PrEP and PEP: *HIV Prevention*

Jehan Budak, MD

Division of Infectious Diseases

University of Washington

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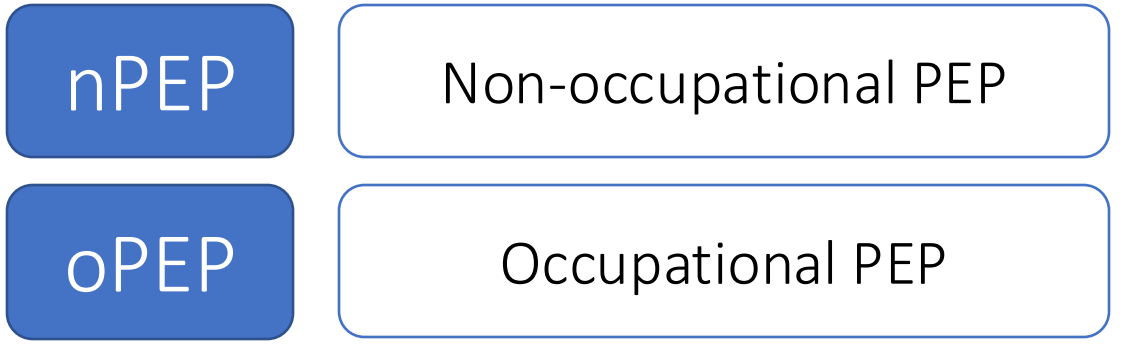
Disclosures

- None

Definitions

- PrEP (Pre-exposure prophylaxis)
  - A strategy of taking antiretrovirals prior to exposure to prevent infection

- PEP (Post-exposure prophylaxis)
  - Use of therapeutic agents to prevent infection following an exposure (eg. needlestick, splash, bite, sex) to an infectious organism



