# PRE-EXPOSURE PROPHYLAXIS AND THE SEXUAL HISTORY

Sean Kelly, MD Vanderbilt Division of Infectious Diseases April 12, 2019

### Objectives

- Background of PrEP
- Importance of PrEP in the Southeast
- Provider and patient barriers to PrEP
- PrEP eligibility
- Taking a sexual history
- PrEP prescribing
  - Counseling
  - Adverse effects
  - Lab monitoring
- Future directions of PrEP

#### Secondary Objectives

- Increase your confidence in providing PrEP!
- Improve your ability to take a sexual history!



#### PrEP is primary prevention

# It is intended to PREVENT the onset of a disease in those who are AT RISK

It is a concept, fulfilled by medication that has been FDA-approved for this purpose

#### But what is PrEP, really?

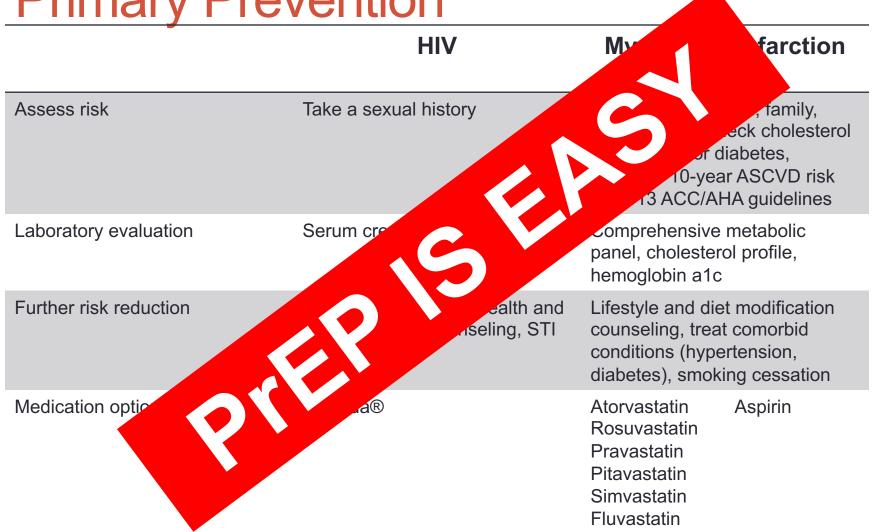
- Truvada®
- 701
- Fixed dose combination of tenofovir disoproxil fumarate (TDF)
   300mg/emtricitabine (FTC) 200mg
- Developed by Gilead
- FDA-approved for use as PrEP for adults on June 6, 2012
- FDA-approved for use as PrEP for adolescents on May 15, 2018
- Generic TDF/FTC approved June 2017 (but not yet available)

For this talk: PrEP = Truvada® = TDF/FTC

## **Primary Prevention**

	HIV	Myocardial infarction or Stroke	
Assess risk	Take a sexual history	Take a past medical, family, social history, check cholesterol and screen for diabetes, calculate 10-year ASCVD risk by 2013 ACC/AHA guidelines	
Laboratory evaluation	Serum creatinine, HIV screen	Comprehensive metabolic panel, cholesterol profile, hemoglobin a1c	
Further risk reduction	Condom use, sexual health and substance use counseling, STI screening	Lifestyle and diet modification counseling, treat comorbid conditions (hypertension, diabetes), smoking cessation	
Medication options	Truvada®	Atorvastatin Aspirin Rosuvastatin Pravastatin Pitavastatin Simvastatin Fluvastatin	

Primary Prevention



#### How well does PrEP work?

(spoiler alert: very well)





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#### ORIGINAL ARTICLE

#### Preexposure Chemoprophylaxis for HIV Prevention in Men Who Have Sex with Men

Robert M. Grant, M.D., M.P.H., Javier R. Lama, M.D., M.P.H., Peter L. Anderson, Pharm.D., Vanessa McMahan, B.S., Albert Y. Liu, M.D., M.P.H., Lorena Vargas, Pedro Goicochea, M.Sc., Martín Casapía, M.D., M.P.H., Juan Vicente Guanira-Carranza, M.D., M.P.H., Maria E. Ramirez-Cardich, M.D., Orlando Montoya-Herrera, M.Sc., Telmo Fernández, M.D., Valdilea G. Veloso, M.D., Ph.D., Susan P. Buchbinder, M.D., Suwat Chariyalertsak, M.D., Dr.P.H., Mauro Schechter, M.D., Ph.D., Linda-Gail Bekker, M.B., Ch.B., Ph.D., Kenneth H. Mayer, M.D., Esper Georges Kallás, M.D., Ph.D., K. Rivet Amico, Ph.D., Kathleen Mulligan, Ph.D., Lane R. Bushman, B.Chem., Robert J. Hance, A.A., Carmela Ganoza, M.D., Patricia Defechereux, Ph.D., Brian Postle, B.S., Furong Wang, M.D., J. Jeff McConnell, M.A., Jia-Hua Zheng, Ph.D., Jeanny Lee, B.S., James F. Rooney, M.D., Howard S. Jaffe, M.D., Ana I. Martinez, R.Ph., David N. Burns, M.D., M.P.H., and David V. Glidden, Ph.D., for the iPrEx Study Team\*

N Engl J Med 2010; 363:2587-2599 | December 30, 2010 | DOI: 10.1056/NEJMoa1011205

44% HIV risk reduction, but 92% risk reduction when taken consistently among MSM and transgender women

#### **TDF2 Study Group**



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#### ORIGINAL ARTICLE

#### Antiretroviral Preexposure Prophylaxis for Heterosexual HIV Transmission in Botswana

Michael C. Thigpen, M.D., Poloko M. Kebaabetswe, Ph.D., M.P.H., Lynn A. Paxton, M.D., M.P.H., Dawn K. Smith, M.D., M.P.H., Charles E. Rose, Ph.D., Tebogo M. Segolodi, M.Sc., Faith L. Henderson, M.P.H., Sonal R. Pathak, M.P.H., Fatma A. Soud, Ph.D., Kata L. Chillag, Ph.D., Rodreck Mutanhaurwa, M.B., Ch.B., Lovemore Ian Chirwa, M.B., Ch.B., M.Phil., Michael Kasonde, M.B., Ch.B., Daniel Abebe, M.D., Evans Buliva, M.B., Ch.B., Roman J. Gvetadze, M.D., M.S.P.H., Sandra Johnson, M.A., Thom Sukalac, Vasavi T. Thomas, M.P.H., R.Ph., Clyde Hart, Ph.D., Jeffrey A. Johnson, Ph.D., C. Kevin Malotte, Dr.P.H., Craig W. Hendrix, M.D., and John T. Brooks, M.D., for the TDF2 Study Group\*

N Engl J Med 2012; 367:423-434 | August 2, 2012 | DOI: 10.1056/NEJMoa1110711

62.2% HIV risk reduction among heterosexual men and women

#### Partners PrEP Study Team



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#### ORIGINAL ARTICLE

#### Antiretroviral Prophylaxis for HIV Prevention in Heterosexual Men and Women

Jared M. Baeten, M.D., Ph.D., Deborah Donnell, Ph.D., Patrick Ndase, M.B., Ch.B., M.P.H., Nelly R. Mugo, M.B., Ch.B., M.P.H., James D. Campbell, M.D., Jonathan Wangisi, M.B., Ch.B., Jordan W. Tappero, M.D., M.P.H., Elizabeth A. Bukusi, M.B., Ch.B., Ph.D., Craig R. Cohen, M.D., M.P.H., Elly Katabira, M.B., Ch.B., Allan Ronald, M.D., Elioda Tumwesigye, M.B., Ch.B., Edwin Were, M.B., Ch.B., M.P.H., Kenneth H. Fife, M.D., Ph.D., James Kiarie, M.B., Ch.B., M.P.H., Carey Farquhar, M.D., M.P.H., Grace John-Stewart, M.D., Ph.D., Aloysious Kakia, M.B., Ch.B., Josephine Odoyo, M.P.H., Akasiima Mucunguzi, M.B., Ch.B., Edith Nakku-Joloba, M.B., Ch.B., Ph.D., Rogers Twesigye, M.B., Ch.B., M.P.H., Kenneth Ngure, Ph.D., Cosmas Apaka, B.Sc., Harrison Tamooh, M.B., Ch.B., Fridah Gabona, M.B., Ch.B., Andrew Mujugira, M.B., Ch.B., Dana Panteleeff, B.S., Katherine K. Thomas, M.S., Lara Kidoguchi, M.P.H., Meighan Krows, B.A., Jennifer Revall, B.A., Susan Morrison, M.D., M.P.H., Harald Haugen, M.S., Mira Emmanuel-Ogier, B.A., Lisa Ondrejcek, M.A., Robert W. Coombs, M.D., Ph.D., Lisa Frenkel, M.D., Craig Hendrix, M.D., Namandjé N. Bumpus, Ph.D., David Bangsberg, M.D., M.P.H., Jessica E. Haberer, M.D., M.P.H., Wendy S. Stevens, M.D., F.C.Path., Jairam R. Lingappa, M.D., Ph.D., and Connie Celum, M.D., M.P.H., for the Partners PrEP Study Team

N Engl J Med 2012; 367:399-410 August 2, 2012 DOI: 10.1056/NEJMoa1108524

75% HIV risk reduction among heterosexual serodiscordant couples, 90% among those with detectable drug levels

### Bangkok Tenofovir Study Group

#### THE LANCET

Volume 381, Issue 9883, 15-21 June 2013, Pages 2083-2090



#### Articles

Antiretroviral prophylaxis for HIV infection in injecting drug users in Bangkok, Thailand (the Bangkok Tenofovir Study): a randomised, double-blind, placebo-controlled phase 3 trial

Kachit Choopanya, MD<sup>a</sup>, Dr Michael Martin, MD<sup>b, c</sup>. ♣ · ► , Pravan Suntharasamai, MD<sup>a</sup>, Udomsak Sangkum, MD<sup>a</sup>, Philip A Mock, MAppStats<sup>b</sup>, Manoj Leethochawalit, MD<sup>d</sup>, Sithisat Chiamwongpaet, MD<sup>d</sup>, Praphan Kitisin, MD<sup>d</sup>, Pitinan Natrujirote, MD<sup>d</sup>, Somyot Kittimunkong, MD<sup>e</sup>, Rutt Chuachoowong, MD<sup>b</sup>, Roman J Gvetadze, MD<sup>c</sup>, Janet M McNicholl, MD<sup>b, c</sup>, Lynn A Paxton, MD<sup>c</sup>, Marcel E Curlin, MD<sup>b, c</sup>, Craig W Hendrix, MD<sup>f</sup>, Suphak Vanichseni, MD<sup>a</sup>, for the Bangkok Tenofovir Study Group

48.9% risk reduction, but 74% HIV risk reduction when taken consistently, among IDUs (TDF only)

#### **IPERGAY**



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#### ORIGINAL ARTICLE

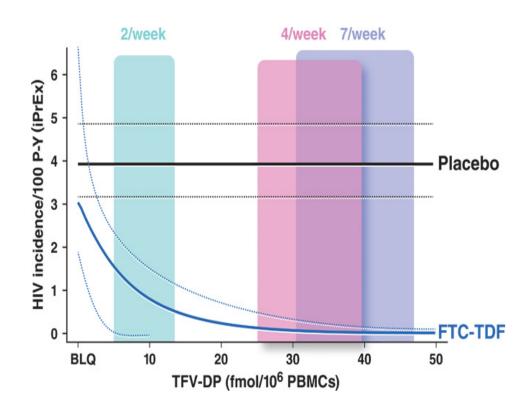
#### On-Demand Preexposure Prophylaxis in Men at High Risk for HIV-1 Infection

Jean-Michel Molina, M.D., Catherine Capitant, M.D., Bruno Spire, M.D., Ph.D., Gilles Pialoux, M.D., Laurent Cotte, M.D., Isabelle Charreau, M.D., Cecile Tremblay, M.D., Jean-Marie Le Gall, Ph.D., Eric Cua, M.D., Armelle Pasquet, M.D., François Raffi, M.D., Claire Pintado, M.D., Christian Chidiac, M.D., Julie Chas, M.D., Pierre Charbonneau, M.D., Constance Delaugerre, Pharm.D., Ph.D., Marie Suzan-Monti, Ph.D., Benedicte Loze, B.S., Julien Fonsart, Pharm.D., Gilles Peytavin, Pharm.D., Antoine Cheret, M.D., Ph.D., Julie Timsit, M.D., Gabriel Girard, Ph.D., Nicolas Lorente, Ph.D., Marie Préau, Ph.D., James F. Rooney, M.D., Mark A. Wainberg, Ph.D., David Thompson, B.C.L., LL.B., Willy Rozenbaum, M.D., Veronique Doré, Ph.D., Lucie Marchand, B.S., Marie-Christine Simon, B.S., Nicolas Etien, B.S., Jean-Pierre Aboulker, M.D., Laurence Meyer, M.D., Ph.D., and Jean-François Delfraissy, M.D., for the ANRS IPERGAY Study Group\*

N Engl J Med 2015; 373:2237-2246 | December 3, 2015 | DOI: 10.1056/NEJMoa1506273

86% HIV risk reduction in MSM using on-demand PrEP

#### Dosing matters



Using drug concentrations in iPrEX and STRAND, pharmacokinetic models predict **76%** risk reduction with 2 doses/week, **96%** with 4 doses/week, and **99%** with 7 doses/week.

