

Moving PrEP Forward

Where We Are & Where We Need to Go

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& INFECTIOUS DISEASES



Overview

- Recent study results & some context
 - Epidemiology
 - Modeling the impact of PrEP
 - PrEP in the real world
- Uptake and utilization in US
 - Is PrEP reaching those at risk?
- Advancing a PrEP agenda for NC

What is pre-exposure prophylaxis?

Use of antiretroviral medications **before** an exposure, to reduce the risk of becoming infected

Tenofovir (TDF) is the most studied agent for PrEP

- Properties of drug allow infrequent dosing
- Few drug-drug interactions
- Safe and well tolerated

FDA approved in 2012

(emtricitabine / tenofovir DF = **Truvada**)





When taken consistently,
oral PrEP reduces risk of
HIV infection by

90-100%

among cisgender MSM,
heterosexual men & women,
and transgender women.

(84% among PWID)

Grant RM, et al. *NEJM*. Dec 2010;363(27):2587-99
Baeten JM, et al. *NEJM*. Aug 2012;367(5):399-410
Grant RM, et al. *Lancet Inf Dis*. Sep 2014;14(9):820-9
Martin M, et al. *AIDS*. Apr 2015;29(7):819-24

PrEP 2.0 is coming...



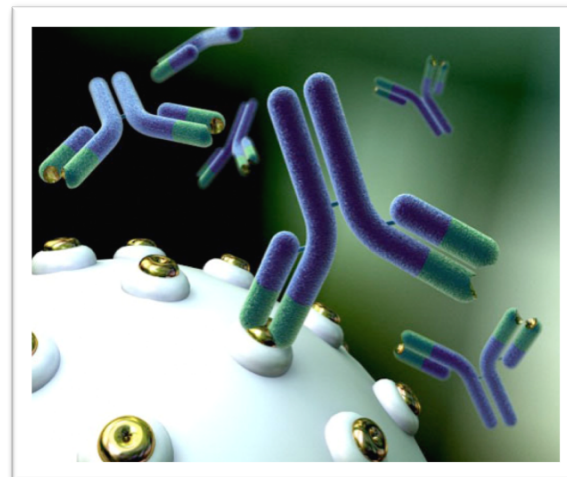
FTC / TAF



dapivirine NNRTI

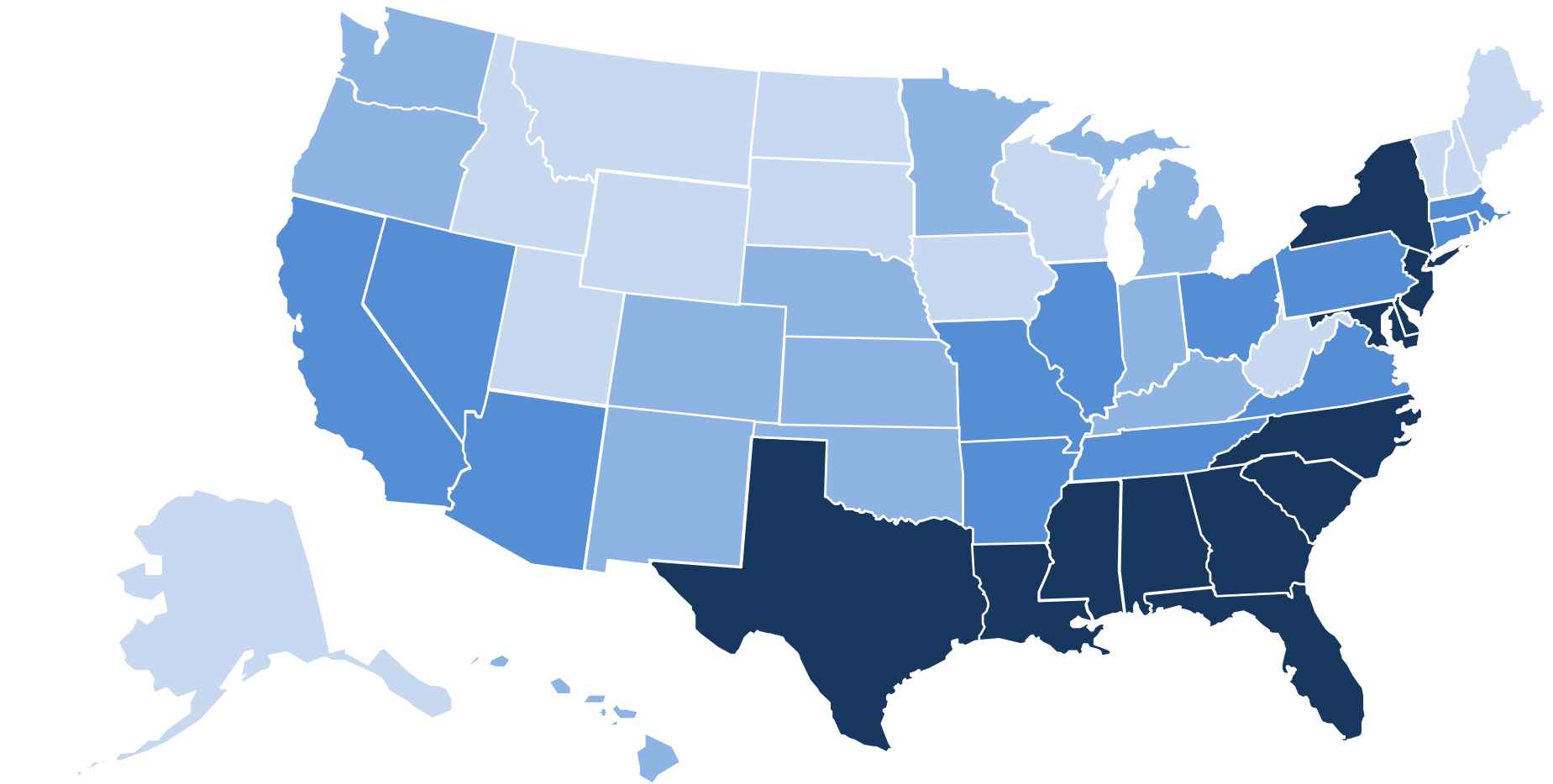


cabotegravir-LA INI



**broadly
neutralizing
monoclonal
antibodies
(bnAbs)**

Lifetime risk of acquiring HIV

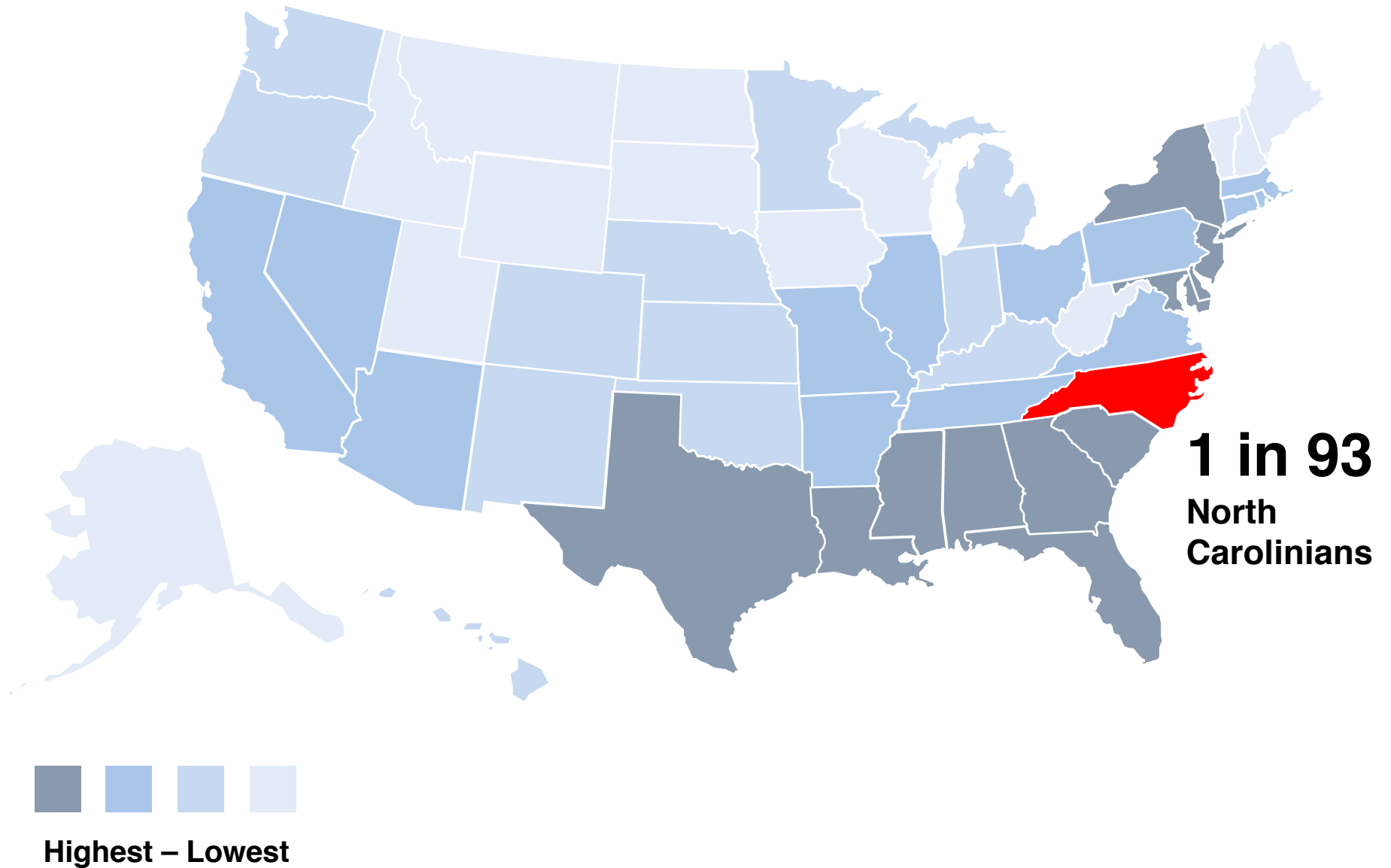


Highest – Lowest

Hess K et al. CROI 2016, abstract #52

Map from CDC website: <http://www.cdc.gov/hiv/statistics/overview/geographicdistribution.html>

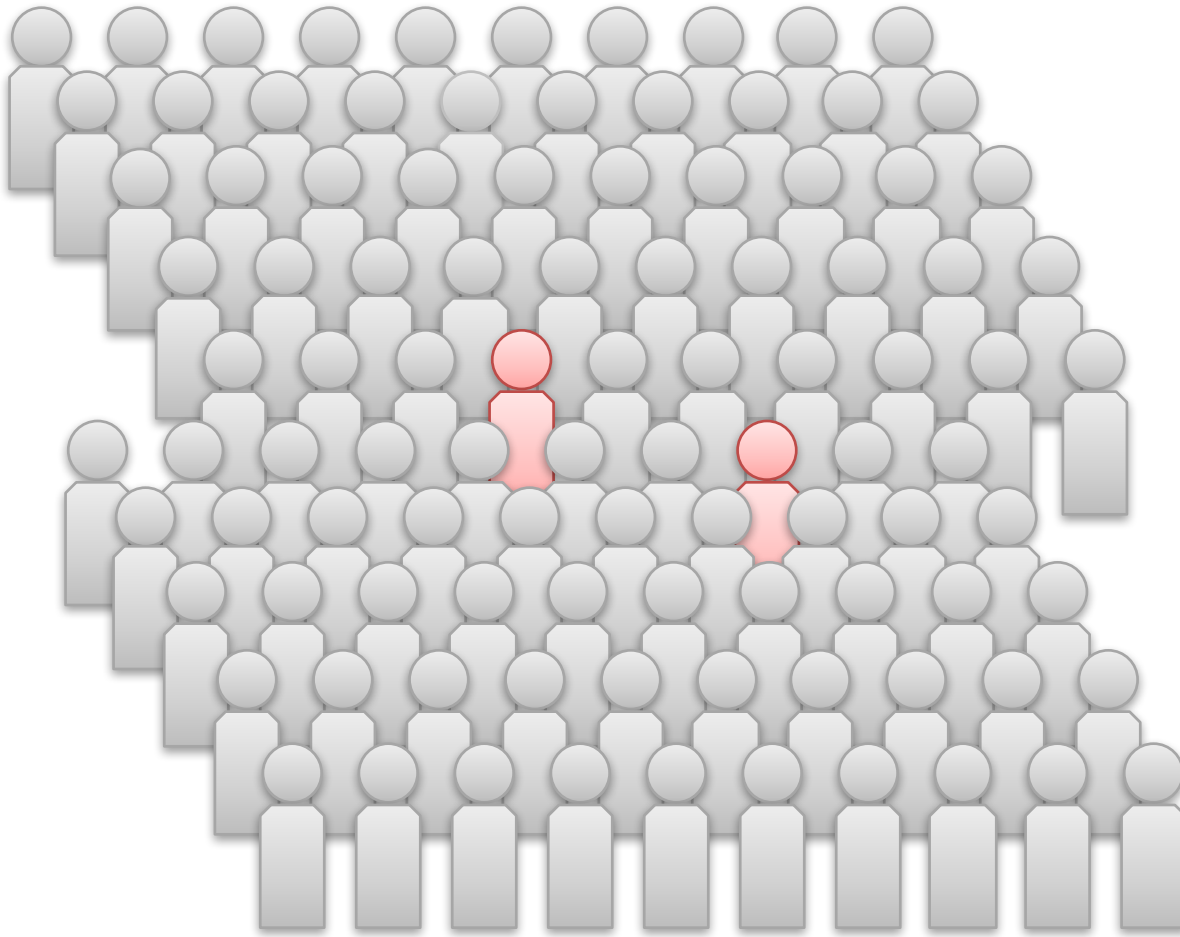
Lifetime risk of acquiring HIV



Hess K et al. CROI 2016, abstract #52

Map from CDC website: <http://www.cdc.gov/hiv/statistics/overview/geographicdistribution.html>

