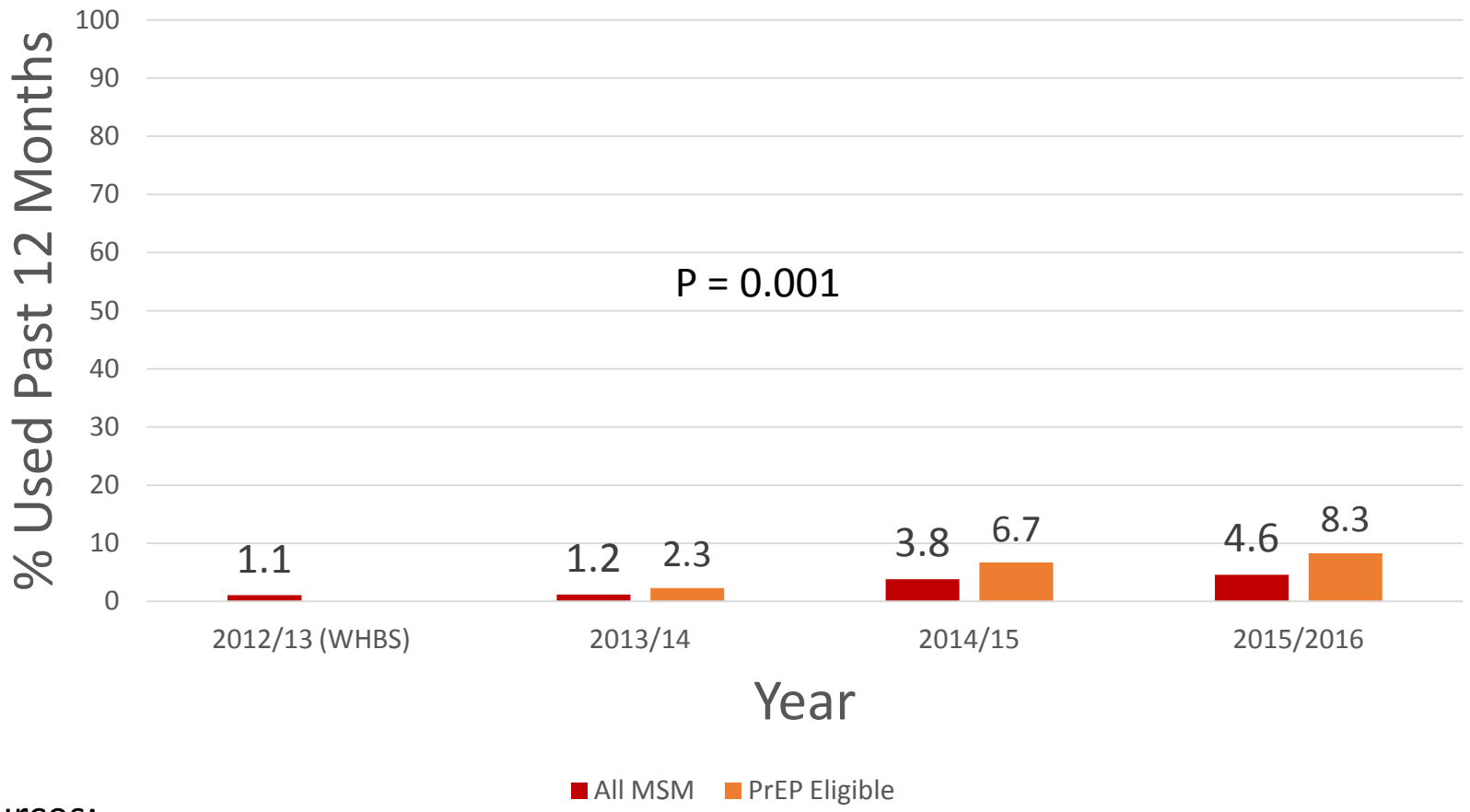
Fig. 1 Estimated coverage of primary HIV prevention interventions among men who have sex with men in the USA and estimated levels of coverage required to reduce HIV incidence, 2010–2015. *NHBS* National HIV Behavioral Surveillance, *AMIS* American Men's Internet Survey, *KFF* Kaiser Family Foundation, *NR* not reported, *PrEP* preexposure prophylaxis, *nPEP* nonoccupational postexposure prophylaxis. *Shaded area* represents the coverage of multiple primary HIV prevention interventions estimated by models to result in meaningful (i.e., 25–30 %) reductions in HIV incidence among MSM



https://jebjones.shinyapps.io/intervention_coverage

Source: Sullivan et al, Current HIV/AIDS Reports 2015

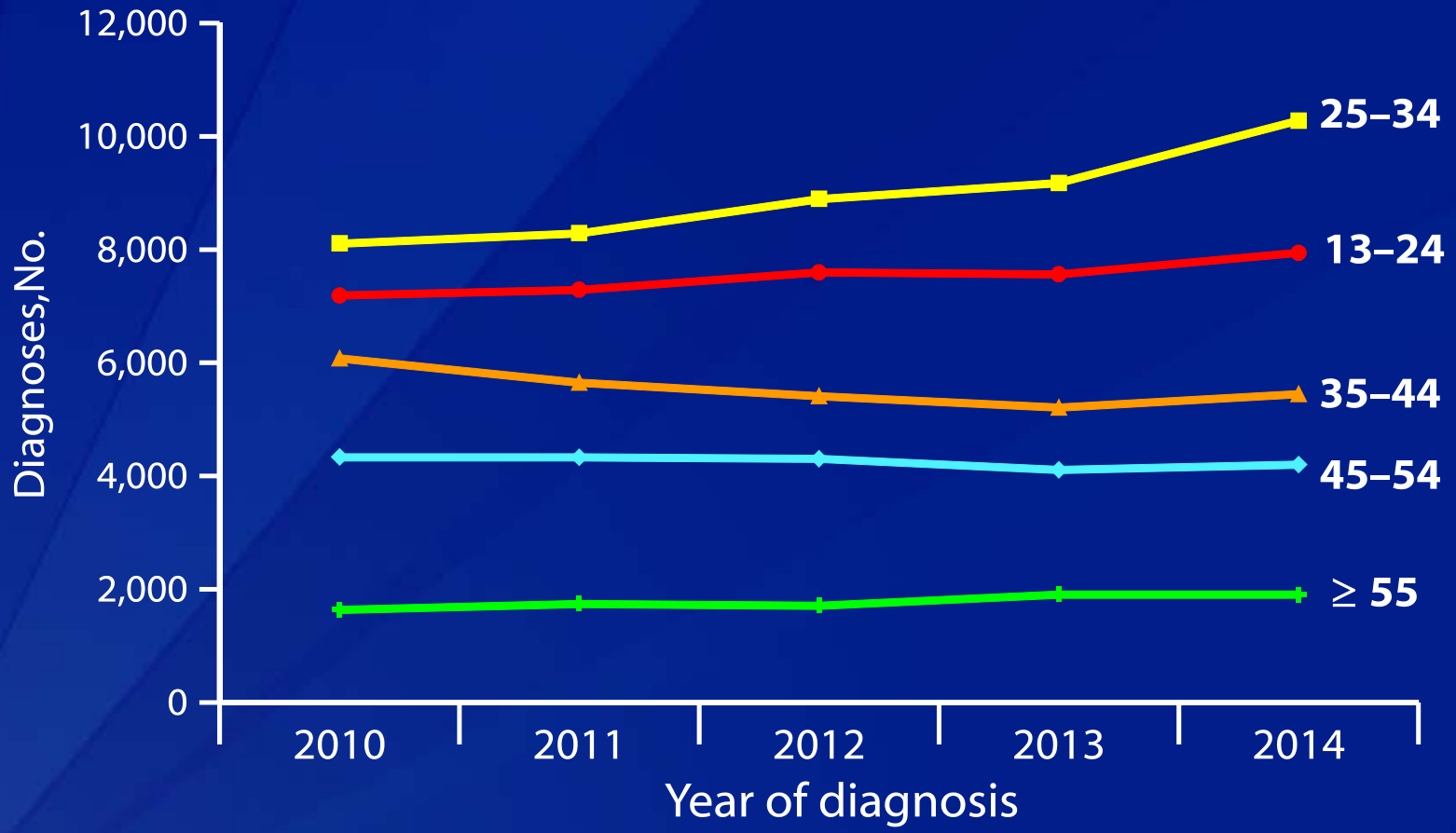
Use of PrEP by year, US MSM, 2012-2016



Sources:

