Children’s National

Pediatric Health Network

STI's and PrEP and PEP- Oh My!

Joseph Waters, MD

Adolescent Medicine Attending

Lorato Anderson, MD

Adolescent Care Pediatrician & HIV Specialist

August 22, 2024

A few notes about today's Grand Rounds

- All lines are muted throughout the presentation.
- Please use the Q&A to ask questions or make comments.
- We will be recording the session.
- Today's recording and materials will be posted to the PHN website three business days following the presentation:

https://pediatrichealthnetwork.org/

Today's Speakers

Joseph H. Waters, MD, FAAP
Adolescent Medicine Attending

Lorato Anderson, MD
Adolescent Care Pediatrician
& HIV Specialist

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Learning Objectives:

- Review sexual health of adolescents and young adults (AYA) and how to take an inclusive, comprehensive sexual history
- Discuss evolving landscape of STI prevalence in AYA and identify screening and treatment recommendations
- Define new STI prevention methods for bacterial STI's (DoxyPEP)
- Recognize HIV prevention modalities of PrEP & PEP

Overview

Evolving Landscape of STI Prevalence

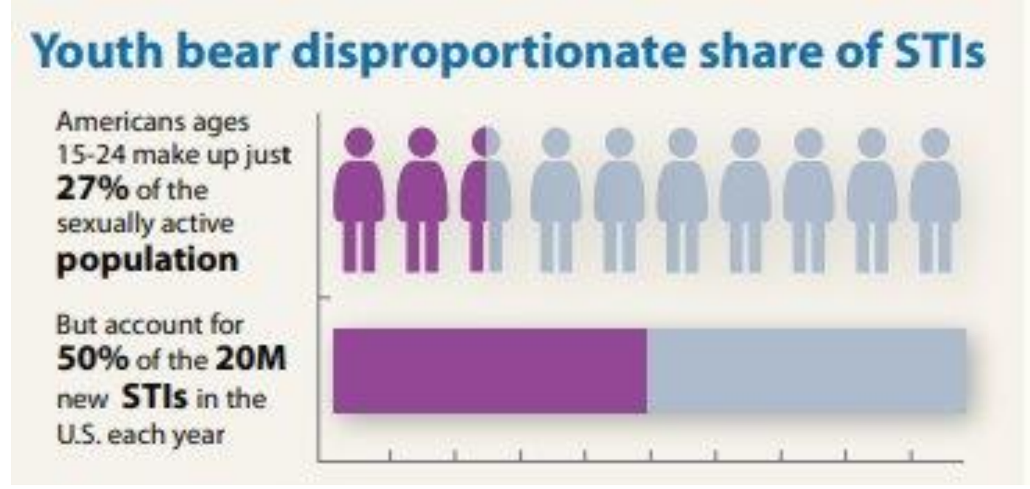
The Percentage of High School Students Who:[*]	2013 Total	2015 Total	2017 Total	2019 Total	2021 Total	2023 Total	Trend (All Years Available)	2-Year Change (2021-2023)
Ever had sex	47	41	40	38	30	32		
Had four or more lifetime sexual partners	15	11	10	9	6	6		
Were currently sexually active	34	30	29	27	21	21		
Used a condom during last sexual intercourse[†]	59	57	54	54	52	52		
Used effective hormonal birth control[‡]	–	–	–	–	33	33	–	
Were ever tested for HIV	13	10	9	9	6	7		
Were tested for STDs during the past year[§]	–	–	–	9	5	6		