Lifetime risk of acquiring HIV

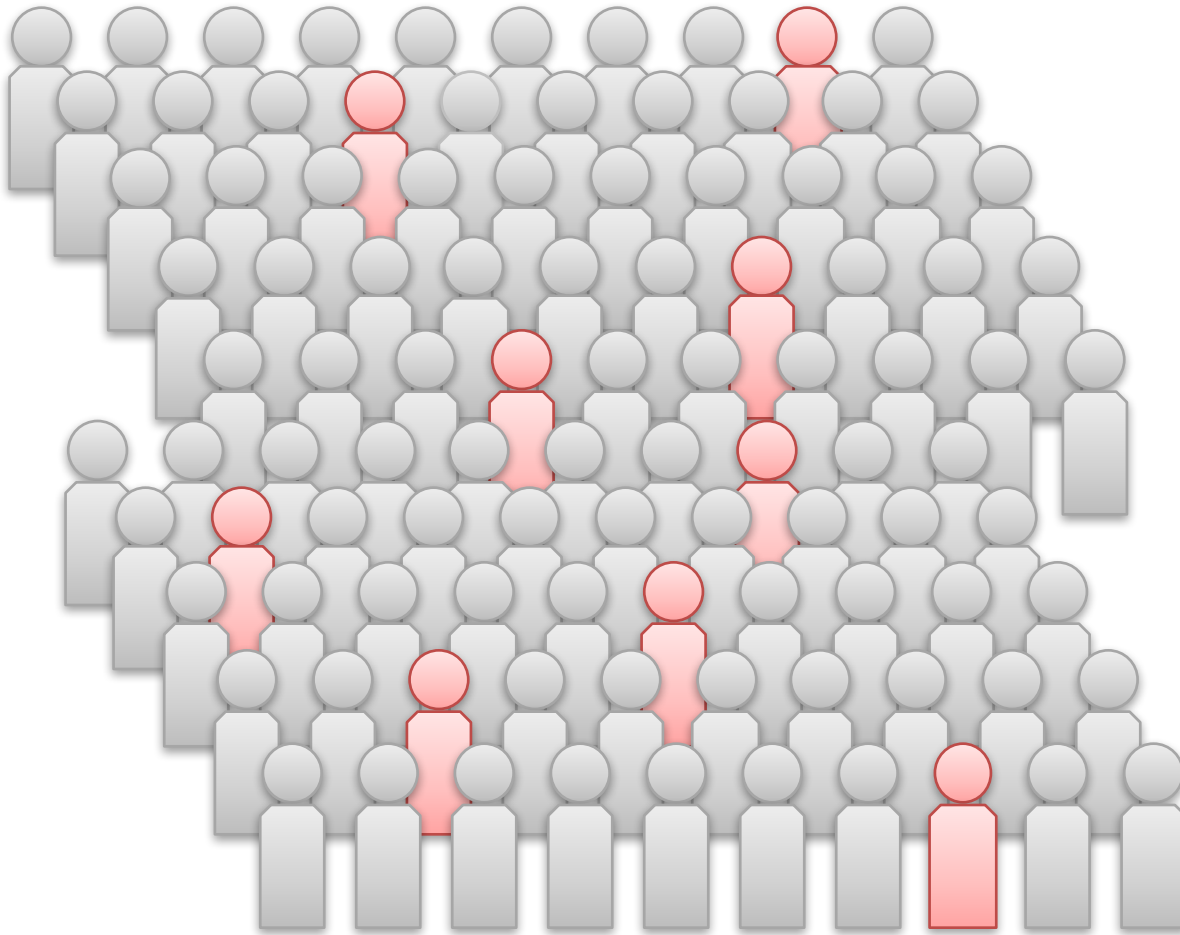


If current diagnosis
rates persist...

2

out of 100
Black women
will become HIV+

Lifetime risk of acquiring HIV

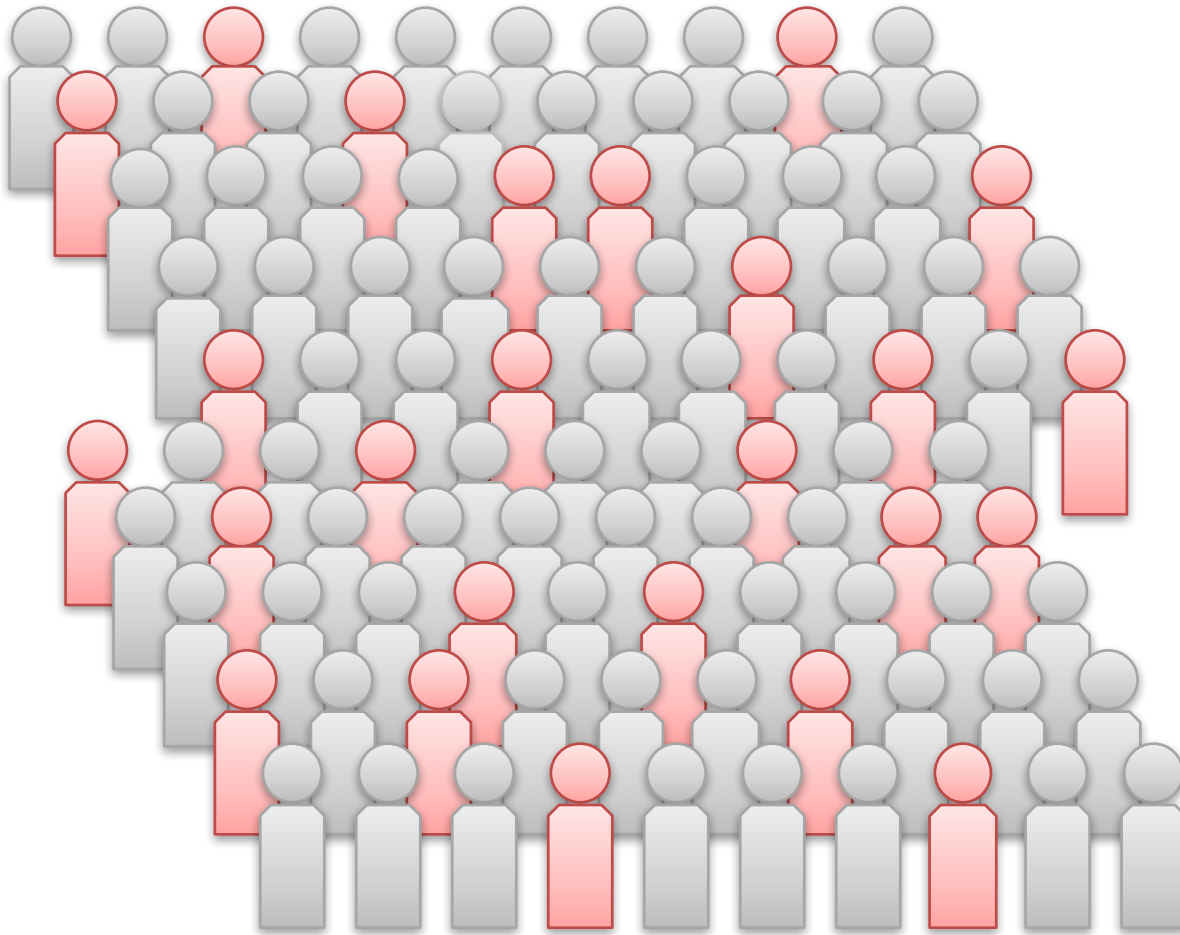


If current diagnosis
rates persist...

