Pre-exposure Prophylaxis for HIV Prevention

Adrian Dominguez, MPH
September 16, 2018
Adapted from a presentation developed by
Dr. Joanne Stekler, MD MPH
for use by the AIDS Education Training Center Program (AETC) Mountain West
Topics To Be Covered

1. HIV epidemiology in AI/AN
2. Efficacy and Safety
3. Prescribing Recommendations/Protocols
4. Common concerns about PrEP
5. Barriers to PrEP in AI/AN
## HIV Epidemiology Case numbers and rates 2016

<table>
<thead>
<tr>
<th></th>
<th>Cases</th>
<th>Rate/100,000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI/AN</td>
<td>243</td>
<td>10.2</td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>10,345</td>
<td>5.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Cases</th>
<th>Rate/100,000 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI/AN</td>
<td>102</td>
<td>4.3</td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>4442</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Racial misclassification and under-counting likely
HIV Epidemiology (2016) Diagnoses within AI/AN by sex & transmission category

Men/Males (N=198)

- Male-to-Male Sexual Contact: 77%
- Heterosexual Contact: 4%
- Male-to-Male Sexual Contact/IDU: 11%
- IDU: 9%

Women/Females (N=45)

- Heterosexual Contact: 69%
- IDU: 31%
HIV Epidemiology Disparities

2015

3,500 AI/AN estimated living with HIV
18% undiagnosed
overall US: 15% undiagnosed

Source: CDC, 2016b; CDC, 2017b; Reilley, B. et al. Public Health Reports. 2018
HIV Epidemiology Disparities

AI/ANs ↑ in HIV cases diagnosed
Most other groups ↓ cases

![Graph showing the rate per 100,000 of AI/ANs and White in HIV cases diagnosed from 2011 to 2016. The rate for AI/ANs increases from 6.2 to 10.2, while the rate for White remains stable.]
Syphilis Rates Continue to Rise

2016 CDC Surveillance Data

https://www.cdc.gov/std/stats16/Syphilis.htm
What barriers have you observed that contribute to HIV/HCV/STI rates within AI/AN communities?
Prevention challenges in AIs/ANs

• AIs/ANs had 2nd highest rates of GC/CT.

• Lack of awareness of status – 1 in 5 HIV+ AIs/Ans

• Stigma and discrimination – on so many levels.

• Mistrust and lack of support from healthcare system

• Cultural diversity – 560 federally recognized tribes w >170 languages
Prevention challenges in AIs/Ans (Con.)

- Poverty, education, employment, healthcare, addiction

- Comorbidities – diabetes, depression, anxiety

- Data limitations – racial misidentification and undercounting leads to underfunding

- Limited funding, resources, services
Question

Name several HIV/HCV/STI prevention interventions
Sexual Health Tools of Prevention

- PEP & PrEP
- HIV Testing & Serosorting?
- Condoms
- Needle Exchange
- HIV and STI Treatment
Pre Exposure Prophylaxis (PrEP)

The Latest Addition to the prevention toolkit
What is PrEP?

- **PrEP (Pre-Exposure Prophlaxis)** = Daily medication to prevent HIV infection

- Truvada is the only approved medication

- **Chemical Composition**
  - Emtricitabine (200 mg) FTC
  - Tenofovir disoproxil fumarate (300 mg) TDF
Biochemical Prevention

• Antiretroviral – Nucleoside Reverse Transcriptase Inhibitor (NRTI) “Nuke”

• Protects CD4 cells from being infected following introduction of virus
PrEP Timeline

- 2004 – Truvada approved for ARV Therapy
- 2007 – IPrEx Study launched – 2,499 individuals
- 2008 - Partners Study launched - 4,758 couples
- 2012 – FDA approves Truvada as PrEP
- 2014 – CDC issues recommendation for PrEP
- 2015 – WHO issues recommendation for PrEP
<table>
<thead>
<tr>
<th>Study</th>
<th>Study Population</th>
<th>Study Randomization</th>
<th>HIV Incidence Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPrEx (Brazil, Ecuador, South Africa, Thailand, US)</td>
<td>2499 MSM and transgender women</td>
<td>Daily oral TDF-FTC or placebo</td>
<td>TDF-FTC: 44% ↓</td>
</tr>
</tbody>
</table>
| Partners PrEP Study (Kenya, Uganda) | 4147 heterosexual HIV discordant couples | Daily oral TDF, TDF-FTC, or placebo                        | TDF: 67% ↓  
|                              |                                         | TDF-FTC: 75% ↓                                           |                      |
| TDF2 Study (Botswana)        | 1219 heterosexual men and women         | Daily oral TDF-FTC or placebo                             | TDF-FTC: 63% ↓       |
| FEM-PrEP (Kenya, South Africa, Tanzania) | 2120 women                             | Daily oral TDF-FTC or placebo                             | TDF-FTC: no protection |
| VOICE (South Africa, Uganda, Zimbabwe) | 5029 women                             | Randomized to daily oral TDF, TDF-FTC, oral placebo, TDF vaginal gel, or gel placebo | TDF: no protection  
|                              |                                         | TDF-FTC: no protection                                     |                      |
| Bangkok TDF Study (Thailand) | 2413 injection drug users               | Randomized to daily oral TDF or placebo                   | TDF: 49% ↓           |
| IPERGAY (France, Quebec)     | 400 MSM                                 | Randomized to “on-demand” TDF-FTC or placebo              | TDF-FTC: 86% ↓       |
| PROUD (United Kingdom)       | 545 MSM and transgender women          | Randomized to daily oral TDF-FTC immediately or delayed   | Immediate TDF-FTC: 86% ↓ |
Efficacy of PrEP

