Addressing STDs in the era of PrEP and Undetectable=Untransmittable

Darpun Sachdev, MD
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
Addressing STDs in the era of PrEP and Undetectable=Untransmittable
• 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


![U=U](image)

6-17% dx with STD

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

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Dear Colleague: September 27, 2017

**What’s your approach to discussing HIV status with partners?**

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_
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Figure 7.3 Male rectal gonorrhea and male gonococcal proctitis among MSM by HIV serostatus, 2006-2016, San Francisco

Tipping point: HIV-negative MSM make up about half of early syphilis cases

Courtesy of Trang Nguyen
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

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

90%
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
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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

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 vs. 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

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
Optimizing outcomes on status-neutral continuum of care

STD Prevention in PrEP and HIV Primary Care

• Screen, screen, screen, screen (and treat) –
  • q3 month x 3 sites
  • Self-collection

• Promote LINCS 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

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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

STD/HIV Clinical Update: San Francisco
California Prevention Training Center
February 8, 2018

SFDPH LINCS Overview

Mandatory reporting of all HIV-related labs and all positive STD tests (negative STD tests if done at Public Health Lab)
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

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!
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)

Decrease CT by 70%
and syphilis by 73%

No PEP

No contraindication to doxycycline

HIV-negative high-risk MSM enrolled in the open-label Ipergay extension study

No change in GC

Decrease CT by 70%
and syphilis by 73%

No change in GC

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

www.healthysexuals.com

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Still More Work to Do: Disparities in Viral Suppression

Source: SFDPH HIV Epidemiology Section
Addressing STDs in the era of PrEP and Undetectable=Untransmittable

Where new HIV infections coming from?
Skarbinski et al. JAMA Int Med 2015; 175:588-596

<table>
<thead>
<tr>
<th>HIV Care Continuum</th>
<th>No. of Transmissions</th>
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<tbody>
<tr>
<td>HIV Infected but Undiagnosed</td>
<td>0 - 5000</td>
</tr>
<tr>
<td>HIV Diagnosed but Not Retained in Medical Care</td>
<td>25000 - 30000</td>
</tr>
<tr>
<td>Retained in Care but Not Prescribed ART</td>
<td>10000 - 15000</td>
</tr>
<tr>
<td>Prescribed ART but Not Virally Suppressed</td>
<td>5000 - 10000</td>
</tr>
<tr>
<td>Virally Suppressed</td>
<td>0 - 500</td>
</tr>
</tbody>
</table>

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

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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.

EMR-list
- EMR list filtered to LINCS eligibility criteria
- Surveillance identifies if patient has moved, died or has a viral load in SF in past 12 months
- Patient referred to LINCS navigation

Not-in-care list
- Surveillance identifies priority patients meeting LINCS criteria
- Patient referred to LINCS navigation

Data feedback loop to Surveillance if pt moved/died

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%

- **Linked**

- **Suppressed 12 months prior**
  - 94%

- **Suppressed 6 months post**
  - 62%

- **Provider (N=167)**
  - 30%

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

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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
- LINCS reached out to offer partner services (testing and PEP/PrEP to female partner)
- Linked to Ward 86 with LINCS 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
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**Architect Ag/Ab window period**

- **Eclipse phase**: time to detectable RNA (11d)
- **Seroconversion window**: time to detectable HIV Abs

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

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**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

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Pilcher, JAIDS, 2017
Test, immediately link, and start HIV treatment

<table>
<thead>
<tr>
<th>Metric</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016 Q2</th>
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<tbody>
<tr>
<td>Diagnosis -&gt; Care</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>5</td>
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<tr>
<td>Care -&gt; ART</td>
<td>27</td>
<td>16</td>
<td>6</td>
<td>0</td>
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<tr>
<td>Diagnosis -&gt; VL &lt;200</td>
<td>133</td>
<td>91</td>
<td>75</td>
<td>51</td>
</tr>
</tbody>
</table>

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

RAPID Contacts

Citywide LINCS: 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)

Email for more information!

- SF focused training brochures and short tailored education
- Self-testing posters
- Palm cards
- PrEP info
darpun.sachdev@sfdph.org

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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


What’s changed?

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

<table>
<thead>
<tr>
<th></th>
<th>Person years</th>
<th># HIV infections</th>
<th>HIV incidence rate/100 py (95% CI)</th>
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<tr>
<td>Placebo</td>
<td>64.8</td>
<td>6</td>
<td>9.3 (3.4-20.1)</td>
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<tr>
<td>TDF/FTC</td>
<td>68.9</td>
<td>0</td>
<td>0.0 (0.0-5.4)</td>
<td>0.013</td>
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<tr>
<th></th>
<th>IPERGAY RCT</th>
<th>2017 Sub-analysis</th>
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<tr>
<td>Median # sex acts/month</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Median # pills taken/month</td>
<td>15</td>
<td>9.5</td>
</tr>
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Adherence to on-demand PrEP v. daily PrEP

<table>
<thead>
<tr>
<th></th>
<th>On-demand PrEP</th>
<th>Daily PrEP</th>
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<tbody>
<tr>
<td>Decision to take PrEP</td>
<td>Assessment on a day-to-day basis</td>
<td>Assessment of “periodic” risk</td>
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<tr>
<td>Adherence cue</td>
<td>Planned Sex 📇</td>
<td>Daily habit</td>
</tr>
<tr>
<td>Unique barriers</td>
<td>- Unplanned sex</td>
<td>- Aversion to daily pill</td>
</tr>
<tr>
<td></td>
<td>- Desire to ‘pick and choose’ with certain partners</td>
<td>- Taking PrEP when not having sex</td>
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Modified from Haberer IAPAC

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

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

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

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A plug for PEP in the PrEP era

Prescribing Post-exposure Prophylaxis (PEP)
Three antiretroviral drugs are recommended for PEP regimen: 4

- **Tenoflovir DF (300 mg)*/Emtricitabine (200 mg) daily + Raltegravir 400 mg BID**

  OR

- **Tenoflovir 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
Addressing STDs in the era of PrEP and Undetectable=Untransmittable
The NNPTC provides:

- Clinical training
- STD clinical consultations
- Resources and tools for STD Treatment

Visit: [www.nnptc.org](http://www.nnptc.org)

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**STD Case Panel**

**Facilitator**

Darpun Sachdev, MD

**Panelists:**

Oliver Bacon, MD, MPH
Stephanie Cohen, MD
Yvonne Piper, RN, FNP

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