

CROI 2020 Update: HIV Prevention

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Disclosures



- I attended Gilead's 2018 U.S. Latinx/Hispanic PrEP Advisory Program.
- Only FTC/TDF and now FTC/TAF are approved by the FDA and only for use as daily PrEP in some but not all populations.

HIV prevention at CROI

- #93: Resistance following PrEP start in AHI
- #140: Challenges of diagnosis HIV in PrEP
- #91: Urine TDF testing
- #987: Non-daily use of meds among PrEP users
- #1131: Impact of PrEP and TasP on epidemic
- #1005: PrEP “equity index”

Initiating PrEP during acute HIV infection: What is the risk for ARV drug resistance?

Thai Red Cross – all PrEP starts tested by pooled qualitative NAT 7 (0.3%)
AHI in 2442 PrEP starts

5 identified by pooled NAT

2 neg pool but Ab+ at 1 mo (baseline VL<100 copies)

Drug resistance

3/7 had M184I or M184V (0/229 in AHI cohort)

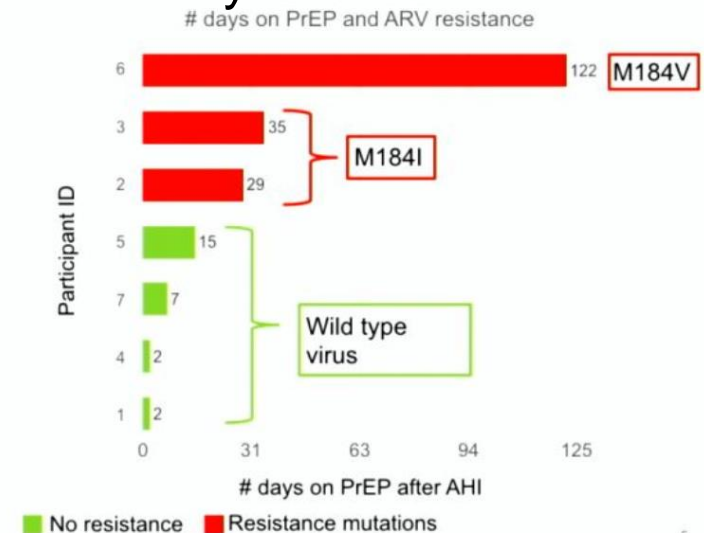
4/7 had no FTC resistance despite PrEP 2-15 days

0/7 TDF

1/7 NNRTI mutation (E138A)

0/7 PI

Since 2019, 3 drugs x 30days then Ab test
if any high risk behavior in last 30 days



Diagnostic and therapeutic challenges arise with early HIV infection on PrEP

UCSF Treat Acute HIV Study

Of 11 (19%) of 58 had “HIV/PrEP overlap” within last 10d
5 AHI at PrEP start, 6 acquired HIV while “on PrEP”