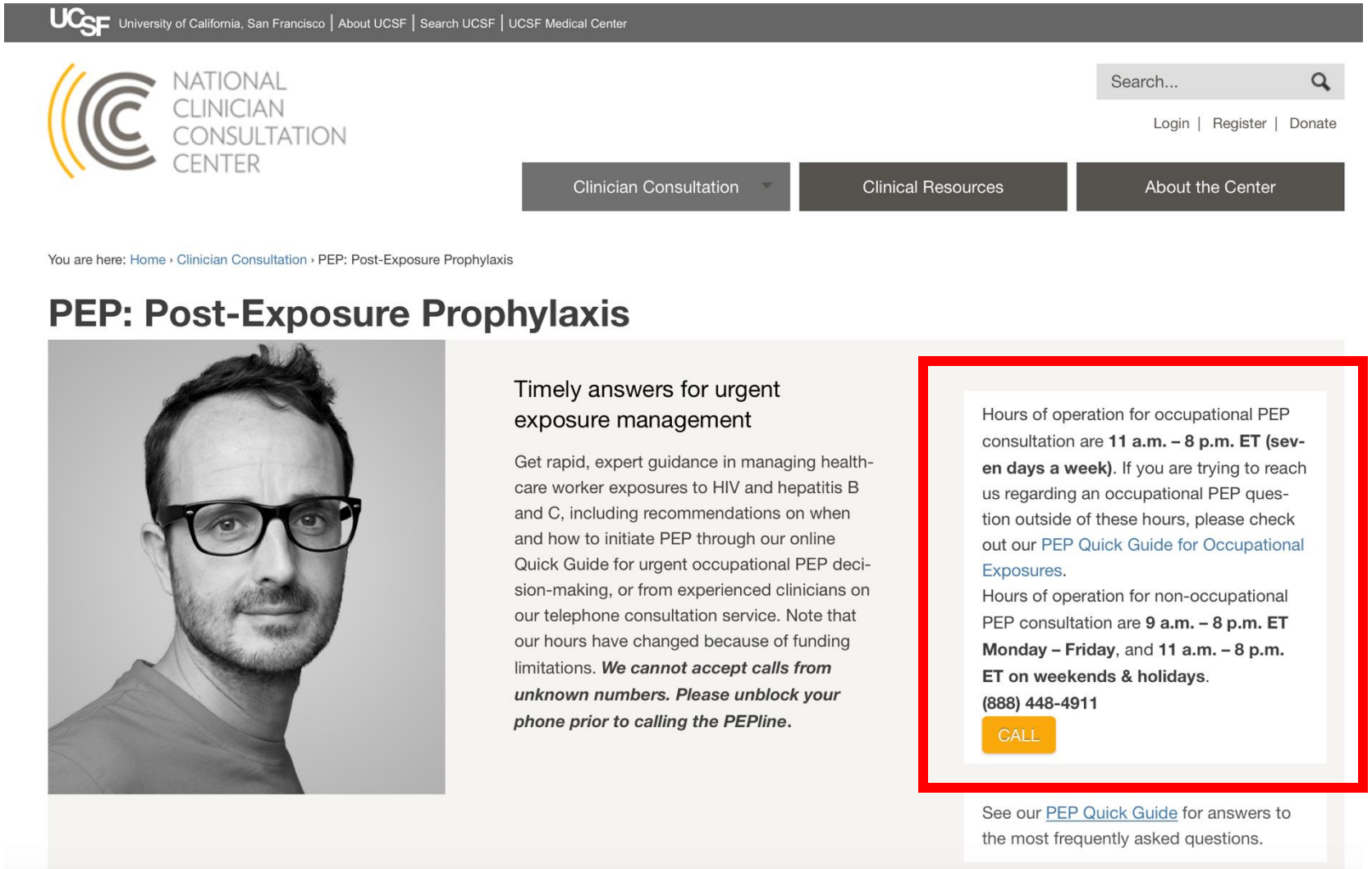
PEP Resources

	Occupational PEP (oPEP)	Non-occupational PEP (nPEP)
HIV	2013 USPHS oPEP Guidelines	2016 CDC nPEP Guidelines
HBV	2018 CDC MMWR Hep B Prophylaxis	2018 CDC MMWR Hep B Prophylaxis
HCV	2020 CDC Hep C & HCW Guideline	--

CCC PEPline 888-448-4911

Updates to HIV PEP (oPEP and nPEP) pending…

Clinician Consultation Center PEP line



Steps in an approach to PEP

1. Assess the risk of exposure
2. Determine the appropriateness of prescribing PEP
3. Select a PEP regimen
4. Provide a follow-up plan

PEP, Clinician Consultation Center.

Risk of HIV Exposure by Exposure Type

Exposure Type	Rate for HIV acquisition per 10,000 exposures
Blood transfusion	9,250
Receptive anal intercourse	138
Needle sharing during injection drug use	63
Percutaneous (needlestick)	23
Insertive anal intercourse	11
Receptive penile-vaginal intercourse	8
Insertive penile-vaginal intercourse	4
Receptive oral intercourse	Low
Insertive oral intercourse	Low
Biting	Negligible
Spitting	Negligible
Throwing bodily fluids	Negligible
Sharing sex toys	Negligible

Adapted from 2016 CDC Updated Guidelines for ARV PEP after Sexual, Injection Drug Use, or other Non-Occupational Exposure to HIV.

Risk of Infection From Occupational Exposure to HIV

Category of Infectivity	Fluid
Infectious fluid	• Blood • **Visibly** bloody bodily fluids
Potentially infectious body fluid	• Semen and vaginal secretions • CSF • Synovial fluid • Pleural fluid • Peritoneal fluid • Pericardial fluid • Amniotic fluid
NOT considered infectious (Unless **visibly** bloody)	• Saliva, vomitus, and feces • Nasal secretions and sputum • Sweat and tears • Urine