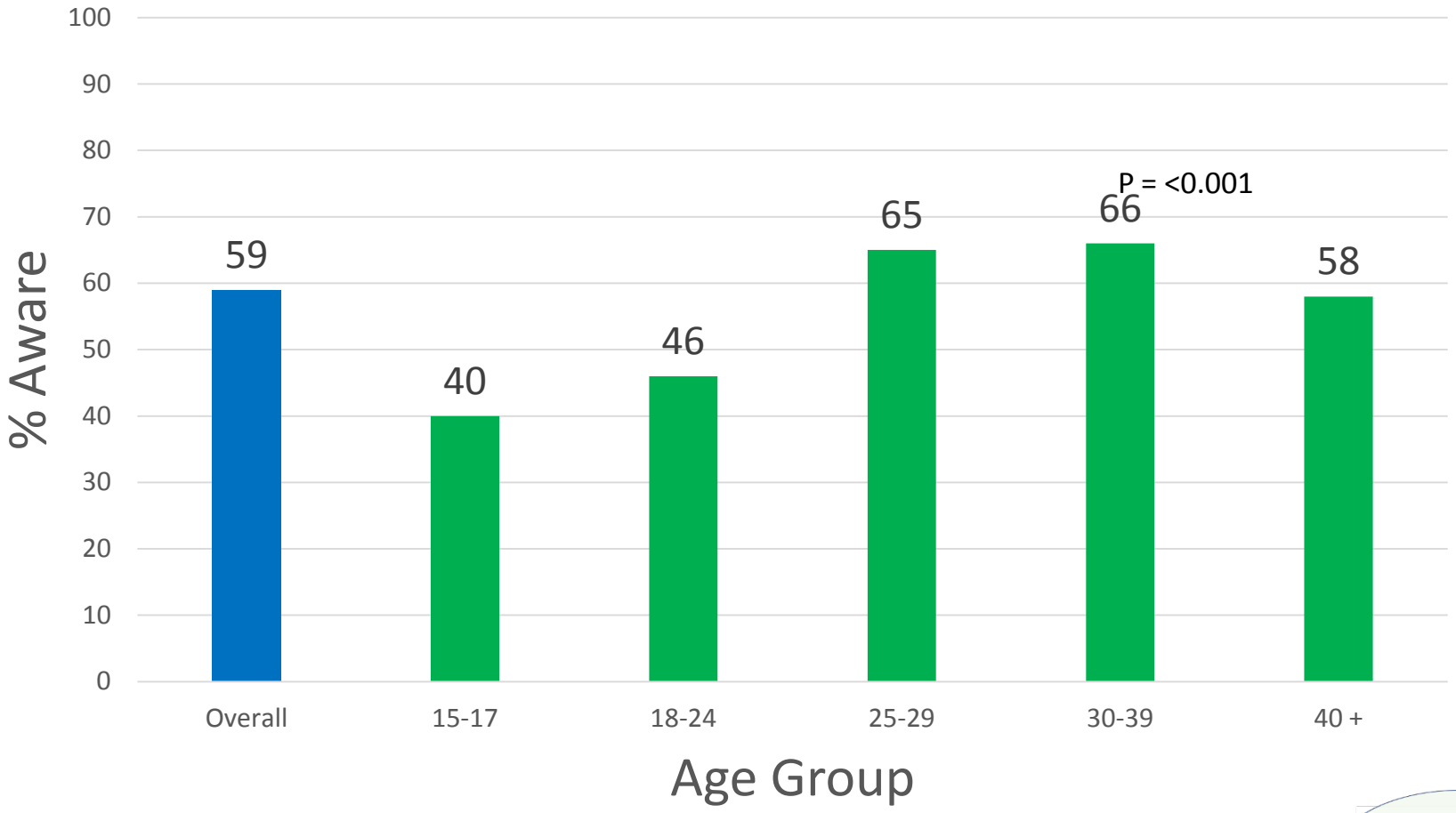
1. Centers for Disease Control and Prevention. A web-based survey of HIV testing and risk behaviors among gay, bisexual, and other men who have sex with men—United States, 2012. HIV Surveillance Special Report 14. Revised edition. http://www.cdc.gov/hiv/library/reports/surveillance/#panel2. Published March 2016.
2. Sanchez et al 2015; JMIR Public Health Surveill 2015;1(1):e3
3. Sanchez et al 2016; JMIR Public Health Surveill 2016;2(1):e2

Diagnoses of HIV Infection among Men Who Have Sex with Men, by Age Group, 2010–2014—United States and 6 Dependent Areas



Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays and missing transmission category, but not for incomplete reporting. Data on men who have sex with men do not include men with HIV infection attributed to male-to-male sexual contact *and* injection drug use.

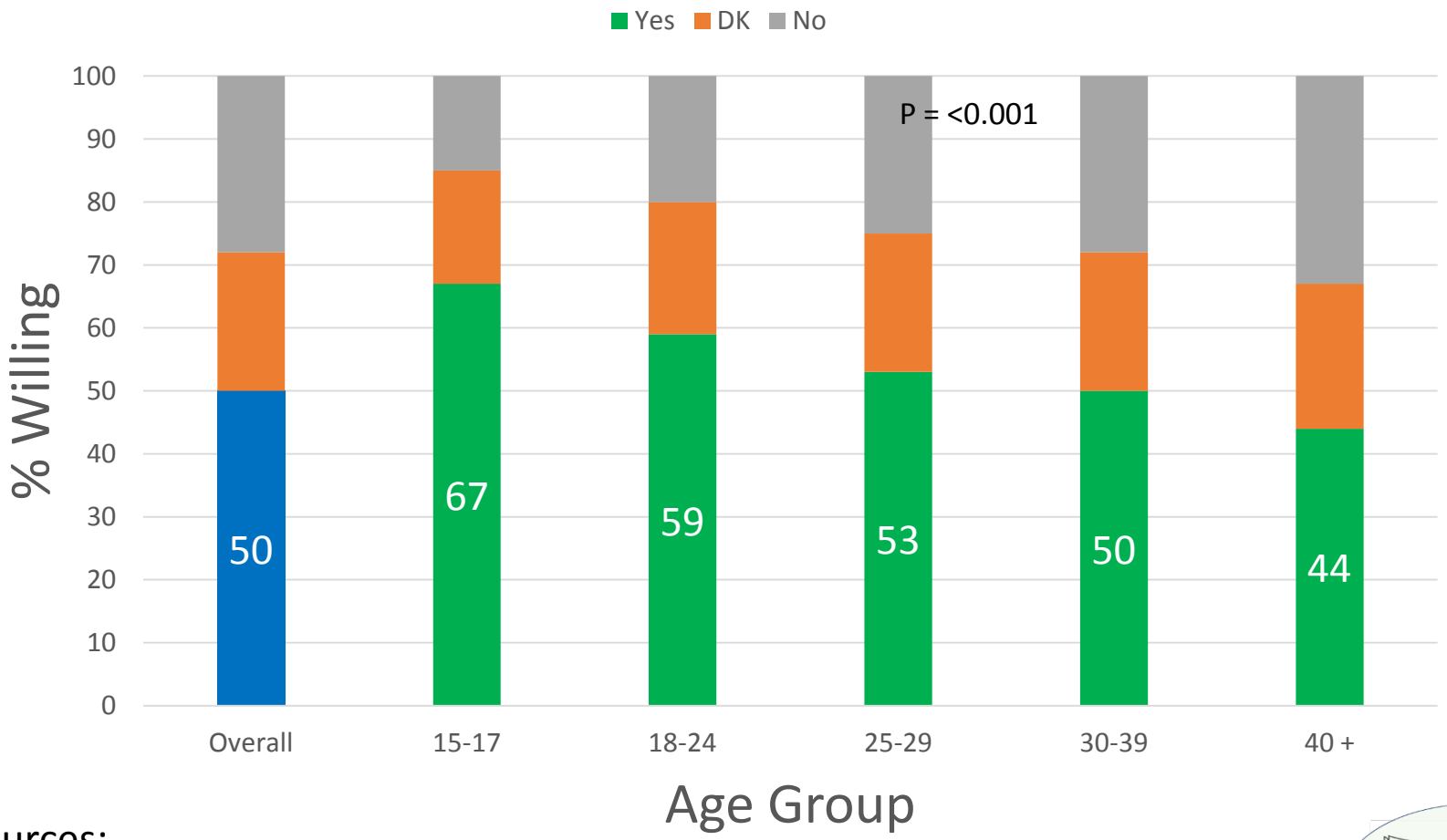
Awareness of PrEP by age, 7003 US MSM, 2013-2015



Sources:

1. Sanchez et al 2015; JMIR Public Health Surveill 2015;1(1):e3
2. Sanchez et al 2016; JMIR Public Health Surveill 2016;2(1):e2

