AETC AIDS Education & Training Center Program Southeast

UNIVERSITY OF SOUTH CAROLINA

Palmetto Health USC MEDICAL GROUP

SOUTH CAROLINA HIV/AIDS CLINICAL TRAINING CENTER

PrEP in Heterosexual Couples/ PrEP For Pregnancy

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Disclosures and Objectives

- No disclosures

- Objectives
  1. PrEP during COVID-19
  2. Discuss how to identify and engage at risk heterosexual people
  3. Understand the utility of PrEP for pregnancy in sero-discordant couples
  4. Describe the safety of PrEP during Pregnancy

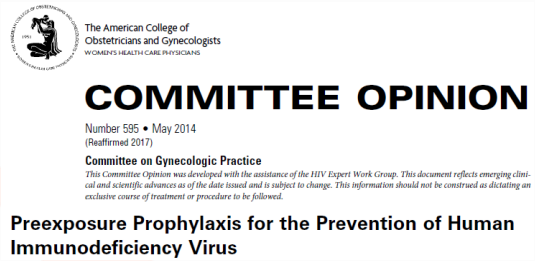
HIV PrEP Option #1

US Public Health Service

PREEXPOSURE PROPHYLAXIS FOR THE PREVENTION OF HIV INFECTION IN THE UNITED STATES – 2017 UPDATE

A CLINICAL PRACTICE GUIDELINE

- Daily oral PrEP with the fixed-dose combination of tenofovir disoproxil fumarate (TDF) 300 mg + emtricitabine (FTC) 200 mg has been shown to be **safe and effective** in reducing the risk of HIV acquisition in at risk adults(AI)[1]
  - Truvada® (FDA approved) pts with eCrCl of ≥60 ml/min
  - FDA approved for adolescents over 35 kgs(2018)


The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

COMMITTEE OPINION

Number 595 • May 2014
(Reaffirmed 2017)

Committee on Gynecologic Practice

This Committee Opinion was developed with the assistance of the HIV Expert Work Group. This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. This information should not be construed as dictating an exclusive course of treatment or procedure to be followed.

Preexposure Prophylaxis for the Prevention of Human Immunodeficiency Virus

Release Date: June 2019

Recommendation Summary

Population	Recommendation	Grade (What's This?)
Persons at high risk of HIV acquisition	The USPSTF recommends that clinicians offer preexposure prophylaxis (PrEP) with effective antiretroviral therapy to persons who are at high risk of HIV acquisition.	A

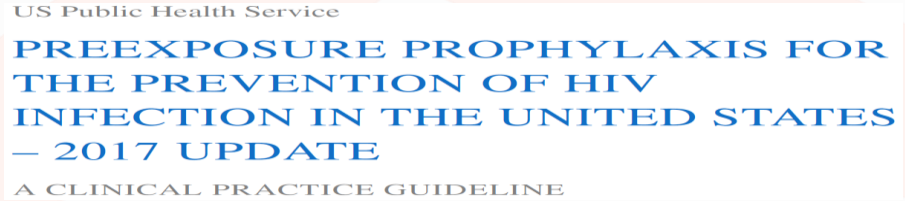
U.S. Preventive Services TASK FORCE

1. https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2017.pdf
2. Centers for Disease Control and Prevention. *HIV surveillance Report, 2016;* vol 28. https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2016-vol-28.pdf

PrEP: An Alternative to TDF/FTC

Tenofovir disoproxil fumarate (TDF) only

- Considered an alternative in certain populations
  - Heterosexually active men and women
  - People who inject drugs
- Lack of data: MSM, transgender



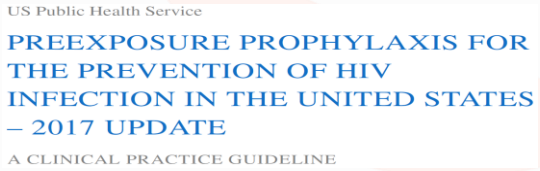
PrEP: Option #2

1. TAF/FTC –FDA approved for at-risk adults and adolescents (≥35 kg), excluding individuals at risk from receptive vaginal sex. (October 2019)
   - Not yet incorporated into guidelines
   - eCrCl > 30 mL/min

Not an option
for
Cis Women
Trans men(vaginal sex)

PrEP: Who Needs It?

MSM	Heterosexual Men and Women	Injection Drug Users	Transgender People
• Commercial sex workers • HIV+ partner • Recent STI • Multiple partners • Inconsistent/No condoms	• Commercial sex workers • HIV+ partner • Recent STI • Multiple partners • Inconsistent/No condom use • High prevalence area	• HIV positive injecting partner • Sharing needles/injection equipment	Trans women of color[2] (National HIV/AIDS Strategy 2010, 2015)



1. https://www.cdc.gov/hiv/risk/prep/index.html (2017 guidelines)
2. Herbst JH, Jacobs ED, Finlayson TJ, et al. Estimating HIV prevalence and risk behaviors of transgender persons in US . AIDS Behav 2008
3. https://www.cdc.gov/mmwr/volumes/68/wr/mm6827a1.htm?s_cid=mm6827a1

PrEP Workflow

Time management

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HIV PrEP Implementation Toolkit

1 vs 2 visits

Bolded items mandatory

PrEP Orientation Visit:

- Discuss PrEP use
- Review insurance coverage/med. assistance
- Perform baseline laboratory tests:
  - **HIV Ab/Ag screen^ (4th generation)**
  - **Cr**
  - **Hepatitis Bs Ag/Ab** and cAb
  - Hepatitis C Antibody
  - RPR/Trep Ab
  - Triple site GC/CH testing- Urine, Rectal, Oral (based on exposure)
  - **Pregnancy test** (if female)

Initial Provider Visit:

- Discuss PrEP use (7 day interval before adequate levels in rectal tissue and 20 days for vaginal tissue/blood; compliance; SE)
- Risk reduction counselling, condoms
- PrEP Clinic Questionnaire(initial)
- Provider visit
- Symptom history to r/o acute HIV
- 30-day supply of PrEP **(start within 7 days of HIV screen)**

PrEP Workflow

Every visit(Q 3mths)

- Provide condoms
- **HIV Ag/Ab → refills**
- Assess adherence
- Risk reduction counseling

Decide who sees the person

HIV PrEP Implementation Toolkit

Bolded items mandatory

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- 30-day supply of PrEP **(start within 7 days of HIV screen)**

30-day visit:

- Adherence review with nurse/ PharmD, risk reduction counselling, assess side effects
- Cr

Optional UA

60-day supply of PrEP

3-month visit:

- PrEP Clinic Questionnaire (short)
- Provider visit, risk reduction counselling, condoms
- **HIV Ab/Ag Test, Pregnancy test,** STI screen in MSM^(RPR/Trep Ab, GC/CH(triple site))

90-day supply of PrEP

6-month visit/ 12 month visit:

- PrEP Clinic Questionnaire (long)
- Provider visit, risk reduction counselling, condoms
- **HIV Ab/Ag , Pregnancy test, Cr,** RPR/Trep Ab, GC/CH(triple site), Hep C ab annually

90-day supply of PrEP

9-month visit:

- PrEP Clinic Questionnaire (short)
- Provider visit , risk reduction counselling, condoms
- **HIV Ab/Ag,** STI screen in MSM(RPR/Trep Ab, GC/CH(triple site))

90-day supply of PrEP

After the 12 month visit: (Re-evaluation of need for continuing PrEP)

Q 3 monthly visit with Adherence nurse/ Pharm D, risk reduction counselling, , condoms.