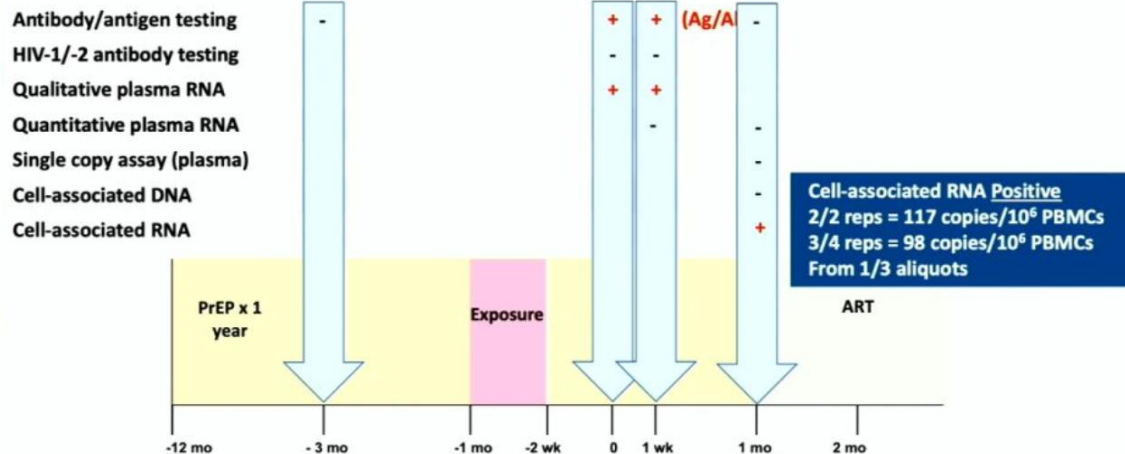
3 cases described

#1: AHI at PrEP start with WT virus, M184I at d7

#3: PrEP as PEP

#2: PrEP “overwhelmed”

Case 2: PrEP “Overwhelmed”?



Near-perfect accuracy of a real-time urine tenofovir test compared to lab-based ELISA

Samples from:

Partners PrEP

n=454 samples from 297 participants

iBrEATHe

n=231 samples from

46 transgender men/women

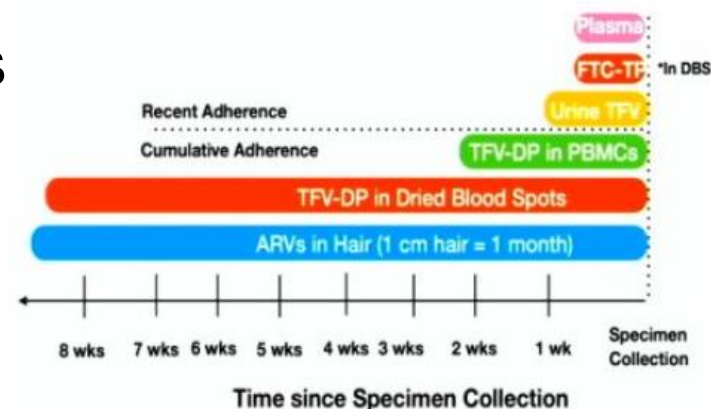
Comparator: ELISA with LOD 1000ng/mL

Planned cut off for LFA 1500 ng/mL =

>98% positive if dose within 24 hours and

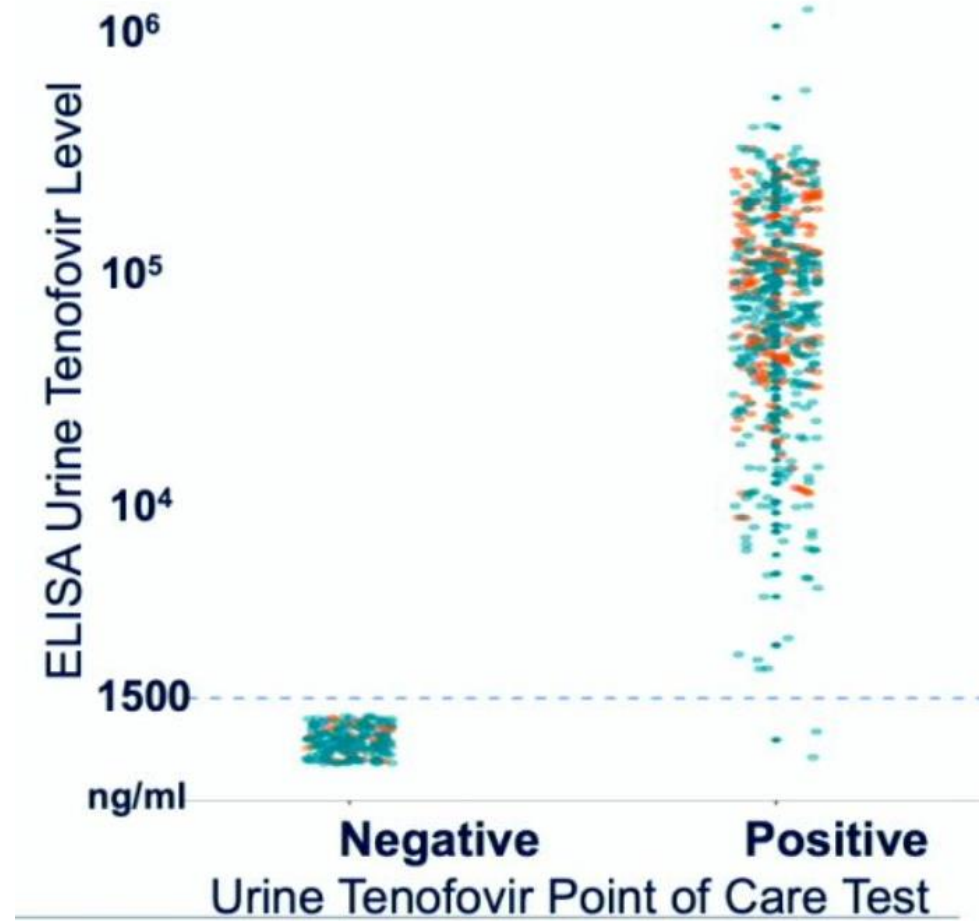
>98% negative if no dose within 120 hours