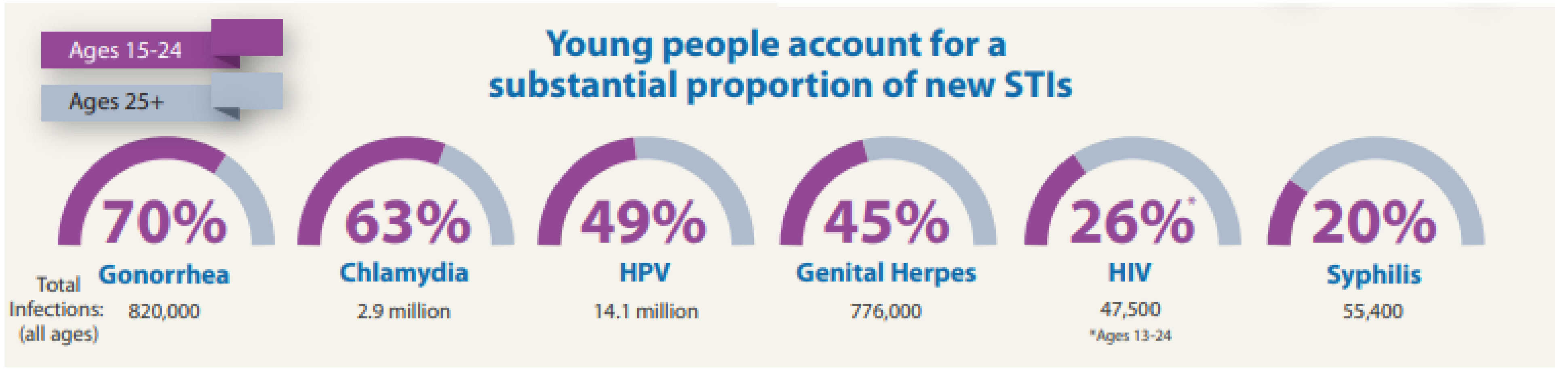
In 2023 (as compared to past 10 yrs),

- % of high school students ever sexually active is decreasing and less overall currently sexually active (i.e. they endorses sex with at least one person during the past three months)

- No signigicant change in condom usage
- Suboptimally screened
- Disproportionally represent higher prevlance of disease

Evolving Landscape of STI Prevalence





Evolving Landscape of STI Prevalence

Unique factors place youth at risk

Insufficient Screening
Many young women don't receive the chlamydia screening CDC recommends

Confidentiality Concerns
Many are reluctant to disclose risk behaviors to doctors

Biology
Young women's bodies are biologically more susceptible to STIs

Lack of Access to Healthcare
Youth often lack insurance or transportation needed to access prevention services

Multiple Sex Partners
Many young people have multiple partners, which increases STI risk

Sexual Health of Adolescents and Young Adults

Sexual History Collection

- Occurred in less than 1/3 of emergency department visits
- Occurred in only 64% of visits involving an STI*-related complaint
- 76% of primary care providers collect some component of sexual history, but few collect a comprehensive sexual history

Sexual History Taking Can…

- Promote patient engagement in prevention and care
- Satisfy patients, who overwhelmingly want clinicians to talk to them about sexual health

GOALS Framework for Sexual History Taking in Primary Care

Designed to streamline the sexual history conversation and elicit information most useful for identifying an appropriate clinical course of action.

Considers obtaining a sexual history as an intervention that can:

- Increase rates of routine HIV/STI screening
- Increase rates of universal biomedical prevention and contraceptive education
- Increase patients' motivation for and commitment to positive sexual health behavior
- Enhance the patient-care provider relationship, making it a lever for sexual health specifically and overall wellness

Source: Golub (2023)