- PrEP Clinic Questionnaire (short)
- **HIV ab/ab q 3 monthly** and STI screen q 3 monthly in MSM
- 90 day supply of PrEP

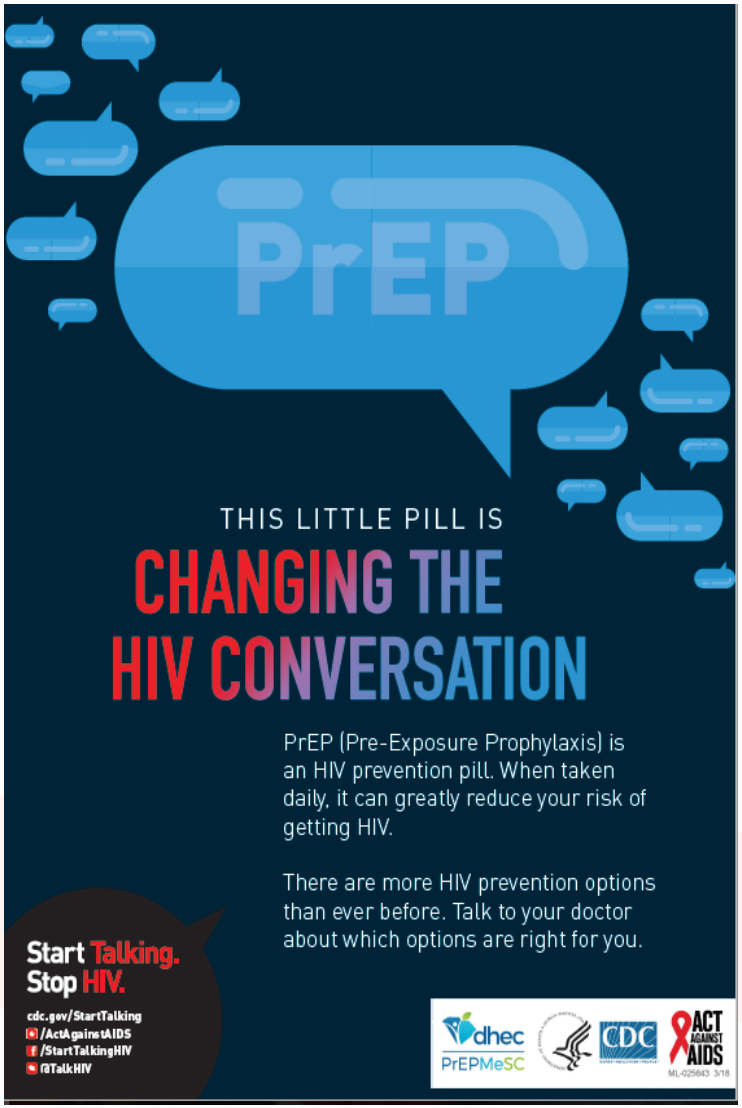
Q 6 monthly visit with Provider

- Pregnancy test, **Cr,** RPR/Trep Ab, GC/CH(triple site) ,Hep C
- 90-day supply of PrEP, condoms

PrEP in setting of COVID-19

- Virtual visit
  - Phone visit
  - Video visit – various platform

- Labs
  - By appointments
    - Everyone with mask
      - To prevent transmission if +
    - Wait in car then come in
    - Labs at car



PrEP Workflow (During COVID 19)

Lab visit

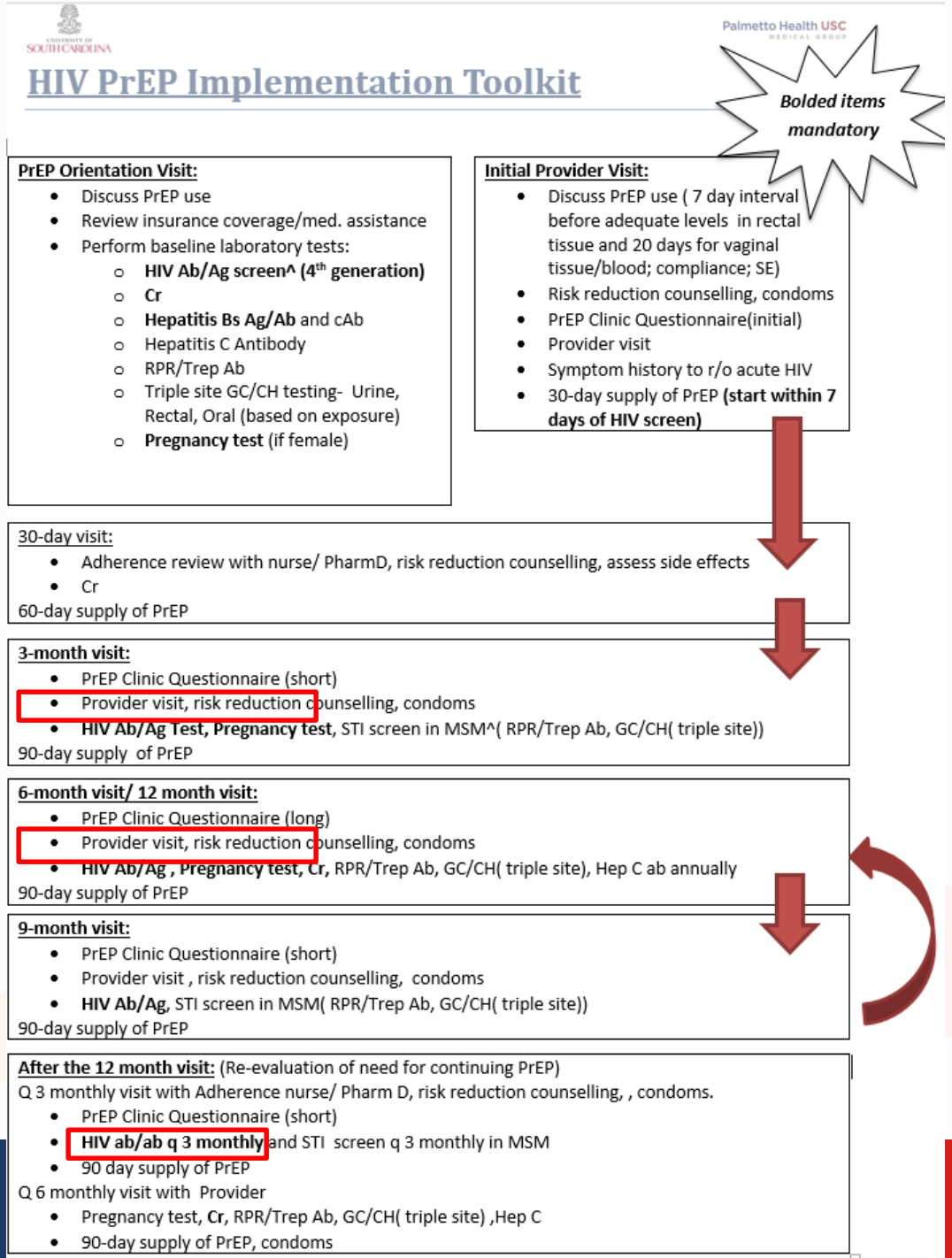
- **HIV Ag/Ab Q3 month**
- Cr @ month 6
- Self swabs

Provide condoms

Phone/Video visit

Day 0
Day 30
Week 12
Week 24

- Assess adherence
- Risk reduction counseling



HIV PrEP Implementation Toolkit

Palmetto Health USC

Bolded items mandatory

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90-day supply of PrEP

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Q 6 monthly visit with Provider

- Pregnancy test, **Cr,** RPR/Trep Ab, GC/CH(triple site) ,Hep C
- 90-day supply of PrEP, condoms

Virtual visit: Adherence

Adherence
=
Efficacy

https://www.caringvillage.com/2018/02/09/the-top-five-medication-management-apps/
https://www.ripplephx.org/?p=5234