9

out of 100
White MSM
will become HIV+

Lifetime risk of acquiring HIV

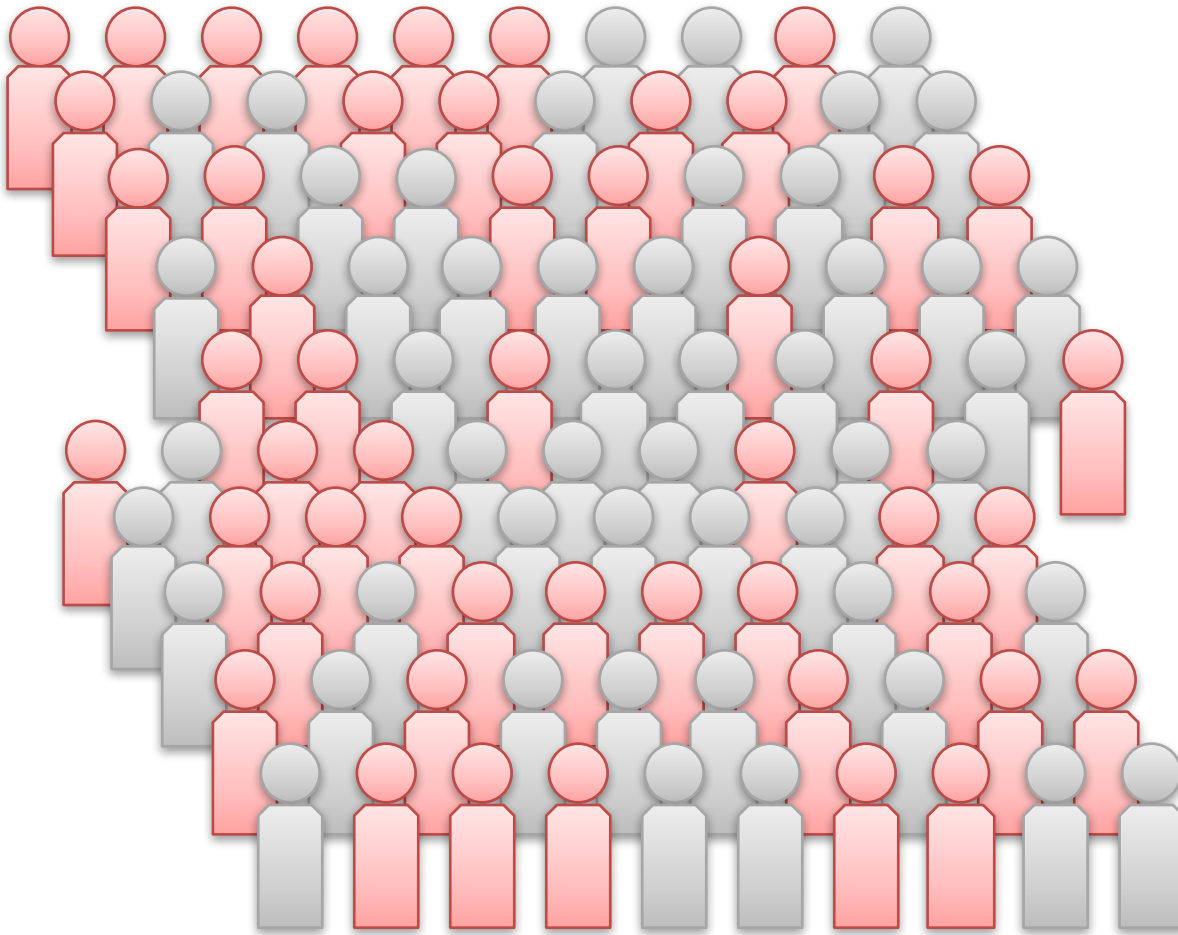


If current diagnosis
rates persist...

25

out of 100
Hispanic MSM
will become HIV+

Lifetime risk of acquiring HIV

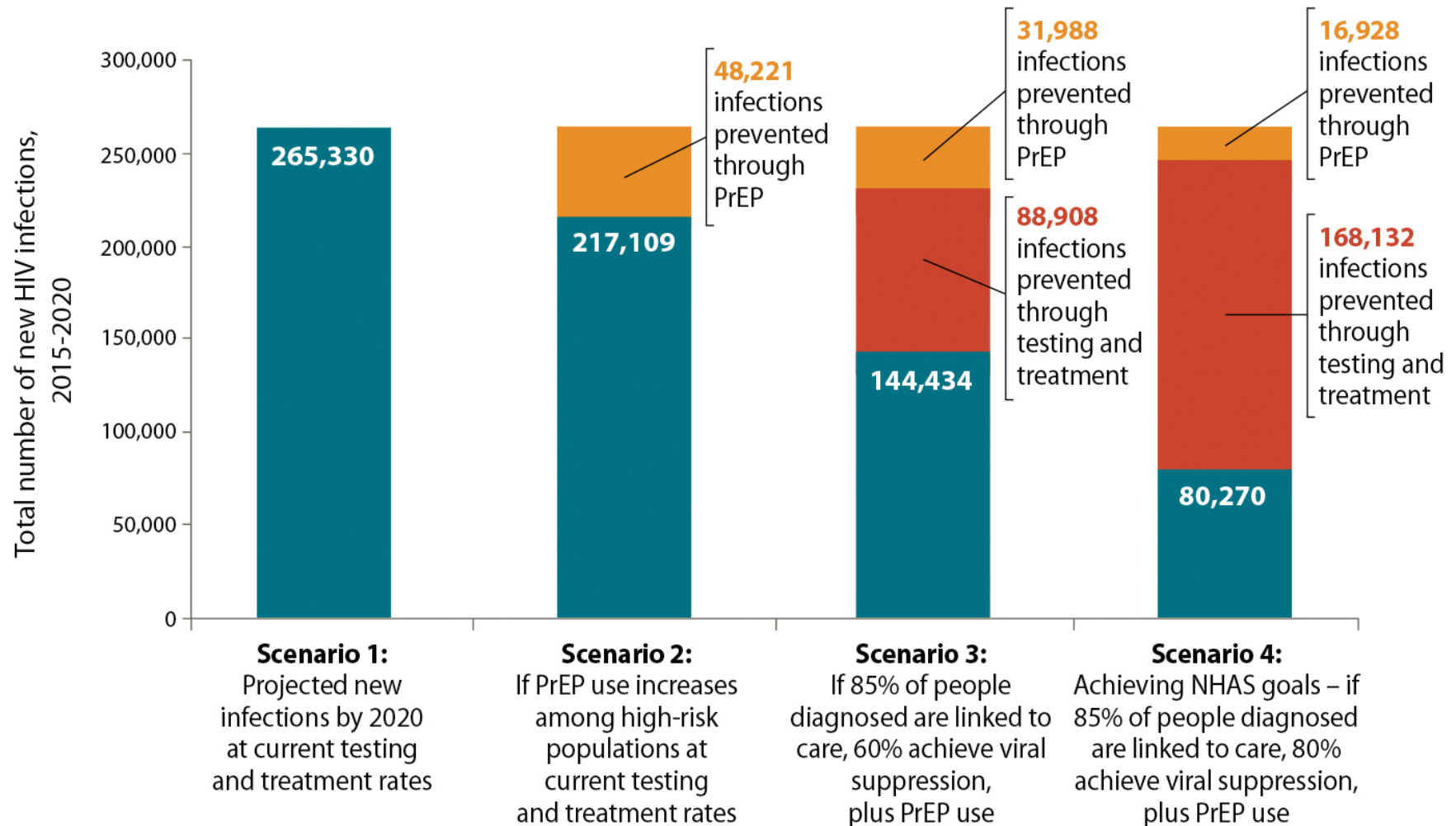


If current diagnosis
rates persist...