## **Studies Summary**

Study	Population	Dosing	Risk Reduction
iPrEX	MSM	Daily	44% (92% with ideal adherence)
TDF2	Heterosexual men and women	Daily	62.2% (100% in open-label extension with regular follow-up)
Partners	Sero-discordant heterosexual couples	Daily	75% (90% with ideal adherence)
Bangkok Tenofovir Study Group	Intravenous drug users	Daily	48.9% (74% with ideal adherence)
IPERGAY	MSM	On-demand	86%

#### PrEP and adolescents

- Adolescent Trial Network
  - 78 HIV-negative MSM, ages 15-17, who reported HIV risk behavior during the previous 6 months received daily PrEP
  - Follow-up monthly for 12 weeks, then quarterly for the remainder of 48-week study
  - Adherence was high during monthly follow-up
    - 95% with detectable TDF drug levels at 12 weeks
  - After 12 weeks, adherence dropped dramatically (by more than half)
  - 32 discontinued before the end of the study
  - HIV acquisition rate: 3 new infections, 6.4 per 100 personyears

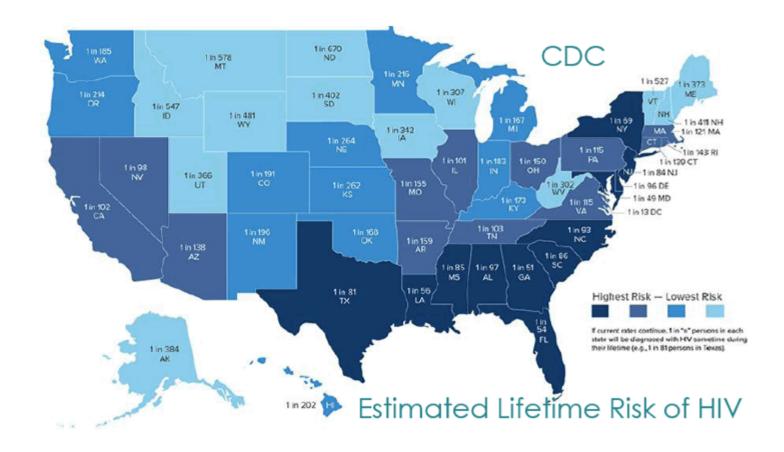
#### Adolescent Trials Network

- Safety and acceptability
  - PrEP was well-tolerated
    - No discontinuations due to adverse effects
  - BMD increased during treatment (as expected for ageappropriate increases in BMD)
    - Slight decline in z-score suggests BMD increase was lower than expected
      - Unclear if due to TDF or small sample size

#### Adolescent Trials Network

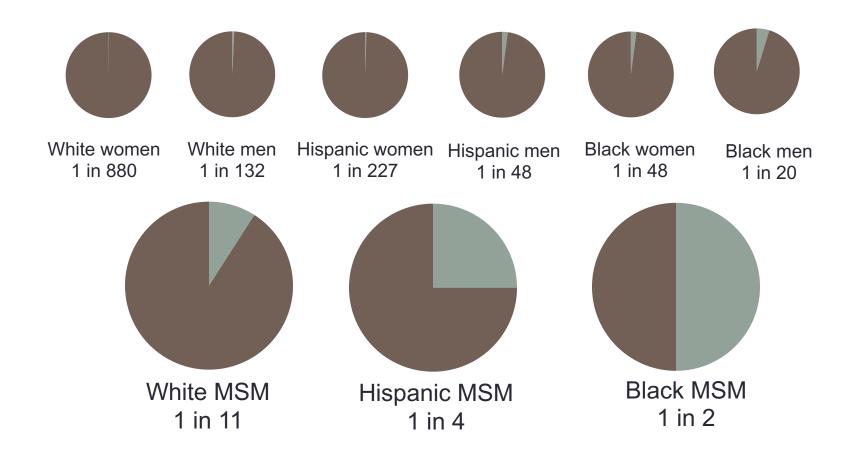
- Why the poor adherence?
  - Those without detectable TDF drug levels were:
    - More likely to endorse the statement, "I worry others will see me taking pills and think I am HIV-positive"
    - More likely to report missing doses due to:
      - Not being at home
      - Being too busy
      - Forgetting
  - Acceptability of pill size and taste decreased after 12 weeks
  - Those with seroconversion had absent TDF levels

# Why PrEP matters



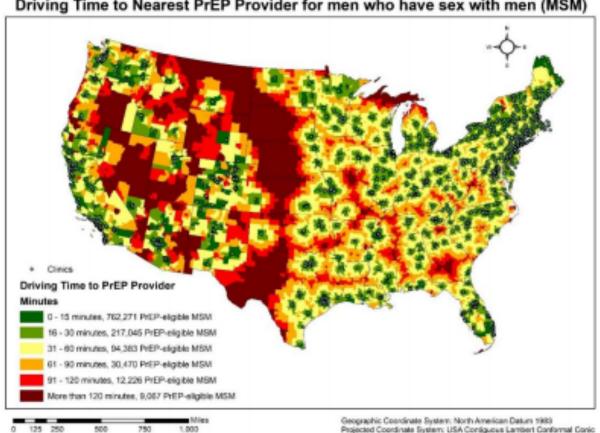
The Southeast remains the region with the highest HIV incidence, which can be markedly reduced with widespread use of pre-exposure prophylaxis (PrEP) among high-risk individuals.

#### HIV Risk by Race/Ethnicity and MSM



#### PrEP Deserts

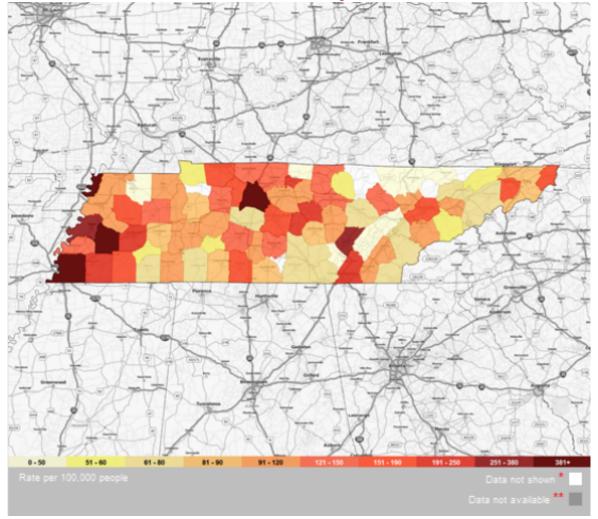
#### Driving Time to Nearest PrEP Provider for men who have sex with men (MSM)



- Most MSM with reduced geographic access to PrEP providers ("PrEP deserts") reside in the South.
- Over 50% of MSM in the South must drive >60 minutes to a PrEP provider.
- PrEP deserts are generally non-urban areas.

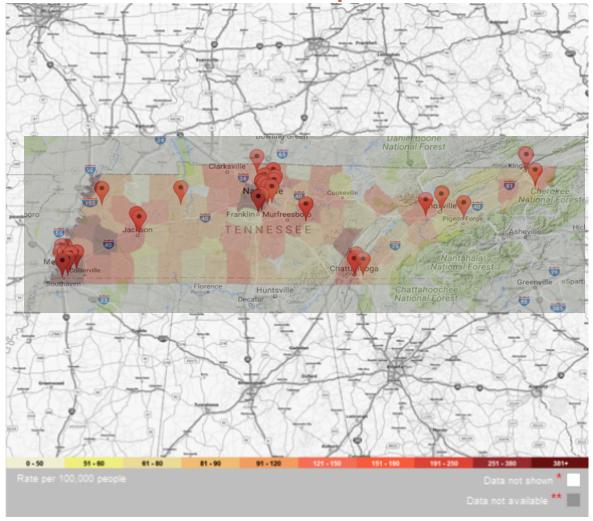
#### Tennessee

HIV risk and location of PrEP providers

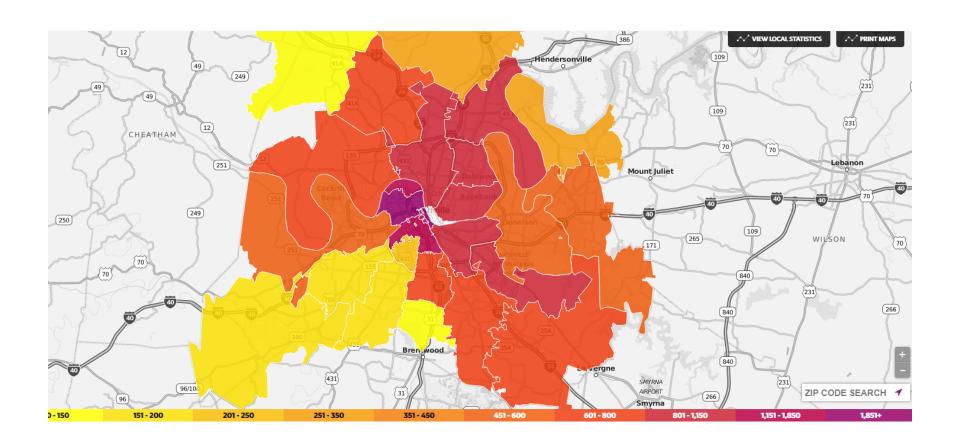


#### Tennessee

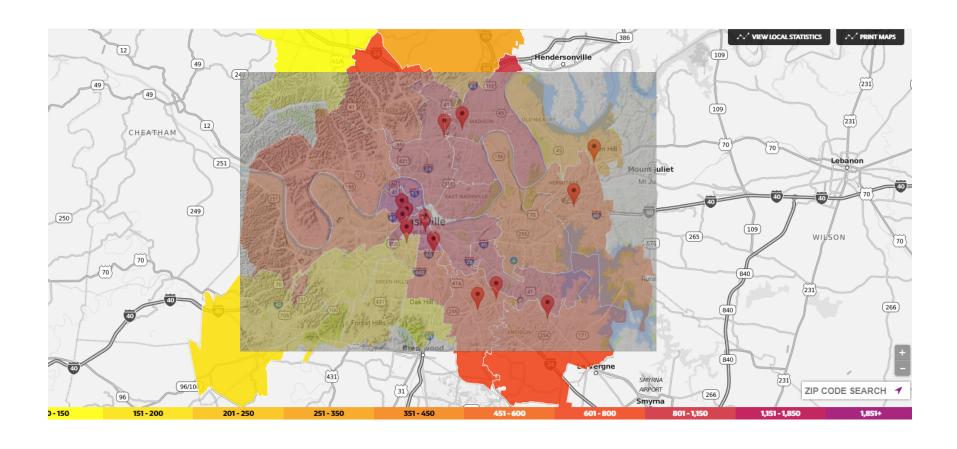
HIV risk and location of PrEP providers



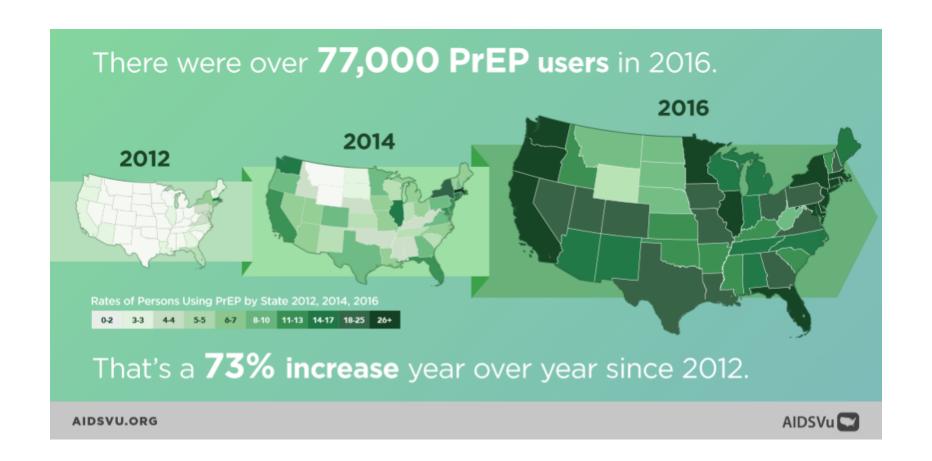
# Nashville HIV risk and location of PrEP providers



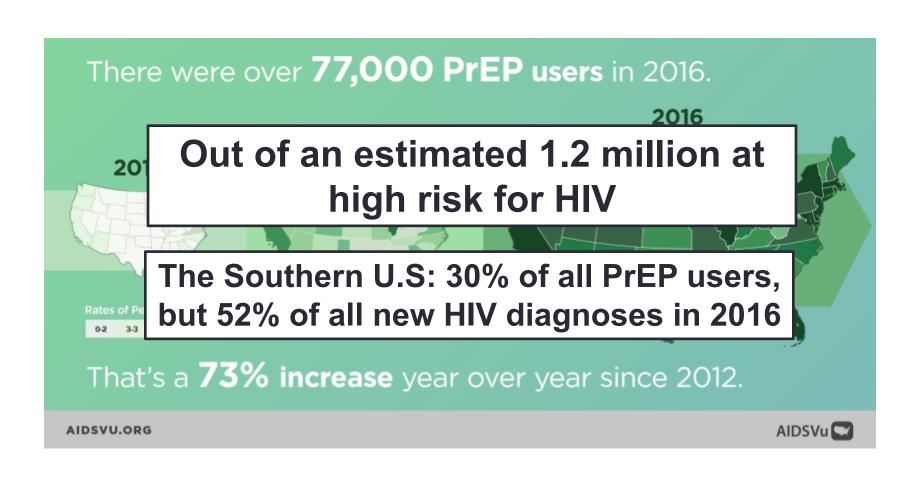
# Nashville HIV risk and location of PrEP providers