TAF/FTC – 30 day Blister pack

Virtual Visit Support

Interdisciplinary support

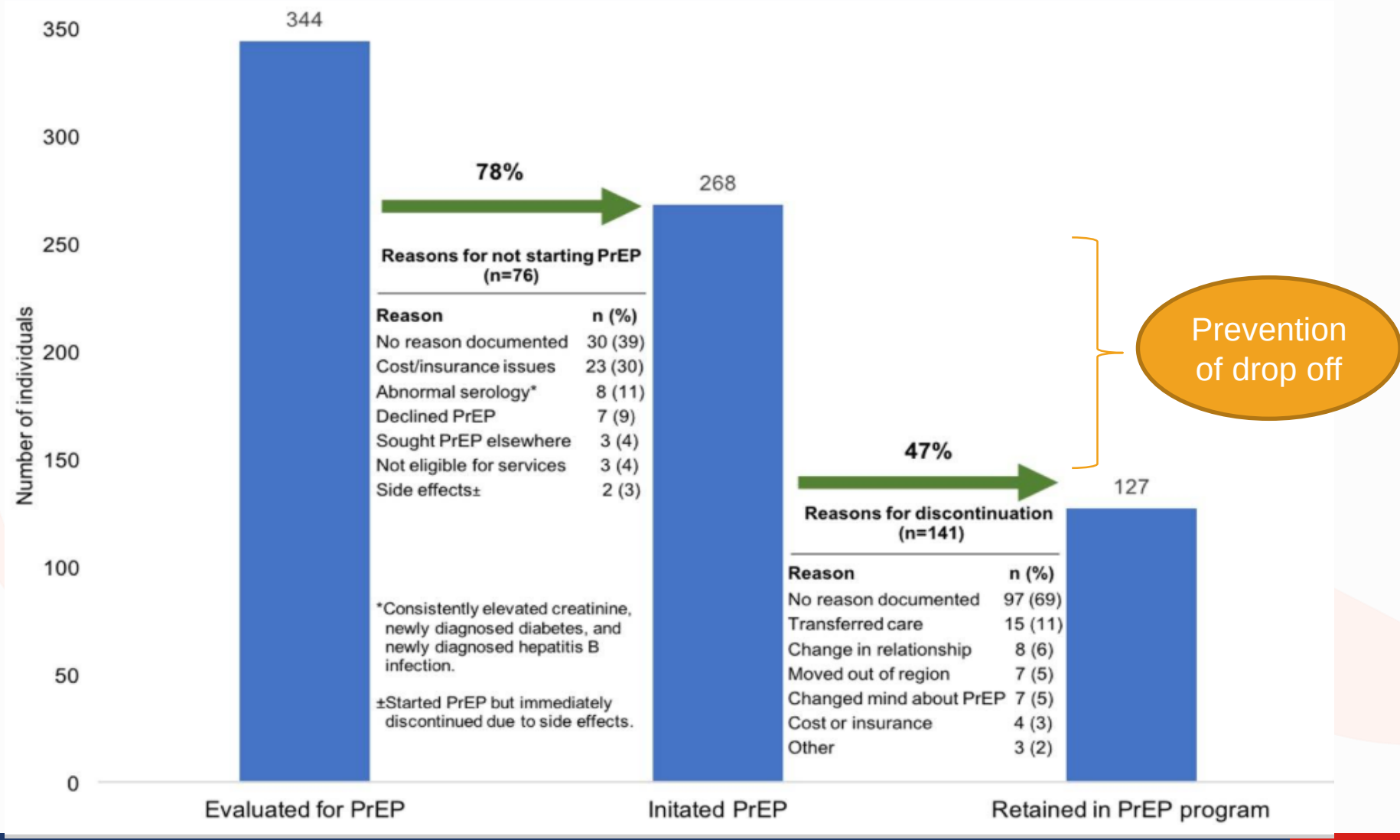
- Retention/adherence rates varies – higher in multidisciplinary scenarios 75%- 90%[1,3]
  - **Pharmacist**[1] and nurse models[4]

- **Text messaging**[2] service or PrEPmate(**app**)[5]
  - Those who opted for text; more likely to remain in clinic (76% vs. 53%)[2]
  - App had better adherence to visits/ therapeutic levels (56 vs 40% @ 36 wks)

- Brief **behavioral intervention** (sexual health or adherence)→ < missed pills/higher drug levels (96.6 vs 84%; p=0.02)- NYC[3]

1. CROI 2017 Tung et al FEASIBILITY OF A PHARMACIST-RUN HIV PREP IN A COMMUNITY PHARMACY
2. CROI 2017 (Abstract 964)- Khosropour et al
3. CROI 2017 (Abstract 965) – Sarit
4. Gibson, S. et al. AIDS 2016 (Strut)
5. *Clinical Infectious Diseases*, ciy810, https://doi.org/10.1093/cid/ciy810

Virtual visit: Reason for Adherence



Hojilla – AIDS behav. 2018

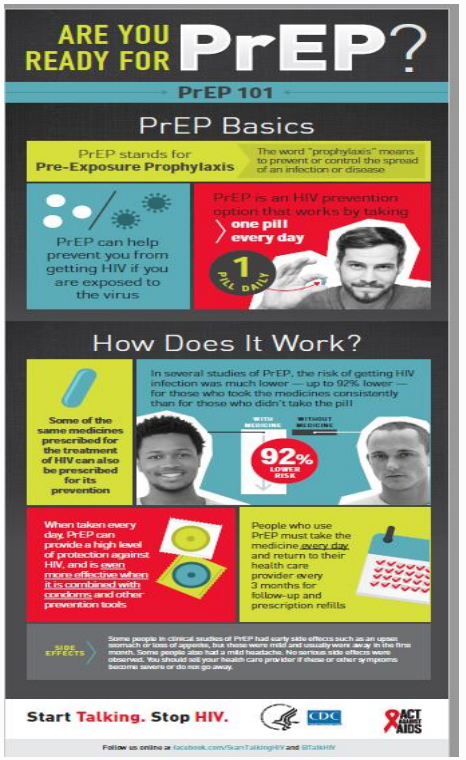
Case 1

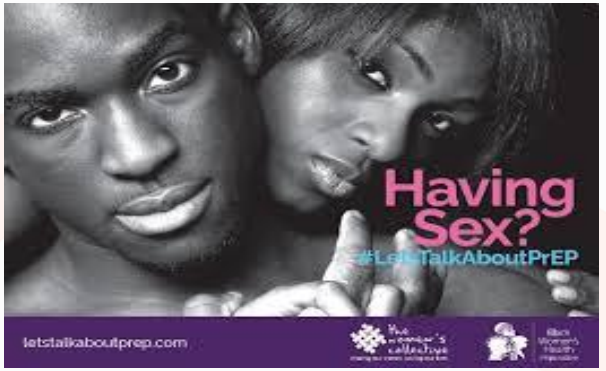
- 29 y/o heterosexual male come to office after ED visit for follow up.
  - Presented there with ‘drips’
  - Got treated with ceftriaxone IM and azithro
  - Urine GC was sent

- In addition to asking about symptoms, what othter information is needed ?
  - Possible PrEP Candidate

PrEP for Heterosexual Persons
Identifying persons at risk

- Talk Sexual Health
- Sexually hx usually deferred by various groups
  - Primary care[1]
  - STI care[2]
  - HIV care[3-5]





1 Wimberly YH et al . Sexual history-taking among primary care physicians. *J Natl Med Assoc.* 2006
2. Kurth AE. A national survey of clinic sexual histories for sexually transmitted infection and HIV screeningSTD 2005
3. Laws MB, Discussion of sexual risk behavior in HIV care is infrequent and appears ineffectual: *AIDS Behav.* 2011
4. Metsch LR,. Delivery of HIV prevention counseling by physicians at HIV medical care settings . *Am J Public Health.* 2004
5. Duffus WA, Effect of physician specialty on counseling practices /referral patterns among physicians caring for disadvantaged HIV populations. *CID 2003*

PrEP for Heterosexual Persons
Sexual Health: Identifying Persons at risk

In the past 6 mth:(Heterosexual men and women)

- Have you had sex with men, women, or both?
  (if opposite sex or both sexes) How many men/women have you had sex with?
- How many times did you have vaginal or anal sex when neither you nor your partner wore a condom?
- How many of your sex partners were HIV-positive?

(if any positive) With these HIV +partners, how many times did you have vaginal or anal sex without a condom?