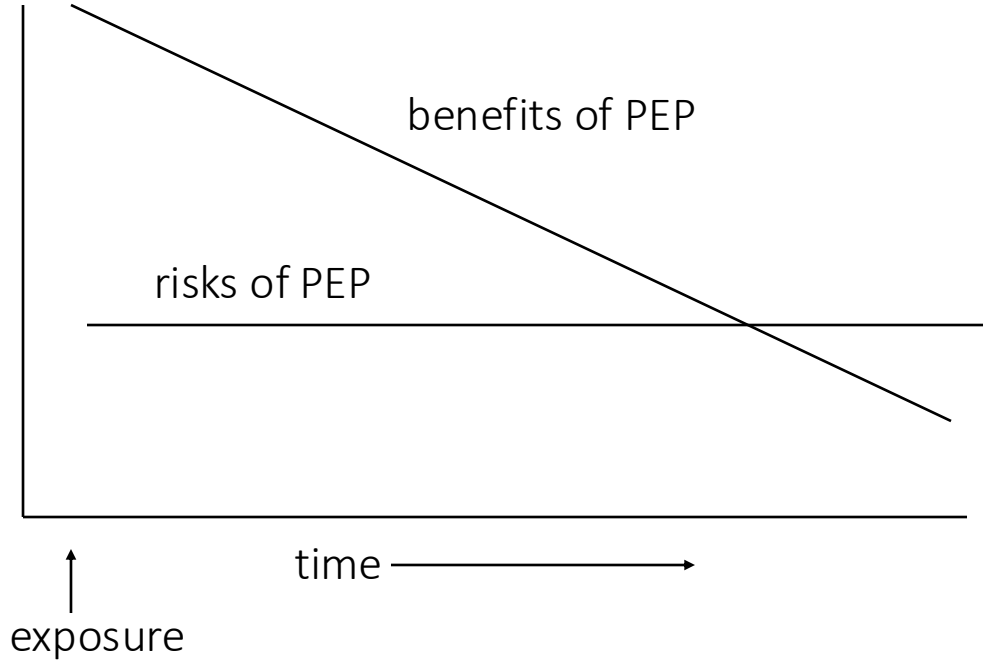
Exposure	Approximate Risk
Cutaneous	0.09%
Mucus membrane	0.09%
Percutaneous	0.23%

Higher Percutaneous Risk
Deep injury
Bloody device
Device (used) in artery or vein

Adapted from Occupational PEP Module, Figure 7. National HIV Curriculum.

When is the optimal time to start HIV PEP?

- As soon as possible
  - Ideally within 4 hours
  - 24 hours > 48 hours > 72 hours[1]
- Efficacy of PEP is thought to wane with time
- Continue PEP for 28 days



1- Tsai, Journal of Virology, 1998.

Current PEP Regimens

TDF/FTC
1 tab daily

+

Dolutegravir (DTG)
50mg QD

x 28 DAYS

Within 72h of exposure

Updates to HIV PEP (oPEP and nPEP) pending…

U = U for nPEP only

- Undetectable = untransmittable: an individual with an undetectable HIV VL cannot transmit HIV infection to their sexual partners

STUDY	FINDINGS
HPTN-052	96% reduction in infections among heterosexual couples when PWH started ART[1]
PARTNER-1	Of 58K condomless sex acts in 888 serodiscordant couples (40% MSM couples, PWH with UD VL), no new HIV infections phylogenetically linked[2]
PARTNER-2	972 serodiscordant MSM couples had 76K condomless sex acts, no HIV infections phylogenetically linked[3]

1-Cohen NEJM 2016, 2-Rodger JAMA 2016, 3-Rodger Lancet 2019

PEP to PrEP

- No consistent or specific guidance yet
- Any break in PEP/PrEP is a potential time for HIV acquisition
  - May be difficult to rule out HIV acquisition while on PrEP
- My approach: Have patient return a few days before PEP is complete for an intake visit to ensure PEP to PrEP transition is seamless, obtain HIV Ag/Ab at that time, ensure follow-up within 1-3 months

National HIV PrEP Curriculum

SELF STUDY ▾ QUICK REFERENCE ▾ GUIDES RESOURCES ▾

National HIV PrEP Curriculum

This free resource was developed at the University of Washington for health care professionals who want to learn about HIV PrEP.

