



## HIV Routine Testing and Prevention

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### Continuing Education Disclosure

- The activity planners and speakers do not have any financial relationships with commercial entities to disclose.
- The speakers will not discuss any off-label use or investigational product during the program.

This slide set has been peer-reviewed to ensure that there are no conflicts of interest represented in the presentation.

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### Session Objectives

- Describe routine testing principles
- Identify, counsel and provide HIV Pre-exposure prophylaxis (PrEP) to patients at high risk of HIV acquisition
- Identify, counsel and provide nonoccupational HIV Post-exposure prophylaxis (PEP) to patients at high risk of HIV acquisition

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## Case

- Ben is a 20 year old man who presents for vaccinations in preparation for a trip to Costa Rica.
- He has not been seen by a healthcare provider for 2 years.
- In addition to evaluation for his upcoming travel, should his provider offer an HIV test?




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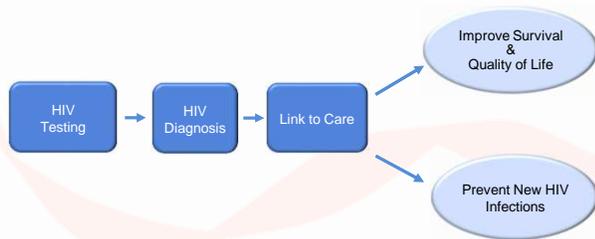
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## Goals of Routine Testing for HIV



Spach, D. Routine HIV Screening in Health Care Settings: Background and Definitions. (PowerPoint). AIDS Education and Training Centers National Resource Center. May 2010. Slide 6.

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## Why Do We Need Routine HIV Screening?

- Many are unaware they have HIV infection – no symptoms
- Risk-based testing strategies fail to identify everyone who needs screening
- Late diagnosis of HIV remains a problem
  - In 2015 the Estimated median interval from HIV infection to diagnosis was 3 years

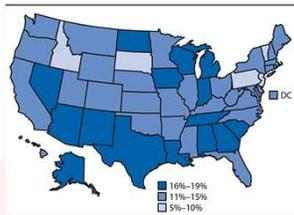


FIGURE 1. Percentage of undiagnosed infections\*† among persons aged ≥13 years† living with diagnosed or undiagnosed human immunodeficiency virus (HIV) infection — United States, 2015



CDC. HIV Testing. Available at <http://www.cdc.gov/hiv/testing/index.html>  
 Daley AF, et al. MMWR Morb Mortal Wkly Rep 2017;66:1300–1306.

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## HIV in the United States and Florida

Over 1.1 million people are living with HIV in the US

One in seven are unaware of their infection

Florida ranked 3<sup>rd</sup> in new HIV diagnoses in 2016

<https://www.cdc.gov/hiv/bdf/library/reports/surveillance/cdc-hiv-info-sheet-diagnoses-of-hiv-infection-20>  
<http://www.floridahealth.gov/diseases-and-conditions/aids/surveillance/epi-slide-sets.html>

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## Disproportionate Transmission of HIV in People Unaware of HIV Infection Status

Awareness of HIV Infection

Unaware	25%
Aware	75%

New HIV Infections

Unaware	54%
Aware	46%

Adapted from Marks G, et al. AIDS 2006;20:1447-50.

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## HIV Testing

**MISSED Opportunities**

7 in 10 people at high risk who weren't tested for HIV in the past year saw a healthcare provider during that time. More than 75% of them weren't offered a test.

**Many people at high risk\* for HIV aren't getting tested every year**

CDC.gov. Vital Signs, November/December 2017.