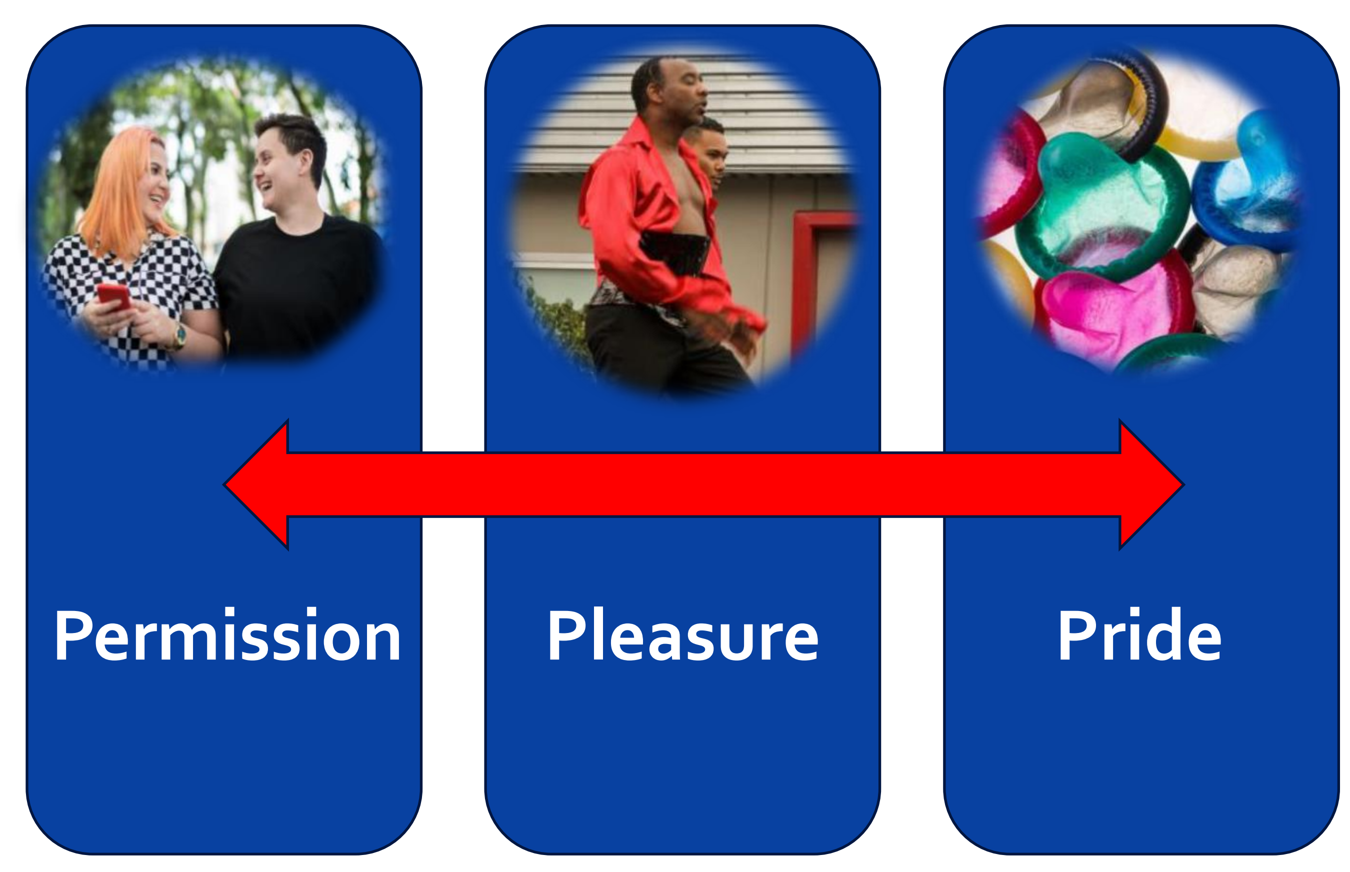
GOALS framework

1. Give a preamble that emphasizes sexual health
2. Offer opt-out HIV/STI testing and information
3. Ask an open-ended question
4. Listen for relevant information and fill in the blanks
5. Suggest a course of action

Time = it takes less than 1 minute to complete four of the five components

5P's Approach – Centers for Disease Control and Prevention

5P's PLUS (5P+)



Screening and Treatment Recommendations

Context of screening recommendations

Evidence-based guidelines for asymptomatic, sexually active adolescents and adults in areas of average epidemiological risk

Additional risk factors to consider:

1. Type of clinic practice
2. Prevalence of disease
3. Epidemiologic data
4. Sexual practices and behaviors of patient

CDC Recommended STI Screening

Assigned females at birth, sexually active, < 25 years of age

- Annual screening: *Chlamydia trachomatis, Neisseria gonorrhea, HIV*
- High risk: RPR

Assigned males at birth, insertive penile sex w/persons with vagina

- Annual screening: *HIV*
- High prevalence: Annual *Chlamydia trachomatis, Neisseria gonorrhea*

CDC Recommended STI Screening

Men who have sex with men, receptive anal sex

- Annual screening: *Chlamydia trachomatis, Neisseria gonorrhea, HIV, RPR* at sites of contact (urethra, rectum, pharynx)
- High risk: Every 3-6 months

Persons living with HIV:

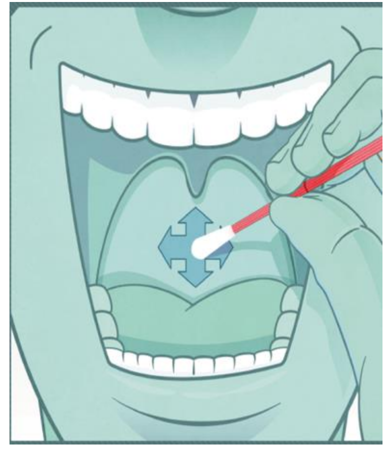
- Annual screening: *Chlamydia trachomatis, Neisseria gonorrhea, RPR*

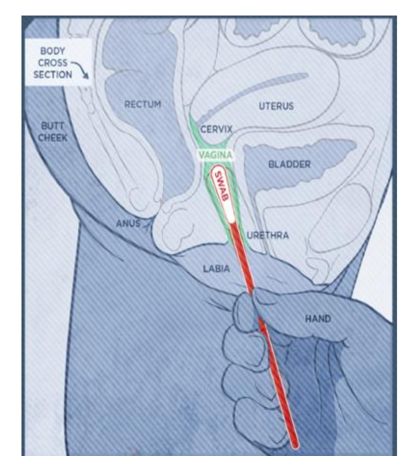
What should we be doing in practice?