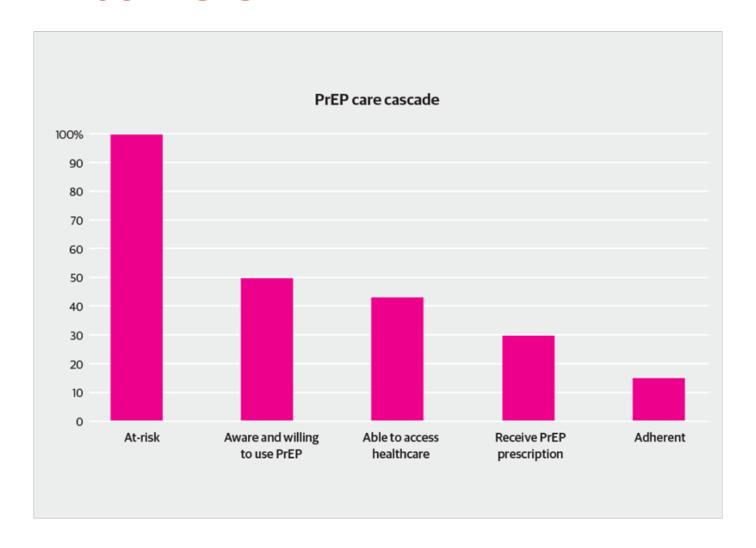
#### PrEP use



#### PrEP use



#### PrEP barriers



## Stigma

A preventative measure against the consequences of sexual activity

... condones sexual activity

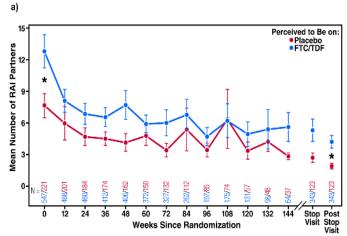
... promotes sexual activity

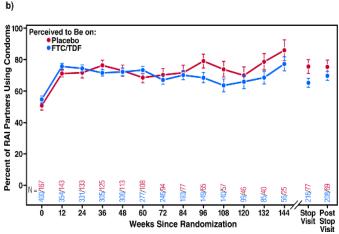
... causes sexual activity





#### Sexual Risk Compensation





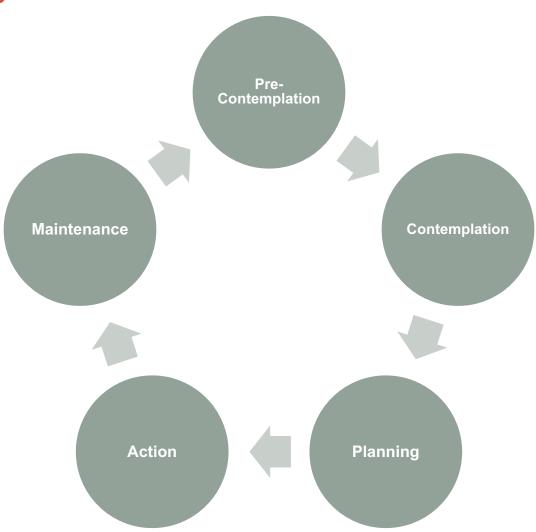
For patients believing they were on PrEP, the number of receptive anal intercourse partners decreased.

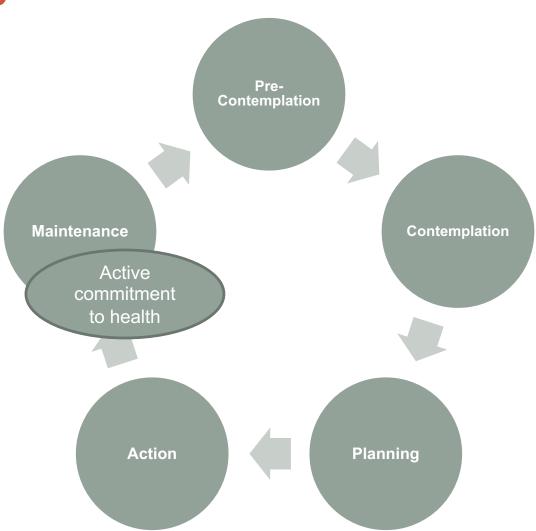
For patients believing they were on PrEP, condom use increased.

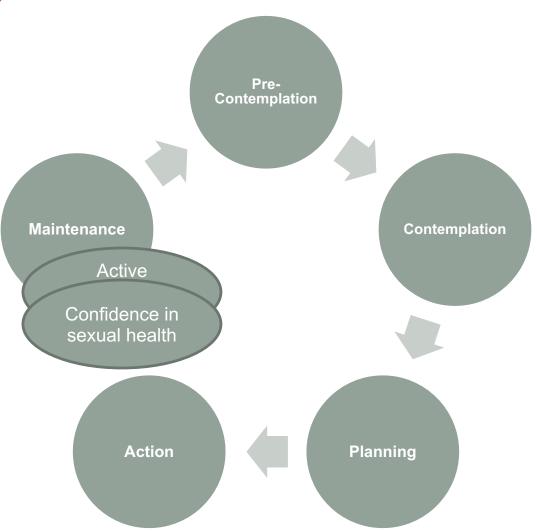
Syphilis incidence also decreased in both study arms

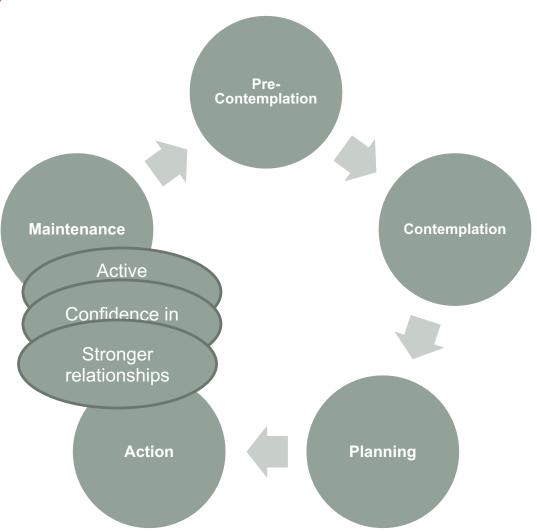
#### Sexual Risk Compensation

- Pre-exposure prophylaxis to prevent the acquisition of HIV-1 infection (PROUD)
  - UK randomized, open-label study
    - 275 MSM to start TDF/FTC immediately
    - 269 MSM to start TDF/FTC after 1 year
  - 86% HIV risk reduction
  - No difference between groups in STI incidence

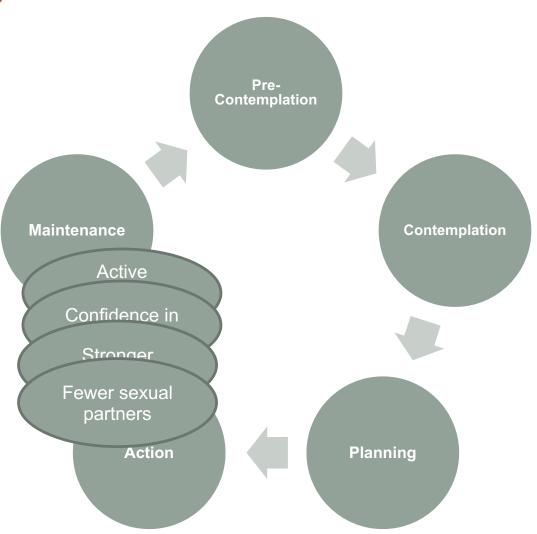




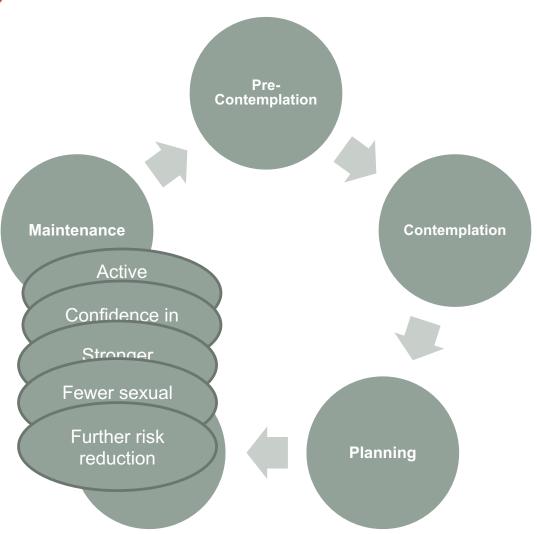




# Actually...



# Actually...



#### PrEP barriers - Providers

- Insufficient evidence of efficacy
- Inexperience with Truvada/lack of knowledge
- PrEP is cost-prohibitive
- PrEP is not a primary care activity ("not me")
- Unfamiliarity with PrEP candidates; inability to assess high HIV risk
- Sexual risk compensation (that use of PrEP will lead to increased high-risk behavior)

- Discomfort using a drug with potential adverse effects in an otherwise healthy person (primary prevention vs. treatment)
- Patients perceived as nonadherent, and risk HIV resistance mutation development
- Personal ideology

# As a society, we treat HIV-related health care activities differently.

As healthcare providers, we need to accept our responsibility to protect our patients.

#### The "cost" of Truvada®

Out-of-pocket cost of TDF/FTC\*

• Per pill: \$67.03

• Per month: \$1,876.84

• Per year: \$24,465.95

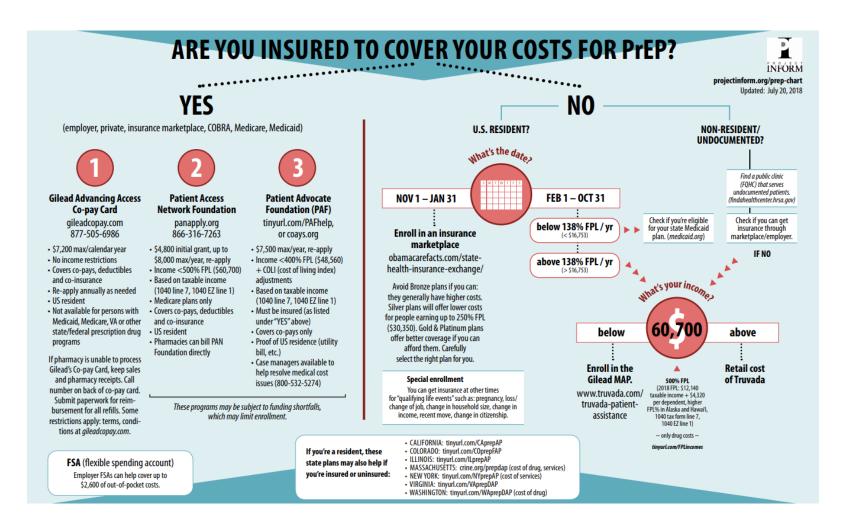


\*Average Wholesale Price

## Truvada® coverage

- Actually, Truvada® is very affordable for most patients
- All insurance plans cover TDF/FTC for the indication of HIV prevention
  - Variable copays
- Medicare/Medicaid cover TDF/FTC
- Gilead Advancing Access Program Copay Assistance
  - \$7,200/calendar year of copay assistance
  - No income limitation
- Gilead Advancing Access Program Medication Access
  - Full drug coverage if income <500% federal poverty level</li>
  - Primary option for uninsured patients

#### Financial Assistance



Conav Assistance

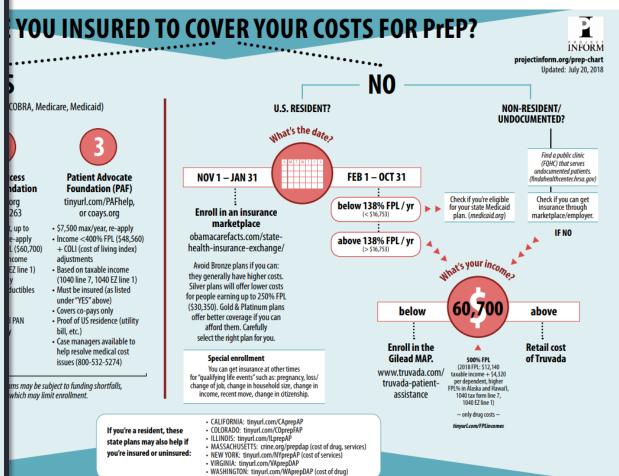


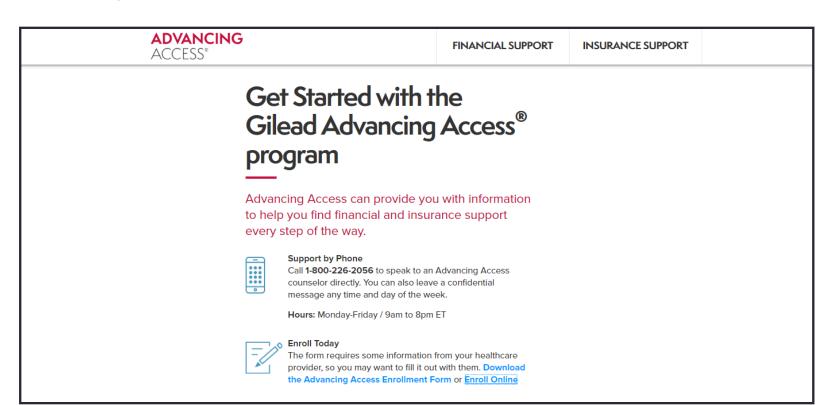
#### Gilead Advancing Access Co-pay Card

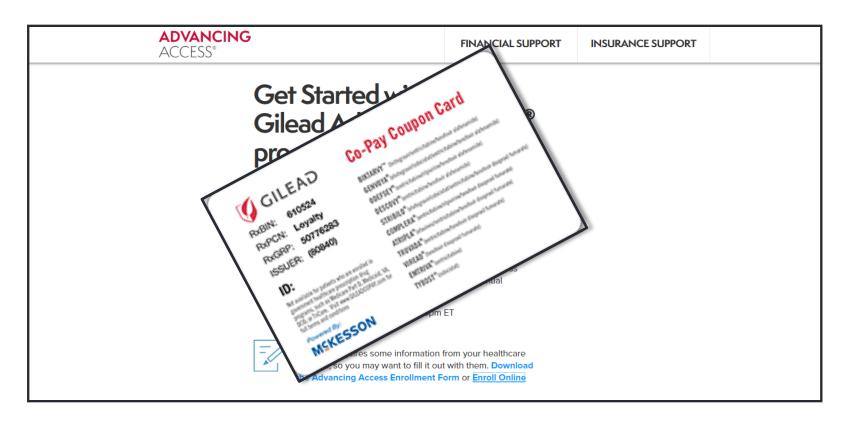
gileadcopay.com 877-505-6986

- \$7,200 max/calendar year
- No income restrictions
- Covers co-pays, deductibles and co-insurance
- · Re-apply annually as needed
- US resident
- Not available for persons with Medicaid, Medicare, VA or other state/federal prescription drug programs

If pharmacy is unable to process Gilead's Co-pay Card, keep sales and pharmacy receipts. Call number on back of co-pay card. Submit paperwork for reimbursement for all refills. Some restrictions apply: terms, conditions at gileadcopay.com.