ABOUT CONTRIBUTORS

Funded by:
Centers for Disease Control and Prevention (CDC)
Health Resources and Service Administration (HRSA)

https://www.hivprep.uw.edu/

Three Medications are FDA approved for PrEP

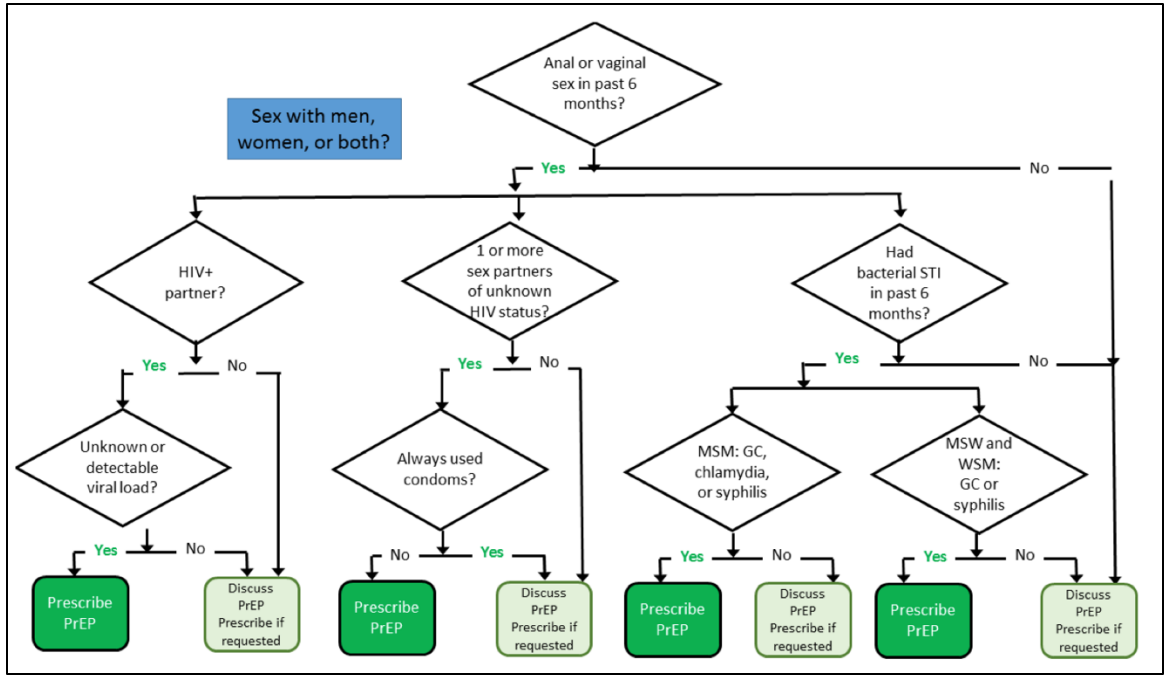
	FDA Approval	Route	Frequency	Drug
1	7/2012	Oral	Daily	Tenofovir DF-emtricitabine (*Truvada*®)
2	10/2019	Oral	Daily	Tenofovir alafenamide-emtricitabine (*Descovy*®)
3	12/2021	Injectable	Q2 month	Cabotegravir (*Apretude*®)

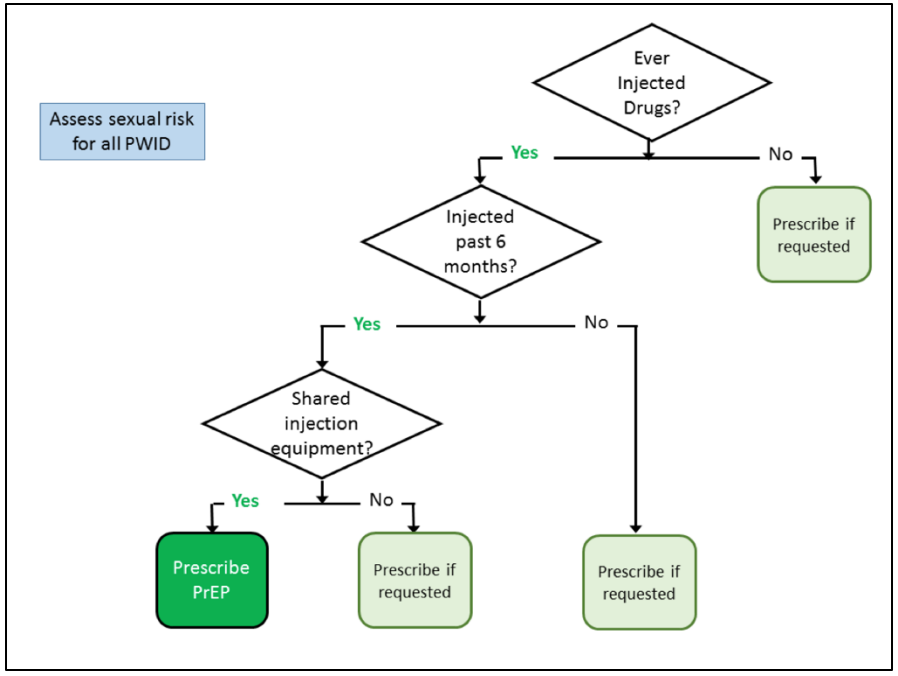
- A USPSTF grade A recommendation to prescribe PrEP to persons at increased risk of acquiring HIV[1]
- Since 2021, most commercial insurers and some Medicaid programs are required to provide oral PrEP, necessary laboratory tests, and clinic visits with no out-of-pocket cost to patients[2]