The five "P"s stand for:

- **Partners**
- **Practices**
- **Protection from STDs**
- **Past history of STDs**
- **Prevention of pregnancy**

CDC. PrEP Guidelines. 2017

Case 1

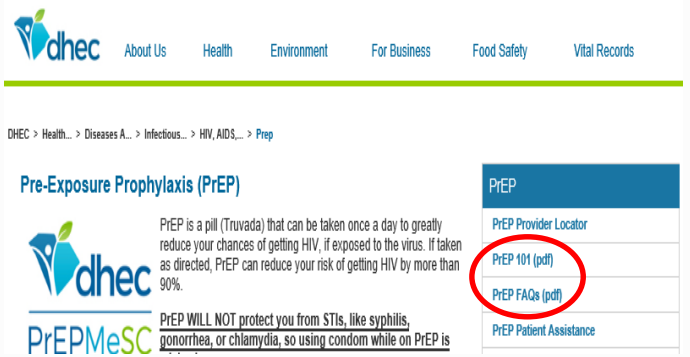
- Male
- Heterosexual
- Female partners mainly, sometimes insertive anal sex
  - No condoms
  - Dates online
  - Unsure of partners HIV status

- HIV test negative, CrCL >60

Case 1: PrEP options for him ?

1. Daily TDF/FTC (Truvada®)
2. Daily TAF/FTC (Descovy ®)
3. Defer PrEP since not MSM

Adherence Counselling What to expect



- Symptoms
  - Flatulence, nausea / GI upset
  - Headache and rash
  - Arthralgia
- This start up syndrome resolves within first 4-6 wks , for most
  - Use OTC medications
- Uncommon
  - Drop in bone density(TDF)
  - Renal dysfunction (subclinical), rare Fanconi syndrome
  - Lactic acidosis
  - Transaminitis

1.US Public Health Service. PrEP Guideline – 2017
2 Martin et al. Renal function of participants in the Bangkok tenofovir - Thailand, 2005–2012. CID 2017
3 Solomon et al. Changes in renal function ….PrEP. AIDS. 2017
4 Liu et al. Bone mineral density in .. PrEP … in San Francisco. PLoS One. 2011
5 PROUD: McCormack S, et al. Lancet 2015

Adherence Counselling Bone Health (TDF)

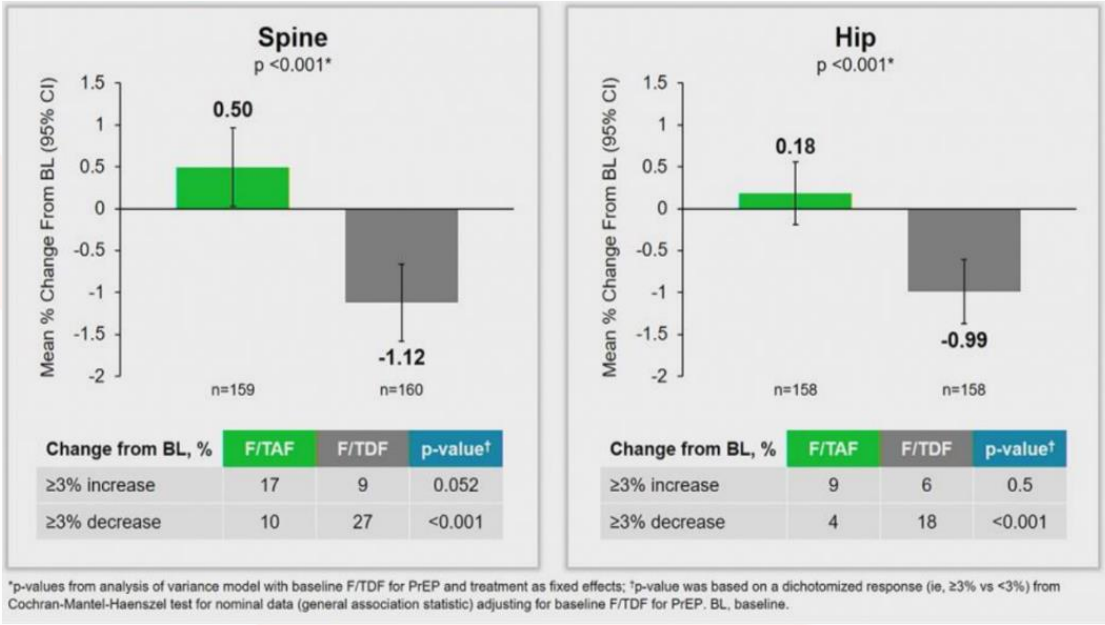
- Small (~1%) decline in BMD occurred in first few months → either stabilized or returned to normal [1,2]
  - iPrEx trial (TDF/FTC) & CDC PrEP safety trial in MSM
  - No increase in fragility (atraumatic) fractures over the 1-2 years

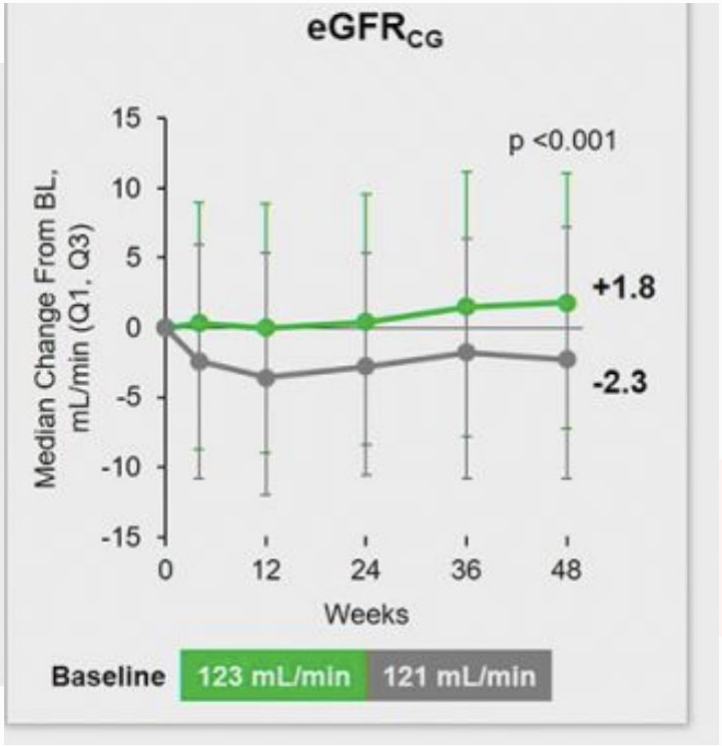
- DEXA scans or other assessments are NOT recommended

1 Grant. lancet 2014
2 Mulligan CROI 2011

Adherence Counselling Bone/Kidney Health

- RCT of Truvada® versus Descovy® for PrEP
  - MSM and TGW (Enrolled ~6000: 74 TGW) ; followed 96 wks
  - 22 HIV transmission (7 TAF and 15 TDF)





Case 2

- 25 y/o cis-woman visits your office with rash
- 1 male partner , condomless sex
- No new lotions or soaps, No meds
- WBC normal

Think Syphilis !!!

- PHx
  - Abnormal PAP in 2019 with GC positive in 2018

- Is PrEP an option for her?

