

Addressing STDs in the era of PrEP and Undetectable=Untransmittable

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LINCS Medical Director
San Francisco City Clinic
STD Update 2018
February 8th, 2018



Overview

- What we know about STDs among people living with HIV and HIV-negative people in SF
- How can we optimize all sexual health outcomes along the continuum of care in SF
- HIV testing in 2018



San Francisco “Getting to Zero”

Zero new HIV infections
Zero HIV deaths
Zero stigma and discrimination

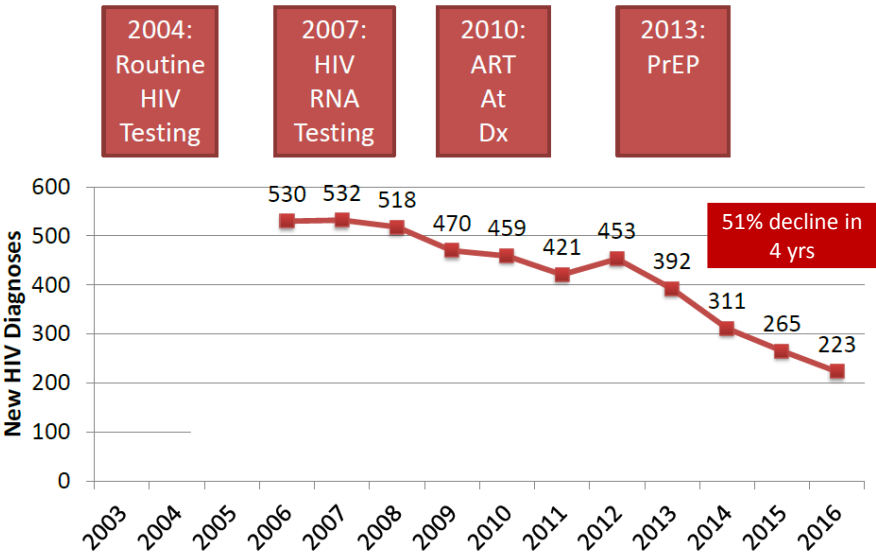


Signature Initiatives:

- 1. City wide coordinated PrEP program
- 2. Rapid ART start
- 3. Patient centered linkage, engagement, retention in care

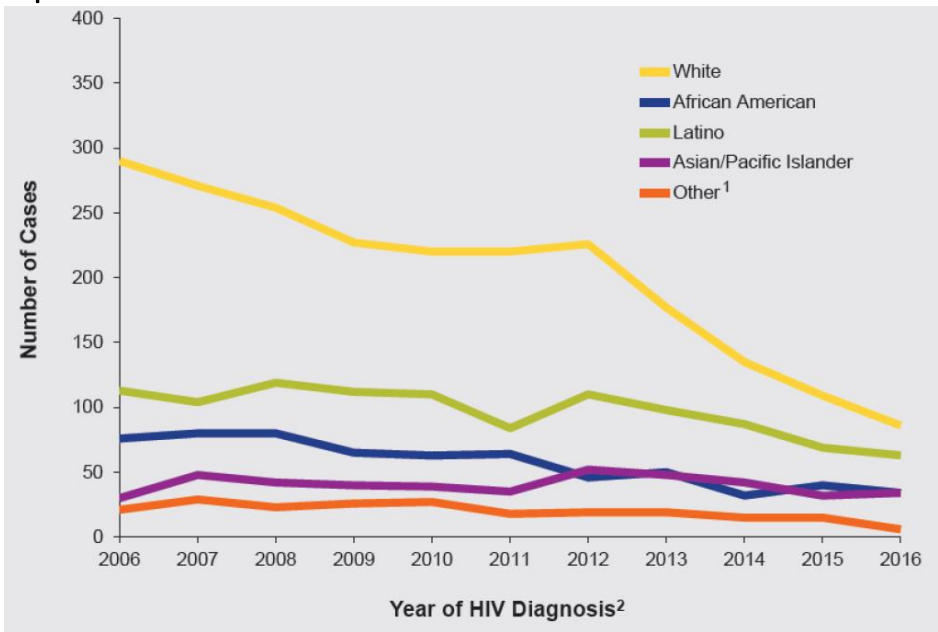
New HIV Diagnoses in San Francisco

No change since 2012 in the proportion of PLWH virally suppressed at 65%



Adapted from Bob Grant
2016 HIV Epidemiology
Annual Report

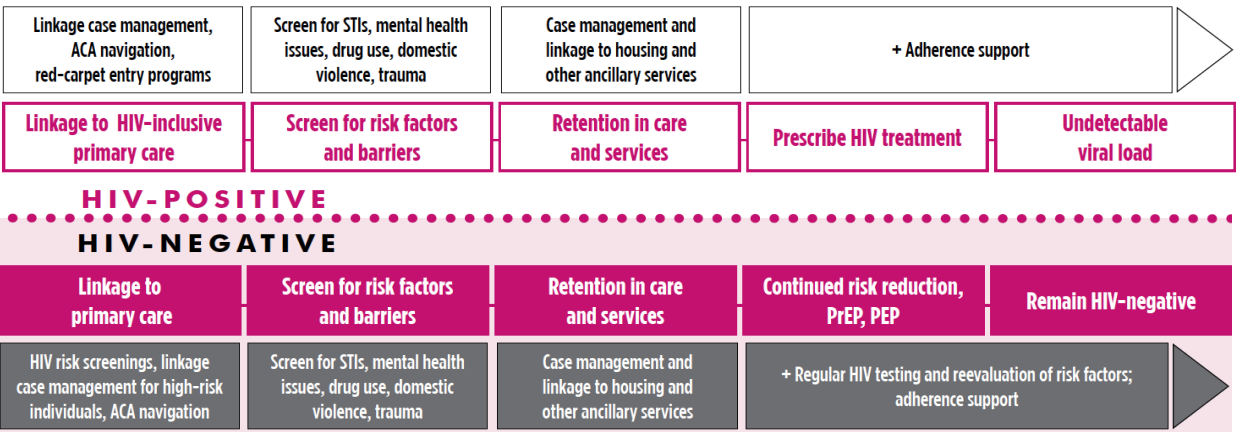
Disparities in new infections



2016 HIV Epidemiology
Annual Report

Optimizing outcomes on status-neutral continuum of care

www.treatmentactiongroup.org



- An HIV+ MSM with an undetectable viral load x 3 years and excellent adherence to HIV medications presents for a physical.
- He is an exclusive top and prefers condomless sex
- 3-site STD testing was negative 2 weeks ago
- He has a new HIV-negative boyfriend, not on PrEP
- Asks *“Can my boyfriend get HIV from me if I am undetectable?”*

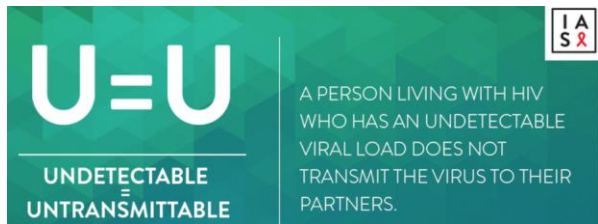
How do you reply?

The same patient returns 2 weeks later with dysuria and is found to have gonococcal urethritis. You inform him that his partner should also be tested and treated for GC ASAP.

He asks if there is any chance he could have transmitted HIV to his HIV-negative boyfriend (still not on PrEP.) They had sex 24 hours ago.

How do you reply?