(Gandhi JAIDS 2019)



Near-perfect accuracy of a real-time urine tenofovir test compared to lab-based ELISA

Sensitivity $505/505 = 100\%$
Specificity $176/179 = 98.3\%$
Accuracy 99.6%



Nondaily use of HIV preexposure prophylaxis in a large online sample in the US

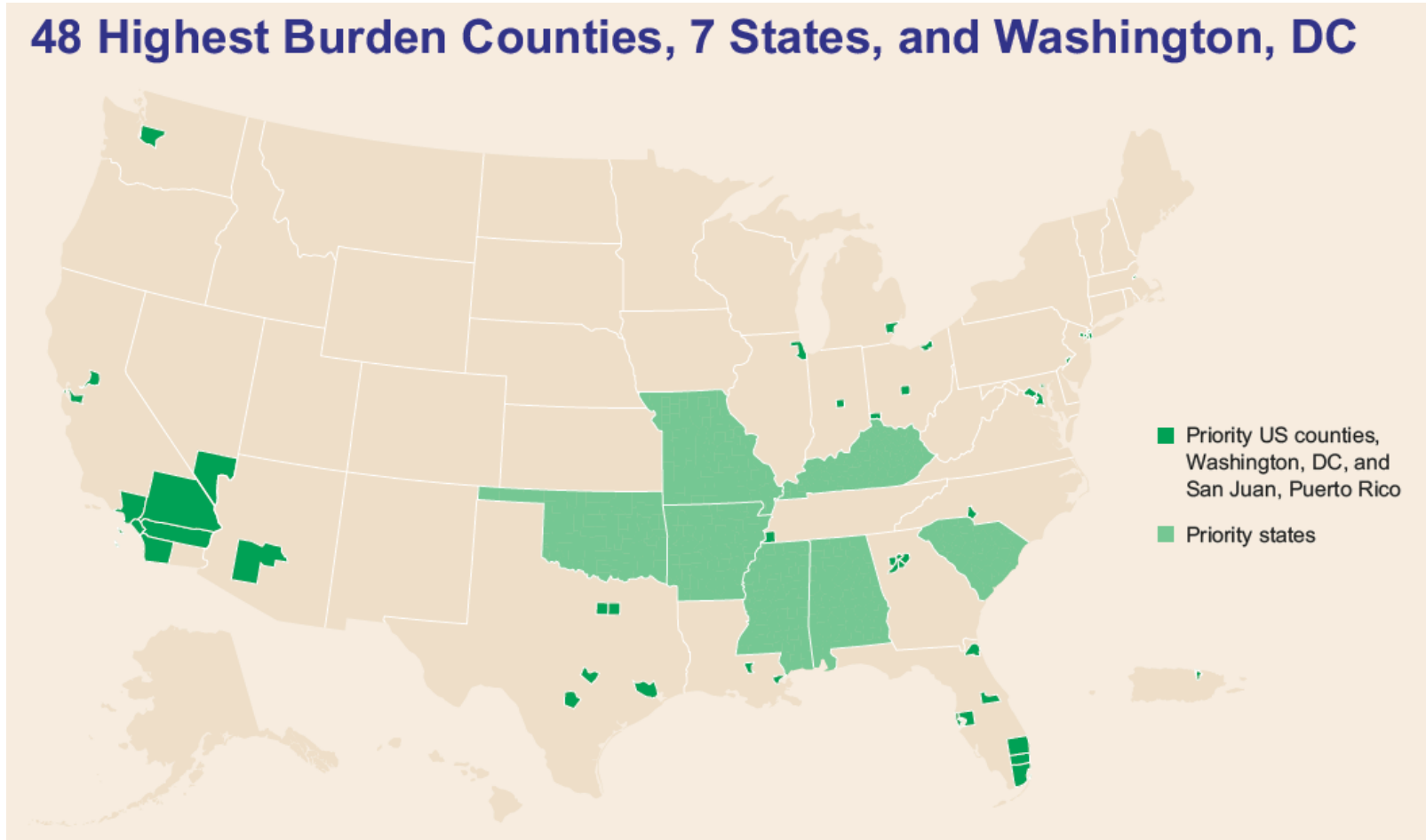
9697 MSM recruited for online survey from sexual networking sites
Of 33% who reported PrEP w/i 6 mo, 176 (5%) reported non-daily use