When taken daily and as directed, PrEP is highly effective at reducing transmission of HIV

- Sexual Transmission >90%
- IDU Transmission >70%

CDC Data https://www.cdc.gov/hiv/basics/prep.html
PrEP Side Effects and Safety

“Startup Syndrome”
• Nausea, headache, or fatigue may occur in first 2-4 weeks

Renal Safety
• Renal insufficiency

Bone Effects
• TDF-FTC associated with small change (~1%) in bone density
• No increase in fractures seen

Hepatic Effects (RARE)
• HBV Flare
• Small risk of TDF related cancer
Important Information on PrEP

- Initial screen for STI’s, HIV status, and metabolic function. Continued screening every 3-6 months

- Minimum of 7 days required for effective tissue saturation of anal tissues; 14 days for penile; 21 days for vaginal

- Continued daily adherence for ongoing protection

- Does not prevent against other STI’s. Most effective when used in combination with barrier protection

- Patients starting PrEP with acute or established HIV infection need to be on standard ARV tri-therapy
Who do you feel would be appropriate candidates for PrEP?
Who is an Ideal Candidate for PrEP?

Individuals at substantial risk” for HIV

- MSM w/multiple partners, have condomless anal sex, and a recent STI
- Heterosexual partners of MSM
- Partners of unknown HIV or IDU status
- Transgender Women
- PWID
- Sex Workers
- Partners of HIV+
Who is an Ideal Candidate for PrEP?

IPrEx Study Findings
PrEP Management: Simpler than Diabetes

- Assess sexual health history and risk for HIV
- Determine appropriateness of biomedical intervention
- Able to adhere to a daily medication
- Able to adhere to follow-up visits
- Insurance coverage and/or ability to pay
- Initial screening tests
  - HIV (Must be negative; if reactive, begin ARV treatment)
  - HBV (if unvaccinated – If reactive, treat)
  - General STI Screen (CT/GC/Syphilis – If reactive, treat)
  - Kidney Creatinine Function (> 60 mL/min)
  - Pregnancy Test (if applicable)
- Follow-up STI and kidney function tests 3-6 months
PrEP and Hepatitis (B/C)

• HBV + should be evaluated for treatment or by linkage to an experienced HBV care provider. Potential life threatening hepatic flare if suddenly stopped

• HCV testing is recommended for:
  • PWID (With annual testing)
  • MSM starting PrEP
  • Anyone born 1945-1965
  • History of incarceration
  • Non-professional tattoos

• HCV treatment can occur simultaneously
Question

What are some concerns you have about PrEP?
PrEP: Commonly Cited Concerns

- Behavioral Disinhibition
- Increased STI outbreaks
- Too complicated for primary care providers
- Adherence
PrEP and Behavioral Disinhibition

Could “risk compensation” negate the prevention benefits of PrEP?
Behavior change and STIs in Demo Project
(San Francisco, Miami, Washington D.C.)

A) Receptive anal sex

<table>
<thead>
<tr>
<th>Visit Week</th>
<th>Reported ncrAS</th>
<th>RAS episodes with a condom</th>
<th>RAS episodes without a condom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening</td>
<td>(n = 557)</td>
<td>(n = 482)</td>
<td>(n = 467)</td>
</tr>
<tr>
<td>12</td>
<td>60</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>24</td>
<td>55</td>
<td>50</td>
<td>45</td>
</tr>
<tr>
<td>36</td>
<td>50</td>
<td>45</td>
<td>40</td>
</tr>
<tr>
<td>48</td>
<td>45</td>
<td>40</td>
<td>35</td>
</tr>
</tbody>
</table>

B) Positive results of STI testing

<table>
<thead>
<tr>
<th>STI Positivity Rate by Visit Week, % of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening (n = 557)</td>
</tr>
<tr>
<td>12 (n = 482)</td>
</tr>
<tr>
<td>24 (n = 464)</td>
</tr>
<tr>
<td>36 (n = 434)</td>
</tr>
<tr>
<td>48 (n = 418)</td>
</tr>
</tbody>
</table>

STI Positivity Rate by Visit Week:
- Rectal STI
- Urethral STI
- Pharyngeal STI
- Primary, secondary, or early latent syphilis
Asymptomatic STIs of Persons on PrEP

Proportion of infections for which treatment would have been delayed with q6 month screening

- Gonorrhea n=181: 34.3% Detected, 65.7% Delayed
- Chlamydia n=210: 40% Detected, 60% Delayed
- Syphilis n=54: 20.4% Detected, 79.6% Delayed
- Total n=445: 35.3% Detected, 64.7% Delayed

Cohen et al, CROI 2016
Contradictory Studies on STIs and PrEP?