Despite STD incidence, Undetectable= Untransmittable works



| Study | Population | Condomless Sex Acts | Transmissions within Partnership |
|-------------------|-----------------------|---------------------|----------------------------------|
| PARTNER | 888 couples, 38% MSM | 58,000 | 0 |
| Opposites Attract | 343 couples, 100% MSM | 17,000 | 0 |



6-17% dx with STD

>20%/yr STD incidence
~10% HIV-neg MSM
w/rectal STD

Rodger et al. JAMA 2016; 316: 171-81, Bavinton et al, IAS 2017: TUAC0506LB

Dear Colleague: September 27, 2017



Dear Colleague

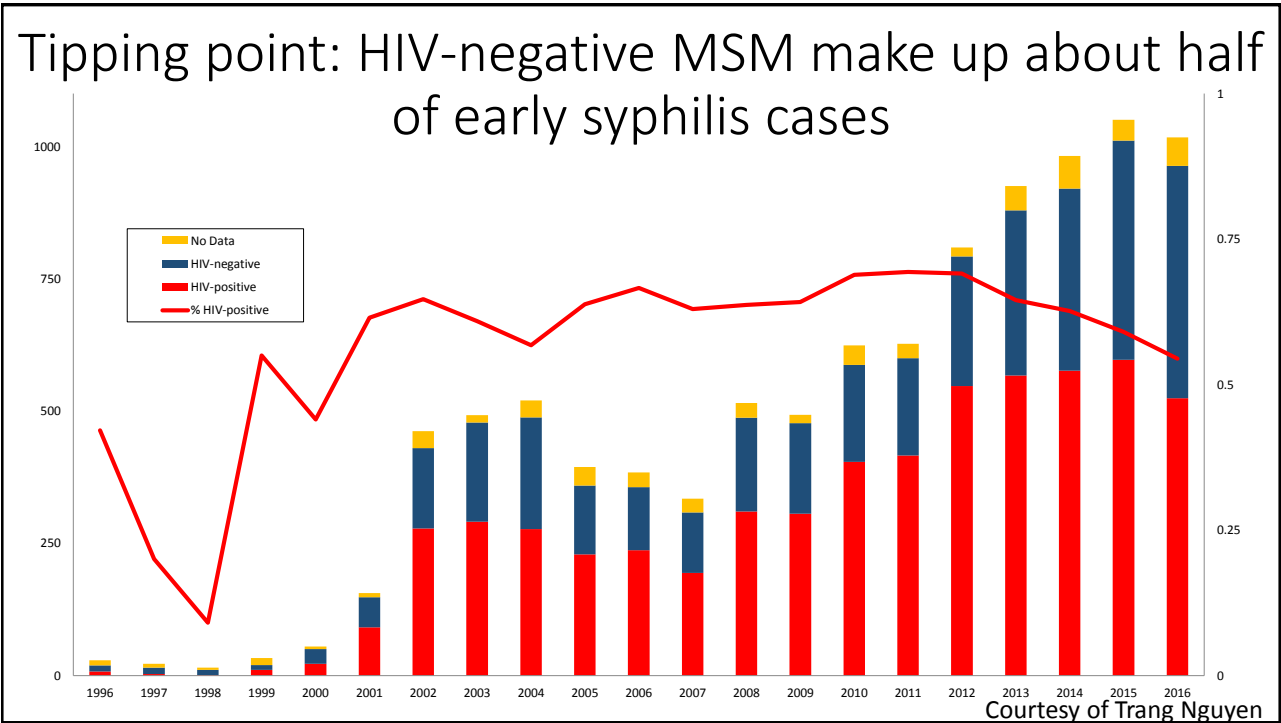
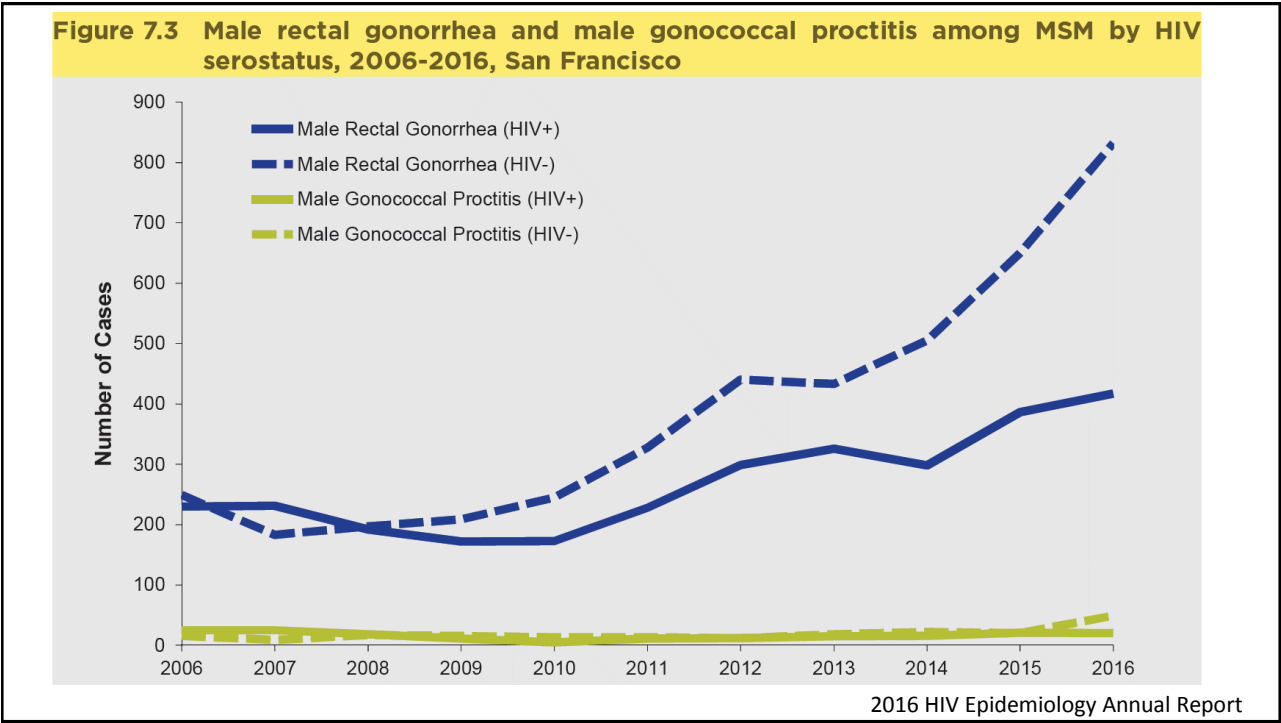
INFORMATION FROM CDC'S DIVISION OF HIV/AIDS PREVENTION

When ART results in viral suppression, defined as less than 200 copies/ml or undetectable levels, it prevents sexual HIV transmission. Across three different studies, including thousands of couples and many thousand acts of sex without a condom or pre-exposure prophylaxis (PrEP), no HIV transmissions to an HIV-negative partner were observed when the HIV-positive person was virally suppressed. ***This means that people who take ART daily as prescribed and achieve and maintain an undetectable viral load have effectively no risk of sexually transmitted the virus to an HIV-negative partner.***

Emphasis Added



What's your approach to discussing HIV status with partners?



Who may benefit from PrEP?



Who

- Men who have sex with men (MSM)
- Trans women
- People who inject drugs
- Heterosexual men and women

Risk

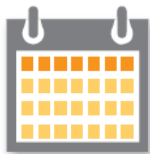
- Recent history of syphilis or rectal STD (high priority)
- Anal sex without condoms
- Multiple sexual partners
- HIV+ sex partner
- HIV+ injection partner
- Shares needles or equipment
- Transactional relationships

Anyone who asks for PrEP

PrEP Basics



PrEP is safe and can reduce your risk of HIV by more than 90%.



It takes at least 1 week on PrEP before you'll be protected for anal sex, and 3 weeks for vaginal sex.



Take 1 pill once a day. Finding a routine is essential.



Get tested for HIV and STDs every 3 months.



Tell your provider if you plan to stop (or restart) PrEP.



Download at: <http://www.sfcityclinic.org/services/prep.asp>

Askaboutprep.org



Find a PrEP Provider

Enter your city or ZIP code

OR

Use the interactive map to search by state

Not sure how to search for a PrEP provider? Our tips help.