Examples of non-daily PrEP regimens

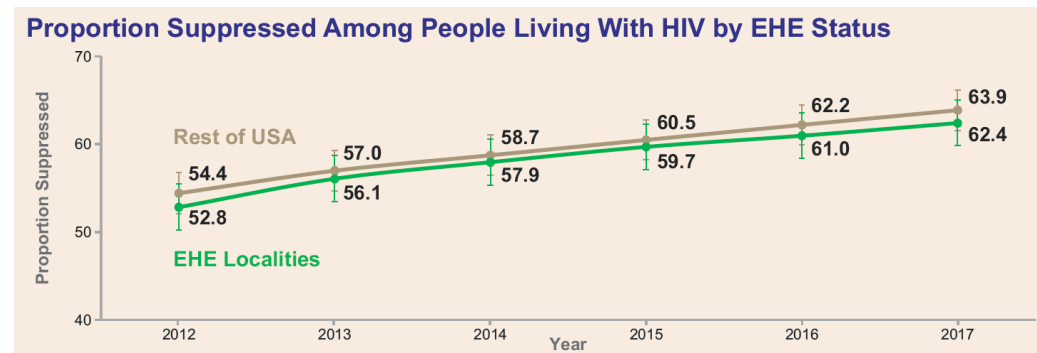
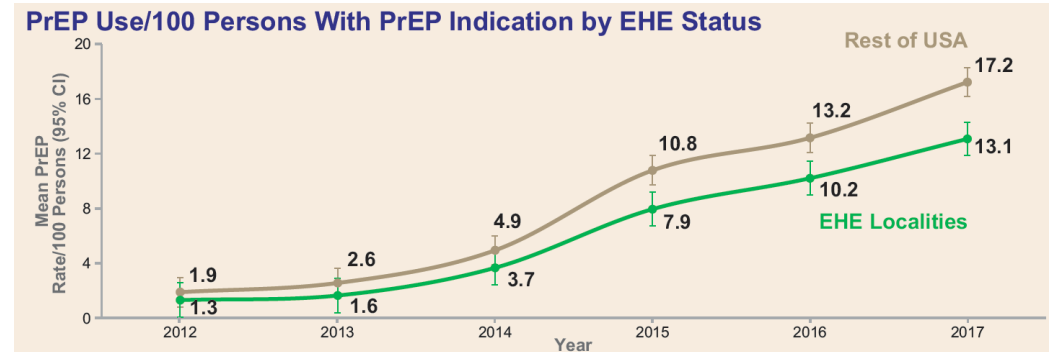
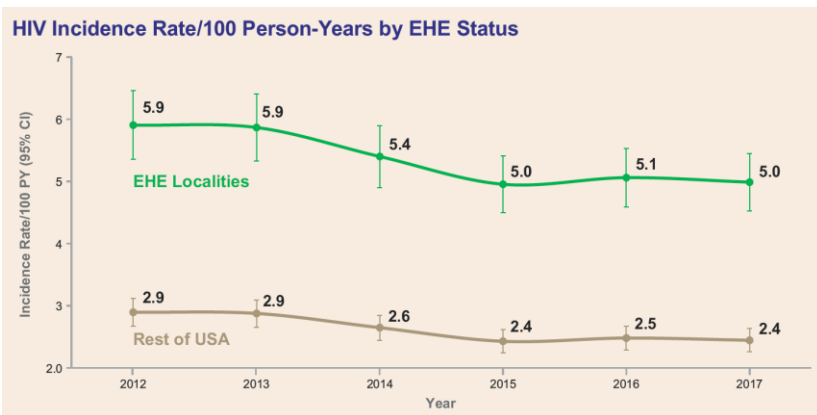
Only around time of sex	48%	2-1-1 One pill day before and one day after sex One pill day of sex
On a regular schedule	24%	T & S (Tu, Th, Sat, Sun) Every other day Fridays and Saturdays
For a few weeks at a time	19%	On vacations
Other non-daily regimens	8%	Daily when expecting sex, o/w QOD Whenever I remember