PrEP for Women
Missed Opportunities to Prescribe PrEP

- 885 new HIV+ pts had 4029 healthcare visits in the months prior to diagnosis (SC 2013-2016)
- 2/3rd had missed opportunities for PrEP engagement
- **Women, Black race and younger** individuals were more likely to have had missed opportunity
- Location
  - 84% of missed opportunities occurred in the ED
  - 10% occurred in outpatient clinics

Clinical Infectious Diseases· May 2018. DOI: 10.1093/cid/ciy441

Engaging Cis-Women

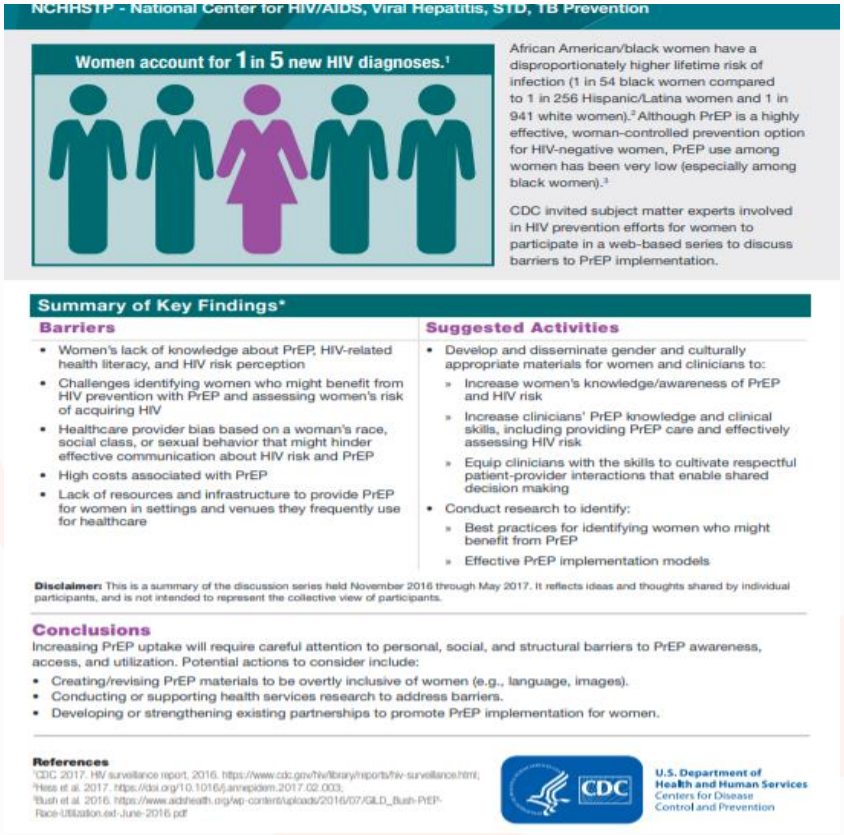
- Why are women at risk for HIV
  - **Unaware of their male partner's risks** (IVDU or MSM) → No condoms (93% of HIV-negative high-risk women had vaginal sex without a condom; 26% anal sex without condom[2])

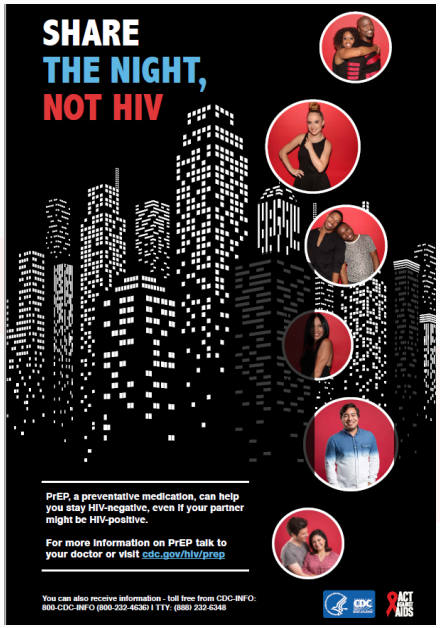
"Southern women are sometimes too polite to ask" -TC

  - **At higher risk for getting HIV during vaginal/anal sex** than their sex partners
  - HIV **testing rates lower** among women (20% with anal sex tested[3])
  - **STI** (gonorrhea, syphilis) greatly increase the likelihood of HIV transmission
  - Women s/p sexual abuse more likely to **engage in sexual risk behaviors** - sex for drugs, multiple partners, or sex without condom

1https://www.cdc.gov/hiv/group/gender/women/index.html
2. behavioral survey(https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-number-19.pdf)
3. Evans et al Am J Obstet Gynecol.2018- Low HIV testing rates among US women who report anal sex and sexual risk, 2011-2015

PrEP for Women





1. https://hiveonline.org/prep4women-disparities/-UCSF
2. DC'S PrEP AWARENESS CAMPAIGN
https://www.cdc.gov/hiv/pdf/group/gender/women/cdc-hiv-women-and-PrEP-discussion-series.pdf

Case 2- PrEP options for her?

1. Daily TDF/FTC (Truvada®)
2. Daily TAF/FTC (Descovy ®)
3. Defer PrEP since not MSM

PrEP: Does it Work for women?

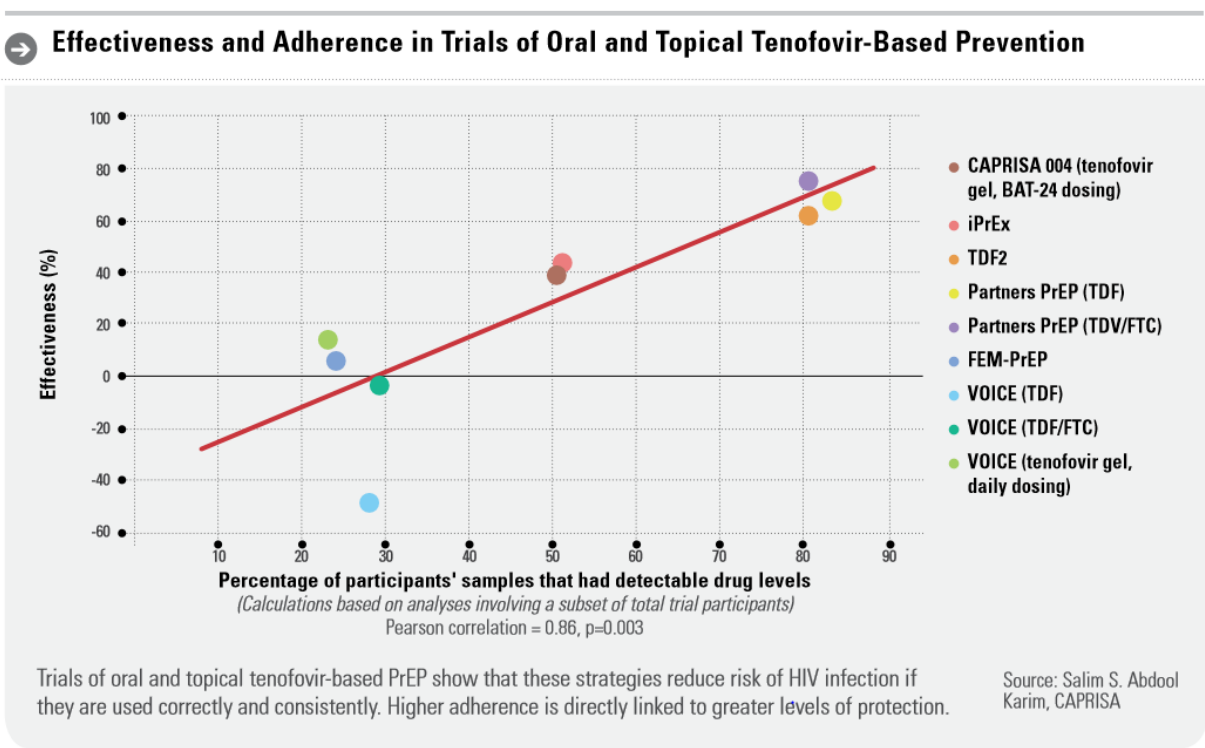
US Public Health Service
PREEXPOSURE PROPHYLAXIS FOR THE PREVENTION OF HIV INFECTION IN THE UNITED STATES – 2017 UPDATE
A CLINICAL PRACTICE GUIDELINE