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### Who Should We Screen? CDC 2006

- Routinely screen all patients aged 13-64 for HIV infection after notifying them that testing will be performed unless declined
  - Opt-out testing
- Prevention counseling should not be required with HIV diagnostic testing or as part of HIV screening programs in health-care settings



CDC. MMWR 2006;55(RR 14;1-17)

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### Routine Screening for HIV Infection: CDC 2006

- Screen
  - All patients starting treatment for tuberculosis
  - All patients seeking treatment for STDs during each visit for a new complaint
- Screen at least annually
  - Intravenous drug users and their sex partners
  - People who exchange sex for money or drugs
  - Sex partners of people with HIV infection
  - Men who have sex with men or heterosexuals who have or who their sex partners have had more than one sex partner since their most recent HIV test




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### Florida HIV Testing Statues

- 381.004 HIV Testing
  - Obtaining Consent
    - "In a health care setting, the person to be tested shall be notified orally or in writing that the test is planned and that he or she has the right to decline the test. If the person to be tested declines the test, such decision shall be documented in the medical record. A person who has signed a general consent form for medical care is not required to sign or otherwise provide a separate consent for an HIV test during the period in which the general consent form is in effect."



[http://www.leg.state.fl.us/Statutes/index.cfm?App\\_mode=Display\\_Statute&URL=0300-0399/0381/Sections/0381\\_004.html](http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=0300-0399/0381/Sections/0381_004.html)

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## Florida HIV Testing Statues 381.004

- "The person ordering the test or that person's designee shall ensure that all reasonable efforts are made to notify the test subject of his or her test result. Notification of a person with a positive test result shall include information on the availability of appropriate medical and support services, on the importance of notifying partners who may have been exposed, and on preventing transmission of HIV. Notification of a person with a negative test result shall include, as appropriate, information on preventing the transmission of HIV. **When testing occurs in a hospital emergency department, detention facility, or other facility and the test subject has been released before being notified of positive test results, informing the county health department for that department to notify the test subject fulfills this responsibility.**"



[http://www.leg.state.fl.us/Statutes/index.cfm?App\\_mode=Display\\_Statute&URL=0300-0399/0381/Sections/0381\\_004.html](http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=0300-0399/0381/Sections/0381_004.html)

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## HIV Screening in Pregnant Women

- Universal Opt-out screening
- Address reasons for declining test
  - Document declinations in the medical records
- Timing of HIV test
  - Early during pregnancy
  - Repeat in third trimester, ideally < 36 weeks gestation
  - Rapid testing at time of delivery if indicated



CDC. MMWR 2006;55(RR14):1-17.




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### HIV Testing in Pregnancy § 384.31, F.S. & Rule 64D-3-042, F.A.C

- Florida Statute 384.31
- **Testing of pregnant women; duty of the attendant.**—Every person, including every physician licensed under chapter 458 or chapter 459 or midwife licensed under part 1 of chapter 464 or chapter 467, attending a pregnant woman for conditions relating to pregnancy during the period of gestation and delivery shall cause the woman to be tested for sexually transmissible diseases, including HIV, as specified by department rule. Testing shall be performed by a laboratory approved for such purposes under part 1 of chapter 483. The woman shall be informed of the tests that will be conducted and of her right to refuse testing. If a woman objects to testing, a written statement of objection, signed by the woman, shall be placed in the woman's medical record and no testing shall occur.

 [http://www.lcg.state.fl.us/statutes/index.cfm?App\\_mode=Display\\_Statute&Search\\_String=&URL=0300-0399/0384/Sections/0384\\_31.html](http://www.lcg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&Search_String=&URL=0300-0399/0384/Sections/0384_31.html)  
<https://www.flrules.org/gateway/RuleNo.asp?id=64D-3-042>

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### What happens if the test is positive?

- Positive rapid tests require confirmation.
- Results should be communicated confidentially through personal contact
- Provide counseling
  - HIV is a manageable disease
  - Discuss HIV risk reduction
  - Discuss ways to handle the emotional consequences of a positive result
- Inform the patient that they might be contacted by health department staff



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### Partner Notification

- Partner notification is not legally mandated in the state of Florida
  - Advise patients with a positive HIV test of the importance of notifying partners who may have been exposed and counsel on prevention of HIV transmission
- The Florida Department of Health can provide confidential partner notification services



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### HIV Prevention

- Voluntary male circumcision
- Blood safety
- Injection safety
- Microbicides
- Prevention of perinatal transmission
- Condom use
- Mutually monogamous sex with a partner who doesn't have HIV
- Abstinence
- Treatment as Prevention
- **Pre-exposure prophylaxis (PrEP)**
- **Post-exposure prophylaxis (PEP)**

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**U=U**  
UNDETECTABLE = UNTRANSMITTABLE

A PERSON LIVING WITH HIV WHO HAS AN UNDETECTABLE VIRAL LOAD DOES NOT TRANSMIT THE VIRUS TO THEIR PARTNERS.