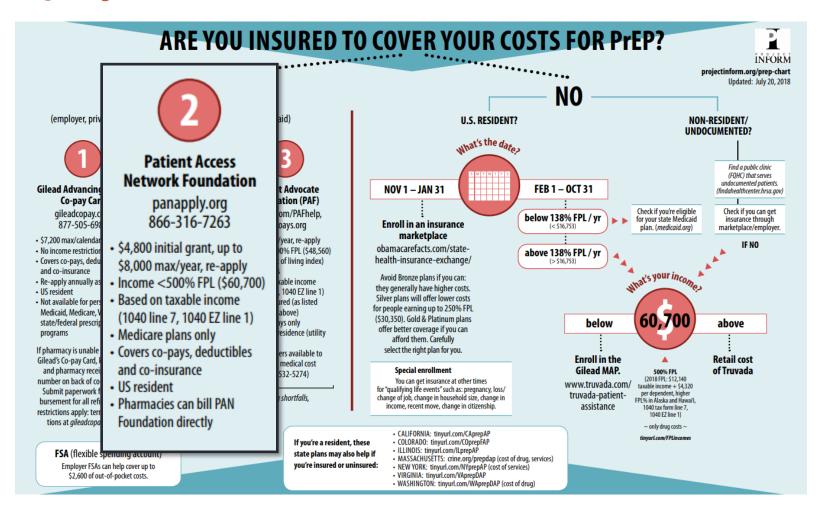


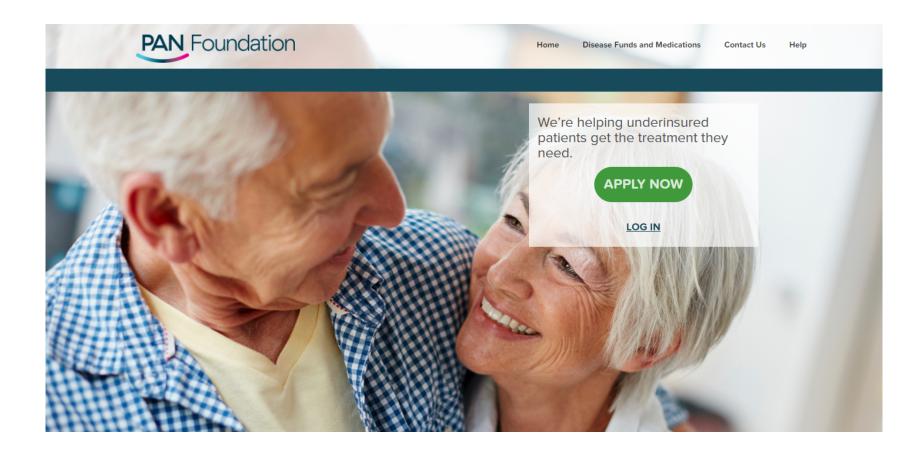




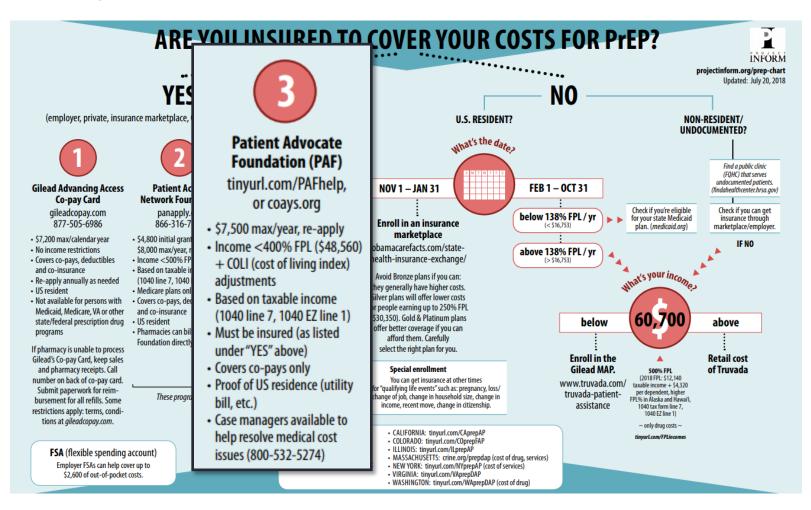
## Gilead Advancing Access Program

- \$7,200/calendar year benefit
  - Increased from \$3,600 to \$4,200 in January 2018
  - Increased from \$4,200 to \$7,200 in September 2018
- No income limitation
- Federal beneficiaries excluded
- Usually goes toward deductible
  - Beware of copay accumulator programs
    - Manufacturer copay assistance will no longer count toward deductible