• STI incidence among MSM PrEP users is high

• PROUD - No difference in STI incidence

• Kaiser Permanente - 44% men ↓ condom use with PrEP

• Meta-analysis suggests ↑ STI risk in MSM using PrEP

• Possible reduced incidence d/t frequent screening
PrEP and STI incidence

Study results are inconclusive and contradictory

BUT...

- Birth control has not led to increased sexual risk
- Needle exchange has not led to increased IDU.
- HPV vaccine has not led to earlier sexual introduction
PrEP: Applying Harm Reduction

We prescribe lipid-lowering agents to reduce MI risk for people who continue to eat French fries…

WHY SHOULD SEX/SUBSTANCE USE BE ANY DIFFERENT?
Sexual Behavior is Part of a Broader Puzzle

- Not Static
- Fluctuates
- Driven by conscious AND subconscious decisions
- Interconnected with other life domains
Health Value of PrEP

- Increased STI screening/treatment
- Reframing sexual health in a positive framework
- Decreased anxiety
- Increased communication and disclosure partners
- Normalization of preventative medical care
Ethical Values of PrEP

- Holistic
- Patient centered
- Respects right to choose and free will
- Addresses realistic expectations for behavior modification
- Harm reduction
- Protects the health of partners
Adherence

- Must be taken daily ("Birth control" metaphor)
- Adherence can change along with changes in habits, routines, etc
- Provider should be monitoring
- Side effects can cause patients to stop
Provider to Patient: Addressing Adherence

• Initial Appointment
  • Educate and stress importance of adherence
  • Establish dosing routine and reminder systems
  • Address broader health (ex. mental health, etc.)

• Followup Appointments
  • Assess adherence and identify barriers
  • Assess and help manage side-effects
PrEP And Adolescents

- FDA-approved for adolescents > 35kg.
- Challenges
  - Adherence
  - Consent without parental approval varies by state
  - Medication/insurance coverage without parental notification
Prevention challenges in AIs/ANs

Specific data to AIs/ANs are limited

• Knowledge about PrEP?

• PrEP uptake?

• Barriers and facilitators to PrEP uptake?

• Culturally appropriate promotional material?
PrEP Access for AIs/ANs

• Truvada is now on IHS National Core Formulary

• UHP access varies and is a facility-level decision

• Some pharmacies carry PrEP

• Some providers prescribe PrEP
Culturally Appropriate Materials

Is PrEP right for you?

If you are HIV negative and answer “yes” to any of the questions below, talk to your doctor about PrEP:

- Is your sexual partner(s) living with HIV or of unknown status?
- Has your partner threatened or forced sexual activity?
- Do you or your sex partner(s) use or inject drugs?
- Do you sometimes or always have anal, vaginal, or frontal sex without a condom?
- Are you and your partner who lives with HIV trying to get pregnant?
- Do you or your sex partner(s) exchange sex for money, housing, drugs, or other needs?
- Have you been treated recently for an STD, such as gonorrhea, chlamydia, or syphilis?

Resources

PrEP is a daily pill that can reduce the risk of HIV by more than 90%.

- To find a doctor that prescribes PrEP: prepdoctor.org
- To learn more:
  edc.gov/nawbasix-prep.html
- To tell your provider about PrEP:
  edc.gov/nawbasix-prep/PrEp guideline 2014.pdf
  National Clinician PrEP Line: 855-448-7737

Ask Your Doctor

If your current doctor is unable to prescribe PrEP, ask for a referral to another doctor or facility.

If taking PrEP, visit your doctor every three months for repeat HIV tests, refills, and follow-up.

See your doctor if you have side effects that become severe or don’t go away.

Payment

Some urban Indian health clinics, tribal clinics, and IHS facilities currently do not cover PrEP, so you may be referred to another doctor or facility. Most private insurance and state Medicaid plans cover PrEP.

If PrEP isn’t fully covered for you, patient assistance can help:

uih.org/projectsvhiv-sti-and-hepatitis-a-prevention-project/prep-payment-assistance/
Conclusions and Next Steps

- PrEP is safe and easy to prescribe
- PrEP is covered by many insurance plans
- PrEP reduces risks of transmission of HIV
- PrEP has already helped to reduce HIV rates
PrEPare to Become an Advocate

• Self-Educate

• Support expanded Medicaid

• Support expansion of access to more providers and pharmacies
How can I learn more?

General Information
www.cdc.gov/hiv/basics/prep.html
www.facebook.com/groups/PrEPFacts
www.prepfacts.org
www.pleaseprepme.org

UCSF Clinician Consultation Center
1-855-HIV-PrEP (1-855-448-7737), M-F 11-6 EST

IHS Clinical Guidelines
https://www.ihs.gov/hivaidsc/clinicalinfo/guidelines

Financial Assistance for PrEP
Gilead’s Medication Assistance Program
http://www.gilead.com/responsibility/us-patient-access/us%20advancing%20access
Questions?