The International AIDS Society is proud to endorse the U=U consensus statement of the Prevention Access Campaign.

IAS  
AETC  
Southwest

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### What is PrEP?

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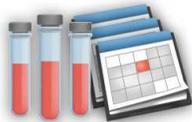
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## Pre-exposure Prophylaxis



PrEP IS AN HIV PREVENTION METHOD IN WHICH **PEOPLE WHO DO NOT HAVE HIV INFECTION TAKE A PILL DAILY TO REDUCE THEIR RISK OF BECOMING INFECTED**

**ONLY PEOPLE WHO ARE HIV-NEGATIVE SHOULD USE PrEP. AN HIV TEST IS REQUIRED BEFORE STARTING PrEP AND THEN EVERY 3 MONTHS WHILE TAKING PrEP.**



<http://aids.gov/hiv-aids-basics/prevention/reduce-your-risk/pre-exposure-prophylaxis>

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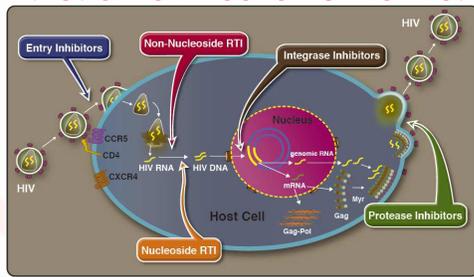
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## Antiretroviral Mechanism of Action



[http://tehta.washington.edu/waaco/P11\\_Cheat.pdf](http://tehta.washington.edu/waaco/P11_Cheat.pdf)

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## Truvada® (TDF/FTC) PrEP

- FDA approval July 2012 for use in HIV PrEP
  - Based on studies showing safety and efficacy in preventing HIV acquisition in the following groups
    - Men that have sex with men
    - Men and women in heterosexual HIV discordant relationships
    - Heterosexual men and women
    - Transgender women
    - People who inject drugs

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### PrEP Trials Men and Transgender Women Who Have Sex With Men

Trial	Design	Participants	Risk Reduction
iPrEx	Randomized, double-blind, placebo controlled TDF/FTC daily vs placebo	2,499 Peru, Ecuador, Brazil, Thailand, S Africa, U.S.	44% Overall <ul style="list-style-type: none"> <li>73% if took 90% of drug by self report/pill count</li> <li>92% if detectable drug level</li> </ul>
IPERGAY	Randomized, double-blind placebo controlled Event driven TDF/FTC	400 France & Canada	86%
PROUD	Randomized, open label TDF/FTC daily vs placebo <ul style="list-style-type: none"> <li>Immediate arm</li> <li>Delayed arm</li> </ul>	544 England	86% in immediate arm

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### PrEP Trials Heterosexual Men and Women

Trial	Design	Participants	Risk Reduction
Partners PrEP	Randomized, double blind, placebo controlled Daily TDF or TDF/FTC or placebo	4,758 HIV-discordant couples Kenya & Uganda	75% with TDF/FTC 90% if drug detected 67% TDF
TDF2	Randomized, double blind, placebo controlled Daily TDF/FTC or placebo	1,219 heterosexual men and women Botswana	62%




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### PrEP Trials: Women

Trial	Design	Participants	Risk Reduction
Caprisa 004	Double-blind, randomized, controlled 1% TDF vaginal gel	889 S Africa	39% overall 54% if high adherence
FEM-PrEP	Double-blind, randomized, controlled TDF/FTC or placebo	1951 Aged 18-35 S Africa Kenya Tanzania	Stopped due to lack of efficacy Low adherence
VOICE	Randomized, double blind TDF or TDF/FTC or TDF gel vs oral or topical placebos	5029 Eastern and Southern Africa	Very high self reported adherence, but low drug levels detected Stopped due to futility
ASPIRE	Double blind, placebo controlled 25 mg dapirvine ring vs placebo	2,629 V Malawi, South Africa, Uganda, and Zimbabwe	27% overall 61% in women over 25 10% if younger than 25
Ring	Double blind, placebo controlled 25 mg dapirvine ring vs placebo	1,959 Uganda S Africa	31% overall 37% if over 21 15% if younger than 21