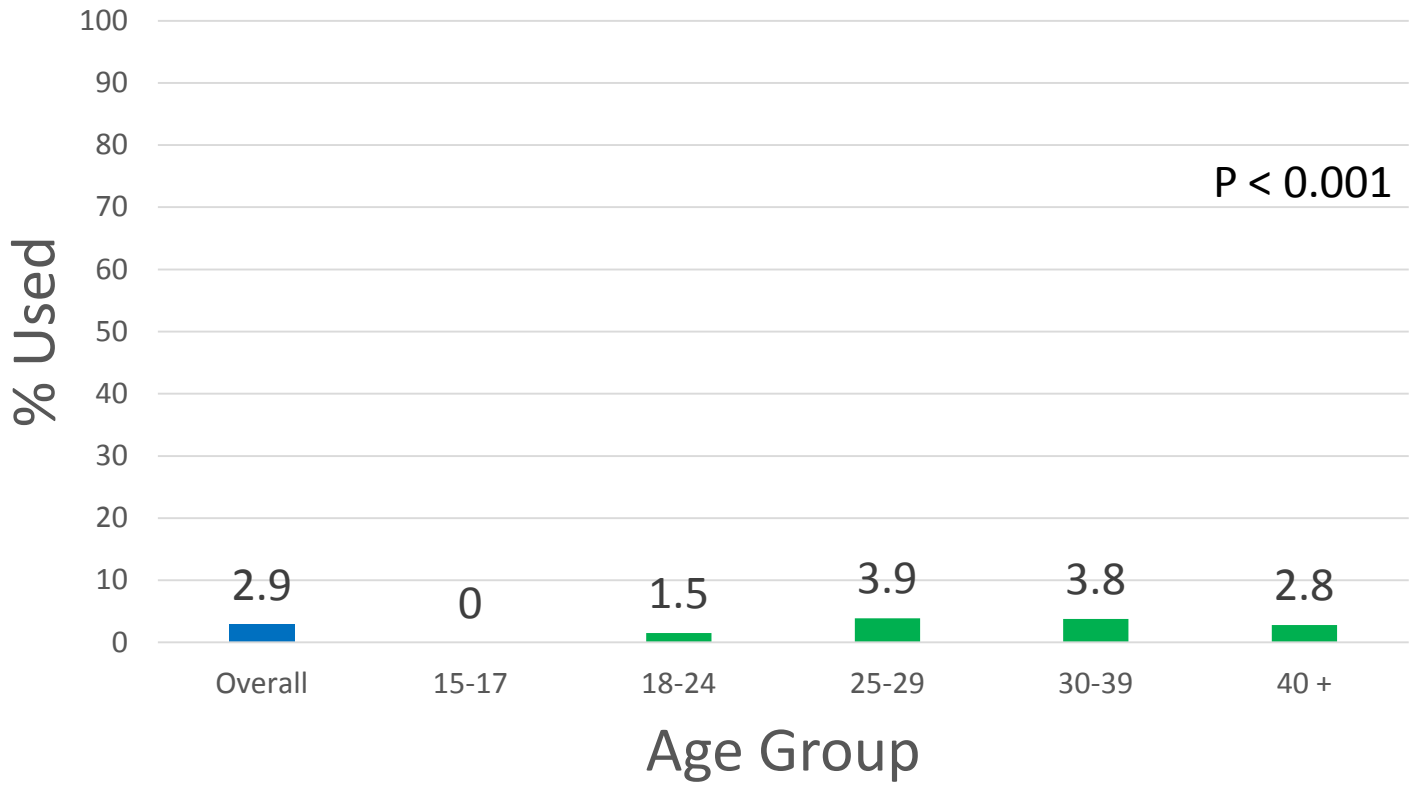
Willingness to use PrEP by age, 6760 US MSM, 2013-2015



Sources:

1. Sanchez et al 2015; JMIR Public Health Surveill 2015;1(1):e3
2. Sanchez et al 2016; JMIR Public Health Surveill 2016;2(1):e2

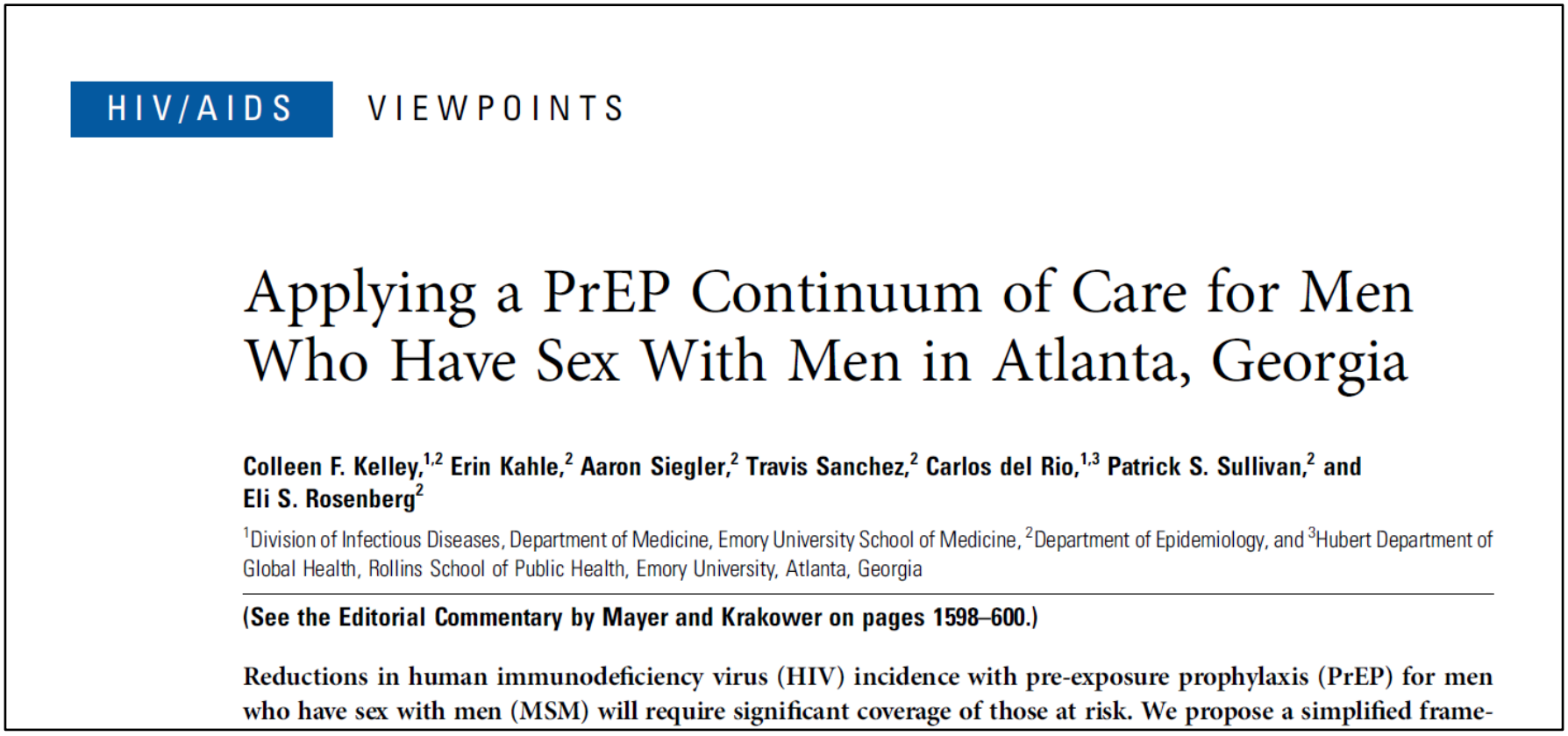
Use of PrEP by age, 6864 US MSM, 2013-2015



Sources:

1. Sanchez et al 2015; JMIR Public Health Surveill 2015;1(1):e3
2. Sanchez et al 2016; JMIR Public Health Surveill 2016;2(1):e2

The PrEP Continuum



HIV/AIDS VIEWPOINTS

Applying a PrEP Continuum of Care for Men Who Have Sex With Men in Atlanta, Georgia

Colleen F. Kelley,[1,2] Erin Kahle,[2] Aaron Siegler,[2] Travis Sanchez,[2] Carlos del Rio,[1,3] Patrick S. Sullivan,[2] and Eli S. Rosenberg[2]

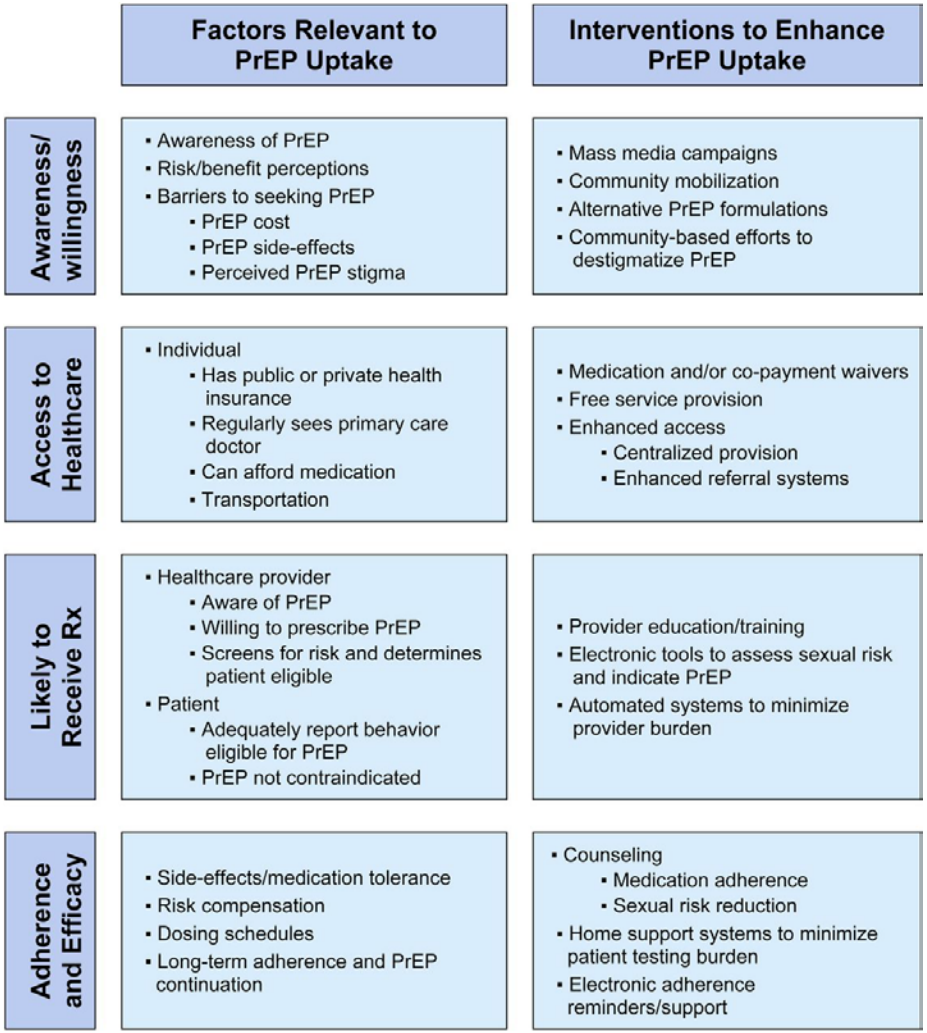
[1]Division of Infectious Diseases, Department of Medicine, Emory University School of Medicine, [2]Department of Epidemiology, and [3]Hubert Department of Global Health, Rollins School of Public Health, Emory University, Atlanta, Georgia

(See the Editorial Commentary by Mayer and Krakower on pages 1598–600.)