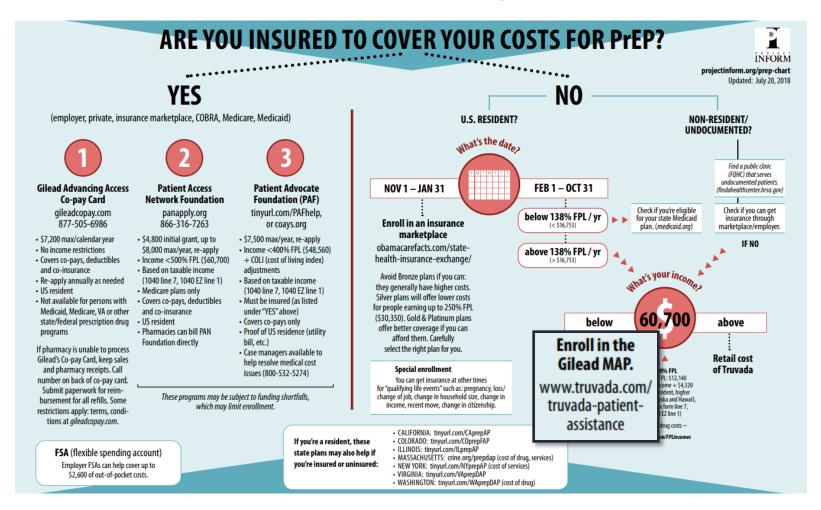


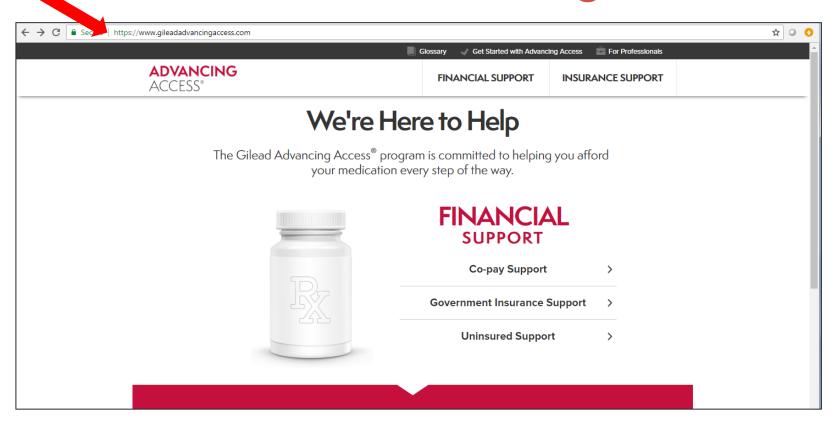


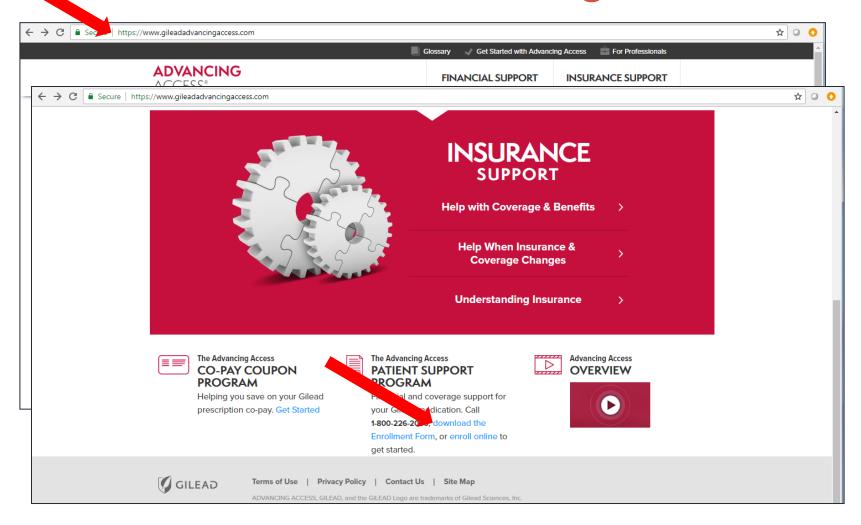




# Medication Access Program







1. REQUESTED PATIENT SUPPORT (REC	OUIRED)								CHECK A	LL BOXES TH	AT APPLY
Benefits Investigation	Benefits Investigation Prior Authorization					d Appeals Info	rmation	Co-	pay Coupon P	rogram Enrol	ment
Patient Assistance Program (PAI	P) or Medicati	on Assist	ance Prog	ram (MA	IP) E	ligibility Screen	ing				
2. GILEAD MEDICATION PRESCRIBED (	REQUIRED)										
Product Name:					m	g:					
If requesting TRUVADA, please indicar	te for:	Treatm	ent	Pre	EP/P	revention					
3. PATIENT INFORMATION (REQUIRED)											
First Name:	Li	ast Name					M.L:	Prefer	red Language	E	
Address:		A	ot/Unit#			City:					
State:		Zi	p Code:			Phone #:			SSN# (Last	4 digits):	
Email:						DOB:					
Alternate Contact Name:						Phone #:			Relationshi	ip:	
CONTACT AUTHORIZATION											
4. INSURANCE INFORMATION (REQUIR	ED)			P	LEA	SE INCLUDE A	COPY O	F THE FRON	IT AND BACK	OF INSURAN	CE CARD(
Patient is insured (Please fill out a below. Attach copy—front and back			ce informat	tion		Patient is u SEE OPTION	ninsured NAL TPATI	je, no health in ENT FINANCIA	surance through L INFORMATIO	any public or pri N° SECTION 9 I	ete payer) SELOW
Primary Insurance:					Is this a Medicare Part D plan? Yes No						
Plan name:					In	surance Phone	Number	n			
Subscriber Name:		Policy   Name:	Holder					Policy Hole Relationsh	der ip to Patient:		
olicy #: Group #:				R	x Bin #:			Rx PCN #:			
Check box if patient has second	lary insurance	coverag	e and fax	а сору о	of ins	surance cards, i	f availab	le.			
5. PRESCRIBER INFORMATION (REQUI	RED)										
Prescriber Name:					Fi	acility Name:					
Address:					G	ity:					
					0	ffice Contact:					
State:	, , , , , , , , , , , , , , , , , , , ,								NPL#:		
State: Phone #:					Fi	acc #:			INPLAT		
					-	ax #: tate License #:			ren e:		
Phone #: Tax ID #:					-		M	JST BE COM		EALTHCARE F	ROVIDER
Phone #: Tax ID #:					-		М	JST BE COM	PLETED BY H	EALTHCARE R	ROVIDER
Phone #:  Tax ID #:  E. DIAGNOSIS/MEDICAL INFORMATION Diagnosis (Please include ICD code):		F MEDICA	AL NECES:	SITY	-		М	JST BE COM		EALTHCARE F	ROVIDER
Phone #:  Tax ID #:  6 DIAGNOSIS/MEDICAL INFORMATION  Diagnosis (Please include ICD code):	TATEMENT Of ribing Gleed micertify that I will sk reimburseme	edication f I be super int for any	or the patie vising the p Glead med	nt identifi	St st	sate License #:	ly that this	prescription n	PLETED BY H	dically necessa	ry for the
Phone #: Tax ID #:  6. DIAGNOSIS MEDICAL INFORMATION Diagnosis (Please include ICD code);  7. PRESCRIBER CERTIFICATION AND S: By signing this form; Leathy that I am present and that the libe used as derected.	TATEMENT Of ribing Gilead m certify that I will ke reimburseme program or the hat the applican	edication f il be super int for any ind-party ins it has been	or the patie vising the p Gilead med uner.	nt identifi atient's tr lication di HIV infect	ed in eatmapen	ate License #:  Section 3. I certify section to be head	ly that this at the info t through	prescription normation providing Patient Ass	PLETED BY H sedication is me ded is complete istance Program HIV testing will	dically necessa and accurate to n/Medication As be conducted	ry for the the best sistance
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To Black Assistance Program (PAP) or Microsoft Assistance Program (NAP)  2 MAND MICROSOFT POWER ASSISTANCE FOR USE AND COLLEGIONE OF RESIDENCE  I Understand that I must complete this enrollment from before I can receive assistance through Gliead Sciences, Inc.'s Advancing Access (Program') and the Patient Assistance Program (PAP) APAPP I As part of this process. Glied and file agents and contractors (collectively." Gliedly Will need to obtain, review, use and disclose of this process. Gliedle and the sugerts and contractors (collectively." Gliedly Will need to obtain, review, use and disclose of this process. Gliedle and the sugerts and contractors (collectively." Gliedly Will need to obtain, review, use and disclose of this process. Gliedle and the sugerts and contractors (collectively." Gliedly will need to obtain, review, use and disclose of the process. Gliedle and the sugerts and contractors (collectively." Gliedly will need to obtain, review, use and disclose of the process. Gliedle and the submicization, and is submicization, and is authorized to ideal in committee of colleged to the process. Gliedle and the submicization is advanced. In the Program and for the PAPIMAP. All in accordance with this authorization, and is authorized to ideal in committee of colleged to use and disclose the information in accordance construction. The process of the process of the program and for the process of the process of the program and information about my if MV-elabel status or teaching the provider. The healthful information is a described by the provider me healthful this precipion medication and related medication in the provider of the healthcare benefits. Lundestand that my pharmacy that fills my precipion medication of the Program and the PAPIMAP.  Plantage in Canada and the provider in the healthcare benefits. Lundestand that my pharmacy that fills my precipion medication of the Program and the PAPIMAP.  Plantage in Canada and the provider in the healthcare benefits and the provider in the healthcare benefits. L							
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Advancing MIXABOX passes rescents for Teamwell PSPP  Advancing Access (Program) and the Patient Assistance Program(PAPIMAP) As part of the process (Gled and not a gent and contractors (collective), but a gent and disclose the information as described below to Gliead in connection with the Program and off the PAPIMAP, all in accordance with this authorization, and authorize Gliead to use and disclose the information in accordance with the authorization. Information to Be Disclosed, Personal health information, and insurance information, my past, current and future medical condition (including information about my HIV-feated status or treatment with this prescription medication and related medical condition), and all information provided on this enrollment form.  **SECRATE BECOMATION BECOMETED**  **PROFESS MEDICAL STATES**  *		I understand that I must complete this enrollment form before I can receive assistance through Gilead Sciences, Inc.'s					
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PAPMAP, all in a coordance with this authorization, and I authorize Gilead to use and disclose the information in accordance with this authorization.  Page 120 Code  Information and Contract Name  CONTACT ANTHORIZATION  I Information about my HIV-related status or treatment with this prescription medication and related medical condition), and all information provided on this reunance information, may past, current and future medical condition), and all information provided on this reunance information, and related medical condition), and all information provided on this reunance information, and related medical condition), and all information provided on this reunance information and related medical condition), and all information provided on this reunance information.  Page 1		or this process, Glead and its agents and contractors (collectively, "Glead") will need to obtain, review, use and disclose my personal and medical information as described below. I hereby authorize my healthcare providers and health plans to					
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administration of the Program and the PAP/MAP Plimary Insurance:    Pinname	4. INSURANCE INFORMATION (REQUIRED) F						
Pain ame:    Policy Holder   Name:   Policy Foliage   Policy Holder   Name:   Policy E	Patient is insured (Please fill out all of the applicable insurance information below. Attach copy—front and back—of patient card.)						
Subscriber Name: N	Primary Insurance:	Purposes for Which the Disclosures Are to Be Made: Disclosures of PHI may be made to Gilead so that Gilead may use and					
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Check box if patient has secondary insurance coverage and fax a copy of insurance coverage and fax a c	Policy #: Group #:						
customer relationship marketing program (this use of my personal information is optional and by checking the box under the signatures below, I may opt in).  Address:  Sunto:  Zip Codo:  Or Phone #.  Tax ID #.  Tax ID #.  Sundon/OSS MEDICAL INFORMATION  Diagnosis Please include XPD Codo:  Diagnosis Please include XPD Codo:  Diagnosis Please include XPD Codo:  The SECRIBER SIGNATURE (REQUIRED):  Sundon/OSS MEDICAL INFORMATION  Diagnosis Please include XPD Codo:  Sunto:  Zip Codo:	Check box if patient has secondary insurance coverage and fax a copy of	Gilead's internal business purposes, including quality control and support enhancing surveys; and 6) to send me marketi					
Poscriber Name:    Paddross   Color	E DESCRIBED INFORMATION (DECLIBED)						
Address:    Zip Code:   Zip Co							
Indestand further that I may refuse to sign this authorization and that if I refuse, my eligibility for health plan benefits on ability to obtain treatment from my healthcare providers will not change, but I will not have access to the support offered by Program and/or the PAP/IMAP. I also understand that I may cancel this authorization and with such in the program and/or the PAP/IMAP. I also understand that I may cancel this authorization ability to obtain treatment from my healthcare providers will not change, but I will not have access to the support offered by Program and/or the PAP/IMAP. I also understand that I may cancel this authorization ability to obtain treatment from my healthcare providers will not change, but I will not have access to the support offered by Program and/or the PAP/IMAP. I also understand that I may refuse this intended that I may refuse the support of the part of the paper intended to program and/or the PAP/IMAP. I also understand that I may refuse the support intended to a copy of this signed and the part of the paper intended to a copy of this signed authorization will not affect uses or disclosures of any PHI after the cancellation date, but the cancellation will not affect uses or disclosures of any PHI after the cancellation of the part of the paper intended to a copy of this signed authorization will not affect uses or disclosures of any program and or the paper intended to make a paper of the paper intended to the paper intended to make a paper of the paper intended to make a paper of the paper intended to make a paper of the paper intended to paper intended to make a paper of the paper intended to paper intended to make a paper of the paper intended to make a paper intended to make a paper paper inte	Address:						
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Diagnosis (Please include ICD code)  PHI that have already been made pursuant to this authorization before the cancellation date. I am entitled to a copy of this signed authorization, which expires the earlier of two (2) years from the date it is signed by me or other time period require modern and the state in which I reside.  PHI that have already been made pursuant to this authorization before the cancellation date. I am entitled to a copy of this signed authorization, which expires the earlier of two (2) years from the date it is signed by me or other time period require modern to the state in which I reside.  By schooling this box, I agree to receive marketing information, offers and educational materials related to my medical condition, treatment, and/or my prescription medication, including the customer relationship marketing program.  By chocking this box, I agree to receive marketing information, offers and educational materials related to my medical condition, treatment, and/or my prescription medication, including the customer relationship marketing program.  SIMNATURE of PATIENT or PATIENT'S REPRESENTATIVE (REQUIRED):  DATE:  PATIENT OF PATIENT'S REPRESENTATIVE (REQUIRED):  DATE:  PATIENT Representative's Name (if signing for the patient):  PATIENT Representative's Name (if signing for the patient):  PATIENT Representative's Relationship to Patient:  FAX COMPLETED FORM TO ADVANCING ACCESS AT 1-800-216-6857	C DIAGNOSIS MEDICAL INECOMATION						
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Tearlify that These received the appropriate written authorsation from the patient, it accordinates	If prescribing TRUVADA for PrEP", I certify that the applicant has been tested for HIV infec	on a					
the purpose of 1 verifying the plaint's insurance coverage and eligibility for banefits, 2) selving support, and effective appear a needed, for further the promoter of the plaint's reserved, and the plaint's reserved. ADMC0300 12/17  Patient Representative's Name (if signing for the patient):  Patient Representative's Name (if signing for the patient):  Patient Representative's Name (if signing for the patient):  FAX COMPLETED FORM TO ADVANCING ACCESS AT 1-800-216-6857	I certify that I have received the appropriate written authorization from the patient, in accord health information privacy lawful, and any other applicable requirements, in order to release	nce v					
PRESCRIBER SIGNATURE (REQUIRED):  Patient Representative's Name (if signing for the patient):  Patient Representative's Relationship to Patient:  FAX COMPLETED FORM TO ADVANCING ACCESS AT 1-800-216-6857	the purposes of 1) verifying the patient's insurance coverage and eligibility for benefits; 2) is support, and referral support as needed; 4) facilitating the provision of the patient's prescript patient's prescriptors.	Asing on the Control of the Control					
FAX COMPLETED FORM TO ADVANCING ACCESS AT 1-800-216-6857							
	2017 Géead Sciences, Inc. All rights reserved. ADMC0300 12/17	Patient Representative's Relationship to Patient:					
CANDIDATE OF THE STATE OF THE S		FAX COMPLETED FORM TO ADVANCING ACCESS AT 1-800-216-6857					

ADVANCING	ENROLLMENT FORM PAGE 1 OF 3	
ACCESS®	DUONE: 1,800,928,2058 EAV: 1,800,918,6857	
1. REQUESTED PATIENT SUPPORT (REQUIRED)	ADVANCING ACCESS ENROLLMENT FORM PHONE: 1-800-226-2056 FAX: 1-800-216-685:	7
Benefits Investigation Prior Authorization and	PATIENT NAME:D	14
Patient Assistance Program (PAP) or Medication Assistance Program (MAP) El	8. PATIENT AUTHORIZATION FOR USE AND DISCLOSURE OF PERSONAL HEALTH INFORMATION (REQL	ADVANCING ACCESS ENROLLMENT FORM PHONE: 1-800-226-2056 FAX: 1-800-216-6857 PAGE 3 OF 3
2. GILEAD MEDICATION PRESCRIBED (REQUIRED)		PATIENT NAME:
Product Name: me	I understand that I must complete this enrollment form before I can receive assista	
If requesting TRUVADA, please indicate for: Treatment PrEP/Pr	Advancing Access ("Program") and the Patient Assistance Program/Medication Ass of this process, Gilead and its agents and contractors (collectively, "Gilead") will ne	
	my personal and medical information as described below. I hereby authorize my h	
3. PATIENT INFORMATION (REQUIRED)	disclose my personal and medical information as described below to Gilead in cor	Please submit current documentation for all sources of income (eg, tax return, W2, last 2 pay stubs, etc.).
First Name: Last Name:	PAP/MAP, all in accordance with this authorization, and I authorize Gilead to use ar	
Address: Apt/Unit #	with the authorization.	
State: Zip Code:	Information to Be Disclosed: Personal health information ("PHI"), including inform	
Email:	name, mailing address, financial information, and insurance information), my pas (including information about my HIV-related status or treatment with this prescrip	
Alternate Contact Name:	condition), and all information provided on this enrollment form.	Has the patient applied for ADAP?  Yes No If Yes, date of application:
CONTACT AUTHORIZATION	Persons Authorized to Disclose My Information: My healthcare providers, including	Has the patient applied for Medicaid? Yes No If Yes, date of application:
I authorize Advancing Access to leave a detailed message, including the name of m	medication, and any health plans or programs that provide me healthcare benefit	S. Is the patient eligible for Medicaid? Yes No If No, state reason:
4. INSURANCE INFORMATION (REQUIRED) PLEAS	providers may receive remuneration for disclosing my PHI pursuant to this author	
Patient is insured (Please fill out all of the applicable insurance information below. Attach copy — front and back — of patient card.)	Persons to Which My Information May Be Disclosed: Gilead, including the third pa	at the parent engine for VA benefits? No obtain the medication through the VA? No
Primary Insurance:	administration of the Program and the PAP/MAP.	Has the patient applied for an insurance plan offered through a state insurance marketplace (also known as an exchange)?  Yes No If Yes, date of application:
Plan name: Ins	Purposes for Which the Disclosures Are to Be Made: Disclosures of PHI may be ma	30
Subscriber Policy Holder	disclose the PHI for purposes of: 1) completing the enrollment process and verifying eligibility for benefits from my health plan or other programs; 3) providing fin	
Name: Name:	support, and communicating with my healthcare providers, including, but not lim	
Policy #: Group #: Rs	prescription medication to me; 4) contacting me to evaluate the effectiveness of the	I certify that all of the information provided in this application, including household income, is complete and accurate. I understand that program assistance
Check box if patient has secondary insurance coverage and fax a copy of ins	Gilead's internal business purposes, including quality control and support enhance	
5. PRESCRIBER INFORMATION (REQUIRED)	information, offers, and educational materials related to my treatment and/or my customer relationship marketing program (this use of my personal information is	P reimbursement or credit for this medication from any insurer, health plan, or government program. If I am a member of a Medicare Part D plan, I will not seek
Prescriber Name: Fa	the signatures below, I may opt in).	reserves the right to modify the application form, modify or discontinue this program, or terminate assistance at any time and without notice. I authorize the PAP/MAP and its administrator to forward my prescription to a dispensing pharmacy on my behalf. I authorize Gilead and its third party administrator to use
Address: Ci	I understand that once my PHI has been disclosed hereunder, federal privacy law	the information provided on this form to obtain a personal conditionant about me to varify the information on this form and determine my clinibility for
State: Zip Code: Of	I understand further that I may refuse to sign this authorization and that if I refuse,	SIGNATURE OF PATIENT/BATIENT DEPOSES NTATIVE:
Phone #: Fa	ability to obtain treatment from my healthcare providers will not change, but I will	REQUIRED ONLY IF APPLYING FOR PAPIMAP)
Tax ID #: Sta	by Program and/or the PAP/MAP. I also understand that I may cancel this authoriza	
	writing at Advancing Access, PO Box 13185, La Jolla, CA 92039-3185. If I cancel, G to obtain, use or disclose my PHI after the cancellation date, but the cancellation w	FAX COMPLETED FORM TO ADVANCING ACCESS AT 1-800-216-6857
DIAGNOSIS/MEDICAL INFORMATION     Diagnosis (Please include ICD code):	PHI that have already been made pursuant to this authorization before the cancell	la
Diagnosis (Please Include ILD code)	signed authorization, which expires the earlier of two (2) years from the date it is si	
7. PRESCRIBER CERTIFICATION AND STATEMENT OF MEDICAL NECESSITY	under the laws of the state in which I reside.	1
By signing this form, I certify that I am prescribing Glead medication for the patient identified in patient and that it will be used as directed. I certify that I will be supervising the patient's treatment.	By checking this box, I agree to receive marketing information, offers and educational materials rel	
of my knowledge. I agree that I shall not seek reimbursement for any Glead medication dispens Program (PAPMAP) from any government program or third-party imuse.	prescription medication, including the customer relationship marketing program.	
If prescribing TRUVADA for PEPT, I certify that the applicant has been tested for HM infection a applicant's care plan. As part of my applicant's eligibility, I agree to periodically verify continued I certify that I have received the appropriate written authorization from the patient, in accordance to	SIGNATURE of PATIENT or PATIENT'S REPRESENTATIVE (REQUIRED):	
health information privacy lawfs), and any other applicable requirements, in order to release the pe		
the purposes of it verifying the patient's insurance coverage and eligibility for benefits, 2) seeking, support, and referred support as needed; 4) facilitating the provision of the patient's prescription in patient's prescription medication or to evaluate the effectiveness of the Advancing Access Program		-
PRESCRIBER SIGNATURE (REQUIRED):	Patient Representative's Name (if signing for the patient):	
© 2017 Gleed Sciences, Inc. All rights reserved. ADMC0300 12/17	Patient Representative's Relationship to Patient:	
	FAX COMPLETED FORM TO ADVANCING ACCESS A	
	© 2017 Glead Sciences, Inc. All rights reserved. ADMC0300 12/17	
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#### State Plans