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## PrEP: People Who Inject Drugs

Trial	Design	Participants	Risk Reduction
Bangkok Tenofovir	Double-blind, placebo-controlled trial Oral TDF or placebo	2,713	49% 70% in those with detectable plasma TDF level

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## Detectable Drug Prevents HIV Acquisition

**A Intracellular FTC-TP Level**

Case (HIV-positive): 3/34 Detectable  
Control (HIV-negative): 22/42 Detectable

**B Intracellular TFV-DP Level**

Case (HIV-positive): 2/34 Detectable  
Control (HIV-negative): 21/42 Detectable

Grant RM, et al. N Engl J Med 2010;363:2587-99.

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## TDF/FTC (Truvada®) PrEP

Adherence is critical

Dosing	Estimated PrEP Efficacy
2x/week	76%
4x/week	90%
Daily	99%

Anderson PL. Sci Transl Med 2012;4:1-9

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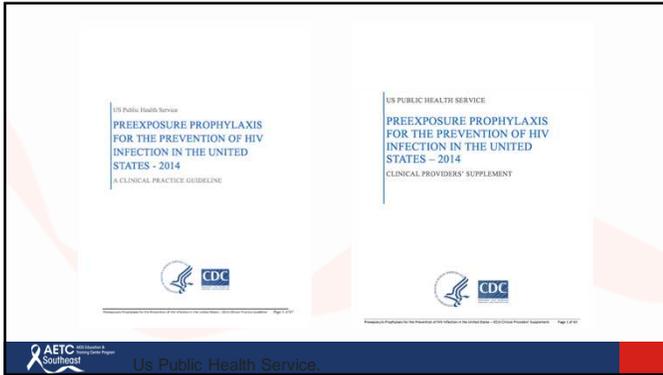
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## Who Should be Offered PrEP?

Men Who Have Sex with Men	Heterosexual Women and Men	Injection Drug Users
HIV-positive sexual partner Recent bacterial STI High number of sex partners History of inconsistent or no condom use Commercial sex work	HIV-positive sexual partner Recent bacterial STI High number of sex partners History of inconsistent or no condom use Commercial sex work In high-prevalence area or network	HIV-positive injecting partner Sharing injection equipment Recent drug treatment (but currently injecting)

All AI recommendations

CDC PrEP 2014 Guidelines Available at <https://aidsinfo.nih.gov/guidelines>

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## PrEP Steps

- Risk assessment
- Eligibility evaluation
- Monitoring
- Evaluation for indication to stop PrEP

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## Baseline Lab Evaluation

- Negative HIV Ab within a week of starting PrEP
- Serologic screen for Hepatitis B
  - Vaccinate if nonimmune
- Serologic screen for Hepatitis C
  - Consider annual screening for MSM, intravenous drug users
- Expert recommendation
  - Serologic screen for Hepatitis A if MSM
  - Immunize if negative
- Creatinine clearance > 60 mL/min
- Pregnancy test




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## Prescribing PrEP

- Truvada one tablet by mouth every day
- Dispense no more than 90 days
  - Patients must be evaluated for HIV every 90 days
    - Sooner if signs of acute HIV infection are present




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## Monitoring Lab Testing

Lab Test	Every 3 months	At least every 6 months	Considerations
HIV Ab	X		Consider HIV RNA PCR
Serum Creatinine		X	
STD screen		X*	Test at site of exposure
Pregnancy test for women	X		

\*Consider testing every 3 months




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## What if the HIV test is positive?