Reductions in human immunodeficiency virus (HIV) incidence with pre-exposure prophylaxis (PrEP) for men who have sex with men (MSM) will require significant coverage of those at risk. We propose a simplified frame-

involve[men]t

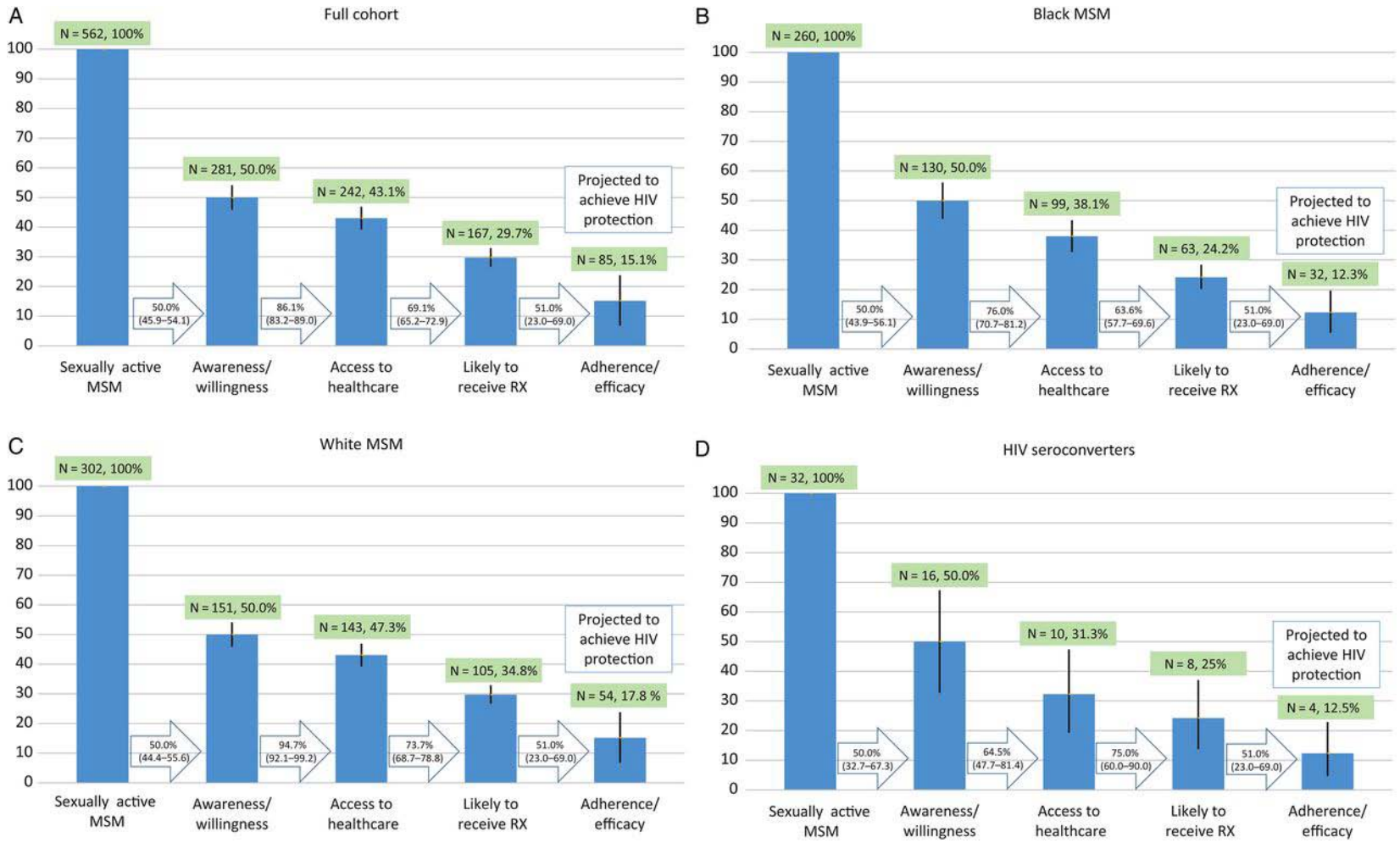
Theorectical model of the PrEP care continuum, factors relevant to uptake, and areas for intervention.



Colleen F. Kelley et al. Clin Infect Dis. 2015;61:1590-1597

Clinical Infectious Diseases

The PrEP care continuum for (A) the total InvolveMENt cohort, (B) black MSM (C) white MSM and (D) HIV seroconverters in the InvolveMENt cohort.



Colleen F. Kelley et al. Clin Infect Dis. 2015;61:1590-1597

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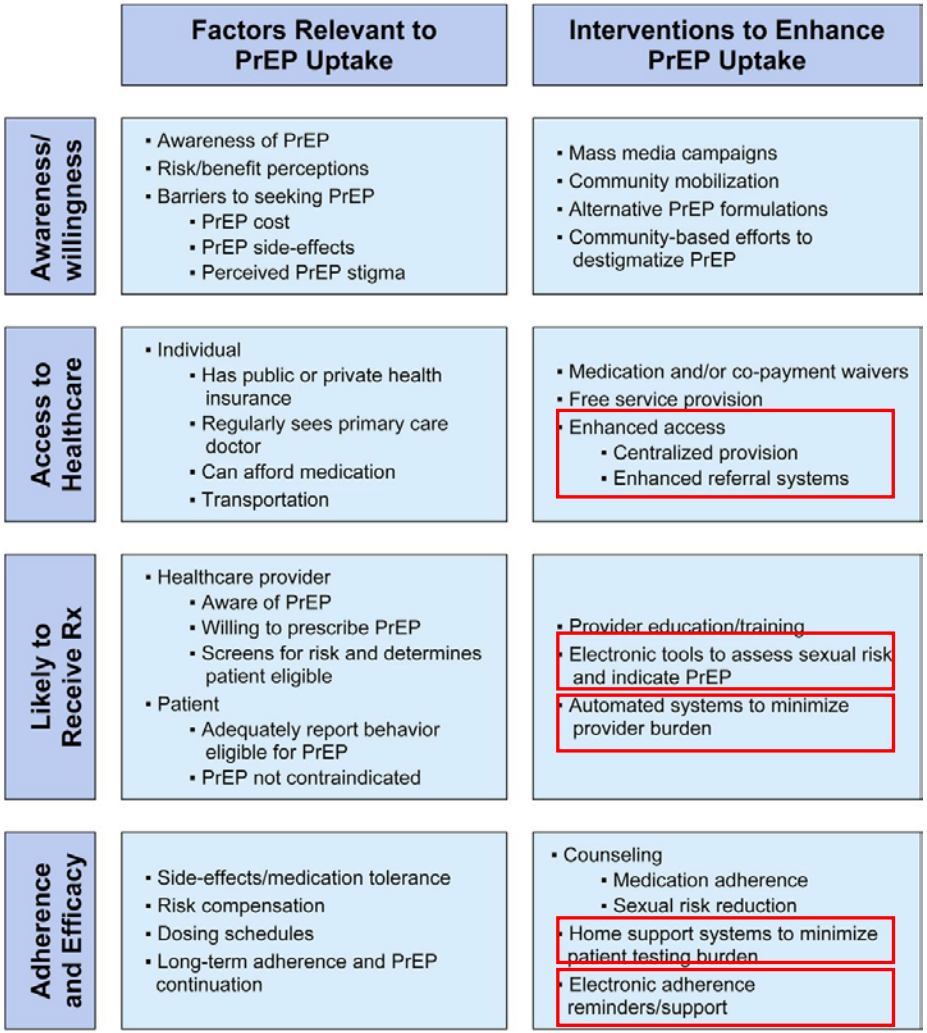
Clinical Infectious Diseases

Theorectical model of the PrEP care continuum, factors relevant to uptake, and areas for intervention.