Conclusion: US public health authorities need to provide clear guidance on effective non-daily PrEP dosing for MSM

Impact of PrEP and TasP on incidence of HIV diagnoses in 48 highest-burden US areas



Impact of PrEP and TasP on incidence of HIV diagnoses in 48 highest-burden US areas



PrEP use by 17.4/100 persons at risk =
 ↓15.5% incidence

Development of a PrEP equity index to set local targets for PrEP coverage

Disparities driven by inequities in access and HIV burden

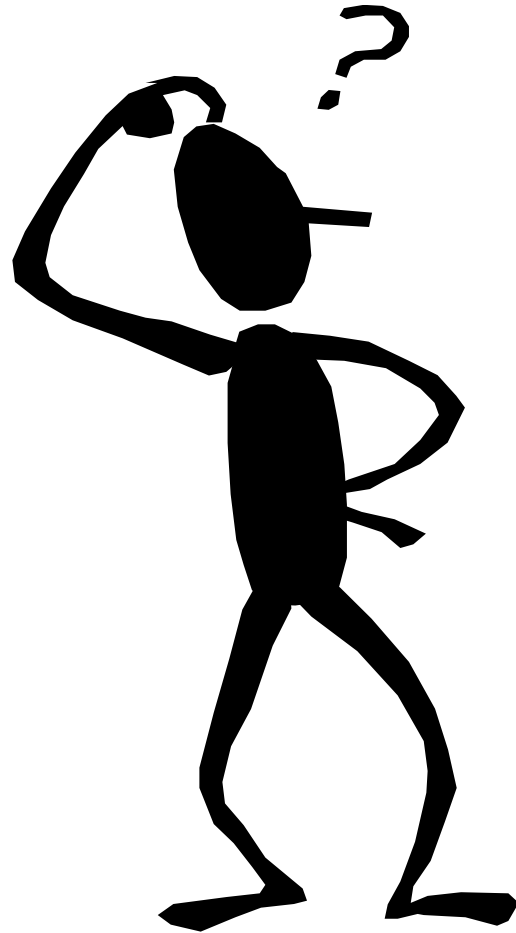
Objective: develop a “PrEP equity index” to quantify inequities in PrEP and conceptualize PrEP targets for NYC

Methods:

$$\text{PrEP coverage} = \frac{\text{use (sexual health survey or NHBS)}}{\text{need (diagnosis by race/ethnicity)}}$$
$$\text{PrEP equity index} = \frac{\text{PrEP coverage for White MSM}}{\text{coverage for Black/Latino MSM}}$$

Results: PrEP equity index = Black 1.7-3.9, Latinx 2.3-3.3
Targeted increase: Black 65-295%, Latinx 131-235%

Questions?



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