PrEP navigation



634-7737 (PrEP)

SF Health Network



985-7737 (PrEP)

Women peri-conception

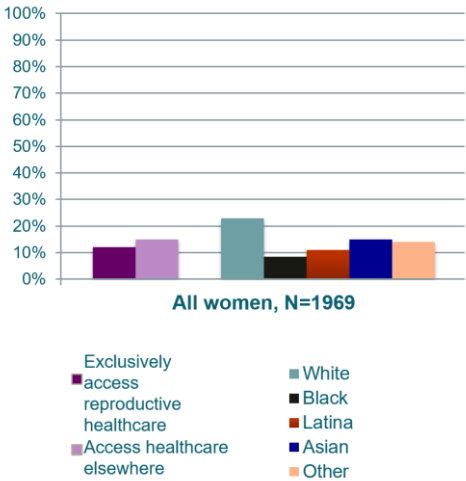


a hub of positive reproductive & sexual health
www.hiveonline.org

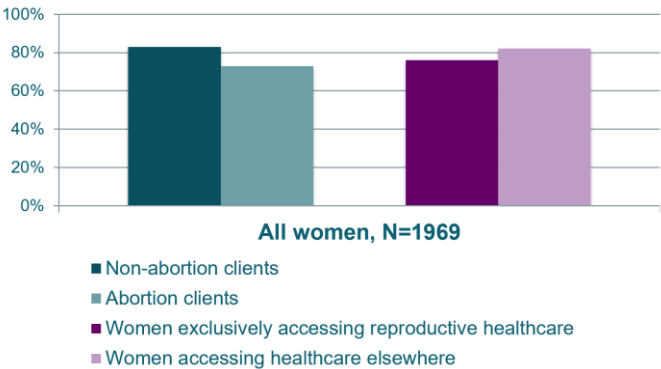
Low PrEP awareness but high interest in integrated prevention services among women in Family Planning Clinics

7% (137/1969) SF Bay Area women aged 13-45 eligible for PrEP

PrEP awareness



Desire for integrated STI & pregnancy prevention counseling

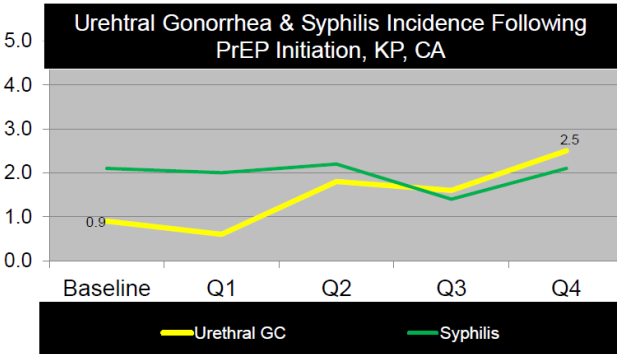


Seidman D R4P Chicago 2016

Impact of PrEP on STD risk

- STD incidence among MSM PrEP users is high
- PROUD study – 73% baseline prevalence, no difference in STD incidence if on PrEP v. deferred PrEP
- PrEP Demo – 26% baseline prevalence, no increase in follow up
 - Quarterly STD testing beneficial for MSM (>1/3 STDs missed if testing only q6 mo)
- Kaiser SF- 50% STD in 12 months (5.5% syphilis), increase over time
- If PrEP is taken daily, STDs do not impact PrEP efficacy

| STI Incidence in PROUD | | | |
|------------------------|-----------|----------|------------------|
| | Immediate | Deferred | Adjusted RR |
| Any STI | 57% | 50% | 1.07 (0.78-1.46) |
| Gonorrhea | 39% | 37% | 0.86 (0.62-1.2) |
| Chlamydia | 30% | 22% | 1.27 (0.89-1.8) |
| Syphilis | 11% | 9% | 1.29 (0.79-2.1) |



Adapted from Golden CROI 2017
McCormick Lancet 2016, Liu JAMA Int Med 2016,
Cohen CROI 2016, Volk, CID 2015, Marcus JAIDS 2016

Be on the lookout: Sexual transmission of HCV

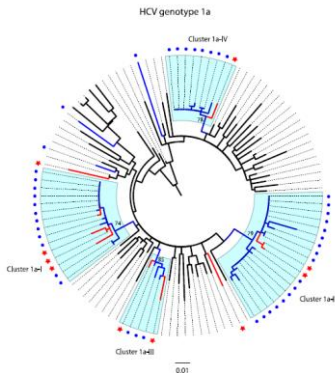
- HCV included in “Emerging Issues” section of the CDC STD guidelines
- **Acute HCV** may be asymptomatic, even with high levels of hepatic inflammation
- **Screen HIV+ MSM for HCV annually**
 - Re-infection post tx or clearance CAN occur
- When **starting PrEP, check HCV Ab** and consider screening routinely

During PrEP follow up

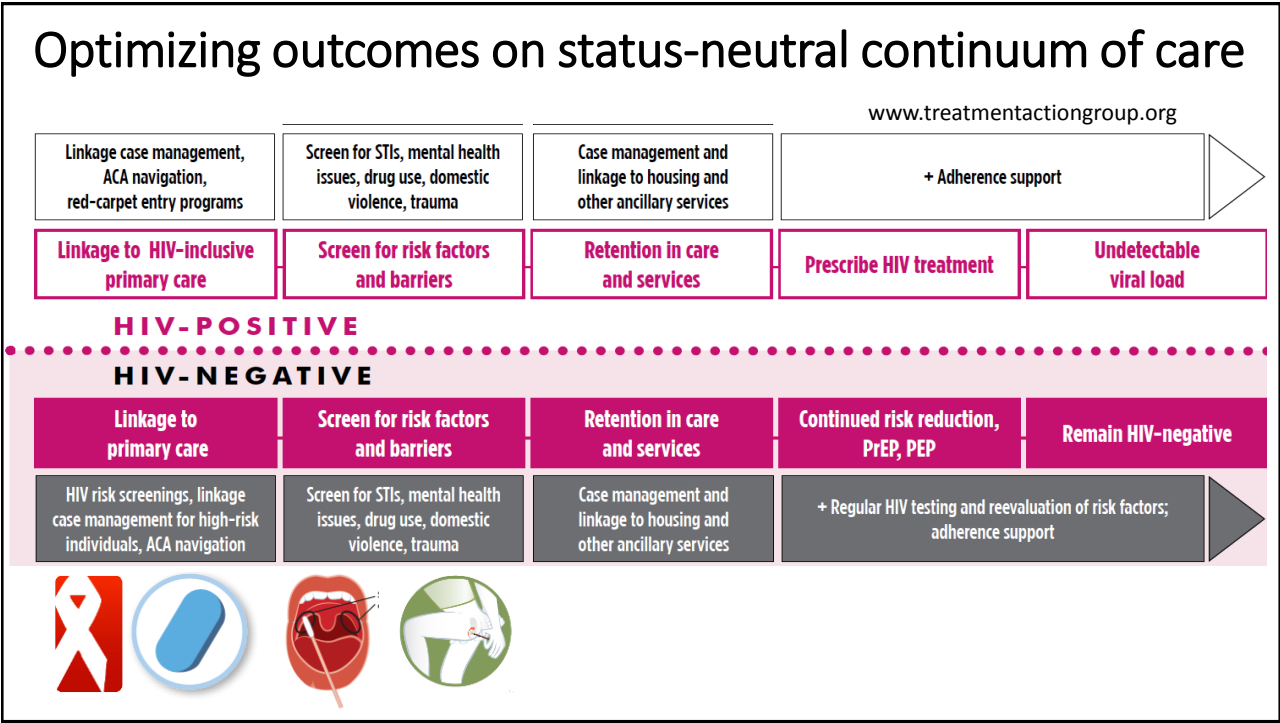
- HCV incidence rate: **0.7-1.3/100p-year**

In Amsterdam PrEP demo project

- 4.8% with HCV antibodies prior to PrEP start






Hoornenborg AIDS 2016, CROI 2017



STD Prevention in PrEP and HIV Primary Care

- Screen, screen, screen, screen (and treat) –
 - q3 month x 3 sites
 - Self-collection
- Promote LINCOS partner services
- STD post-exposure prophylaxis in the future?



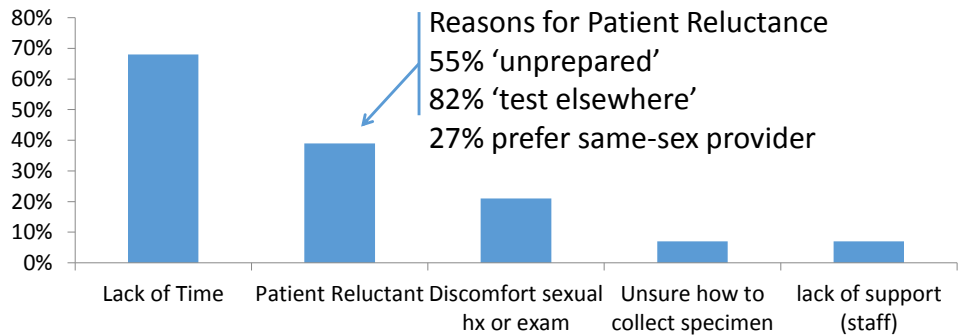
The last time you saw a patient in primary care at-risk for STDs, but did not perform extragenital testing, what was the primary reason?