- Stop PrEP
  - Not a fully suppressive regimen for HIV infection
- Two options for treatment
  - Hold off on ARV therapy until genotype results
  - Start a fully suppressive antiretroviral regimen and modify based on genotype results
- Order an HIV-1 RNA PCR, HIV-1 Genotype, CD4 count
- Link to an experienced HIV provider




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## WHAT ARE RISKS OF PREP




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## Development of Resistance

- Risk is low despite 2 drug therapy with PrEP
- IPREX
  - 48 people with HIV – none with significant resistance
- Partner's PrEP
  - 5 of 63 seroconverters developed resistance
  - M184V

Table 1. Results of Genotypic and Phenotypic Drug Resistance Testing of the Patient's Plasma Sample on Day 1\*

Drug Class and Drug	Drug Resistance on Genotypic Testing	Relative Drug Susceptibility on Phenotypic Testing
<b>Nucleoside or nucleotide reverse transcriptase inhibitors</b>		
Abacavir	Intermediate	Susceptible (3.9 × $10^{-3}$ )
Lamivudine	High	Resistant (more than maximum $IC_{50}$ )
Emtricitabine	High	Resistant (more than maximum $IC_{50}$ )
Tenofovir	Low	Sensitive (0.8 × $IC_{50}$ )
<b>Nonnucleoside reverse transcriptase inhibitors</b>		
Efavirenz	Intermediate	Sensitive (0.54 × $IC_{50}$ )
Etravirine	Intermediate	Sensitive (0.54 × $IC_{50}$ )
Nevirapine	High	Resistant (0.7 × $IC_{50}$ )
Rilpivirine	Intermediate	Sensitive (0.53 × $IC_{50}$ )
<b>Protease inhibitors, all agents</b>		
Susceptible		
<b>Integrase strand transfer inhibitors</b>		
Raltegravir	Intermediate	Reduced response (0.8 × $IC_{50}$ )
Dolutegravir	High	Resistant (100 × $IC_{50}$ )
Dabunegravir	Low	Reduced response (2.7 × $IC_{50}$ )

Knox DC, et al. *N Engl J Med*. 2017 Feb 2;376(5):501-502.




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## Risk Compensation

Graph (a) Mean Number of Sex Partners: The red line (PrEP) starts at approximately 10 and remains relatively stable, while the blue line (not on PrEP) starts at approximately 12 and shows more fluctuation, ending slightly higher than the red line.

Graph (b) Percent of HIV Patients Using Condoms: The red line (PrEP) starts at approximately 60% and remains stable, while the blue line (not on PrEP) starts at approximately 70% and shows more fluctuation, ending slightly higher than the red line.

- Behavioral disinhibition
- Not seen in most clinical trials

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## PrEP: Side Effects

- Headache
- Abdominal pain
- Poor appetite/weight loss

} "start-up syndrome"

- Renal impairment, Fanconi syndrome
- Decreased bone density
- Lactic acidosis
- Hepatomegaly/steatosis
- Risk for hepatitis B exacerbation in those with chronic hepatitis B infection with Truvada® discontinuation

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## Discontinuing PrEP

- Positive HIV result
- Acute HIV signs or symptoms
- Non-adherence
- Renal disease
- Changed life situation: lower HIV risk

<http://www.cdc.gov/hiv/pdf/guidelines/PrEPguidelines2014.pdf>

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## PrEP May Be Periodic

(b) **Prevention-effective adherence paradigm:** Success is achieved because PrEP is used during all episodes of HIV exposure. Adherence to PrEP may be periodic and mapped to periods of risk.

The diagram illustrates the 'Prevention-effective adherence paradigm'. It features two horizontal axes. The top axis is labeled 'Adherence behavior' and shows two grey rectangular boxes, each labeled 'PrEP'. The bottom axis is labeled 'HIV exposure over time' and shows two white rectangular boxes, each labeled 'No risk'. Vertical arrows point upwards from the 'No risk' boxes to the 'PrEP' boxes, indicating that PrEP is taken during periods of risk. A light red wavy line is visible in the background.

AETC Southeast | [www.aetcsoutheast.org](http://www.aetcsoutheast.org)  
 Haber, Jessica, Bergsberg David et al. Defining success with HIV pre-exposure prophylaxis: a prevention-effective adherence paradigm. AIDS 2015, 29: 1277-1285.

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## Case

Ben is a 25 year old man who has sex with men. He had 4 partners in the last month and while he used condoms, he wants to reduce his risk of HIV acquisition further. He asks about taking tenofovir alafenamide/emtricitabine (Descovy®) as he has heard it's safer for the bones and kidneys. What do you tell him?