50

out of 100
Black MSM
will become HIV+

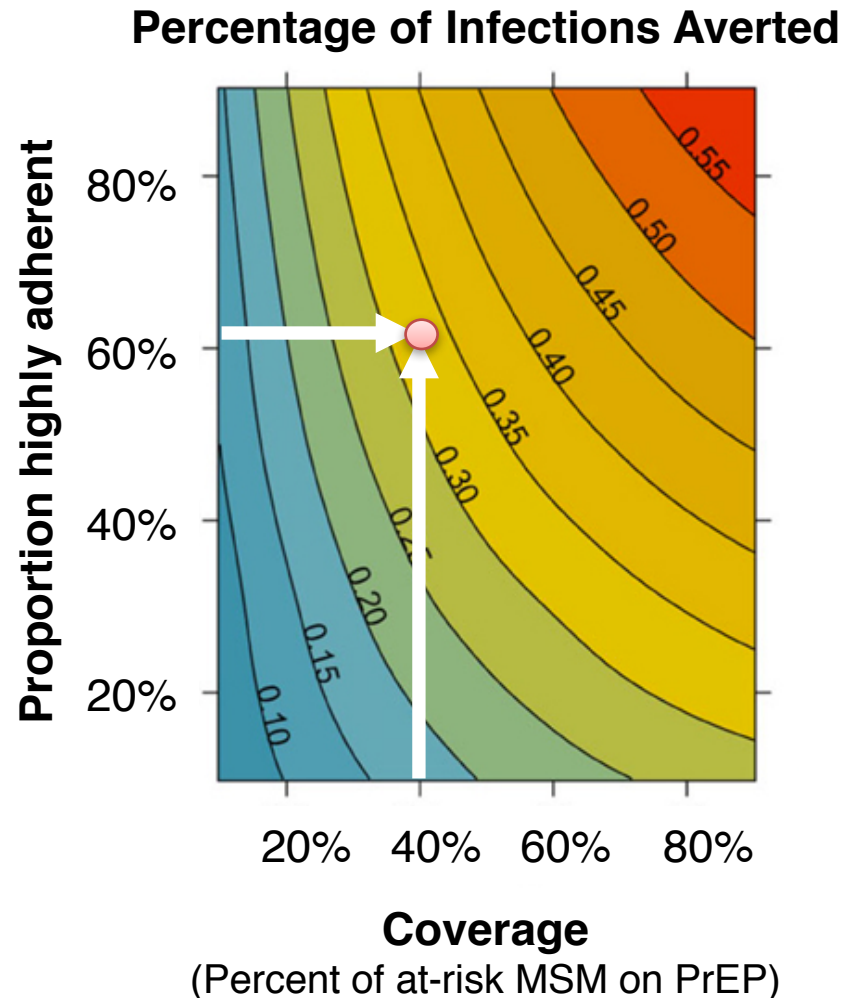
Potential impact of interventions, 2015-2020



- New infections
- HIV infections prevented due to expanded testing and treatment
- HIV infections prevented due to PrEP (assumes PrEP use among high-risk populations = 40% MSM; 10% PWID; 10% HET)

Yaylali E et al. CROI 2016, abstract #1051
Graphic from CDC

Modeling the 10-year impact for MSM



If 40% are covered
and 62% take
PrEP consistently...

33%

of expected
infections in next 10
years will be averted

Increasing coverage
has a greater impact

PrEP really does work in the real world

PROUD – Nov 2012 - Apr 2014



544

MSM &
trans women

1/2

started
immediately

1/2

delayed
initiation

86%

protective
effectiveness
(95%CI: 58, 96)

13

at-risk MSM need to be
treated for 1 year to
prevent 1 infection
(95% CI: 9, 23)

For primary prevention: aspirin 1667 x 1Y statin 104 x 5Y

PrEP really does work in the real world

Kaiser SF, July 2012 - Feb 2015



1045

referrals for
PrEP

80%

evaluated
in person

82%

started PrEP
(62% of those referred)