Colleen F. Kelley et al. Clin Infect Dis. 2015;61:1590-1597

Clinical Infectious Diseases

Map - AIDSVu | Chicago - AIDSVu | US PrEP Provider Directo

https://preplocator.org

PrEP Locator Find Your Provider

About Us | Locator Data | FAQ | Add Provider | Add Locator To Your Site | Contact

Chicago

PrEP for uninsured

PrEP access assistance

Northwestern Medical Group
1460 N. Halsted Street
5th Floor
Chicago, IL 60642
312-926-3627
Distance from your location: 1 mile

Planned Parenthood of Illinois
1152 N. Milwaukee
Chicago, IL 60642
773-252-2240
Distance from your location: 0.9 miles

Seton Family Health Center
711 W. North Avenue
Chicago, IL 60610
312-280-0996
Distance from your location: 1.2 miles

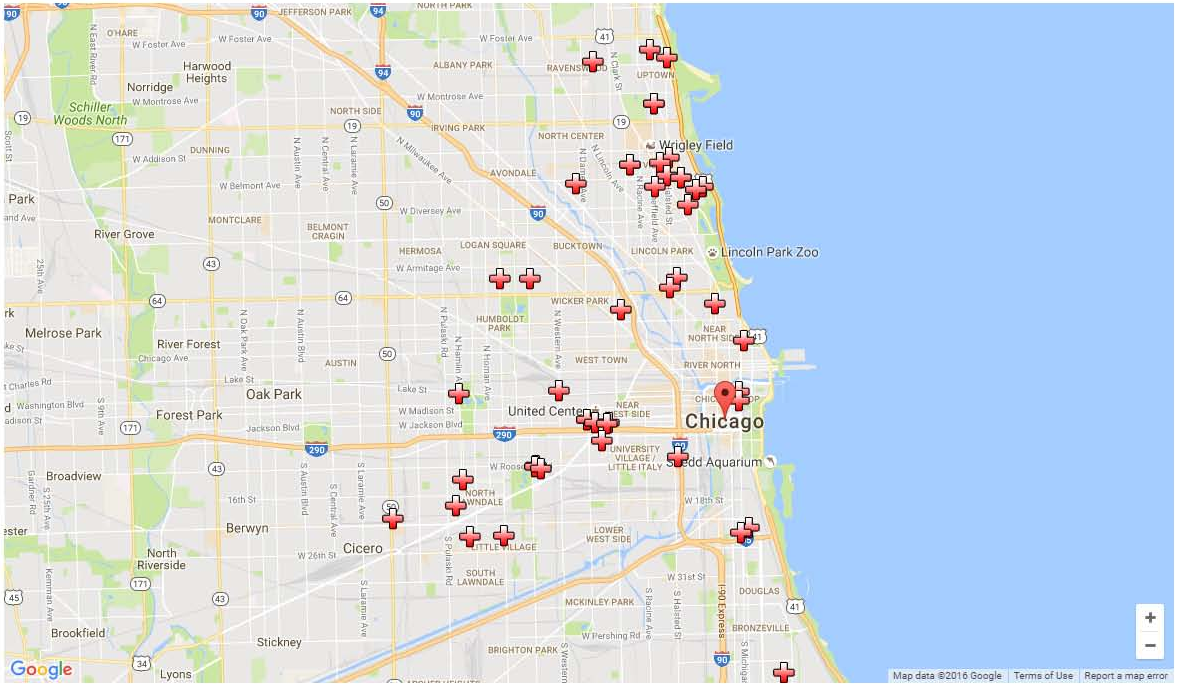
Planned Parenthood of Illinois
1200 N. Lasalle
Chicago, IL 60610
312-266-1033
Distance from your location: 1.2 miles

Rush University Medical Center
600 S. Paulina
Suite 140-143
Chicago, IL 60612
312-942-5865
Distance from your location: 1.7 miles

Rush University Medical Center Specialty

Add PrEP Locator to Your Site

Suggest a provider for the directory



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Suggest A Provider | Privacy Policy | Terms of Use

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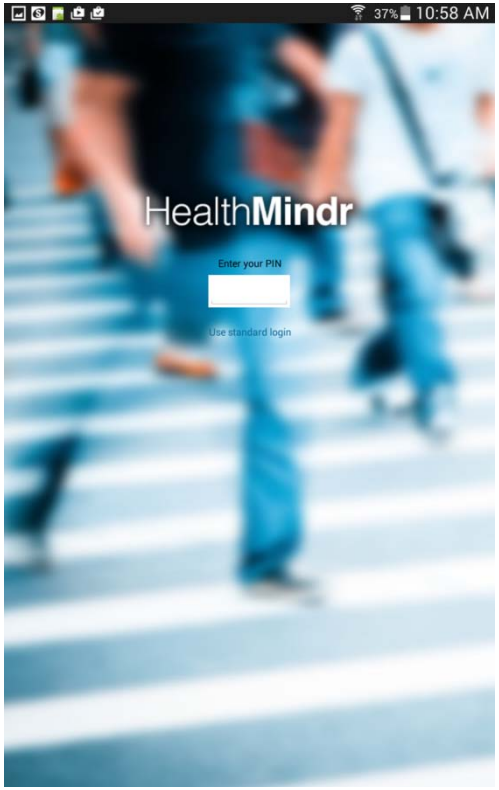
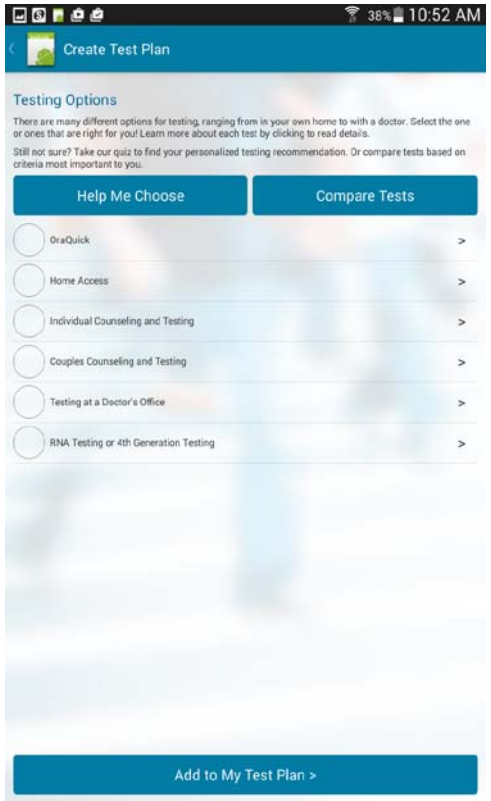
HealthMindr: A comprehensive HIV prevention platform for MSM





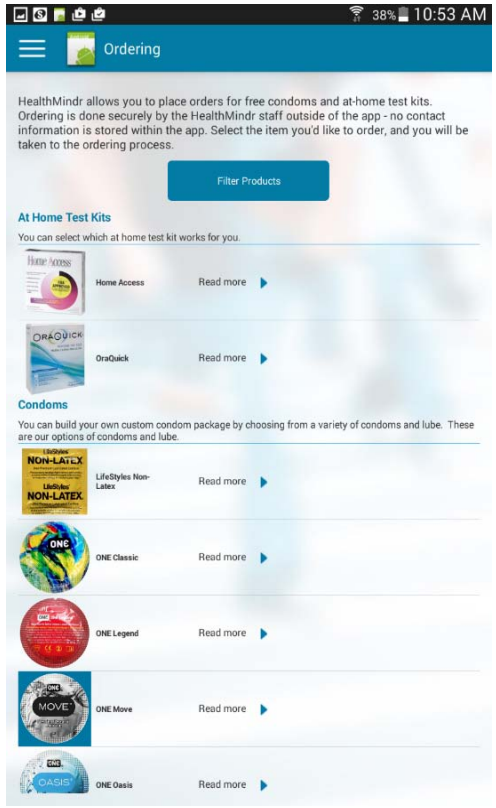


Figure A18. PrEP self-assessment.

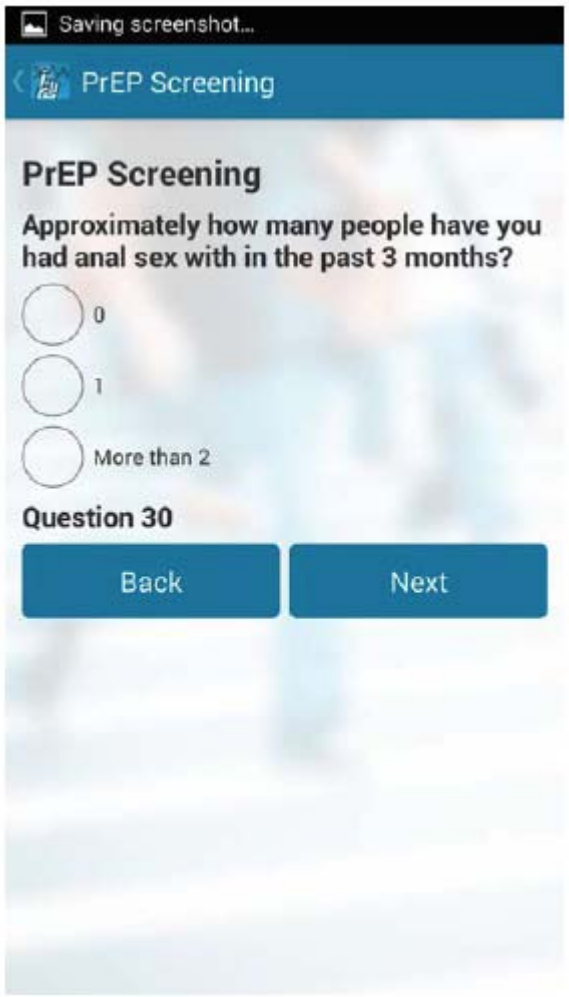


Figure A20. PrEP self-assessment.