Trial	Where	Who	What	Efficacy
1. iPrEx n=2499	SA, US, South Africa, Thailand	MSM high risk	TDF-FTC or placebo	44% TDF-FTC
2. Partners PrEP n=4747	**Kenya, Uganda**	**Discordant hetero couples**	**TDF, TDF-FTC or placebo**	**67 -75% (TDF, TDF/FTC) •Men 84% •Women 66%**
3. US MSM safety Trial, n=400	US	MSM	TDF or placebo Early vs delay	Not reported ; 0 infections on TDF
4. TDF2 n=1219	**Botswana**	**Hetero men or women**	**TDF-FTC or placebo**	**62.2% all •80% men •49% women (NS)**
5. FEM-PrEP n=2120	**Kenya, South Africa, Tanzania**	**Women**	**TDF-FTC or placebo**	**Stopped early due to lack of efficacy**
6. VOICE n=5021	**Uganda, South Africa,Zimb.**	**Heterosexual women**	**TDF gel, placebo gel, TDF, TDF-FTC, placebo**	**TDF gel/pill stopped, lack of efficacy**
7. West African Trial n=859	**West Africa**	**Hetero women**	**TDF vs placebo**	**65% (NS, stopped early)**
8. Bangkok TDF n=2413	Thailand	IVDU	TDF or placebo	49% TDF

https://www.cdc.gov/hiv/pdf/risk/prep/cdc-hiv-prep-guidelines-2017.pdf

PrEP: Efficacy and Adherence

- If drug detected in blood, effectiveness of PrEP = **<u>90-92%</u>**
  - 92-100% if levels equivalent to daily use[2] (Post Hoc iPrEx)
  - 0 conversions if at least 4 doses taken[3]



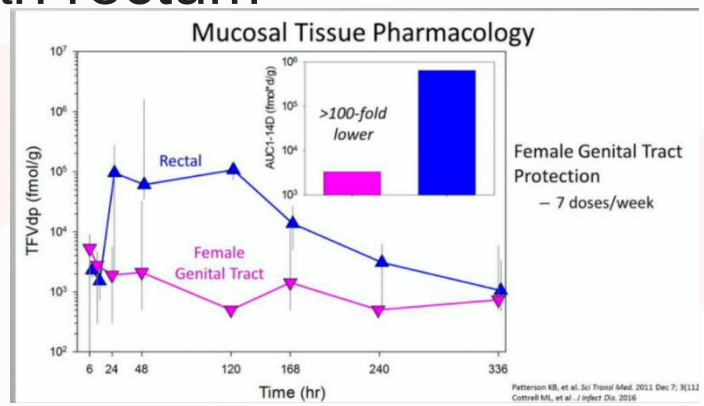
Adherence= Efficacy

AVAC Report. 2013
2 Anderson . Intracellular TDF/FTC driedbloodspots following DOT .Antimicrob AgentsChemother.2017
3 Anderson iPrExStudyTeam. PrEP efficacyinmenwhohavesexwithmen.SciTransl Med.2012

PrEP in Women: Why didn't it work?

- 2 large studies (FEM-PrEP and VOICE trials), PrEP was not effective in preventing HIV[1,2]
  - Non-adherence was a major factor in study failure
    - Overall adherence <30%
    - More common in young women <25 yo
  - Differences in vaginal concentrations of drug plausible role in lack of efficacy- > 100 fold lower than rectum

- Women have to work harder
- Focus counselling efforts on cultural/social barriers



1 Van Damme L, et al. N Engl J Med. 2012;367:411-422
2 Marrazzo JN, et al. N Engl J Med. 2015;371:509-518
3 Patterson STM 2011 and Cottrell JID 2016

PrEP: Reminder

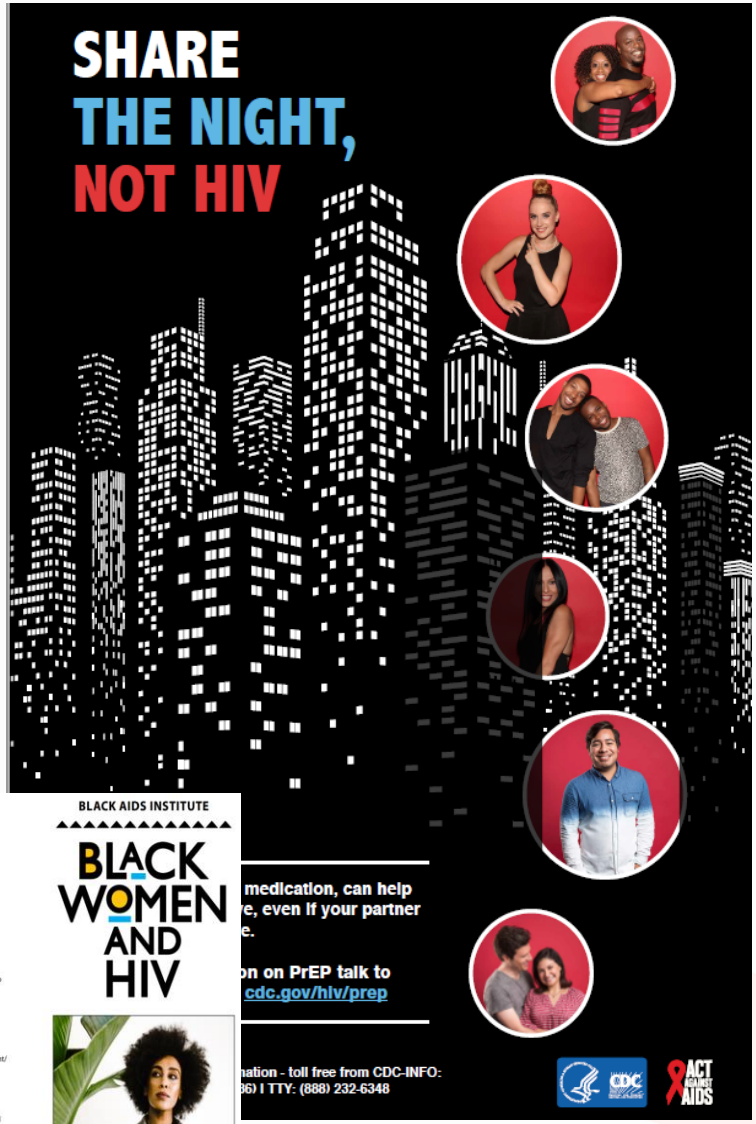
1. TAF/FTC –FDA approved for at-risk adults and adolescents (≥35 kg), excluding individuals at risk from receptive vaginal sex. (October 2019)
2. Dec 2019 – Company statement: agreed with the FDA on the framework of an innovative trial design to conduct a study evaluating Descovy for PrEP in cisgender women and adolescent females

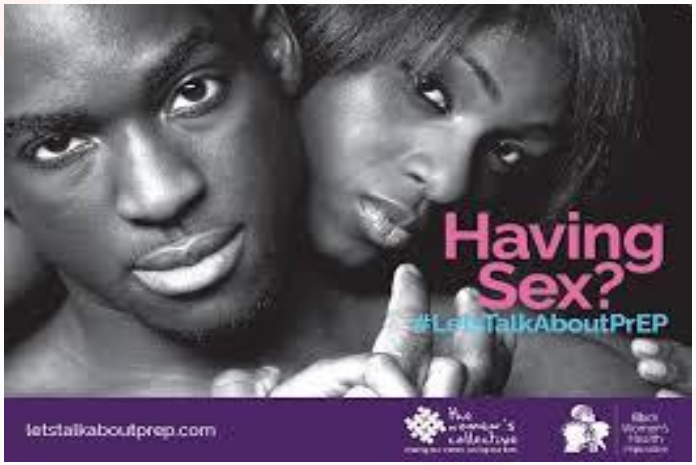
Not a current option
for
Cis Women

PrEP Continuum of Care - Retaining Clients

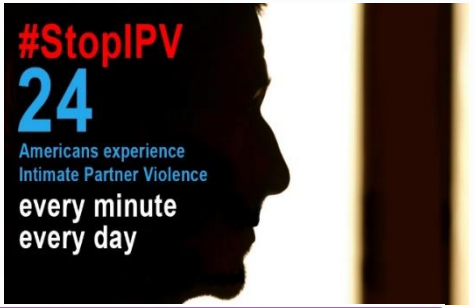
Engagement/Retention
Welcoming Environment