388

person-years
of follow-up

187

new STIs among
PrEP users

0

new HIV infections
among PrEP users

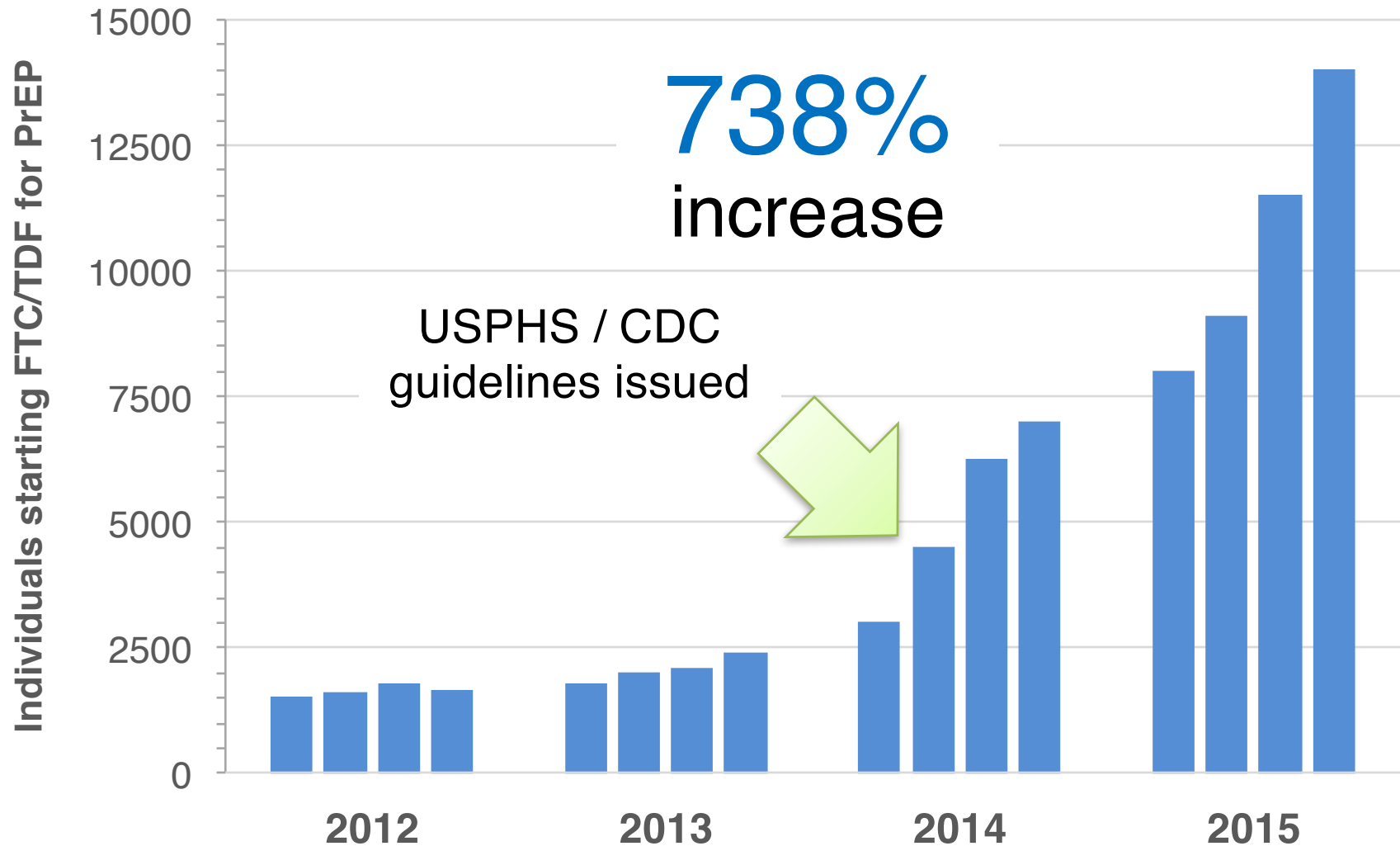
PrEP really does work in the real world

Review of 32 PrEP demonstration projects

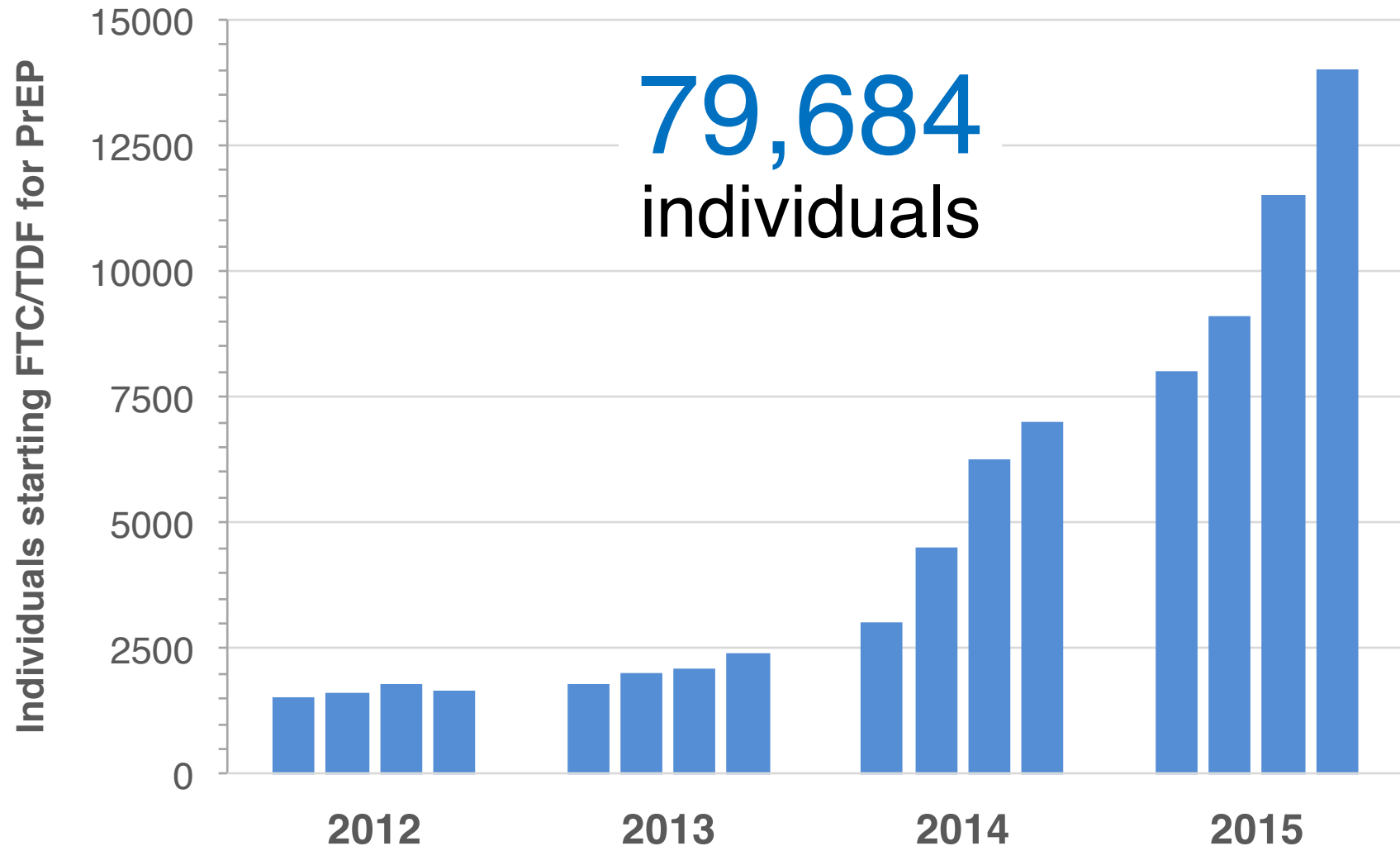
- 17 projects had **no new infections**
 - 2,467 participants → 1,315 P-Y of PrEP exposure

	Men n=7002	Women n=1388	Transgender Women n=76	Overall
Total exposure, P-Y	6214	788	48	7061
Number of infections	64	2	1	67
Rate per 100 P-Y (95%CI)	1.03 (0.80, 1.32)	0.25 (0.03, 0.92)	2.07 (0.05, 11.5)	0.95 (0.74, 1.2)

PrEP is taking off in the US...

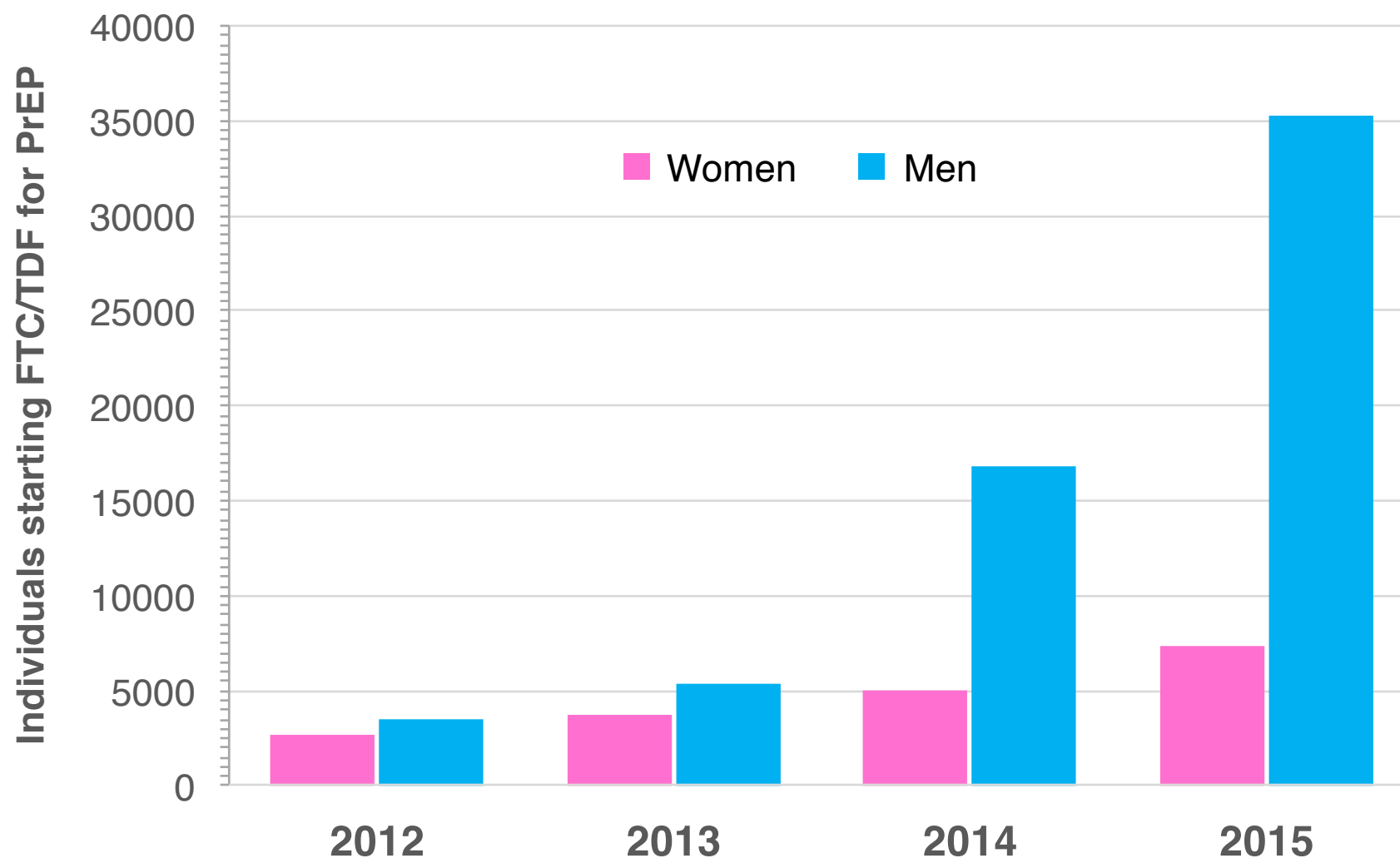


PrEP is taking off in the US...