- A. Currently, there isn't sufficient data regarding efficacy of TAF containing regimens in PrEP
- B. The only FDA approved regimen for PrEP includes TDF not TAF

AETC Southeast | [www.aetcsoutheast.org](http://www.aetcsoutheast.org)

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## Case

- KS is a 35 year old man who is in a long term relationship with another man with whom he does not use condoms. His partner was diagnosed with acute HIV infection 1 week ago after a trip in which they both had sex with men of unknown HIV status. They did not use condoms.
- KS and his partner last had unprotected sex 4 days ago.
- KS had a negative HIV Ag/Ab test today

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## Would you start PrEP today?

- A. Yes, this patient is clearly at high risk of HIV acquisition
- B. No, I am concerned he could have been exposed to HIV too recently for the HIV Ag/Ab assay to pick up infection

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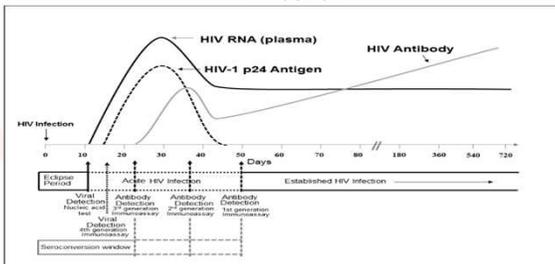
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## Sequence of Appearance of Lab Markers of HIV-1 Infection



Branson BM, et al. Laboratory Testing for the Diagnosis of HIV Infection: Updated Recommendations. CDC.gov. June 27, 2014. Available at <http://stacks.cdc.gov/view/cdc/23446>.




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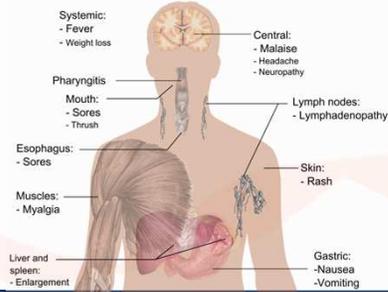
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## Main symptoms of Acute HIV infection




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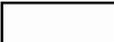
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### Case

- Sam is a 42 year old man who has sex with other men. He wants to get on PrEP because he doesn't want to have to use condoms to prevent acquisition of HIV infection.
- How would you counsel Sam?



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### Comprehensive Prevention Strategy

- Screen and treat all STDs
- HIV prevention counseling before and after testing
- Individual and couples risk reduction counseling
- Condoms with training and counseling



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### Case

- Martha is a 30 year old woman who has had multiple male sex partners in the last 6 months and started PrEP at the urging of her sister.
- She wants to know how many days it will take after starting PrEP to be protected.



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### Time to achieve protection with PrEP

- Rectal tissue 7 days
- Blood and cervicovaginal tissue 20 days
- However, these levels may not represent true clinical protection
  - Guidelines do not provide specific recommendations on time to protection
  - Critical to counsel on safer sex practices in combination with PrEP



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### HIV Post-Exposure Prophylaxis (PEP) Non-Occupational PEP (nPEP)

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### Jake CASE



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## Non-Occupational PEP

- Use of antiretrovirals to prevent HIV acquisition following high risk exposures to HIV infection outside of occupational settings
- nPEP is only for potentially exposed persons without HIV infection
- nPEP is recommended when source of body fluids is known HIV-infected and reported exposure presents a substantial risk for transmission



CDC. Updated Guidelines for Antiretroviral nPEP, 2016. Available at <http://stacks.cdc.gov/view/cdc/38856>

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## Non-Occupational PEP

- Provide any indicated prevention, treatment or supportive care for other exposure-associated health risks and conditions
  - Sexually transmitted infections
  - Traumatic injuries
  - Hepatitis B and C virus infection
  - Pregnancy



CDC. Updated Guidelines for Antiretroviral nPEP, 2016. Available at <http://stacks.cdc.gov/view/cdc/38856>

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## Non-Occupational PEP

- Don't delay initiating nPEP if indicated and results of rapid HIV blood test results are unavailable
  - Can stop nPEP if patient later determined to have HIV infection or source does not have HIV infection