- Illinois IDPH PrEP Assistance Program
  - PrEP Navigation, funding for cost assistance through IDPH
- Massachusetts Massachusetts Pre-Exposure Prophylaxis Drug Assistance Program (PrEP-DAP)
  - Assistance for copays, co-insurance, full cost of Truvada ®
  - Limited to <500% FPL</li>
- Washington Pre-Exposure Prophylaxis Drug Assistance Program (PrEP-DAP)
  - PrEP Navigation, assistance for medication and cost of labs/visits
  - No income limitation
- New York Pre-exposure Prophylaxis Assistance Program (PrEP-AP)
  - Assistance for cost of labs and provider visits
  - Enrollment criteria based on AIDS Drug Assistance Program (ADAP)
- California PrEP Assistance Program (PrEP-AP)
  - Launched early 2018
  - Assistance for cost of labs and provider visits
  - Limited to <500% FPL</li>

### Advice to patients

- Find out your deductible
- Find out your Truvada® copay
- Find out your estimated costs of visits and labs
- If you need an insurance plan from the marketplace, avoid Bronze Plans due to high out-of-pocket expenses
- Use Flexible Spending Account to offset any out-of-pocket expenses

	Summary of Gui	dance for PrEP Use						
	Men Who Have Sex With Men	Heterosexual Women and Men	Injection Drug Users					
Detecting substantial risk of acquiring HIV infection:	Sexual partner with HIV Recent bacterial STD High number of sex partners History of inconsistent or no condom use Commercial sex work	Sexual partner with HIV     Recent bacterial STD     High number of sex     partners     History of inconsistent or     no condom use     Commercial sex work     Lives in high-prevalence     area or network	HIV-positive injecting partner     Sharing injection equipment     Recent drug treatment (but currently injecting)					
Clinically eligible:	<ul> <li>No signs/symptoms of</li> <li>Normal renal function,</li> </ul>	Documented negative HIV test before prescribing PrEP     No signs/symptoms of acute HIV infection     Normal renal function, no contraindicated medications     Documented hepatitis B virus infection and vaccination status						
Prescription	Daily, continuing, oral doeses of TDF/FTC (Truvada), ≤90 day supply							
Other services:	<ul> <li>Follow-up visits at least every 3 months to provide:</li> <li>HIV test, medication adherence counseling, behavioral risk reduction support, side effect assessment, STD symptom assessment</li> <li>At 3 months and every 6 months after, assess renal function</li> <li>Every 6 months test for bacterial STDs</li> </ul>							
	Do oral/rectal STD testing	Assess pregnancy intent     Pregnancy test every 3 months	Access to clean needles/ syringes and drug treatment services					

Source: US Public Health Service. Preexposure prophylaxis for the prevention of HIV infection in the United States -2014: a clinical practice guideline.

Summary of Guidance for PrEP Use						
	Men Who Have Sex \	With Men	Heterosexual Women and Men	Injection Drug Users		
Detecting substantial risk	Sexual p	1.0	HIRI-MSM Risk Index*			
of acquiring HIV infection:	Recent b High nur partners History c no cond Commer	1	How old are you today (yrs)?	<18 years 18–28 years 29–40 years 41–48 years ≥49 years		
Clinically eligible:	- Do	2	How many men have you had sex with in the last 6 months?	>10 male partners 6–10 male partners 0–5 male partners		
Prescription	- No - No - Do	3	In the last 6 months, how many times did you have receptive anal sex (you were the bottom) with a man?	1 or more times 0 times		
Other services:	- Foll - HIV side	4	How many of your male sex partners were HIV positive?	>1 positive partner 1 positive partner <1 positive partner		
	• At: • Eve • Do oral/re	5	In the last 6 months, how many times did you have insertive anal sex (you were the top) with a man who was HIV positive?	5 or more times 0 times		
Source: US Public Health Service. P	reexposure proph	6	In the last 6 months, have you used methamphetamines such as crystal or speed?	Yes No		
		7	In the last 6 months, have you used poppers	Yes No		

(amyl nitrate)?

Add down entries

in right column to

calculate total score

score 0 score 8 score 5 score 2 score 0 score 7 score 4 score 0 score 10 score 0

score 8 score 4 score 0 score 6 score 0

score 5 score 0 score 3 score 0

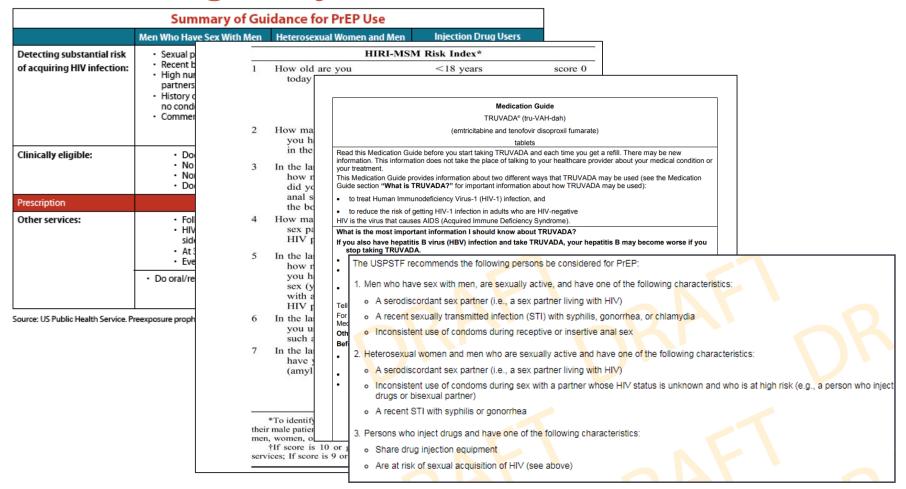
Total

score†

<sup>\*</sup>To identify sexually active MSM in their practice, we recommend clinicians ask all their male patients a routine question: "In the past (time) have you had sex? (if yes), with men, women, or both?"

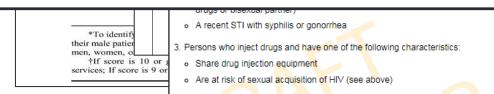
 $<sup>\</sup>dagger$ If score is 10 or greater, evaluate for PrEP or other intensive HIV prevention services; If score is 9 or less, provide indicated standard HIV prevention services.

	Sumr	nary of Gu	idance foi	PrEP Use			
	s	1					
Detecting substantial risk	Sexual p	130 110		HIRI-MSM	Risk Index*		
of acquiring HIV infection:	Recent b	1	How old ar	e you	<18 years	score 0	
	<ul> <li>High nur partners</li> </ul>		today				
	History c						
	no condi				Medica	ation Guide	
	Commer				TRUVADA	(tru-VAH-dah)	
		2	How ma		(emtricitabine and ter	nofovir disoproxil fumarate)	
			you h			ablets	
Clinically eligible:	- Do		in the		e before you start taking TRUVA		a refill. There may be new rider about your medical condition or
	- No	3	In the las	your treatment.	on does not take the place of tall	king to your ricultifource prov	naci about your medical condition of
	• No		how n		vides information about two diffe		may be used (see the Medication
	- 50		did yo anal s		odeficiency Virus-1 (HIV-1) infec		may be asea.
Prescription			the bo		etting HIV-1 infection in adults w		
Other services:	• Foll	4	How ma		s AIDS (Acquired Immune Defici		
	- HIV		sex pa		ant information I should know	<u> </u>	
	side		HIV p			ake TRUVADA, your hepa	titis B may become worse if you
	- At 3	5	In the las	stop taking TRUVADA	 JVADA without first talking to yo	ur haalthaara provider	
	• Eve		how n	' "	• ,		vider before your TRUVADA is all
	<ul> <li>Do oral/re</li> </ul>		you h	gone.	, , ,		•
			sex (y with a		ider stops TRUVADA, your heal hepatitis B infection, or give you		
			HIV	, , , , , , , , , , , , , , , , , , , ,	er about any new or unusual sy		
ource: US Public Health Service. Pr	reexposure proph	6	In the las		t side effects, see the section "V	What are the possible side	effects of TRUVADA?" in this
			you u	Medication Guide.	ion for people who take TRIIV	ADA to help reduce their	risk of getting HIV-1 infection:
			such a	1	to reduce your risk of getting	•	risk of getting file-1 infection.
		7	In the las	_			ure that you do not already have
			have y	HIV-1 infection.		•	
			(alliyi		A to reduce the risk of getting miss HIV-1 infection in a person		
				symptoms, you could I	nave recently become infected w	vith HIV-1. Tell your healthc	are provider if you had a flu-like
				illness within the last n infection include:	nonth before starting TRUVADA	or at any time while taking	TRUVADA. Symptoms of new HIV-1
		_	*To identify	o tiredness	o sor	re throat	
		thei	r male patier	o fever		miting or diarrhea	
		men	, women, o	o joint or muscle a			
					for PrEP or other intens cated standard HIV prev		



Summary of Guidance for PrEP Use								
	Men Who Have	Sex With Men	Heterosexua	al Women and Men	Injection Drug Users		1	
Detecting substantial risk	Sexual p	99 9.0		HIRI-MSM	Risk Index*			
of acquiring HIV infection:	Recent b     High nur	1	How old ar	e you	<18 years	score 0		
	partners • History o		today					
	no condi				Medication	Guide		
	<ul> <li>Commer</li> </ul>				TRUVADA® (tru-	-VAH-dah)		
		2	How ma		(emtricitabine and tenofovi	r disoproxil fumarate)		
			you h		tablets	3		
Climina Haradinilatan	D-		in the	Read this Medication Guide	hefore you start taking TRUVADA a	nd each time you get	a refill. There may be new	

Anyone with high risk for HIV acquisition, as determined by the patient's and/or provider's assessment, in which the risk of Truvada® does not outweigh the benefit.



### Recommendation comparisons

- 300 high risk young, black MSM (age 16-29) in Chicago
- 33 HIV acquisitions over 3 years
  - 52% met CDC eligibility for PrEP
  - 85% met HIRI-MSM eligibility for PrEP
  - 94% met drug company eligibility for PrEP
  - CDC guidelines: Low sensitivity, specificity (52%)
  - Drug company guidelines: High sensitivity, low specificity (15%)

#### What about U=U?



#### U=U

- Those who have an undetectable viral load have effectively no risk of transmitting the virus.
- This is a consensus of HIV experts worldwide, CDC, NIH, IDSA/HIVMA, common knowledge in the medical community.
- Combined data from 4 studies (HPTN 052, OPPOSITES ATTRACT, PARTNER and PARTNER2)
  - Among sero-discordant couples where the partner living with HIV had a durably undetectable viral load:
    - zero transmission among over a hundred thousand condomless sex acts
    - Results similar in both male-female and male-male partnerships

#### U=U

- Is PrEP necessary in this situation?
  - Consider durable viral suppression
    - Contributing factors include adherence, history of virologic failure, follow-up interval of the HIV-positive person
  - Consider non-monogamous sex
    - In U=U studies, HIV transmissions DID occur, but were linked to sex between HIV-negative participant and HIV-positive individual not involved in the study
  - Always weigh risks and benefits

# HIV risk is behavioral, individual, transitional

The only way to know is to ask (and listen)!

#### PrEP is a PROGRAM

- Not only HIV prevention
- Involves comprehensive sexual healthcare
  - Screening and treatment for STIs
  - Hepatitis A and B vaccination
  - Counseling on STI prevention strategies



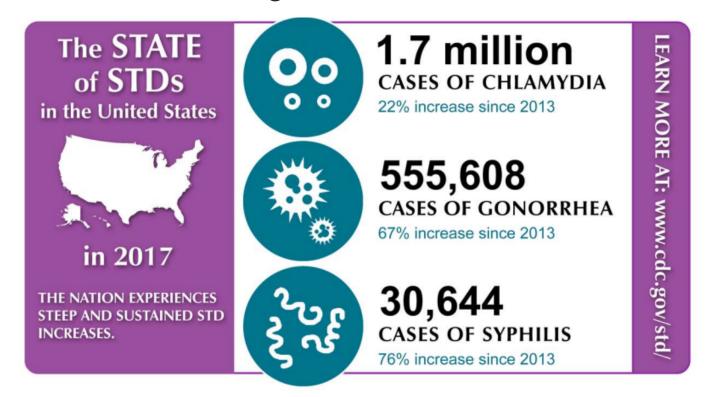
#### STIs Facilitate HIV Transmission

- Disruption of mucosal integrity
- Increase HIV target cells in genital tract due to immune reaction to infection
- STIs promote HIV shedding in the genital tract

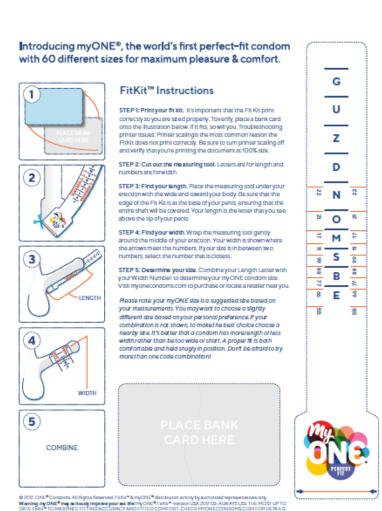
Presence of ulcerative STI increases likelihood of HIV acquisition up to 5-fold!