- Non judgmental
- Understand stigma/
  fear of health care system
- Engage patients /language
  - Staff
  - Posters





PrEP and Adherance
- Intimate Partner Violence



Intimate Partner Violence (IPV) and PrEP [3,4,5]

- Recent IPV (3 mths) associated with a lower adherence
- Women reported taking pills and pill counts (unused) pills suggested they took their PrEP (VOICES trial)
  - BUT serum drug levels undetectable
- Themes of stigma, fear, relationship conflict and lack of understanding

[3]Roberts ST, et al. CROI 2015. Abstract 980;
[4]Saag MS. N Engl J Med. 2015; 372:564
[5]van de Straten A, et al. JIAS. 2014;17 (supple):19146

Engagement/Retention
Rural clients

- Rural residence -risk factor for late HIV diagnosis
  - Less likely to **obtain HIV testing** and Rx

- Challenges of rural pts with HIV (Can extrapolate to PrEP care):
  - Stigma and social isolation
  - Long travel distances to care
  - Lack of transportation
  - Lack of providers with "HIV" expertise
    - 95% of rural counties lack "HIV" providers compared to 69% of urban counties

Vyavaharkar, M. (2013). HIV in Rural America. A technical report by the SCRural Health Research Center.
Ohl ME, et al. BMC Public Health. 2011; 11:681.; Weis KE, et al. J Rural Health. 2010; 26(2):105-12.;

Case 3

- 26 y/o woman presents inquiring about PrEP
- 7 weeks gestation
- Her HIV ab/ag test= negative
- Male Partner HIV positive
  - HIV Viral load unknown, non compliance with ART
  - Continue to have unprotected sex with partner

Case 3

- If she is HIV negative, should PrEP be offered to her?
  1. No; because she is already preganant
  2. Yes; PrEP is safe in pregnancy and she has ongoing risk
  3. No; PrEP is not safe in pregnancy
  4. Unsure

PrEP in Pregnancy

- TDF and FTC - FDA Pregnancy Category B medication[1]

- Risks and available information should be discussed
  - Risk of mother to child HIV transmission goes up if HIV acquired during pregnancy
  - In-utero studies with only low concentration of drug getting to umbilical cord[2,3]

Concentration of Tenofovir In Vivo

First Author	Sample Size	Tenofovir Dose, mg	Concentration in Maternal Serum, ng/mL	Concentration in Umbilical Cord, ng/mL
Flynn [14]	13	600	234	76
	15	900	456	68
Hirt [15]	38	300	310	100

1. DHHS. HIV Perinatal Guideline. 2015
2. Ehrhardt Breastfeeding While Taking Lamivudine or Tenofovir Disoproxil Fumarate CID 2015
3. Mofenso Tenofovir PrEP for Pregnant and Breastfeeding Womenat Risk ofHIVInfection PLOS 2015
4. CROI 2017 # 584 – Jourdain **TDF TO PREVENT PERINATAL HEPATITIS B VIRUS TRANSMISSION – RCT**

PrEP:

Effects on Infants

PrEP and Breastfeeding

- Infants of women on tenofovir while pregnant followed
  - Infants at 6 months- No effects on their weight, length and head circumference[3]

- Also minimal excretion in breastmilk [5]
  - Median amount of tenofovir ingested would be 0.03% of the recommended neonatal dose

1. **Ehrhardt Breastfeeding While Taking 3TC or TDF CID 2015**
2. Mofenso Tenofovir PrEP for Pregnant and Breastfeeding Womenat Risk ofHIVInfection PLOS 2015
3. CROI 2017 # 584 – Jourdain **TDF TO PREVENT PERINATAL HEPATITIS B TRANSMISSION – RCT**
4. Gibb Pregnancy and infant outcomes among HIV-infected women taking long-term ART with and without tenofovir in the DART trial *PLoS Med* 2012
5. Benaboud Concentrations of tenofovir and emtricitabine in breast milk of HIV-1-infected women in Abidjan, Cote d'Ivoire, in the ANRS 12109 TEmAA study, step 2 *Antimicrob Agents Chemother* 2011

Case 3

If yes to PrEP, which agent

1. Daily TDF/FTC (Truvada®)
2. Daily TAF/FTC (Descovy®)

PrEP: Reminder

1. TAF/FTC –FDA approved; excluding individuals at risk from receptive vaginal sex. (October 2019)
2. Study evaluating Descovy® for PrEP in cisgender women and adolescent females- will start in near future
3. **TAF/FTC (Descovy®) in Pregnancy= limited/no data**

Not a current option
for
Cis Women

Case 4

- HIV positive male brings his HIV negative female partner to his well visit
- He has an undetectable viral load for the last 2 years and claims 100% compliant
- They would like to have children

- How do you advice?

PrEP: For Pregnancy

Reproductive Options for Couples in Which One or Both Partners are Living with HIV (Last updated December 7, 2018; last reviewed December 7, 2018)

Panel's Recommendations

For Couples Who Want to Conceive When One or Both Partners are Living with HIV:

- Expert consultation is recommended to tailor guidance to couples' specific needs (**AIII**).
- Partners should be screened and treated for genital tract infections before attempting to conceive (**AII**).
- Partners living with HIV should attain maximum viral suppression before attempting conception to prevent HIV sexual transmission (**AI**) and, for women living with HIV, to minimize the risk of HIV transmission to the infant (**AII**).
- For couples with differing HIV statuses, **when the partner living with HIV is on ART and has achieved sustained viral suppression**, sexual intercourse without a condom limited to the 2 to 3 days before and the day of ovulation (peak fertility) is an approach to conception with effectively no risk of sexual HIV transmission to the partner without HIV (**BII**).
- For couples with differing HIV statuses who attempt conception via sexual intercourse without a condom (despite counseling) **when the partner living with HIV has not been able to achieve viral suppression or when the viral suppression status is not known**, administration of antiretroviral pre-exposure prophylaxis (PrEP) to the partner without HIV is recommended to reduce the risk of sexual transmission of HIV (**AI**). Couples should still be counseled to limit sex (without condoms) to the period of peak fertility (**AIII**).
- When the woman is living with HIV, assisted insemination at home or in a provider's office with semen from a partner without HIV during the periovulatory period is an option for conception that eliminates the risk of HIV transmission to the partner without HIV (**AIII**).
- When the man is living with HIV, the use of donor sperm from a man without HIV is an option for conception that eliminates the risk of HIV transmission to the partner without HIV (**BIII**).
- For couples with differing HIV statuses who attempt conception (sexual intercourse without a condom limited to peak fertility) when the partner living with HIV has achieved viral suppression, it is unclear whether administering PrEP to the partner without HIV further reduces the risk of sexual transmission (**CIII**).

Rating of Recommendations: *A = Strong; B = Moderate; C = Optional*

Rating of Evidence: *I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion*

https://aidsinfo.nih.gov/guidelines/html/3/perinatal-guidelines
DHHS Perinatal Guidelines, Updated 2018

PrEP: For Pregnancy

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For discordant couples:

- HIV+ partner should be on ART and attain suppression of VL (AI)
- Once suppression of VL, Peri-ovulatory sex without condom, an option with effectively no risk of HIV transmission (BII)
  - (based on U=U data)
- Unclear if PrEP further reduced risk
  - But……

Case 5

- What is the positive partner is the woman
  - She is undetectable and has been for years
- New spouse is HIV negative and the couple would like to have a baby
  - How would you advise?