Rawlings K et al (McAllister presenting). IAC Durban 2016, abstract #TUAX0105LB
http://www.natap.org/2016/IAC/IAC_17.htm

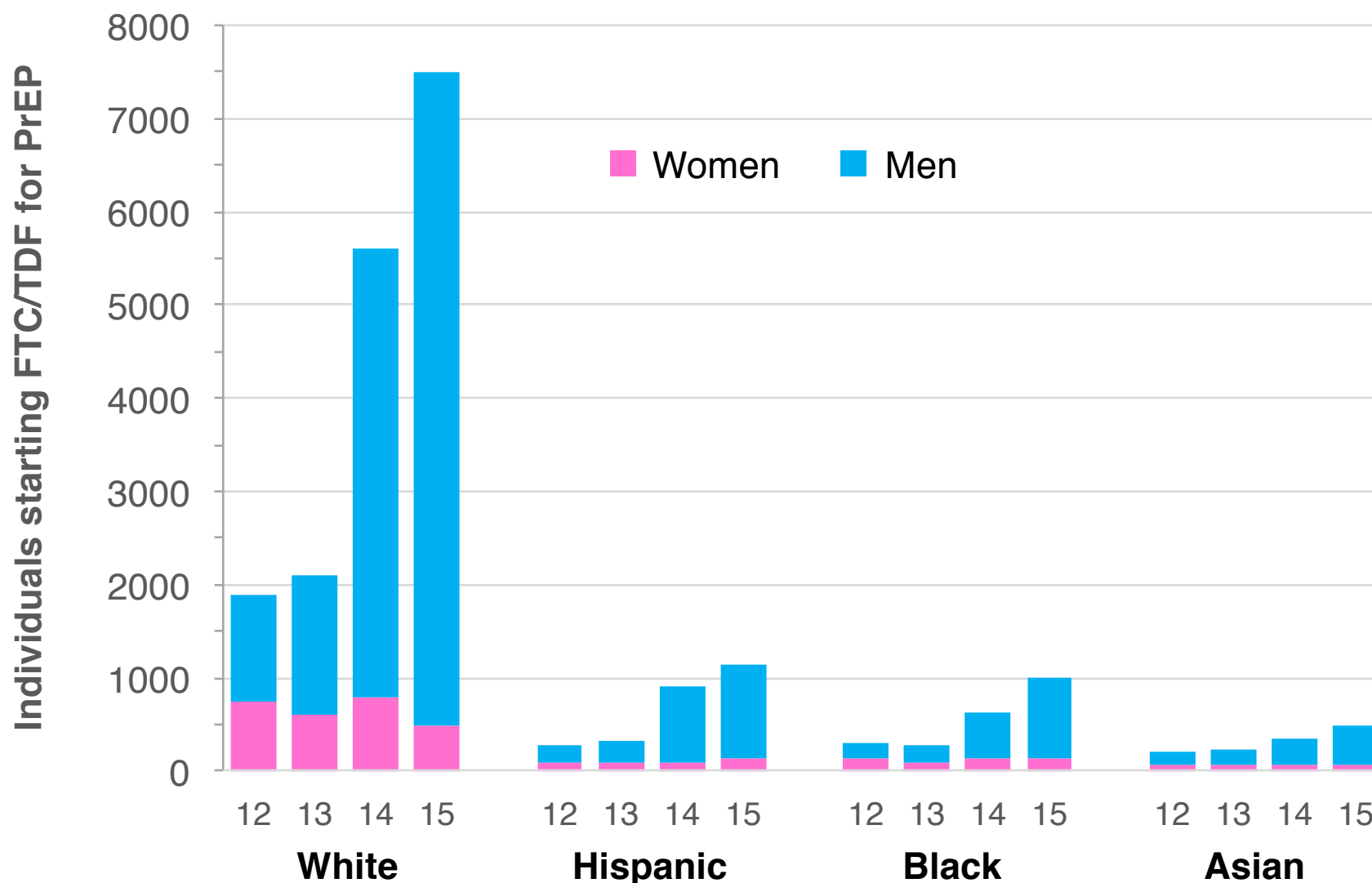
...but its distribution is uneven...



Rawlings K et al (McAllister presenting). IAC Durban 2016, abstract #TUAX0105LB
http://www.natap.org/2016/IAC/IAC_17.htm

...but its distribution is uneven...

n=21,463
(44% of all started)



Bush S et al. ASM / ICAAC 2016, abstract #2651

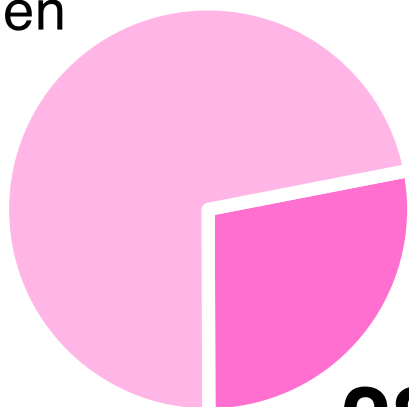
http://www.aidshealth.org/wp-content/uploads/2016/07/GILD_Bush-PrEP-Race-Utilization.ext-June-2016.pdf

...and it's not reaching those most at-risk

22%

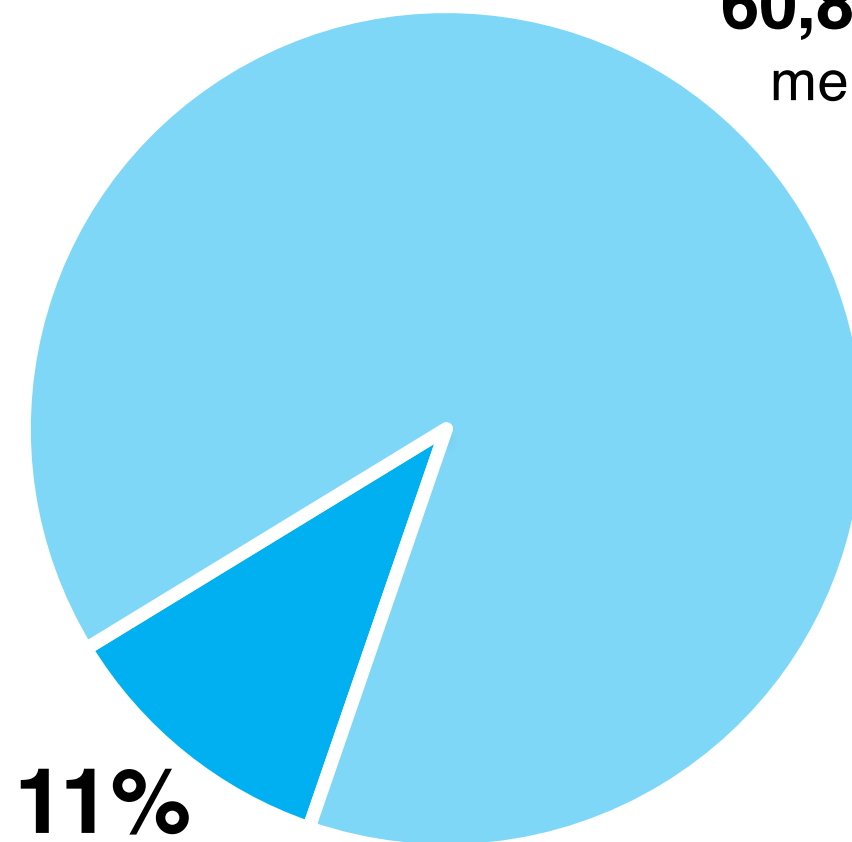
of all new infections in
2014 among 13-24 yo