- Lack of time
- Patient reluctance
- Discomfort with sexual hx or exam
- Unsure of how to collect specimen
- Lack of support staff
- Pt recently screened at STD clinic
- No swab/kit available



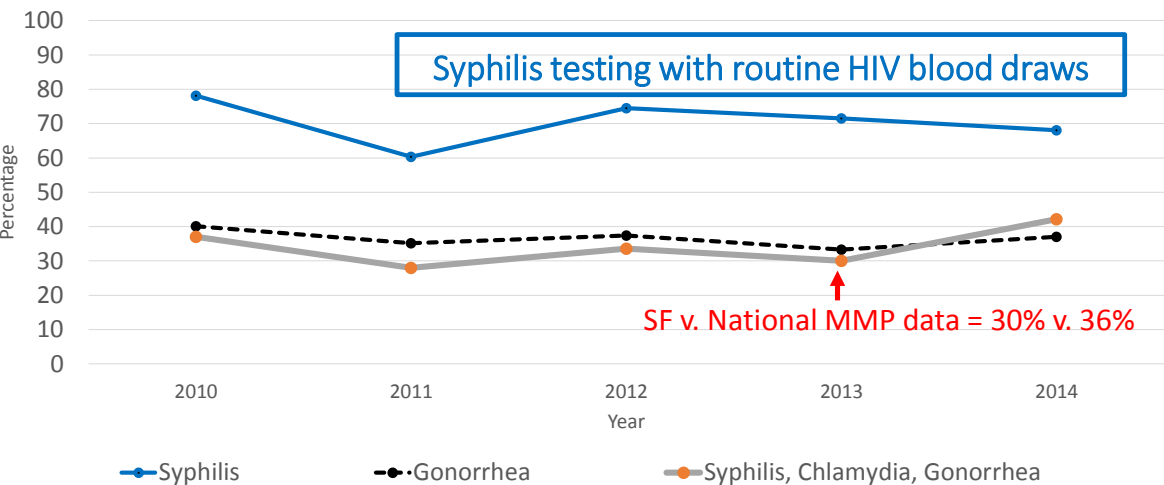
What are the barriers to STD testing in HIV care settings?

- Large urban HIV Clinic – 28% patients reported seeking tests elsewhere because it was easier, anonymous, could be more frequent.



Barbee STD 2015

STD Screening in HIV Primary Care in SF: Opportunities to Improve

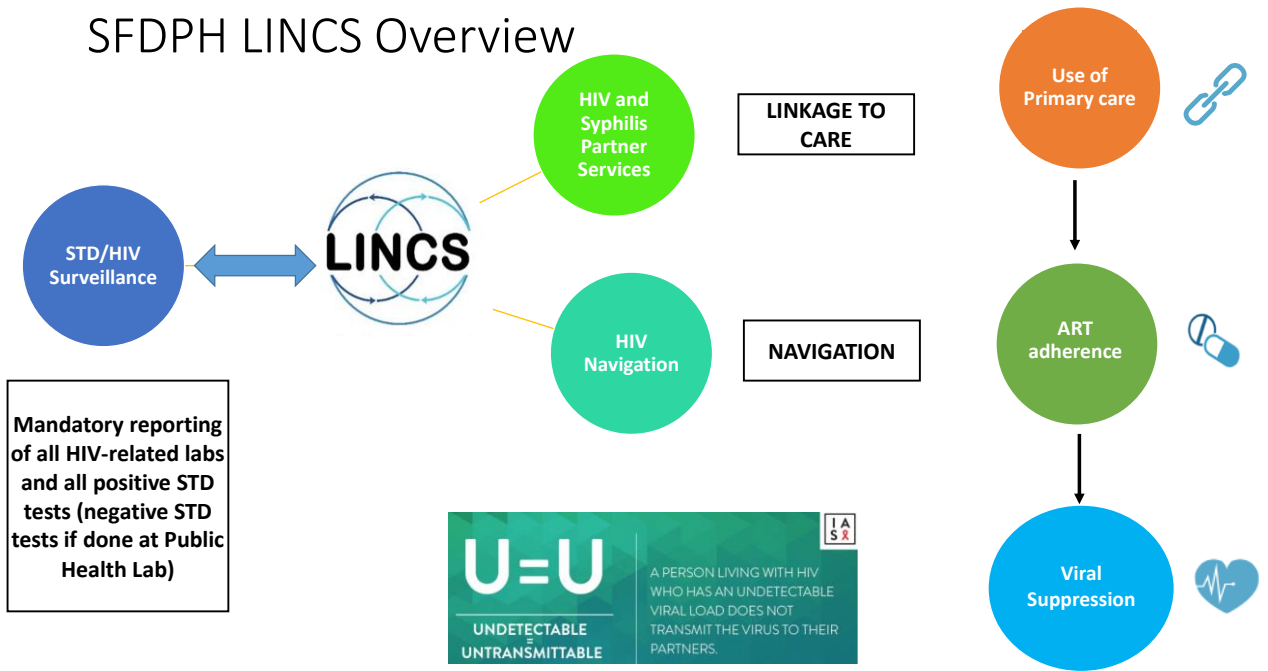


Medical Monitoring Project analysis in San Francisco, additional 8.9% screened (34.5% → 43.5%) in 2012-14 if include sexual health clinics

57% of patients not screened for all 3 STDs

Hughes CID 2017

SFDPH LINCS Overview

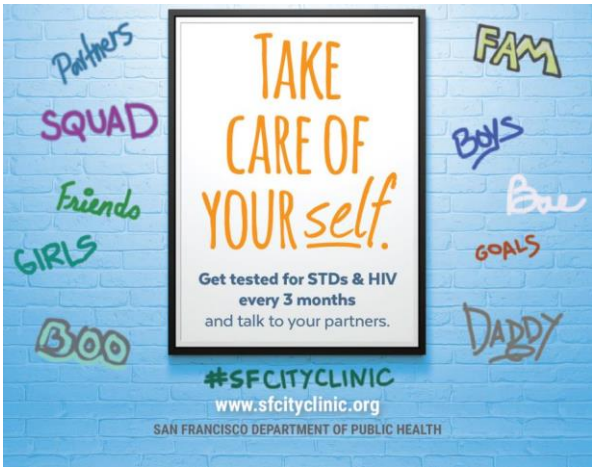


Encourage patients to participate in LINCS partner services

- Free program that helps patients notify partners and confidentially offer free HIV and STD testing, treatment and linkage to care, **including PrEP**
- LINCS provides partner services to SF residents diagnosed with HIV and syphilis
 - Women are a priority



Syphilis titer or treatment hx: 487-5519
Rebecca.shaw@sfdph.org



Our field workers will ensure patients with syphilis get treatment!!

LINCS is your link to sexual health

Have you been tested for syphilis?

- If you have syphilis, getting treated today will help keep you healthy, and will prevent the spread to your partners
- We recommend testing for STDs every 3 months

Are you or your partners interested in PrEP?

- PrEP is a daily pill that prevents HIV by more than 90%
- We have a team who can help you get PrEP regardless of insurance status

Living with HIV and haven't seen a doctor in 6 months? Newly diagnosed?

Our team can help you:

- Get into HIV care
- Stay healthy on medications to keep your viral load low so you don't transmit HIV

I got treated for syphilis, why should I talk to the health department?

- **Prevent reinfection and forward transmission**
- **Help partners get PEP/PrEP/back into HIV care!**

WHAT IS PARTNER SERVICES?

It can be difficult to tell your partners you have HIV or an STD. Our specialists can contact partners and get them free testing and treatment, while protecting your privacy.

To get LINCed, call us at 98-LETS-LINC | www.sfcityclinic.org

LINCS is the city's team ensuring access to comprehensive sexual health services.

Does post-exposure doxycycline prophylaxis prevent STDs?