CDC. Updated Guidelines for Antiretroviral nPEP, 2016. Available at <http://stacks.cdc.gov/view/cdc/38856>

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## Rationale

- Systemic infection does not appear to occur immediately
  - HIV initially affects target cells and takes time to cause systemic infection
  - Goal of prophylaxis is to attack the HIV virus prior to establishment of infection in immunologically protected sites



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## Rationale

- PEP has been effective in occupational settings
  - 1997 study of healthcare workers exposed to HIV infected blood who took zidovudine within 4 hours of exposure reduced risk of HIV acquisition by 81%
- Perinatal prevention
  - Antiretroviral treatment of mother during pregnancy and delivery, PEP for baby has significantly decreased transmission of HIV



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## Animal Studies

- Macaque Studies
  - Inoculation of simian immunodeficiency virus (SIV)
    - Tenofovir decreased risk of seroconversion
      - Greatest reduction if started early and continued for 28 days
  - Intravaginal inoculation of HIV-2
    - Tenofovir prevented seroconversion in all 8 female macaques when started within 12 to 36 hours



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## nPEP Steps

1. What is the HIV status of the exposed person?
2. Does the source of the exposure have or is likely to have HIV infection?
3. What is the risk of HIV acquisition related to the exposure?
4. When the the exposure occur?




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## Estimated Per-Act Probability of Acquiring HIV from an Infected Source

Type of Exposure	Risk per 10,000 Exposures
<b>Parenteral<sup>1</sup></b>	
Blood Transfusion	9,250
Needle-sharing during injection drug use	63
Percutaneous (needle-stick)	23
<b>Sexual<sup>2</sup></b>	
Receptive anal intercourse	138
Insertive anal intercourse	11
Receptive penile-vaginal intercourse	8
Insertive penile-vaginal intercourse	4
Receptive oral intercourse	low
Insertive oral intercourse	low
<b>Other<sup>3</sup></b>	
Biting	negligible <sup>4</sup>
Spitting	negligible
Throwing body fluids (including semen or saliva)	negligible
Sharing sex toys	negligible

<http://www.cdc.gov/hiv/policies/law/risk.html>

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## Indications for Starting nPEP

1. Nonoccupational exposure to blood, genital secretions or other potentially infected body fluids from a person with known HIV infection
  - If HIV status is unknown, evaluate case-by-case, ideally with expert consultation
2. The exposure represents a substantial risk for HIV transmission
3. The person seeks care within 72 hours of exposure




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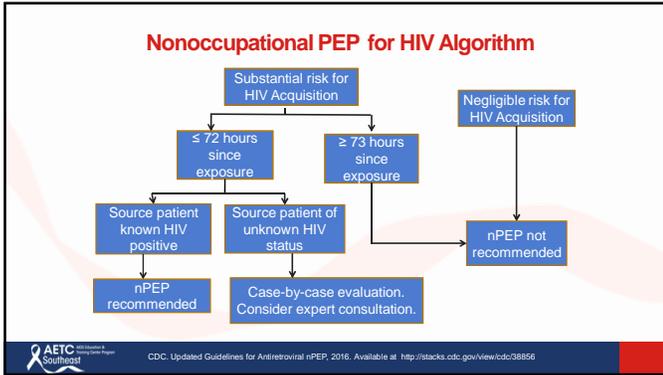
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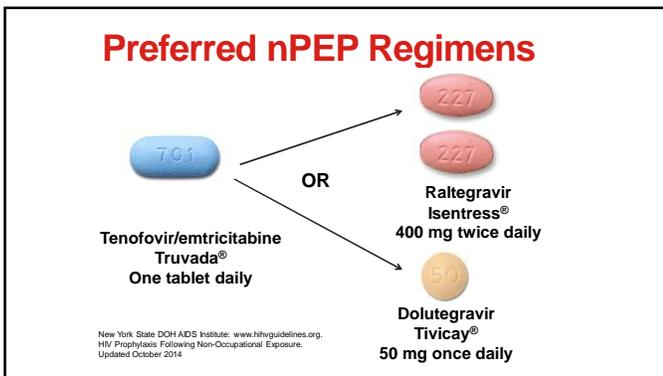
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### Tenofvir/emtricitabine (Truvada®)