### Condom use

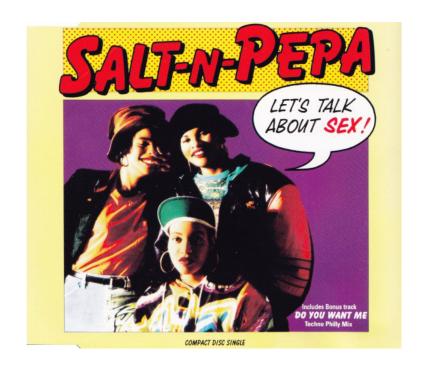
- Truvada® does NOT protect against bacterial and other STIs
- These are at record highs!



### How many sizes of condoms are there?



- Patients have sex, in lots of different ways.
- Patients may not want to discuss this.
- Providers may not feel comfortable discussing this.



- Patients have sex, in lots of different ways.
- Patients may not want to discuss this.
- Providers may not feel comfortable discussing this.

# Taking a sexual history is a potentially life-saving intervention.

- Recognize that this is our duty as physicians
- It's a learnable skill (like all things in medicine)
- With experience comes comfort



# Barriers to the Sexual History

- Lack of understanding of relevance of sexual health to overall health
- Uneasiness of clinicians and patients with a difficult and sensitive subject
- Belief it is irrelevant
- Belief it is someone else's job
- Lack of time
- Fear of offending the patient
- Medical/nursing school curricula design

## Sexual History Misconceptions

- The problems with labeling
  - "Married persons do not acquire STIs"
  - "Persons who identify as "straight" only have sex with those of the opposite gender"
  - "Persons who identify as "gay" or "lesbian" only have sex with those of the same gender"
- Persons will an STI will have symptoms
- Persons will voice sexual concerns without prompting

# Principles of a comprehensive sexual history

- Ensure privacy and confidentiality.
- Be professional.
- Be open minded and non-judgmental.
- Recognize non-verbal cues.
- Explain procedures and treatments thoroughly.

### **Effective Communication Skills**

- Consider prefacing the sexual history with a short introduction.
- Start with open-ended questions
- Use closed-ended questions to elicit specific information

#### Preface

- "The rates of sexually transmitted infections continue to increase, especially here in the South. In order to screen you correctly, prevent STIs and keep you healthy, it's important for me to know how you have sex and with whom."
- "Gonorrhea and chlamydia can also live in our rectums and throats, so it's important for us to test anywhere you might have had an exposure."

- "About how many partners have you had in the past 6 months?"
- "Do you have sex with men, women or both?"
- "Are you a top, bottom, or vers?"
  - Top = anal insertive
  - Bottom = anal receptive
  - Vers/versatile = both insertive and receptive
- "Do you have oral sex?"
- "What do you do to prevent STDs?"
- "Are you trying to prevent pregnancy? What do you use for contraception?"
- "Do you use condoms? What percentage of the time would you say you use condoms?"

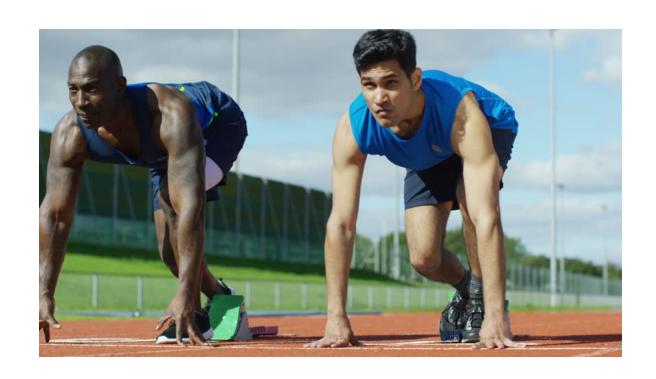
- "Are any of your partners HIV-positive?"
  - If so, "do you know if they're undetectable?"
- "Have any of your partners recently had an STD?"
- "Have you ever had an STD"
- "Have you ever had HIV or STD testing?"

- "Do you ever use drugs, like poppers or meth, when you have sex?"
- "Do any of your partners make you scared or feel unsafe?"
- "Do you ever have to use sex for things you need, like food or to pay pills?"

- Also a great time to discuss travel!
- Many people meet sexual partners, or have sex with partners other than long-term partner, during travel



# Ready, set, PrEP!



## PrEP Medication Counseling

- Dosing
  - One tab daily, with or without food
- Adherence, and its relationship to efficacy
- Time to effectiveness
  - 7-10 days for men, 21 days for women
  - Barrier protection especially needed during that time
- Adverse effects
  - Nausea, vomiting, diarrhea, loss of appetite, weight loss
  - Fatigue, headache
- Requirements for monitoring
- Refill process
  - "Call when you have 7-10 days left"

Adverse Event	FTC-TDF (N	=1251)	Placebo (N	P Value†	
	no. of patients (%)	no. of events	no. of patients (%)	no. of events	
Any adverse event	867 (69)	2630	877 (70)	2611	0.50
Any serious adverse event	60 (5)	76	67 (5)	87	0.57
Any grade 3 or 4 event	151 (12)	248	164 (13)	285	0.51
Grade 3 event	110 (9)	197	117 (9)	225	0.65
Grade 4 event	41 (3)	51	47 (4)	60	0.57
Elevated creatinine level	25 (2)	28	14 (1)	15	0.08
Headache	56 (4)	66	41 (3)	55	0.10
Depression	43 (3)	46	62 (5)	63	0.07
Nausea	20 (2)	22	9 (<1)	10	0.04
Unintentional weight loss (≥5%)	27 (2)	34	14 (1)	19	0.04
Diarrhea	46 (4)	49	56 (4)	61	0.36
Bone fracture	15 (1)	16	11 (<1)	12	0.41
Death	1 (<1);	1	4 (<1)	4	0.18
Discontinuation of study drug					
Permanently	25 (2)	26	27 (2)	33	0.82
Permanently or temporarily	79 (6)	99	72 (6)	92	0.49

<sup>\*</sup> A listing of all laboratory abnormalities and clinical adverse events of grade 2 or higher that were reported in 25 or more subjects (1%) is provided in Tables S9 and S10 in the Supplementary Appendix. FTC-TDF denotes emtricitabine and tenofovir disoproxil fumarate.

<sup>†</sup> P values were calculated by the log-rank test.

<sup>‡</sup> This death was due to a motorcycle accident.

	Table 2. Adverse Events.*						
	Adverse Event	FTC-TDF (N	l=1251)	Placebo (N	=1248)	P Value†	
		no. of patients (%)	no. of events	no. of patients (%)	no. of events		
	Any adverse event	867 (69)	2630	877 (70)	2611	0.50	
	Any serious adverse event	60 (5)	76	67 (5)	87	0.57	
	Any grade 3 or 4 event	151 (12)	248	164 (13)	285	0.51	
	Grade 3 event	110 (9)	197	117 (9)	225	0.65	
	Grade 4 event	41 (3)	51	47 (4)	60	0.57	
	Elevated creatinine level	25 (2)	28	14 (1)	15	0.08	
	Headache	56 (4)	66	41 (3)	55	0.10	
Nausea	20	(2)	22	9 (<1	)	10	0.0
	Unintentional weight loss (>5%	) 27 (2)	3.4	14 (1)	19	0.04	
Unintentional weigh	t loss (≥5%) 27	(2)	34	14 (1)		19	0.0
	Death	1 (<1);	1	4 (<1)	4	0.18	
	Discontinuation of study drug						
	Permanently	25 (2)	26	27 (2)	33	0.82	
	Permanently or temporarily	79 (6)	99	72 (6)	92	0.49	

<sup>\*</sup> A listing of all laboratory abnormalities and clinical adverse events of grade 2 or higher that were reported in 25 or more subjects (1%) is provided in Tables S9 and S10 in the Supplementary Appendix. FTC-TDF denotes emtricitabine and tenofovir disoproxil fumarate.

<sup>†</sup> P values were calculated by the log-rank test.

<sup>‡</sup> This death was due to a motorcycle accident.

Adverse Event	TDF-FT0 (N=611	_	Placebo (N = 608		P Value†
	no. of participants (%)	no. of events	no. of participants (%)	no. of events	
Any	557 (91.2)	4357	536 (88.2)	4390	0.003
Any serious	63 (10.3)	68	66 (10.9)	79	0.90
Grade 3 or 4 only	19 (3.1)	21	29 (4.8)	32	0.17
At least possibly related to study drug	20 (3.3)	21	27 (4.4)	29	0.35
Upper respiratory tract infection	231 (37.8)	385	241 (39.6)	439	0.84
Headache	227 (37.2)	390	226 (37.2)	411	0.73
Dizziness	92 (15.1)	109	67 (11.0)	82	0.03
Abdominal pain	155 (25.4)	215	156 (25.7)	217	0.78
Nausea	113 (18.5)	132	43 (7.1)	48	< 0.001
Vomiting	69 (11.3)	87	43 (7.1)	47	0.008
Diarrhea	76 (12.4)	93	65 (10.7)	76	0.22
≥5% Weight loss	75 (12.3)	113	61 (10.0)	72	0.13
Back pain	57 (9.3)	72	68 (11.2)	90	0.37
Rash	39 (6.4)	44	42 (6.9)	48	0.81
Fracture	7 (1.1)	7	6 (1.0)	8	0.74
Elevated creatinine	1 (0.2)	1	0	0	1.00
Hypophosphatemia	142 (23.2)	219	159 (26.2)	245	0.65
Hyperamylasemia	315 (51.6)	997	302 (49.7)	1017	0.45
Elevated AST	36 (5.9)	43	38 (6.2)	42	0.90
Elevated ALT	38 (6.2)	48	43 (7.1)	66	0.57
Death:	2 (0.3)	2	4 (0.7)	4	0.45

<sup>\*</sup> ALT denotes alanine aminotransferase, and AST aspartate aminotransferase.

<sup>†</sup> All P values were calculated with the use of a time-to-first-event analysis (regression analysis of survival data on the basis of the Cox proportional-hazards model), with the exception of the P values for weight loss of 5% or more and death, which were calculated with the use of Fisher's exact test.

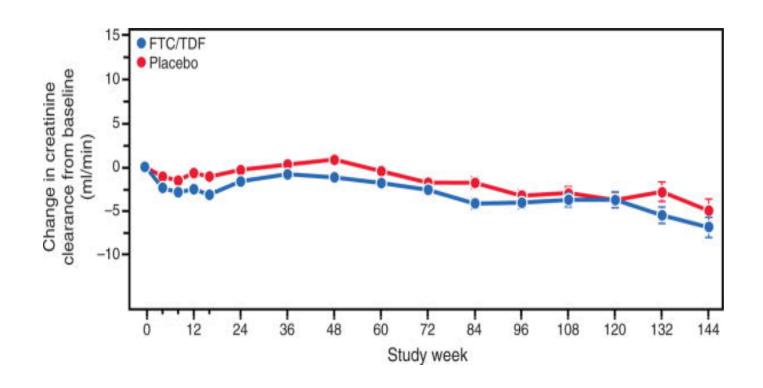
<sup>†</sup> The causes of death in the TDF-FTC group were motor vehicle accident (one participant) and suicide (one); the causes
of death in the placebo group were motor vehicle accident (two), homicide (one), and cerebrovascular accident (one).