18,812
women



28%
< 25 yo

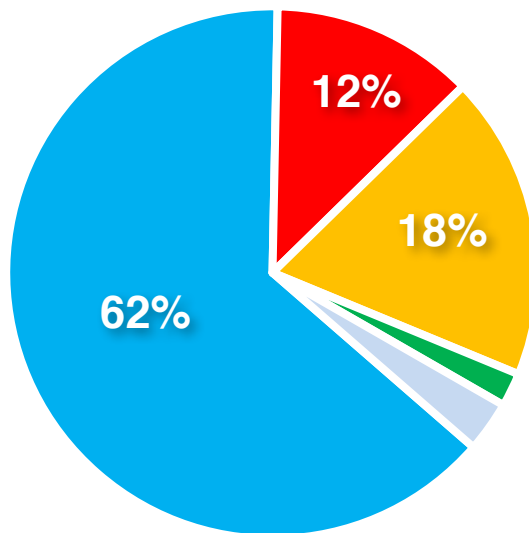
60,872
men



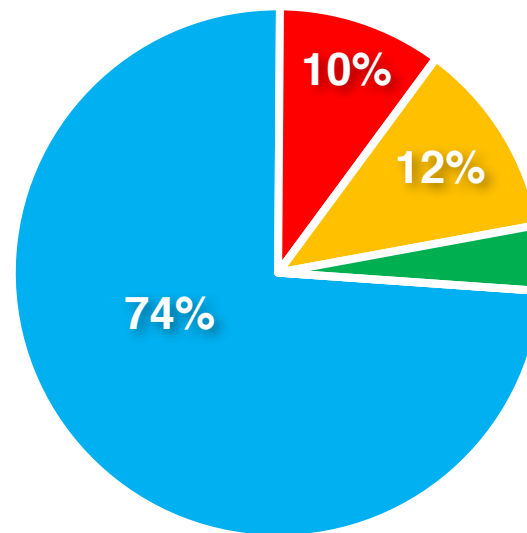
11%
< 25 yo

...and it's not reaching those most at-risk

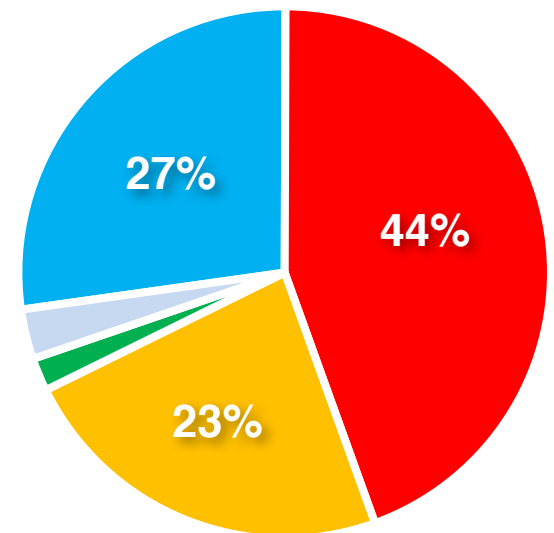
US Population
2014



PrEP Utilization
Sept 2015



New Infections
2014 (estimated)



■ Black ■ Hispanic ■ Asian ■ Multi/Other ■ White

Addressing barriers head-on

Nat'l HIV Behavioral Surveillance System (CDC)

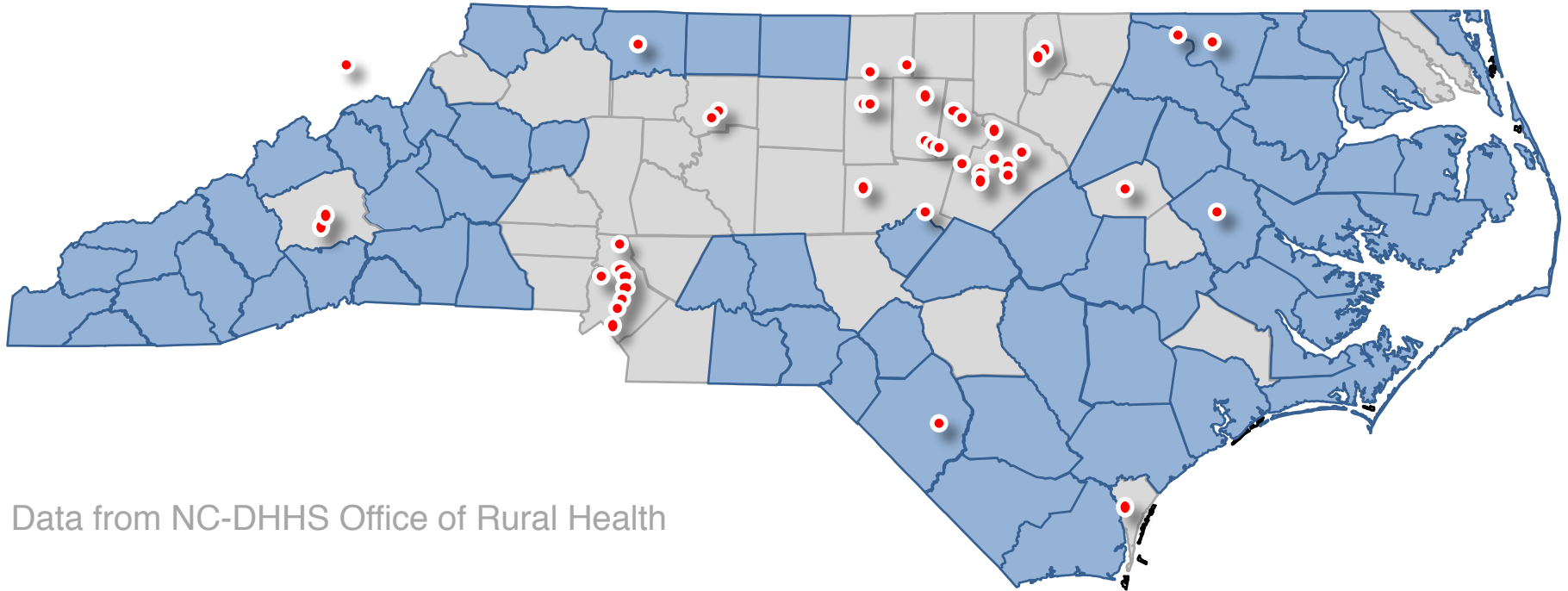
- Blacks & Whites equally willing to take PrEP
- Educated & high income: more White users
- **YBMSM less likely to have an indication**
 - ≥ 2 sex partners + (bacterial STI or UAI) in past 12m
 - 1 main HIV+ partner in past 12m
- Behavior alone doesn't explain differential risk...
 - Fewer missteps needed for YBMSM to acquire HIV

Hoots B et al. Clin Infect Dis. 2016;63(5):672-7.

Hurt CB, Dennis AM. Sex Transm Dis. 2013;40(3):213-5.

Hurt CB et al. JAIDS. 2012;61(4):515-21.

Service gaps reflect structural barriers

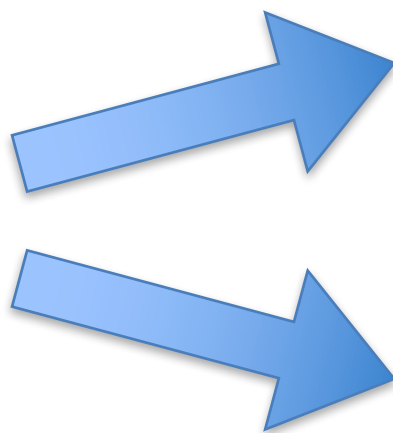


Data from NC-DHHS Office of Rural Health

 **Rural counties designated Health Professional Shortage Areas**
(specifically in need of primary care services)



**Structural
barriers**



Adherence

**Communities
of color**

PrEP is now a matter of social justice



PrEP is now a matter of social justice

We need statewide partnerships to:

- get the word out in innovative ways
- ensure access in people's own communities
- help cis- and trans men and women enter care
- alleviate barriers to retention and adherence
- identify best practices in delivering PrEP
- collect the data we need to demonstrate impact

We need the voices of advocates...



Questions?

Feel free to email me
churt@med.unc.edu