Figure A21. PrEP self-assessment.

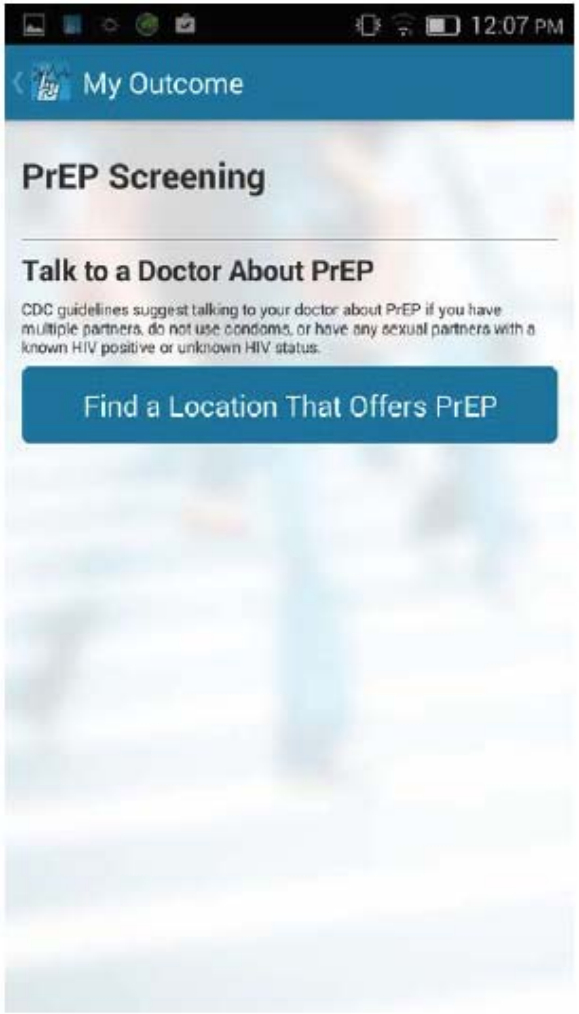


Figure A26. PrEP self-assessment result recommend talking to a doctor about PrE

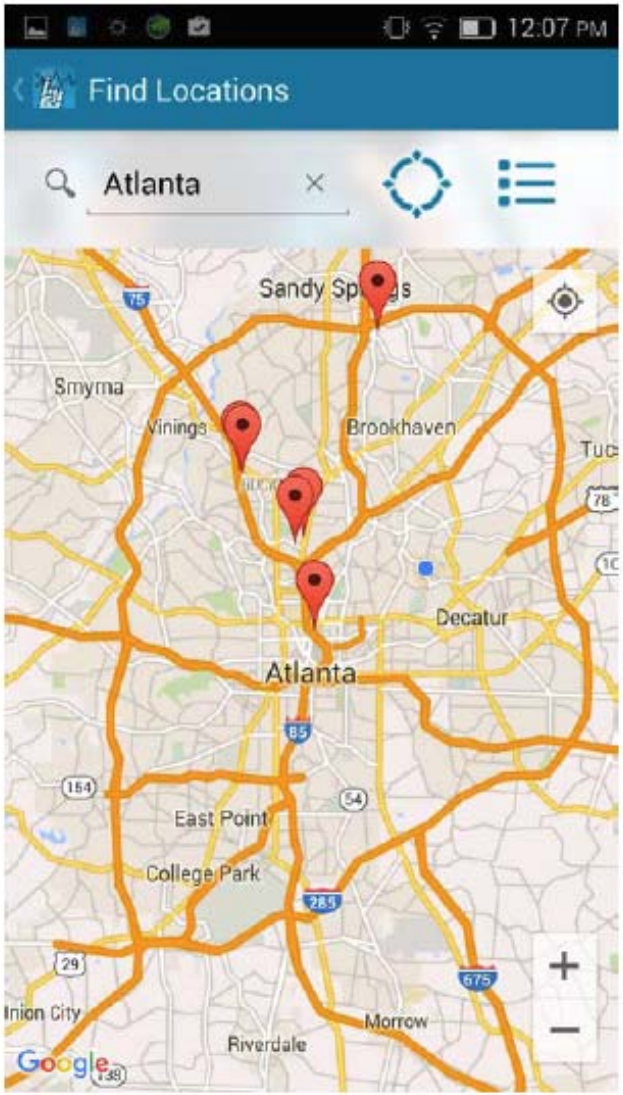


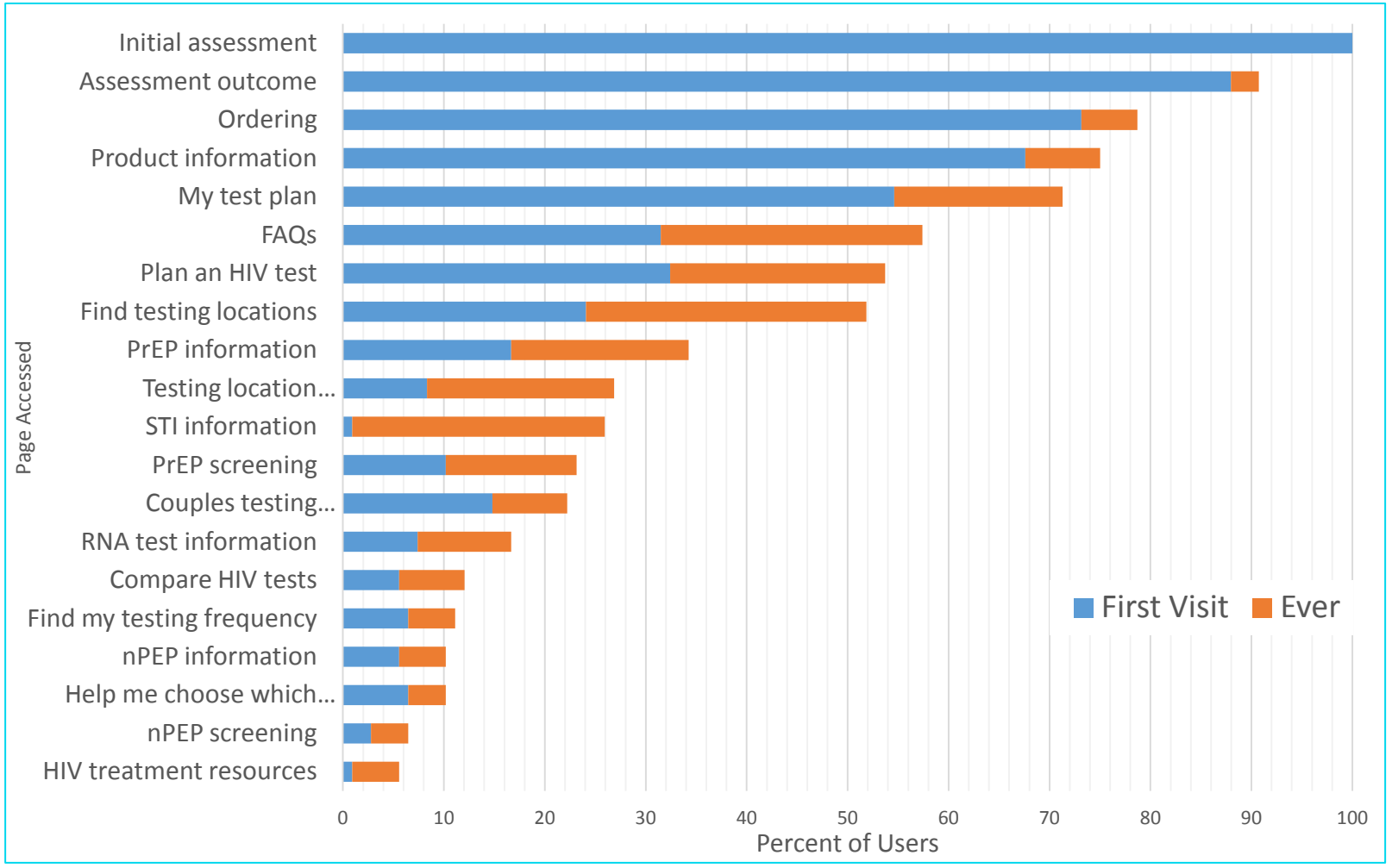
Figure A27. PrEP provider locations map.

Figure A28. PrEP provider locations list.