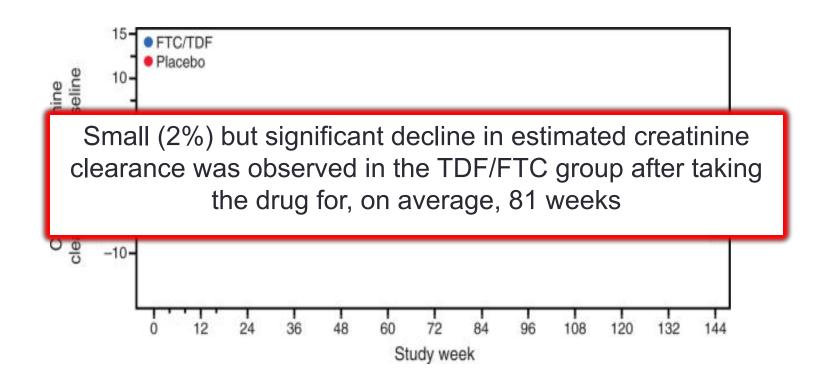
	Table 2. Adverse Events, According to Treat	ment Group.*						
	Adverse Event	TDF-FT (N=611		Placebo (N = 608)		P Value†		
		no. of participants (%)	no. of events	no. of participants (%)	no. of events			
	Any	557 (91.2)	4357	536 (88.2)	4390	0.003		
	Any serious	63 (10.3)	68	66 (10.9)	79	0.90		
	Grade 3 or 4 only	19 (3.1)	21	29 (4.8)	32	0.17		
	At least possibly related to study drug	20 (3.3)	21	27 (4.4)	29	0.35		
	Upper respiratory tract infection	231 (37.8)	385	241 (39.6)	439	0.84		
Dizziness	93	2 (15.1)	109	6	57 (11.	0)	82	0.03
	Abdominal pain	155 (25.4)	215	156 (25.7)	217	0.78		
Nausea	11:	3 (18.5)	132	4	3 (7.1	)	48	<0.001
Nausea Vomiting		3 (18.5) 9 (11.3)	132 87		3 (7.1 3 (7.1	•	48 47	<0.001 0.008
		, ,			,	•		
	69	9 (11.3)	87	4	3 (7.1	)		
	69 Back pain	9 (11.3)	87 72	68 (11.2)	3 (7.1	0.37		
	Back pain Rash Fracture Elevated creatinine	57 (9.3) 39 (6.4)	87 72 44	68 (11.2) 42 (6.9)	90	0.37 0.81		
	Back pain Rash Fracture	9 (11.3) 57 (9.3) 39 (6.4) 7 (1.1)	87 72 44 7	68 (11.2) 42 (6.9) 6 (1.0)	90 48 8	0.37 0.81 0.74		
	Back pain Rash Fracture Elevated creatinine Hypophosphatemia Hyperamylasemia	9 (11.3)  57 (9.3)  39 (6.4)  7 (1.1)  1 (0.2)	87 72 44 7	68 (11.2) 42 (6.9) 6 (1.0)	90 48 8 0	0.37 0.81 0.74 1.00		
	Back pain Rash Fracture Elevated creatinine Hypophosphatemia Hyperamylasemia Elevated AST	9 (11.3)  57 (9.3)  39 (6.4)  7 (1.1)  1 (0.2)  142 (23.2)	72 44 7 1 219	68 (11.2) 42 (6.9) 6 (1.0) 0 159 (26.2)	90 48 8 0 245	0.37 0.81 0.74 1.00 0.65		
	Back pain Rash Fracture Elevated creatinine Hypophosphatemia Hyperamylasemia	9 (11.3)  57 (9.3)  39 (6.4)  7 (1.1)  1 (0.2)  142 (23.2)  315 (51.6)	72 44 7 1 219 997	68 (11.2) 42 (6.9) 6 (1.0) 0 159 (26.2) 302 (49.7)	90 48 8 0 245 1017	0.37 0.81 0.74 1.00 0.65 0.45		

<sup>\*</sup> ALT denotes alanine aminotransferase, and AST aspartate aminotransferase.

<sup>†</sup> All P values were calculated with the use of a time-to-first-event analysis (regression analysis of survival data on the basis of the Cox proportional-hazards model), with the exception of the P values for weight loss of 5% or more and death, which were calculated with the use of Fisher's exact test.

<sup>†</sup> The causes of death in the TDF-FTC group were motor vehicle accident (one participant) and suicide (one); the causes
of death in the placebo group were motor vehicle accident (two), homicide (one), and cerebrovascular accident (one).





Assessment		Forearm			Hip		L	umbar Spine	
	TDF-FTC (N=109)	Placebo (N=112)	P Value	TDF-FTC (N=109)	Placebo (N = 112)	P Value	TDF-FTC (N=109)	Placebo (N = 112)	P Value
T score			0.004			< 0.001			<0.001
Enrollment	-0.75	-0.58		0.44	0.53		-0.72	-0.59	
6 mo	-0.77	-0.50		0.33	0.57		-0.84	-0.45	
12 mo	-0.79	-0.48		0.33	0.54		-0.77	-0.56	
18 mo	-0.93	-0.27		0.17	0.77		-0.92	-0.43	
24 mo	-0.92	-0.13		0.21	0.74		-1.11	-0.37	
z Score			0.004			< 0.001			< 0.001
Enrollment	-0.70	-0.54		0.45	0.54		-0.67	-0.54	
6 mo	-0.73	-0.45		0.35	0.58		-0.80	-0.41	
12 mo	-0.72	-0.42		0.34	0.55		-0.74	-0.53	
18 mo	-0.88	-0.21		0.18	0.78		-0.88	-0.41	
24 mo	-0.87	-0.13		0.20	0.76		-1.09	-0.28	

<sup>\*</sup> In the TDF–FTC group, 58 participants completed bone mineral density testing at the 6-month visit, 45 at the 12-month visit, 36 at the 18-month visit, and 23 at the 24-month visit. In the placebo group, 66 participants completed bone mineral density testing at the 6-month visit, 44 at the 12-month visit, 33 at the 18-month visit, and 35 at the 24-month visit.

Table 3. Bone Mineral Density Scores.*									
Assessment		Forearm			Hip		Li	umbar Spine	
	TDF-FTC (N=109)	Placebo (N=112)	P Value	TDF-FTC (N=109)	Placebo (N=112)	P Value	TDF-FTC (N = 109)	Placebo (N=112)	P Value
T score			0.004			< 0.001			<0.001
Enrollment	-0.75	-0.58		0.44	0.53		-0.72	-0.59	
6 mo	-0.77	-0.50		0.33	0.57		-0.84	-0.45	

Significant decline in T scores and z scores for BMD at the forearm, hip, and lumbar spine in participants who received TDF/FTC, as compared with those who received placebo

6 mo	-0.73	-0.45	0.35	0.58	-0.80	-0.41	
12 mo	-0.72	-0.42	0.34	0.55	-0.74	-0.53	
18 mo	-0.88	-0.21	0.18	0.78	-0.88	-0.41	
24 mo	-0.87	-0.13	0.20	0.76	-1.09	-0.28	
1							

<sup>\*</sup> In the TDF–FTC group, 58 participants completed bone mineral density testing at the 6-month visit, 45 at the 12-month visit, 36 at the 18-month visit, and 23 at the 24-month visit. In the placebo group, 66 participants completed bone mineral density testing at the 6-month visit, 44 at the 12-month visit, 33 at the 18-month visit, and 35 at the 24-month visit.

Table 3. Bone Mir	neral Density Sco	res.*							
Assessment		Forearm			Hip		Lu	umbar Spine	
	TDF-FTC (N = 109)	Placebo (N=112)	P Value	TDF-FTC (N=109)	Placebo (N=112)	P Value	TDF-FTC (N=109)	Placebo (N=112)	P Value
T score			0.004			<0.001			<0.001

#### **BUT THIS CAN RECOVER!**

Bone mineral density recovered after 6 months of stopping TDF/FTC in both young and older adults.

i							á
	24 mo	-0.87	-0.13	0.20	0.76	-1.09 -0.28	
	W - 72.20 (2.5)					23/21/48	

<sup>\*</sup> In the TDF–FTC group, 58 participants completed bone mineral density testing at the 6-month visit, 45 at the 12-month visit, 36 at the 18-month visit, and 23 at the 24-month visit. In the placebo group, 66 participants completed bone mineral density testing at the 6-month visit, 44 at the 12-month visit, 33 at the 18-month visit, and 35 at the 24-month visit.

### The First Visit

- Labs:
  - HIV Ag/Ab (but if symptoms of acute HIV, get HIV RNA)
  - Basic Metabolic Panel
  - Hepatitis B sAg, sAb
  - Hepatitis C Ab
  - Treponemal IgG
  - Gonorrhea/chlamydia PCR (oral, rectal and urethral)
  - Consider Hepatitis A IgM/IgG given recent outbreak

### The Second Visit

- Repeat HIV screen, repeat serum creatinine
- Assess adherence
- Reassess eligibility
- Assess for side effects
- Provide behavioral risk reduction support
- STI screen, if necessary
- Assess pregnancy intention (test if could be pregnant)
- If HIV-negative and eligible, refill PrEP

# Every 3 months

- HIV screen
- Assess adherence
- Reassess eligibility
- Assess for side effects
- Provide behavioral risk reduction support
- STI screen, if necessary
- Assess pregnancy intention (test if could be pregnant)
- If HIV-negative and eligible, refill PrEP

# Every 6 months

- Screen for other STIs
- Repeat serum creatinine

# A year of PrEP

Encounter	To do
Month 0	<ul> <li>Screen for HIV</li> <li>Confirm HBV and HCV status</li> <li>Check serum creatinine</li> <li>Screen for STIs</li> <li>Counseling</li> <li>Prescribe</li> </ul>
Month 3	<ul><li>Screen for HIV</li><li>Check serum creatinine</li><li>Counseling</li><li>Prescribe</li></ul>
Month 6	<ul><li>Screen for HIV</li><li>Screen for STIs</li><li>Counseling</li><li>Prescribe</li></ul>
Month 9	<ul><li>Screen for HIV</li><li>Check serum creatinine</li><li>Counseling</li><li>Prescribe</li></ul>
Month 12	<ul><li>Screen for HIV</li><li>Screen for STIs</li><li>Counseling</li><li>Prescribe</li></ul>

#### Labs:

- HIV screen: 5
- Serum creatinine: 3
- STI screen: 3

Prescriptions/Refill authorizations: 5

Discussions: 5+

# Billing/coding

- While ICD-10 does not provide specific codes for PrEP, the following codes have been discussed with billing and used for PrEP visits:
  - Z20.6 "Contact with and (suspected) exposure to HIV "
  - Z17.1 "Human immunodeficiency virus [HIV] counseling"
  - Z11.3 "Encounter for screening for infection with a predominantly sexual mode of transmission"
  - Z79.2 "Long-term (current) use of antibiotics"

- Not suggested
  - Z72.52 High risk homosexual behavior

# Billing/coding

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  - Z79.2 "Long-term (current) use of antibiotics"

• Not suggested.

72.52 – High risk home websehavior

## Special considerations

#### Pregnant or breastfeeding women

- Pregnancy Category B (No known risk)
- Minimally secreted in breastmilk, not contraindicated in breastfeeding

#### Chronic HBV

- TDF and FTC are active against HBV
- Abrupt withdrawal of TDF/FTC could cause HBV flare
- Stopping TDF/FTC requires careful monitoring and observation

#### Chronic Renal Failure (eGFR <60mL/min)</li>

Don't use TDF/FTC; safety has not been adequately determined

### STOP PrEP

- The patient doesn't want it
- Behavior or life situations have changed that lower risk for HIV infection
- Intolerable adverse events/toxicities
- Nonadherence despite attempted interventions to improve
- HIV-infection

# Future of PrEP



# **Descovy**®

- Similar to Truvada®
  - Truvada® = tenofovir disoproxil fumarate (TDF) + emtricitabine
  - Descovy® = tenofovir alafenamide (TAF) + emtricitabine
    - Currently approved for HIV treatment, but not PrEP
- TAF achieves high intracellular concentrations, but lower (>10-fold) plasma and tissue concentrations than TDF
  - Lower risk of BMD loss and reduced creatinine clearance
  - Can be used in chronic kidney disease (eGFR >30 mL/min)

Does the lower plasma/tissue concentration affect efficacy as PrEP?

## DISCOVER trial - Update

- 5400 MSM and transgender women
- Randomized to Truvada® vs Descovy®
- Descovy® is non-inferior to Truvada® at 48 weeks
- Adverse events similar



# Long-acting PrEP

- Cabotegravir (integrase inhibitor)
  - Formulated as a long-acting, depot-controlled nanosuspension
    - Half life ~50 days
  - Injection every 8 weeks
  - Injection site reactions common, though still favored over daily pill
  - Phase III trial (cabotegravir vs TDF/FTC) underway



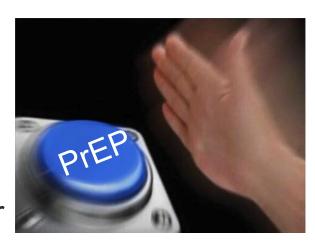
### PrEP + contraception

- Dapivirine (NNRTI) 25mg ring
  - Two phase III trials (ASPIRE and The Ring Study) demonstrated about 30% HIV risk reduction
    - Low efficacy likely due to low adherence
  - Two open label extension studies pending
- Dapivirine 200mg + levonorgestrel 320mg
  - Phase I trial demonstrated safety

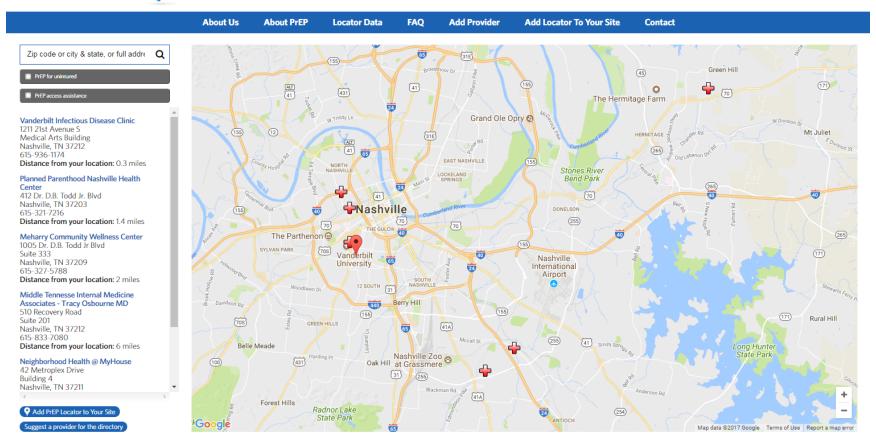


### Conclusion

- PrEP is a component of primary care
- PrEP is an extremely effective preventive strategy for both HIV and STIs
- Understand PrEP prescribing guidelines
- There are some adverse effects, but PrEP is generally very well-tolerated
- PrEP requires an ongoing patient-doctor relationship
- Sexual history is essential to comprehensive health care
- Ask for help! <u>sean.g.kelly@vumc.org</u>



# Prep Locator Prep Locator Find Your Provider



https://preplocator.org

### Help us increase PrEP provision in TN!

- Anonymous 40-question survey to identify barrier providers have in prescribing PrEP.
- You can find the link on the event page along with the slides from today.
- https://redcap.vanderbilt.edu/surveys/?s=YKE8YHNHHT

# Questions?