- Open-label Ipergay (on-demand PrEP) study (Molina CROI 2017) – 41% acquired STDs

Open-Label Study of Ipergay
(n=232)

HIV-negative high-risk MSM
enrolled in the open-label
Ipergay extension study
No contraindication to
doxycycline

Randomization
1:1

On Demand PEP
Doxycycline 200 mg
(~24 hours after sex, up to
72 hours, max 6 pills/week)

No PEP

Decrease CT by 70%
and syphilis by 73%

No change in GC

Median pills 6.8/mo

25% PEP v. 14% GI SE
7% d/c in PEP arm

Unclear impact on GC resistance

- Only 32% of GC specimens were culture-positive (2 in PEP arm)

Molina Lancet 2017

Counseling in 2018

- Engage clients in a conversation about their sexual health goals
- Emphasize that PrEP and antiretroviral therapy do not prevent other STDs
- U=U and PrEP prevent HIV even in the setting of STDs
- Recommend q3mo STD screening
- Talk about partners
- Don't forget about HIV PEP


HEALTHYSEXUAL™

Healthier
Sex Options

Get
Tested

Understanding
Prevention Medicines

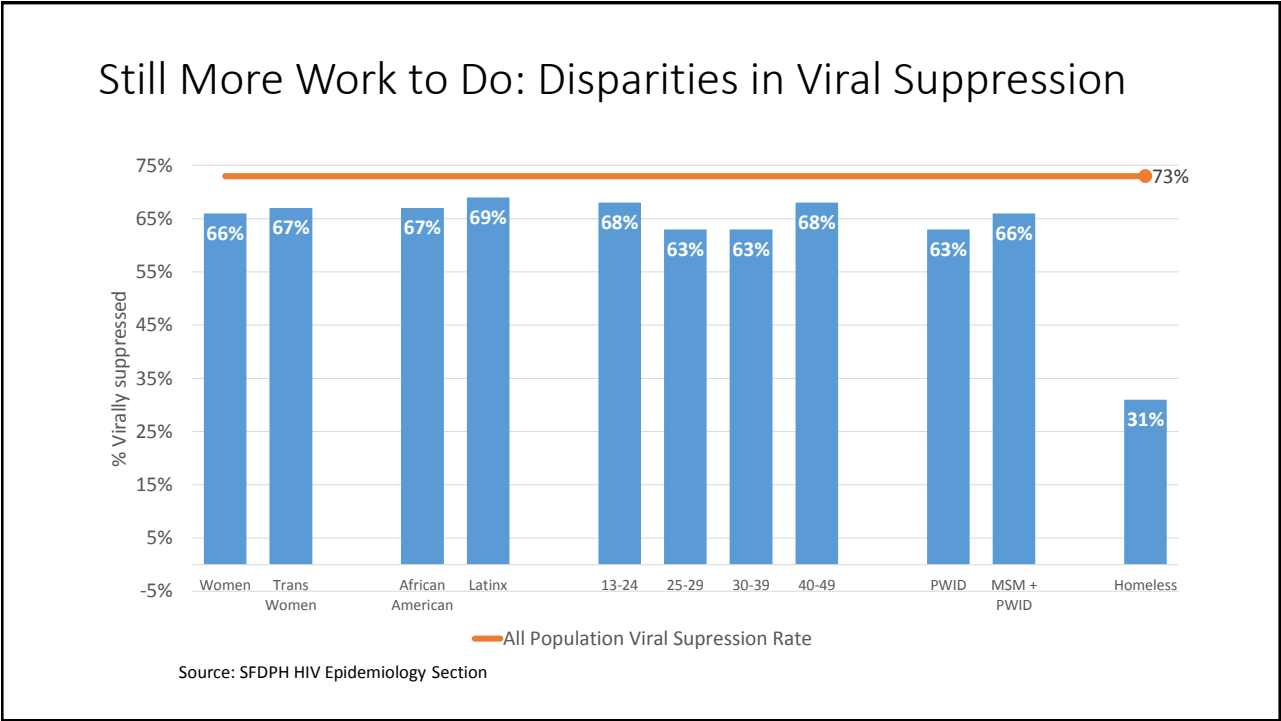
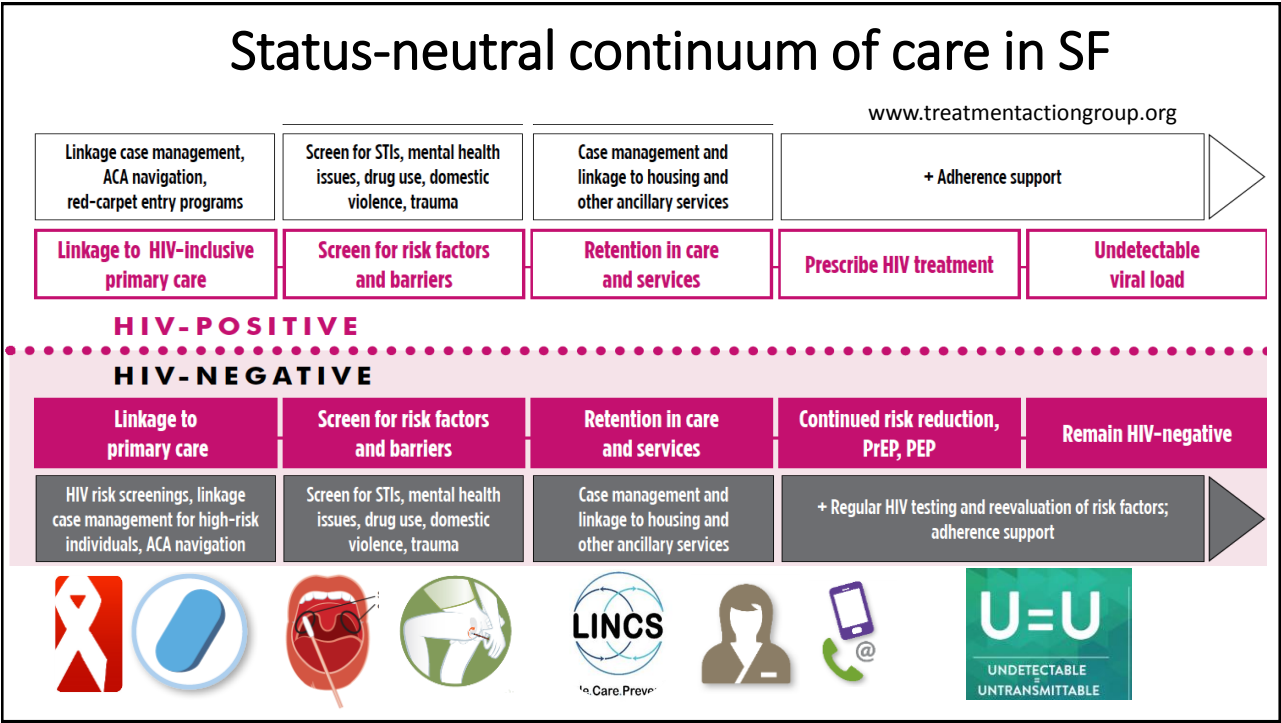
Talk
About It



**Health and sex
belong together.**

Small steps can make a big difference in the bedroom.
That's what Healthysexual is all about.

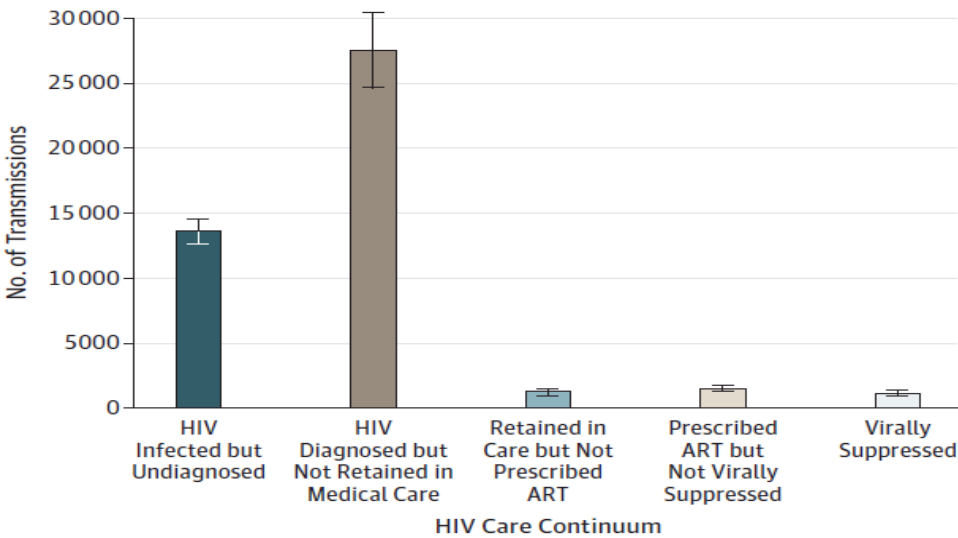
www.healthysexuals.com



Where new HIV infections coming from?

Skarbinski et al, JAMA Int Med 2015; 175:588-596

A United States, 2009



What is HIV Navigation?

A service to **assist out-of-care, HIV+ clients re/connect** with HIV care and treatment.

Navigators can help clients access **insurance, benefits, and other support services** based on their individual needs.

Navigation usually offers **mobile services** in the community for a **limited period of time**.

Who is “out-of-care”?