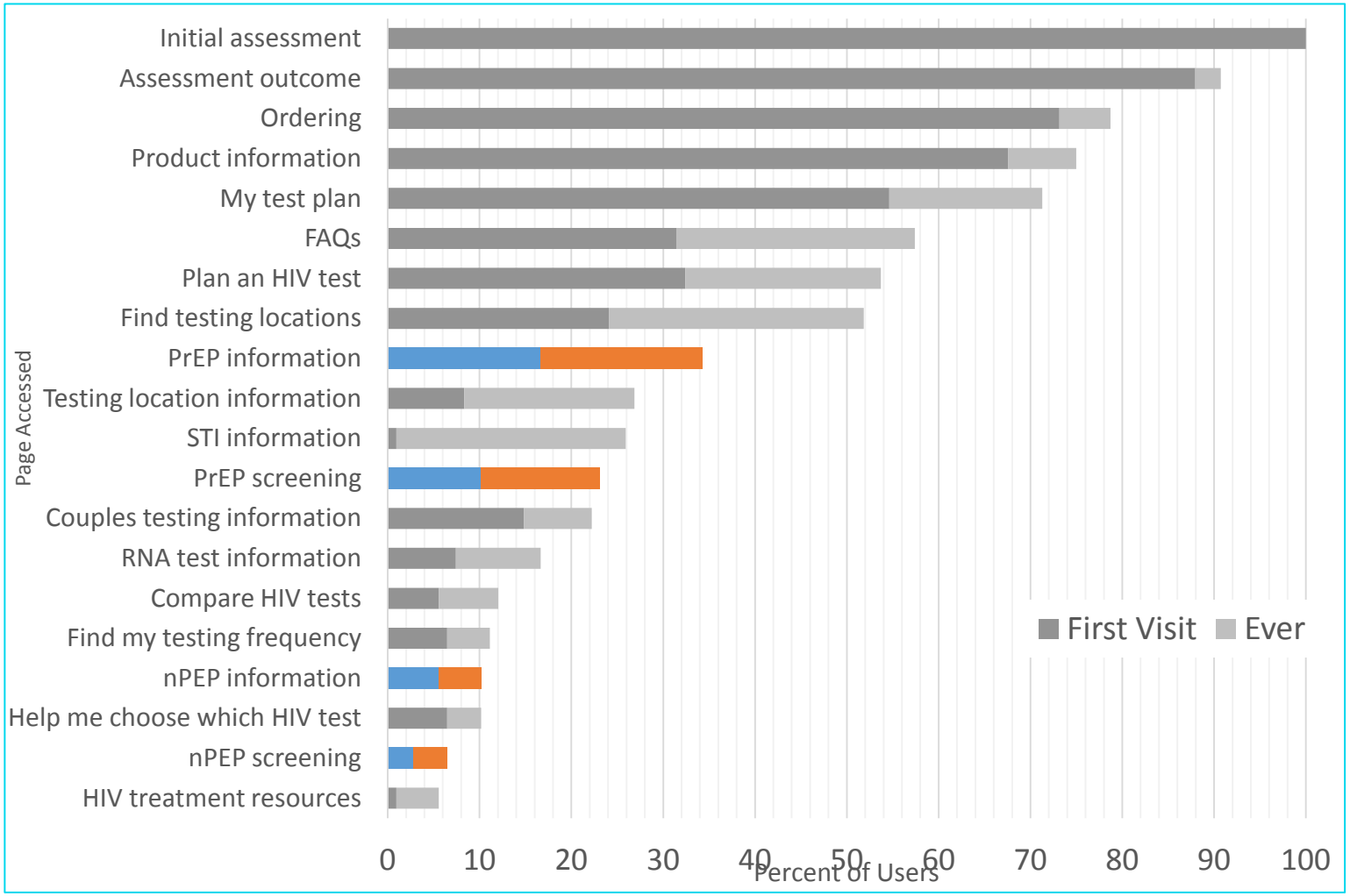
Participant Demographics

	Total (n=121)		Atlanta (n=72)		Seattle (n=49)	
Characteristic	No.	%	No.	%	No.	%
Age	31	(18-66)	31	(18-66)	30	(18-56)
Race/Ethnicity						
White/Caucasian	62	51	34	47	28	57
Black/African American	25	21	24	33	1	2
Hispanic	10	8	3	4	7	14
Asian/Pacific Islander	13	11	5	7	8	16
Native American/Alaska Native	1	1	0	0	1	2
Multiracial	10	8	6	8	4	8
Sexual orientation						
Gay/homosexual	104	87	64	89	40	83
Bisexual	14	12	8	11	6	13
Other	2	2	0	0	2	4
Most recent HIV test result						
Unsure	8	7	7	10	1	2
Never tested	18	15	14	20	4	8

App Pages Accessed by Users



App Pages Accessed by Users



Preliminary Evaluation Results (n=99)

- 78% of those reported dissatisfied with current condoms ordered new condoms
- 87% report using the ordered condoms
- 2/3 of test kit orders were not planning on being tested soon
- 50% of users who did not have a testing schedule now do
- 10% of PrEP-eligible men started PrEP

PrEP starts: HealthMindr Pilot

- 8/80 PrEP eligible started PrEP
- *"I went through and put in my (screener) responses and it basically said 'Hey maybe you should check out PrEP as an option and by the way here are some places you could go.' … I was seen (for PreP) at [provider] within a week … Easy breezy. (Healthmindr) was the piece that crossed the threshold from inaction to actual action. … This (Healthmindr) will saves lives, and I can even say maybe my life."* - Pilot participant

PrEP at Home

- Need to bring PrEP to scale
- CDC Guidance: at least four follow-up visits per year
- 492,000 US MSM behaviorally eligible for PrEP
- 1,968,000 patient visits per year for clinic-based HIV, STI and creatinine testing
- A home care kit could alleviate the economic burden on patients, providers and the healthcare system

Sources:

1. US Public Health Service. Preexposure Prophylaxis for the Prevention of HIV Infeciton in the United States – 2014. A Clinical Practice Guidelines. Available at: https://www.cdc.gov/hiv/pdf/prepguidelines2014.pdf .
2. Smith et al 2015; MMWR 64(46);1291-1295

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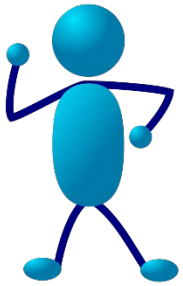
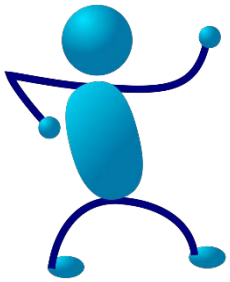
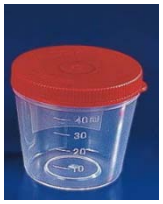
PrEP
AT HOME

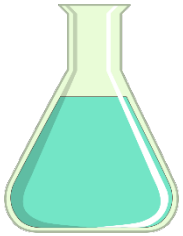
Standard PrEP Initiation and follow up at 1 and 3 months



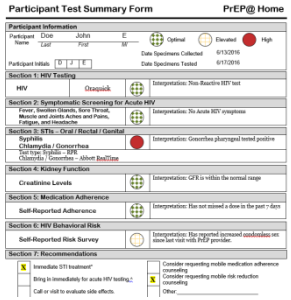

Subsequent follow-up visit, participant receives kit from central lab



Participant uses kit, returns mailer to lab




Lab receives kit. Results collated with behavioral survey.


Participant Test Summary Form PrEP@ Home

Participant Information

Participant Name: Doe (Last) John (First) E. (M)

Optimal / Elevated / High

Date Specimens Collected: 6/13/2016

Participant Initials: D J E

Date Specimens Tested: 6/17/2016

Section 1: HIV Testing

HIV — Orasquick — Interpretation: Non-Reactive HIV test

Section 2: Symptomatic Screening for Acute HIV

Fever, Swollen Glands, Sore Throat, Muscle and Joints Aches and Pains, Fatigue, and Headaches — Interpretation: No Acute HIV symptoms

Section 3: STIs – Oral / Rectal / Genital

Syphilis

Chlamydia / Gonorrhea

Test type: Syphilis – RPR

Chlamydia / Gonorrhea – Abbott RealTime

Interpretation: Gonorrhea pharyngeal tested positive

Section 4: Kidney Function

Creatinine Levels — Interpretation: GFR is within the normal range

Section 5: Medication Adherence

Self-Reported Adherence — Interpretation: Has not missed a dose in the past 7 days

Section 6: HIV Behavioral Risk

Self-Reported Risk Survey — Interpretation: Has reported increased condomless sex since last visit with PrEP provider.

Section 7: Recommendations

X Immediate STI treatment*

Bring in immediately for acute HIV testing.†

Call or visit to evaluate side effects.