1-USPSTF Guidelines. 2-CDC 2021 Update Clinical Practice Guideline – PrEP for the Prevention of HIV Infection in the US.

Indications for PrEP

- ANYONE WHO ASKS FOR PrEP!
- All sexually active adults and adolescents should be informed of PrEP





2021 Update Clinical Practice Guideline – PrEP for the Prevention of HIV Infection in the US.

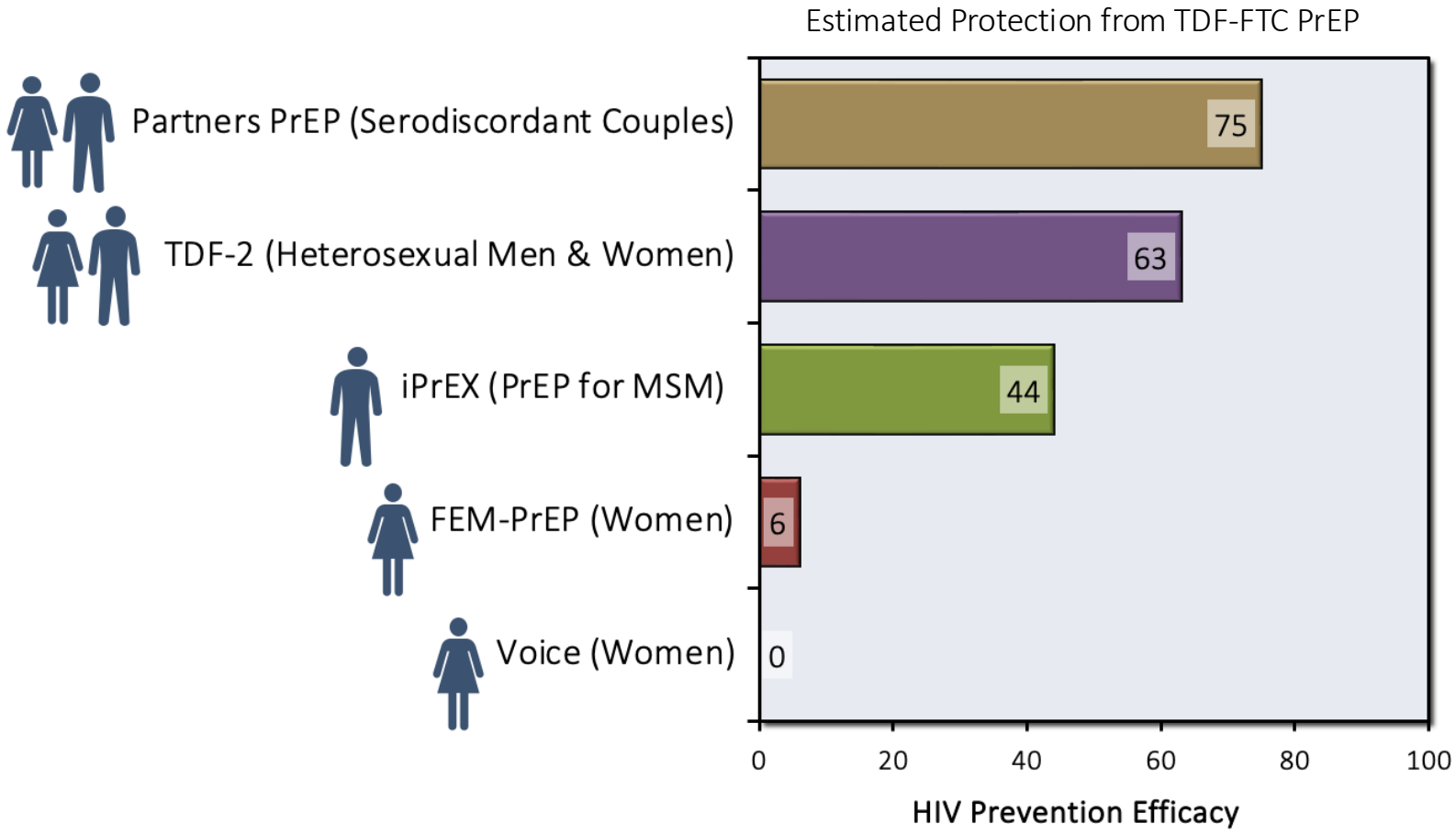
Prior to PrEP Start

- Take a sexual history