PrEP: For Pregnancy

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Panel's Recommendations

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Additional measures after virologic suppression:
If woman is HIV positive: At home or in office insemination in the peri ovulatory period is an option (AIII)
If man is HIV positive: Could us a sperm donor

Alternative options to unprotected sex = cost

- Artificial insemination can cost per cycle - $1,500 to $4,000
- Cheap method of insemination
- Sperm washing – $100-300
- Semen analysis $85-135

Case 5

- Discuss U=U
- Could still offer PrEP

PrEP: For Pregnancy, Support Data

Treatment as Prevention

Trial	When	Who (sero-Discordant)	What	Efficacy
1. Observational	1989-2008-Madrid Spain	424 heterosexual couples . 83% male+	20,000 acts of intercourse w/out condoms	0 transmission if +partner on ART Risk: 1 in 2000 exposure
2. HPTN 052	9 countries	1763 couples (homosexual + heterosexual)		0 transmission if the + partner were suppressed
3. Partners	14 countries Europe	1166 couples (homosexual + heterosexual)	58 000 instances of unprotected sex	0 of the 11 who converted were linked to their partners
4. Opposites Attract (1.7yrs)	3 countries (Aust, tia, Bra)	358 HIV+ homosexual men	17 000 acts of sex	3 new cases, 0 linked 0 within couple trans
5. Timed, peri ovulatory sex with PrEP	**2005-2008**	**53 couples**	**244 unprotected intercourse Preg. rate: 75%**	**0 sero- conversions**
6. Timed, peri ovulatory sex with PrEP	**HIV+ suppressed 08-16 (China)**	**91 couples (43 with men living with HIV**	**196 unprotected intercourse, 97 live births**	**0 seroconversion**

U=U campaign Joined by CDC 10/2017

AETC AIDS Education & Training Center Program Southeast

1. Del Romero, J, et al. BMJ 2010; 340
2. HPTN 052 Cohen NEJM- 9/2016
3. Partner – Rodger JAMA 7/2016
4.. **Grulich- IAS 2017** ; Lancet HIV 2018
5. Vernazza AIDS. 2011- 2005-2008
6. Sun Natural conception in HIV-serodiscordant couples. *PLoSOne* 2015

Counselling
U=U: Believe the Science and Say What You Mean

Language Matters

*"From a practical standpoint, **the risk is zero.**"*
(Dr. Anthony Fauci, NIAID)

Be clear and consistent about risk.

Say:	VS.	Don't say:
Can't pass it on		Greatly reduces
Can't transmit		Extremely unlikely
Effectively no risk		Nearly impossible
No risk		Almost no risk
Zero risk		Close to zero
Prevents HIV		Helps prevent
Eliminates onward transmission		Makes it hard to transmit

IUPUI
SCHOOL OF LIBERAL ARTS

- U=U is about sex not breastfeeding or needle sharing
- U=U prevents HIV not other STI

Case 6

- 30 y/o female seeing you for primary care
- HIV negative today
- HTN
- Her partner is HIV positive
  - She is unaware of his VL and if he takes his meds regularly
- They are actively trying to have children

- How do you advice ?

PrEP: For Pregnancy

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For discordant couples:

- HIV + partner should be undetectable before conception
- If HIV+ partner not suppressed or VL unknown:
  - PrEP (AI) to reduce the risk of sexual transmission and limit sex without condom in peri-ovulatory period (AIII)

Case 5
Offer PrEP

PrEP for Pregnancy
When does protection start (Counselling)

- Time to maximal protection is unknown
- TDF/FTC concentrations vary by tissue
- Time to achieve maximal intracellular concentrations after daily TDF
  - Blood: ~ 20 days
  - Cervico-vaginal tissues: 20 days
  - Penile tissues: no data

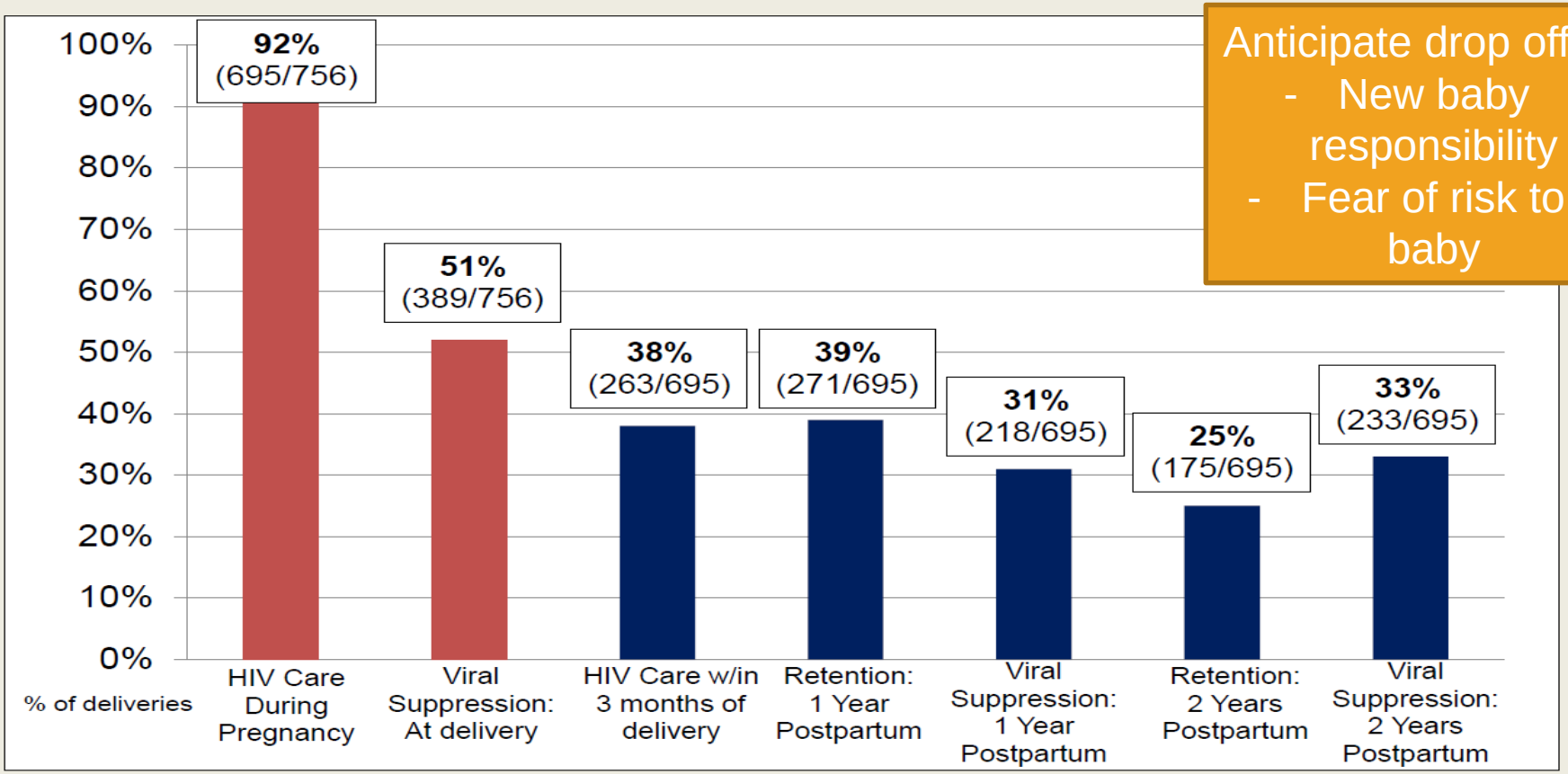
Wait 4 weeks before trying to get pregnant
- Ensure compliance: pill box, alarms, couple meds
- Tolerability

CDC. PrEP Guidelines. 2017

What happens to PrEP after delivery
Extrapolated from Postpartum HIV care

HIV Care Continuum for Postpartum Women in Philadelphia: 2005-2011

Figure 1. HIV Care Engagement During Pregnancy and for Two Years Postpartum for 598 HIV-Infected Women (n=756 deliveries)



Anticipate drop off
- New baby responsibility
- Fear of risk to baby

CROI 2015, Abstract #890

AETC AIDS Education & Training Center Program Southeast

UNIVERSITY OF SOUTH CAROLINA

Palmetto Health USC MEDICAL GROUP

PrEP in Heterosexual Couples/ PrEP For Pregnancy

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