Retention focus

No visits with an HIV medical provider in the **past 6 months** *and/or* no appointments scheduled

Viral suppression-focus

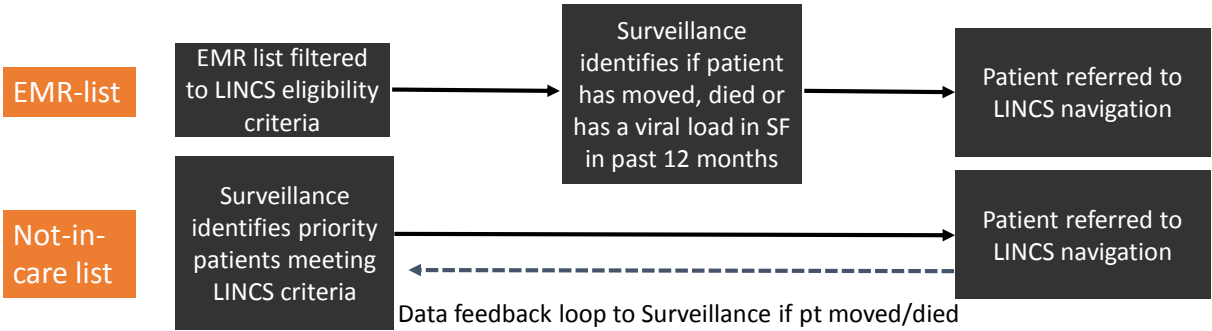
Not taking HIV meds (ART) *or* **taking them inconsistently**

tiny.cc/HIVNavigationOptionsInSF



Goals of Data to Care in SF

- Using **surveillance data** to identify HIV-diagnosed persons who are not in care, link them to re-engage persons who have fallen out of care

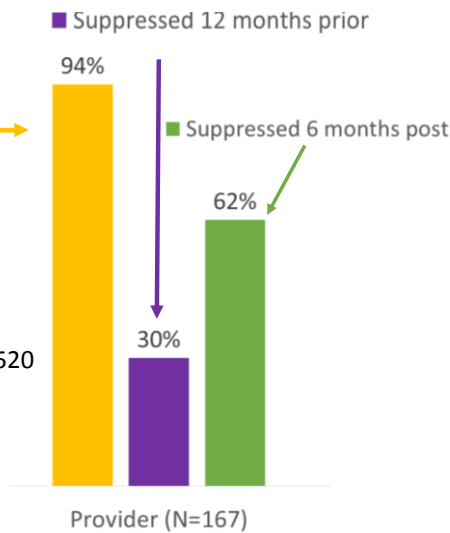


Demographics and outcomes of LINCS navigation patients 2015-2017 (N=222)

- Gender**
 - 87% Male
 - 10% Female
 - 3% Trans women
- Age**
 - 28% <35 years
 - 60% 35-55 years
 - 11% >55 years
- Race**
 - 26% Black
 - 27% Latino
 - 41% White
- Ever suppressed: 71%**
- Socioeconomic factors**
 - Homeless: 34%
 - Drug use
 - Meth: 46%
 - Heroin : 12%
 - Crack : 10%



Navigation referrals: 487-5520
Mark.oneil@sfdph.org



Overview

- What we know about STDs among people living with HIV and HIV-negative people in SF
- How can we optimize outcomes along the status-neutral continuum of care in SF
- HIV testing in 2018

Case: Febrile illness

- 32 yo Latino man, monogamous with wife, + meth, no IDU presents to urgent care
- Cc: Headache/low back pain post bike accident
- Presented with : fever, fatigue, rash, pharyngitis, sore throat
 - + Monospot
 - Transaminitis: AST/ALT 245/212
- HIV Ag/Ab **POSITIVE**
- Geenius HIV 1/2 Differentiation **NEGATIVE**

What do you do next?

Case

- HIV Ag/Ab **POSITIVE**
- Geenius HIV 1/2 Differentiation **NEGATIVE**
- Viral load (ordered separately): **1.6 million**
- Acute HIV - PHAST called
- Antiretrovirals started (RAPID start), but patient did not have phone and did not follow up
- LINCIS reached out to offer partner services (testing and PEP/PrEP to female partner)
- Linked to Ward 86 with LINCIS HIV navigator



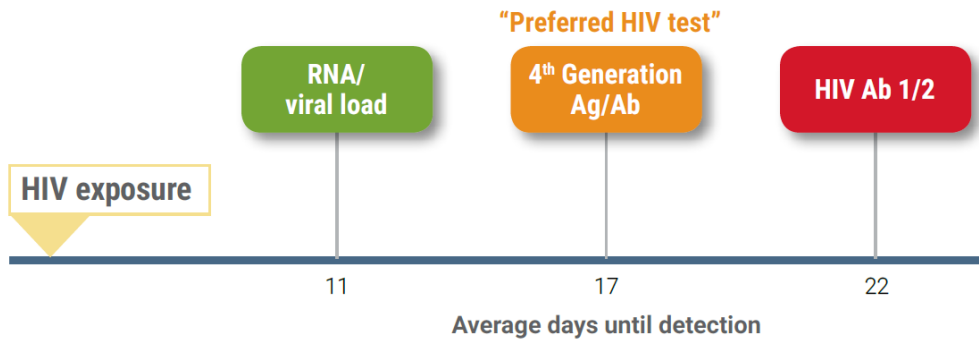
Flu-like symptoms = Keep acute HIV on your differential and order HIV viral load with HIV Ag/Ab

Risk factors associated with HIV

- Any history of condomless sex
- Known HIV exposure
- Any h/o IDU or meth
- Suspected or confirmed STD
- Any history of sex work
- Incarceration
- PES visits

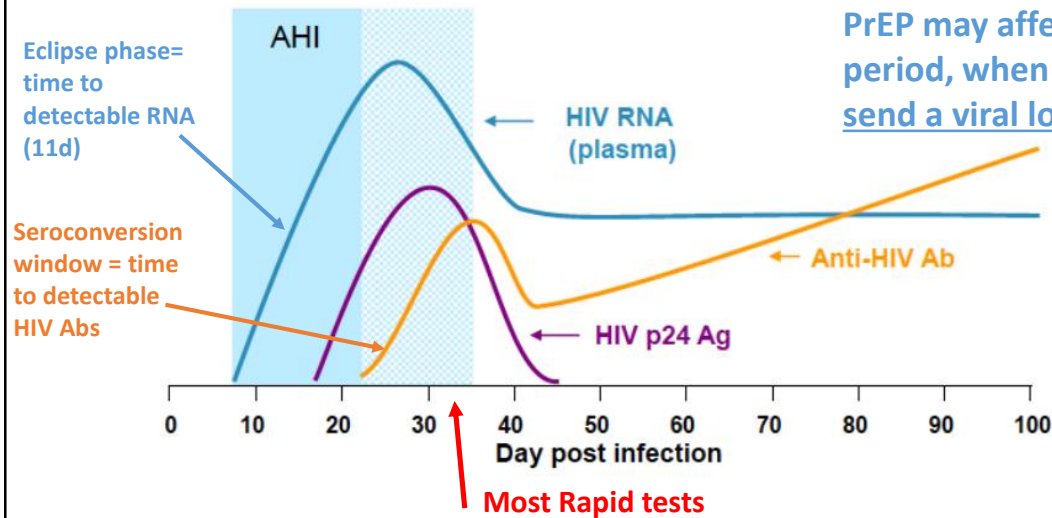
HIV testing

- Order HIV Ag/Ab (window period of 2-4 weeks post infection)
 - If positive, automatic reflex to confirmatory Geenius (HIV 1/2 differentiation assay)
 - Negative/Indeterminate: False positive or ACUTE. **Need to order HIV viral load (PCR)**
 - Positive: HIV-infected
- If high suspicion for acute HIV, order HIV viral load with HIV Ag/Ab
 - Consider presumptive HIV treatment



Architect Ag/Ab window period

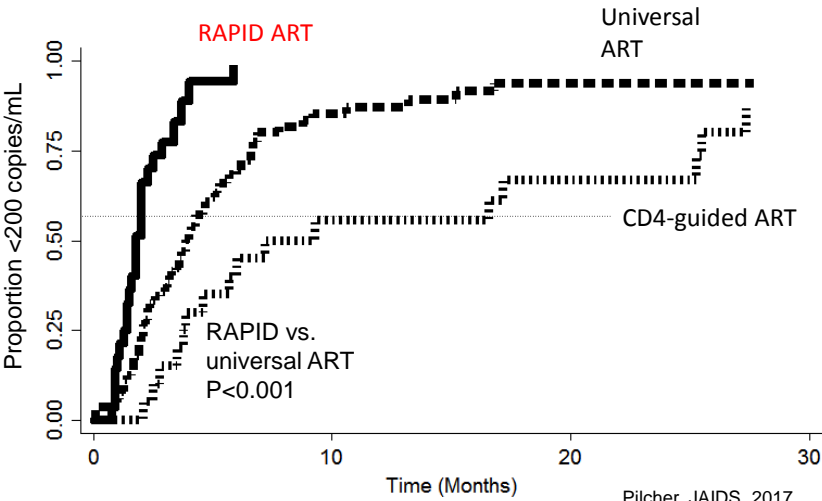
What is the longest time
“window” to positive
Ag/Ab? 45 days
PrEP may affect window
period, when in doubt,
send a viral load!!