Consider requesting mobile medication adherence counseling

X Consider requesting mobile risk reduction counseling

Other: _____

Results sent to provider


Provider can renew RX, or treat or refer to telemedicine counseling as needed

PrEP@Home Video

Provider form

Participant Test Summary Form

PrEP@ Home

Participant Information

Participant Name: Doe (Last) John (First) E (MI)

Participant Initials: D J E

Optimal | Elevated | High

Date Specimens Collected: 6/13/2016

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Section 1: HIV Testing

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Syphilis **Chlamydia / Gonorrhea**		Interpretation: Gonorrhea pharyngeal tested positive
Test type: Syphilis – RPR Chlamydia / Gonorrhea – Abbott RealTime		

Section 4: Kidney Function

Creatinine Levels		Interpretation: GFR is within the normal range

Section 5: Medication Adherence

Self-Reported Adherence		Interpretation: Has not missed a dose in the past 7 days

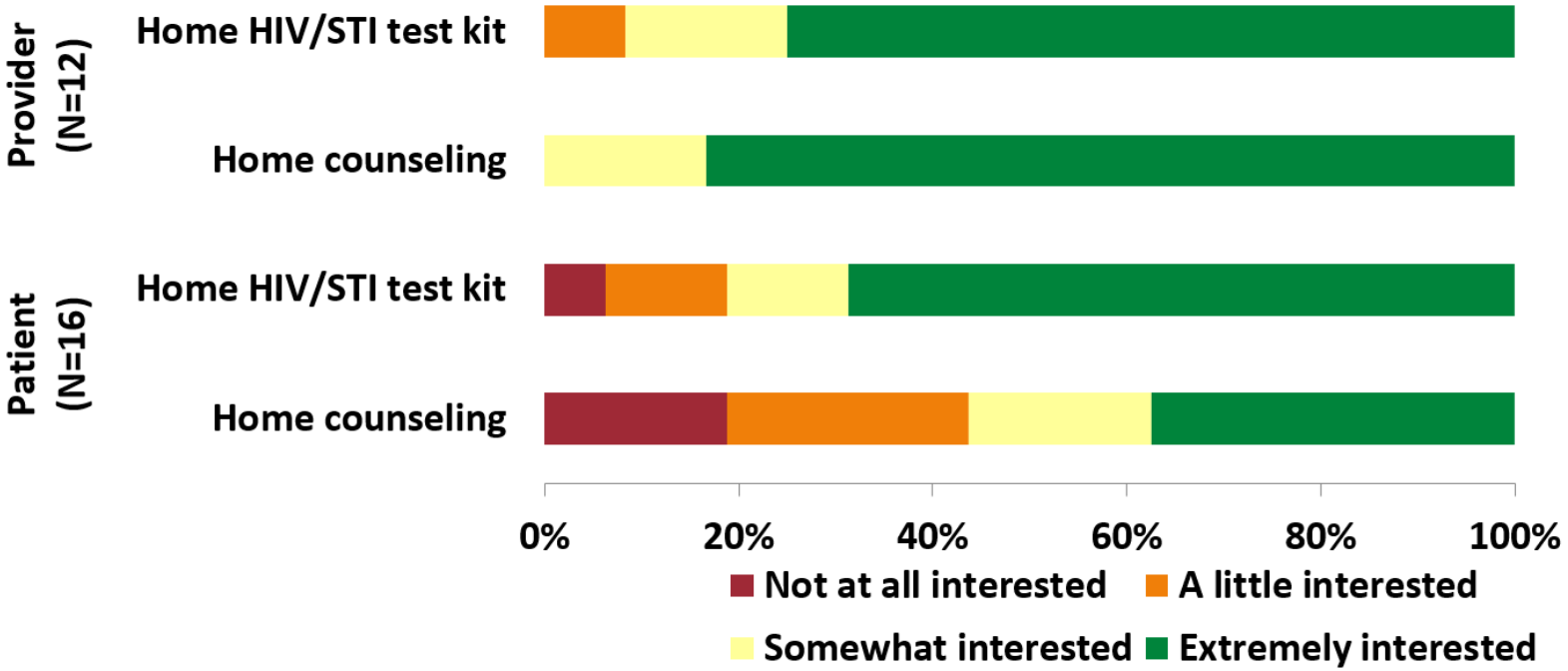
Section 6: HIV Behavioral Risk

Self-Reported Risk Survey		Interpretation: Has reported increased condomless sex since last visit with PrEP provider.

Section 7: Recommendations

X	Bring in immediately for STI treatment.*		Consider requesting telephone medication adherence counseling
	Bring in immediately for acute HIV testing.^	X	Consider requesting telephone risk reduction counseling
	Call or visit to evaluate side effects.		Other:_____

EMORY UNIVERSITY PrEP AT HOME



- Provider: “Anything to help me do PrEP well, to be able to provide the services, I think it’s fantastic.”
- Provider: “I think it’s great. I think that we have to decentralize … particularly for folks who don’t have good experiences or access to providers … the idea that you have to come into a visit in order to get some of the medical care particularly around PrEP where (patients are) usually generally young healthy folks is not necessary.”
- Patient: “ I think it’s pretty useful especially for the STI testing … I would highly encourage this to be out in the world. I think it will help a lot.”
- 4/15 patients rated themselves as more likely to remain on PrEP if a home kit was available.

Pilot testing

- Provider: “Anything to help me do PrEP well, to be able to provide the services, I think it’s fantastic.”
- Provider: “I think it’s great. I think that we have to decentralize … particularly for folks who don’t have good experiences or access to providers … the idea that you have to come into a visit in order to get some of the medical care particularly around PrEP where (patients are) usually generally young healthy folks is not necessary.”
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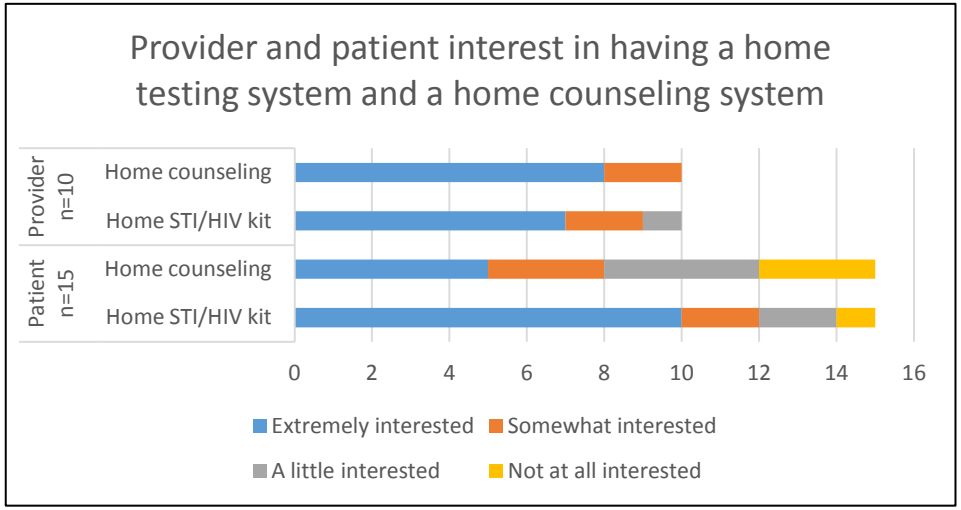

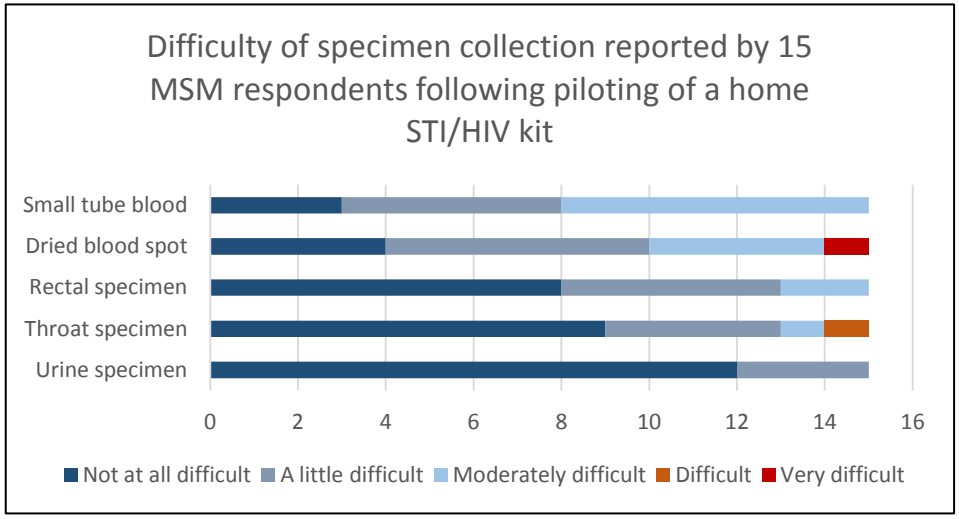

Next Steps

- PrEP Strategic Summit – January 2016
- For the field
  - Approvals (?) and consensus on adolescent PrEP
- For Emory team
  - Remote PrEP provision – mobile app, telemedicine
  - Further study of home monitoring kits
  - Optimization of PrEP Continuum in cohort of young black MSM in Atlanta

Team and funders

- Colleagues
  - Hannah Cooper
  - Carlos del Rio
  - Ralph DiClemente
  - Paula Frew
  - Colleen F. Kelley
  - Mark Mulligan
  - John Peterson (GSU)
  - Eli Rosenberg
  - Laura F. Salazar (GSU)
  - Travis Sanchez
  - Gina Wingood
  - Aaron Siegler
- Colleagues
  - Steve Goodreau
  - Rob Brookmeyer
  - Chris Beyrer
  - Rob Stephenson
  - Joanne Stekler
  - Rob Driggers
  - Adam Vaughan
- Dedicated team of staff:
  - Project coordinators
  - Recruiters
  - Event staff
  - Retention specialists
  - Data managers, analysts

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