- Take with or without food
- Do not use for PEP in patients with estimated creatinine clearance (CrCL) < 60 mL/min
- Adverse effects
  - Flatulence
  - Headache
  - Renal insufficiency
  - Rarely, fanconi syndrome

AETC Southeast | CDC. Updated Guidelines for Antiretroviral nPEP, 2016. Available at <http://stacks.cdc.gov/view/cdc/38856>

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### Raltegravir (Isentress®)

- Take with or without food twice daily
- Interactions with polyvalent cations
  - Avoid aluminum or magnesium containing antacids
  - Can take with calcium carbonate antacids
- Adverse effects
  - Diarrhea
  - Nausea
  - Headache
  - Rash (rare)



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### Dolutegravir (Tivicay®)

- Take with or without food once daily
- Interacts with polyvalent cations
  - Can take with calcium or iron supplements if taken with food
  - Take 2 hours before or 6 hours after other polyvalent cations
- Adverse effects
  - Headache
  - Insomnia
  - Rash/hypersensitivity reaction



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### Alternative nPEP or PEP in Renal Disease

- Alternative PEP
  - Tenofovir/emtricitabine (Truvada®) + darunavir (Prezista®) + ritonavir (Norvir®)
- If creatinine clearance < 60 mL/min
  - Substitute zidovudine + lamivudine dose adjusted for degree of renal insufficiency for tenofovir/emtricitabine



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### What if the Source Has an Undetectable HIV viral load?

- Exposure to source with undetectable serum viral load does not eliminate the possibility of HIV transmission or need for PEP and follow-up testing
  - Risk of transmission is thought to be very low, but not non-existent

AETC Southeast  
Kuhar DT, et al. Infect Control Hosp Epidemiol. 2013;34(9):875-882

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### Resistance in the Source Virus?

- If source patient is known or suspected to harbor drug-resistant HIV
  - Do not delay initiation of PEP
  - Consult with experts for PEP selection
  - Resistance testing at time of exposure is not practical, given length of time required for results
  - You can modify PEP regimen (with expert consultation) later if indicated

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### What if the Exposed Person is Pregnant?

- PEP is not contraindicated for pregnant women
- Pregnancy has been documented to increase susceptibility to HIV infection through sexual activity

CDC. Updated Guidelines for Antiretroviral nPEP, 2016. Available at <http://stacks.cdc.gov/view/cdc/38856>

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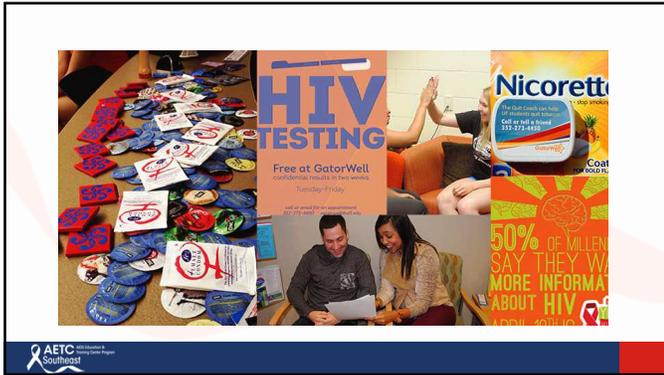
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## Clinician Consultation Center

**PrEP: Pre-Exposure Prophylaxis**



**Clinically supported advice on PrEP for healthcare providers**

Use the most clinically supported PrEP data, including how counseling about PrEP is an important part of a prevention program in communities where HIV prevalence is high or rising.

**Call for a Phone Consultation**

888.846.7227 or 888.846.7227 (toll-free, 24 hours a day)

**PEP: Post-Exposure Prophylaxis**



**Timely answers for urgent exposure management**

Use quick, expert guidance in managing both acute and chronic exposures to HIV. Includes PrEP and PEP, including best practices for when and how to start PrEP. Includes our online PrEP/PEP calculator, information on PrEP/PEP, and more. Includes our online PrEP/PEP calculator, information on PrEP/PEP, and more.

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