RAPID Pilot Program at SFGH

Time to VL suppression by ART initiation strategy, 2006-2014

25% acute HIV
42% major
mental health
42% drug use
28% homeless



Test, immediately link, and start HIV treatment

| Metric | Median days | | | |
|----------------------|-------------|------|------|---------|
| | 2013 | 2014 | 2015 | 2016 Q2 |
| Diagnosis -> Care | 8 | 7 | 7 | 5 |
| Care -> ART | 27 | 16 | 6 | 0 |
| Diagnosis -> VL <200 | 133 | 91 | 75 | 51 |

- Integrase inhibitors
- Changing clinician norms to start ART prior to genotype results
- Rapid linkage to care programs

Rapid ART Program Initiative:
How immediate ART initiation improves health outcomes

Earlier treatment is better care¹

EMERIT HIV+ adults who started ART immediately with a CD4+ T cell count of 1000 cells/mm³ compared to those who initiated with their CD4+ T cell count below 1000 cells/mm³

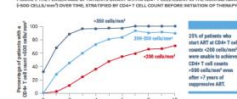
- were 0.45 times as likely to die from any cause
- experienced a 35% reduction in the number of serious non-AIDS-related events
- experienced a 55% reduction in the number of serious non-AIDS-related events

TEMPERAD HIV+ adults who started ART immediately with a baseline CD4+ T cell count of 500 cells/mm³ versus those who delayed at the same baseline count

- were less likely to reach death (any cause), AIDS-defining disease, non-AIDS defining events, or non-AIDS defining serious adverse events (SAEs) (95% CI 0.34-0.64)
- This also applies to patients with CD4+ T cell counts 1000 cells/mm³ (95% CI 0.35-0.54)

Earlier ART improves CD4+ T cell recovery²

Figure 1. The relationship of treatment of HIV infection with CD4+ T cell count in the baseline. Adapted from: [HIV Medicine](#) 2012; 13(1): 1-10. CD4+ T cell count approximates recovery of T-helper 1 cells.



50% of patients who start ART at CD4+ T cell counts 500 cells/mm³ or lower achieve CD4+ T cell counts 500 cells/mm³ or higher after 48 weeks of treatment.



ART **RAPID CARE OPTIONS IN SF**
tinyurl.com/RapidOptionsInSF

RAPID Contacts

Citywide LINC: 415-487-5506 (Erin Antunez)
Ward 86 PHAST team: pager **415-443-3892** (Mon-Fri 8-5) or leave detailed message on **415-206-2460** (Lizzy Lynch, PHAST nurse)

Rapid ART Program Initiative:
How immediate ART initiation improves health outcomes

Ask about PrEP
How providers can prescribe PrEP to prevent HIV and reduce health disparities

What is PrEP?
• PrEP is a once-daily pill for HIV negative individuals that can help prevent HIV transmission.

Promoting Sexual Health: A Guide for Clinicians
Healthcare providers can play an important role in reducing syphilis, gonorrhea, and chlamydia, and preventing congenital syphilis.

STD rates are increasing in men, women, and some newborns in San Francisco and nationwide.
HIGHLIGHT: STD RATES—SAN FRANCISCO, 2009-2012¹

Ask about PrEP
Ask your doctor about a daily pill that can protect you and your partners.

SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH

- Email for more information!**
- SF focused training brochures and short tailored education
 - Self-testing posters
 - Palm cards
 - PrEP info
- darpun.sachdev@sfdph.org

PrEP Basics

90% of people who take PrEP as directed will not get HIV.


TAKING THE PILL
One pill per day
PrEP can be taken as a daily pill or as a 2-day regimen. PrEP can be taken as a daily pill or as a 2-day regimen. PrEP can be taken as a daily pill or as a 2-day regimen.

YOUR PRESCRIPTION
Fill your prescription
PrEP is a daily pill that prevents HIV by more than 90%. PrEP is a daily pill that prevents HIV by more than 90%. PrEP is a daily pill that prevents HIV by more than 90%.

STAYING PROTECTED
Lubrication
PrEP is a daily pill that prevents HIV by more than 90%. PrEP is a daily pill that prevents HIV by more than 90%. PrEP is a daily pill that prevents HIV by more than 90%.

STAY HEALTHY
PrEP is a daily pill that prevents HIV by more than 90%. PrEP is a daily pill that prevents HIV by more than 90%. PrEP is a daily pill that prevents HIV by more than 90%.

TEST YOURSELF
Self-collected Throat Swabs



LINC is your link to sexual health

Have you been tested for syphilis?
If you have syphilis, getting treated today will help keep you healthy, and will prevent the spread to your partners.

Are you or your partners interested in PrEP?
PrEP is a daily pill that prevents HIV by more than 90%. PrEP is a daily pill that prevents HIV by more than 90%. PrEP is a daily pill that prevents HIV by more than 90%.

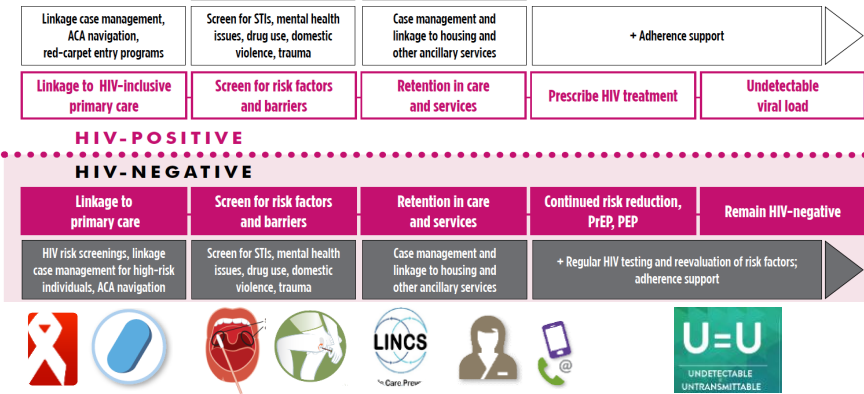
Living with HIV and haven't seen a doctor in 6 months?
Our team can help you:
• Get into HIV care
• Stay healthy on medications to keep your viral load low so you don't transmit HIV

WHAT IS PARTNER SERVICES?
It can be difficult to tell your partners you have HIV or an STD. Our specialists can contact partners and get them free testing and treatment, while protecting your privacy.

To get LINCed, call us at 415-487-5536 | www.sfdph.org
LINC is the city's team providing comprehensive sexual health.

Thank you!

- Stephanie Cohen
- Tamara Ooms
- Alyson Decker
- Susan Philip
- Oliver Bacon



Case discussion: HIV testing in 2018

- 33 year-old MSM in an open relationship with boyfriend on east coast who has 1-2 partners every few months presented to SFCC for routine STD screening
- Started on PrEP March 2017
- 4th generation Ag/Ab test NEGATIVE
- RPR positive → bicillin
- Last HIV-Ab negative ~November 2017
- Pool viral load POSITIVE, viral load copies 82

PrEP-failure?

- Instructed to STOP TDF/FTC
 - Pt continued TDF/FTC "talked to my friends and they told me it was probably a false positive"
- Retested with PMD 7 days later, 4th gen still NEGATIVE
 - HIV RNA 360
- Enrolled in acute seroconverter study at ZSFG
 - Reported flu-like sx in November
 - Intermittent use "5 days/week" in November

Questions to ask pt with possible "PrEP failure"

- Did you have any **flu-like symptoms** since you last HIV test?
- Since your last HIV test, have you **missed** any daily doses
- Did you ever take PrEP only around the time you were going to have sex? (**on-demand**)
- When was the **last time** you took Truvada?

Questions for Panel

- How would you create an initial regimen in the setting of possible PrEP failure?
- Are you more concerned about resistance from the intermittent PrEP use?
- Why start ART immediately?
- What would make you delay ART?