  - Ask when was last condomless sex (*may need PEP*)
  - Ask when was last HIV test?

- Rule out acute HIV symptoms
  - Ask about fevers/chills, rash, nausea, fatigue, myalgias, pharyngitis, diarrhea

- Obtain Labs
  - Reference National PrEP Curriculum for baseline labs, including STI testing

PrEP is Very Effective If You Take It



Marrazzo JM et al. JAMA. 2014;312:390-409.

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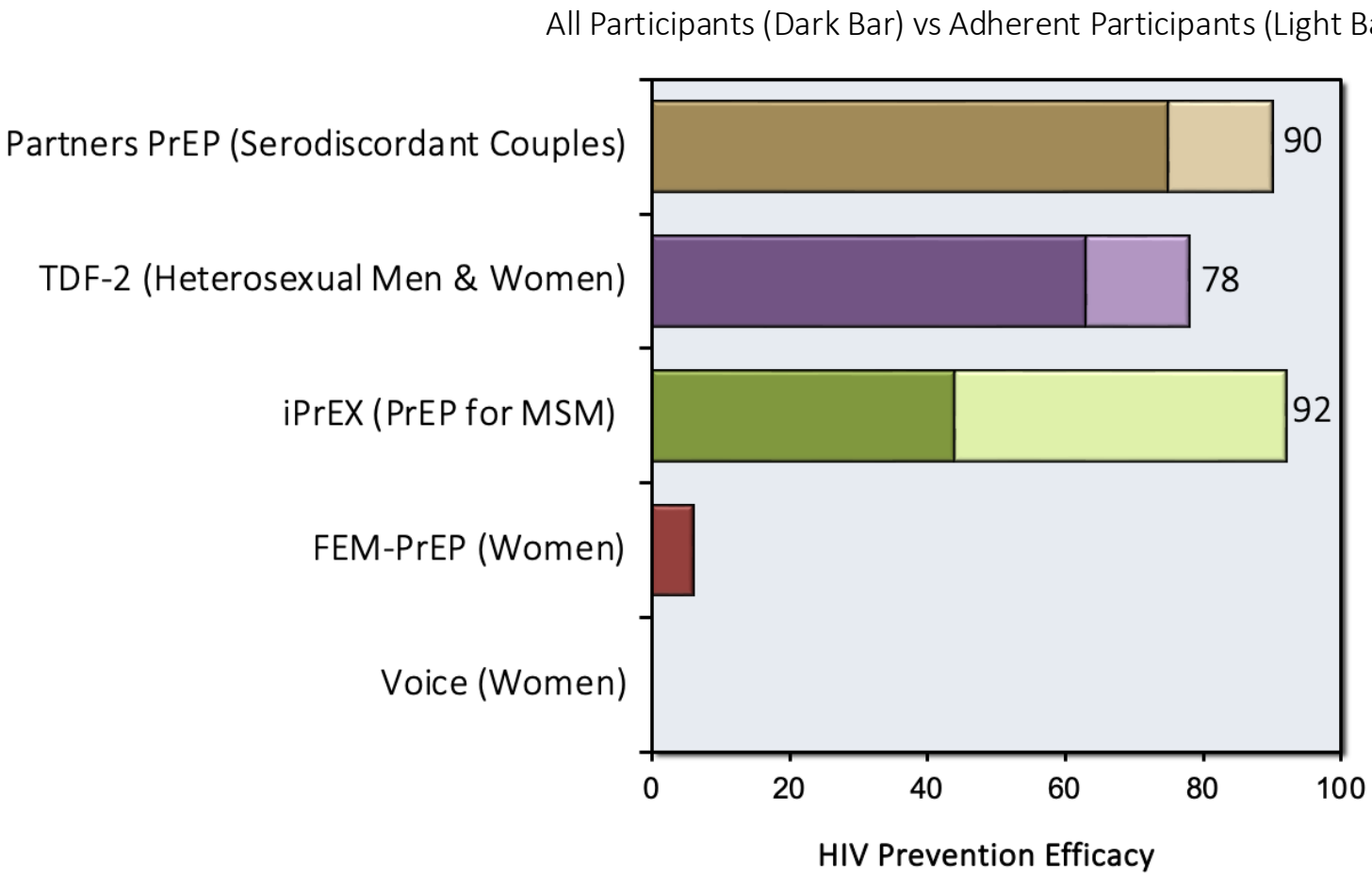

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How to choose which PrEP to use?

1. Most individuals can take TDF-FTC
   - TDF-FTC can also be used “on-demand” with 2-1-1 dosing
   - Renal or bone comorbidities may preclude use of TDF-FTC

2. Other options are much more expensive
   - TAF-FTC I use in those who cannot take TDF-FTC
   - Injectable cabotegravir I prioritize for individuals who cannot take oral PrEP

3. In the pipeline is even longer acting PrEP options
   - Lenacapavir SQ q 6 months is effective, awaiting FDA review in June 2025

Co-Morbidities and PrEP

- Renal
  - TDF/FTC (*Truvada*®) is contraindicated with CrCl ≤ 60
  - TAF/FTC (*Descovy*®) is contraindicated with CrCl ≤ 30
  - Consider CAB for patients with significant renal disease in whom tenofovir-containing regimens are not recommended

- Bone
  - If high risk for osteoporosis, consider bone scan and consultation with bone health specialist prior to TDF or TAF use; TAF is more bone friendly than TDF

Krakower D, OFID, 2017.

Counseling on Oral PrEP Use

- Side effects
  - GI: Possible stomach upset initially, “start up syndrome”
  - Renal: CrCl can decrease slightly, by an average of 2.5% over 18 months
  - Bone: Bone density can decrease by a small amount, but stabilizes and is reversible with discontinuation; no direct increased risk of fracture

- Time to Protection
  - Rectal sex: 7 days
    - Or extrapolating from 2-1-1, MSM can take 2 doses TDF-FTC on day 1
  - Vaginal sex: 20 days

Gandhi, CROI 2016 – Abstract 866.

Counseling on Injectable PrEP Use

- Injection schedule
  - Optional 30mg oral cabotegravir lead-in prior to injection
  - Followed by cabotegravir 600mg IM q 2 months, after an initial loading dose

- Injection site reactions are a common side effect
  - Can take OTC pain meds PRN for 1-2 days
  - Apply warm compress to injection site for 15-20 minutes

- Time to Protection
  - Time to protection from CAB unknown but many assume immediate

CDC 2021 Update Clinical Practice Guideline – PrEP for the Prevention of HIV Infection in the US.

Conclusions

1. PEP is effective, and timing is important – the earlier the better!

2. Consider PrEP for patients on nPEP and make a plan to start PrEP.

3. Anyone who asks for PrEP should be offered PrEP.

4. There are 3 currently FDA approved regimens for PrEP, with a 4th option (injectable q 6-month) under review.

5. Use the National PrEP Curriculum and the National HIV Curriculum.