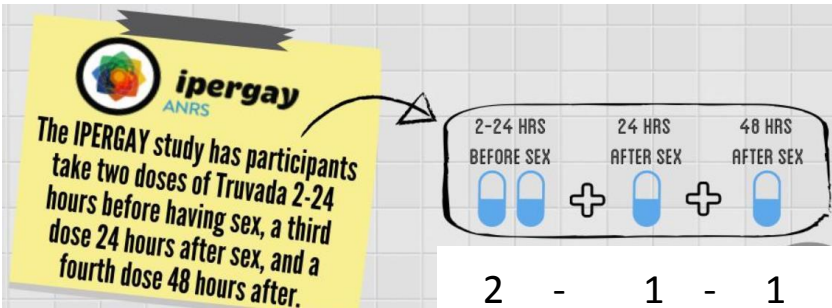
What is on-demand PrEP?

Non daily PrEP terms

- Intermittent
- Event/sex driven
- As-needed

What it's not?

- Not a morning after pill
- Not disco dosing



<http://www.nejm.org/doi/10.1056/NEJMdo005041/full/>

What's changed?

- A new analysis of IPERGAY study evaluated 269 patients (134 person-yr) who took on-demand PrEP less frequently (**<15 pills/month**) **AND** reported using PrEP systematically or often during sexual intercourse¹

| | Person years | # HIV infections | HIV incidence rate/100 py (95% CI) | P |
|---------|--------------|------------------|------------------------------------|-------|
| Placebo | 64.8 | 6 | 9.3 (3.4- 20.1) | |
| TDF/FTC | 68.9 | 0 | 0.0 (0.0-5.4) | 0.013 |

| | IPERGAY RCT | 2017 Sub-analysis |
|----------------------------|-------------|-------------------|
| Median # sex acts/month | 10 | 5 |
| Median # pills taken/month | 15 | 9.5 |

1. Antoni G, et al. IAS 2017. Paris, France. Poster #TUAC0102

Adherence to on-demand PrEP v. daily PrEP

| | On-demand PrEP | Daily PrEP |
|-----------------------|--|---|
| Decision to take PrEP | Assessment on a day-to-day basis | Assessment of “periodic” risk |
| Adherence cue | Planned Sex 🗓️ | Daily habit |
| Unique barriers | - Unplanned sex - Desire to ‘pick and choose’ with certain partners | - Aversion to daily pill - Taking PrEP when not having sex |

Modified from Haberer IAPAC

Practical Considerations of On Demand PrEP (MSM only, off-label)



Emphasize emergency PEP (28 days) and condoms if missed doses

Continue q3mo HIV and rectal/pharyngeal/urine STD testing

NOT INTENDED FOR

- Cis- or trans-women
- Decreasing (renal/bone) toxicity

Patterns of sex

- Have infrequent (<once/week) sex event
- Ability of sex planning / have control over planning for sex with sexual partners

Pros

- Fewer doses
- Alternative for individuals who do not want to take a daily pill

Cons

- Need to carry tablets at all times (pre/post-sex dose)
- Complicated regimen (Need 2 hours window pre-sex)
- Need to use this strategy **uniformly** with all sex acts, don't pick and choose with certain partners
- Potential for **resistance** if seroconvert with partner off PrEP then take on-demand dosing with other sexual partners
- **Loss of forgiveness of TDF/FTC** with on-demand dosing: consider the implications of switching
- **Data do not suggest decreased side effects**

A plug for PEP in the PrEP era

Prescribing Post-exposure Prophylaxis (PEP)

Three antiretroviral drugs are recommended for PEP regimen:⁴

Tenofovir DF (300 mg)/Emtricitabine (200 mg) daily + Raltegravir 400 mg BID

OR

Tenofovir DF/Emtricitabine daily + Dolutegravir 50 mg daily

- Potential HIV exposure within 72 hours and patient **has not taken PrEP for past 7 days**
- Provide a 28-day supply of PEP, and then transition seamlessly to PrEP
- There is no evidence that PEP “masks” HIV seroconversion

Acute Infection with a Wild-Type HIV-1 Virus in a PrEP User with High TDF Levels

MSM 50 years of age at time of starting daily PrEP

- HIV negative prior to PrEP and 1, 3 and 6 months after starting PrEP
- Reported excellent adherence

During PrEP use

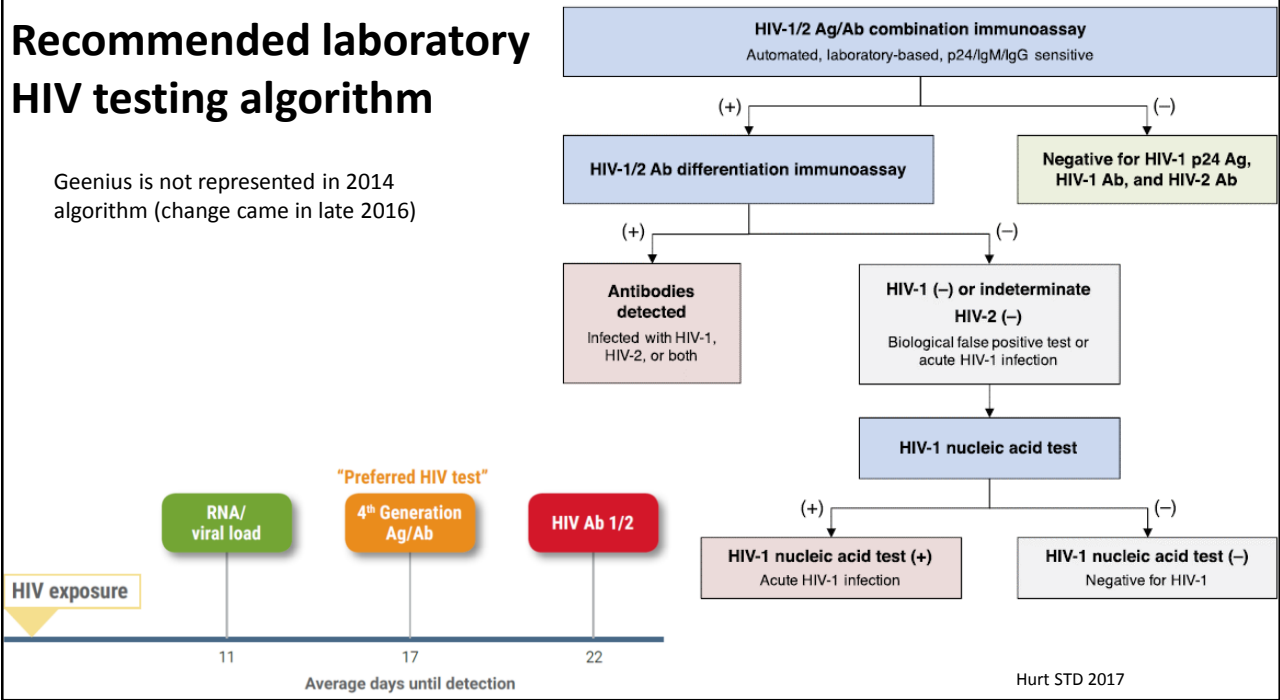
- 3 episodes of STIs
- 38 to 70 anal sex partners per month

8 months after PrEP start

- PrEP interrupted
- HIV RNA detectable 3 weeks after PrEP interrupted
- Undetectable HIV RNA achieved with ART
- No mutations detected
- Underscores the importance of regular HIV testing and awareness of atypical patterns of HIV seroconversion

Recommended laboratory HIV testing algorithm

Geenius is not represented in 2014 algorithm (change came in late 2016)



STD Treatment Guidelines Apps

STD Treatment Guidelines

Recommended Regimen

Ceftriaxone 250 mg IM in a single dose
PLUS
Azithromycin 1 g orally in a single dose

Alternative Regimen

If ceftriaxone is not available
Cefixime 400 mg orally in a single oral dose
PLUS
Azithromycin 1 g orally in a single dose

Available on iTunes & Google Play

STD Clinical Toolbox

News: STD Treatment Guidelines, HPV, Zika, HCV, etc.

Available on iTunes

STD Treatment Guidelines wall charts, pocket guides, and the full MMWR article at: www.cdc.gov/std/tg2015/

The NNPTC provides:

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STD Case Panel

Facilitator

Darpun Sachdev, MD

Panelists:

Oliver Bacon, MD, MPH

Stephanie Cohen, MD

Yvonne Piper, RN, FNP