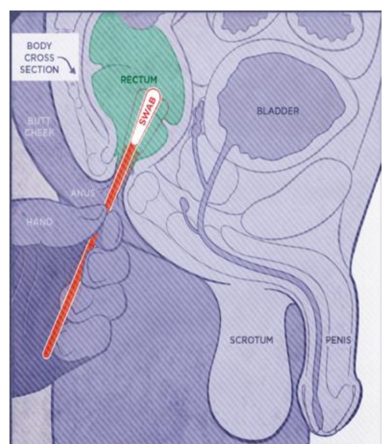
1. "Triple Site" Neisseria gonorrhea & Chlamydia trachomatis Nucleic Acid Amplification Test (NAAT)
   - Throat swab
   - GU sample (urine or cervical swab)
   - Rectal swab
2. Serum 4th generation HIV (HIV1/2 Antibody)
3. Serum RPR
4. Trichomonas PCR
   - Urine or cervical swab

*evidence supports greater sensitivity for vaginal swabs over urine collection

Triple Site Testing







STI Treatment

Chlamydia Treatment (different 1st line & longer duration of treatment)

First line treatment: Doxycycline 100mg BID x 7 days

Alternative treatment: azithromycin 1 gm orally in a single dose

Trichomonas Treatment

Women: Metronidazole 500mg orally 2x/day x 7days (longer duration of therapy)

Men: Metronidazole 2grams orally in single dose

Gonorrhea Treatment

Ceftriaxone (monotherapy & higher dose)

- **500 mg IM dose of ceftriaxone***

***1 gram IM dose for persons weighing ≥150 kg (300 lbs)**

Chlamydia coinfection

- Oral doxycycline 100 mg BID x 7 days

Update to CDC's Treatment Guidelines for Gonococcal Infection, 2020. MMWR 69(50);1911–1916.
https://www.cdc.gov/mmwr/volumes/69/wr/mm6950a6.htm?s_cid=mm6950a6_w

Test of Cure vs. Test of Reinfection

Retesting 3 months after diagnosis of chlamydia, gonorrhea, or trichomoniasis can detect **repeat** infection and potentially enhance population-based prevention.

Test of cure recommended for oropharyngeal gonorrhea

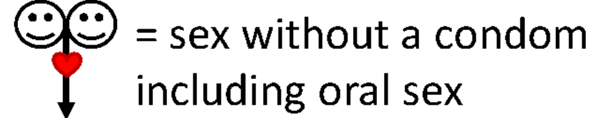
Update to CDC's Treatment Guidelines for Gonococcal Infection, 2020. MMWR 69(50);1911–1916.
https://www.cdc.gov/mmwr/volumes/69/wr/mm6950a6.htm?s_cid=mm6950a6_w

STI Prevention

Doxycycline Post-Exposure Prophylaxis (DoxyPEP)

- **What**: Off-label use of Doxycycline 200 mg (2 x 100mg pills)
- **Who**: MSM and transgender women having condomless sex — oral, anal or vaginal/front-hole sex when a condom is not used for the entire time
- **When**: Taken within 24-72 hours after condomless sex
  - Take as often as daily when having condomless sex but do not take more than 200 mg (two 100 mg pills) in a 24-hour period.
- **Why**: Reduced incidence of gonorrhea, chlamydia and syphilis

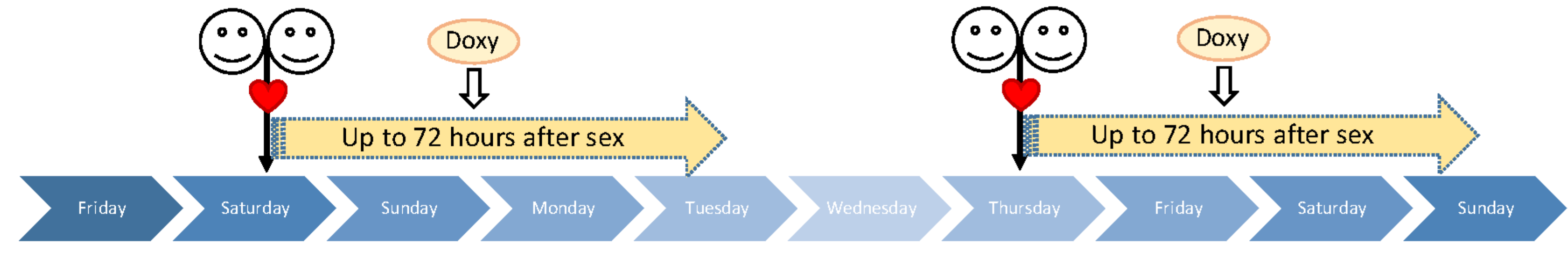
Doxy PEP – How to Take



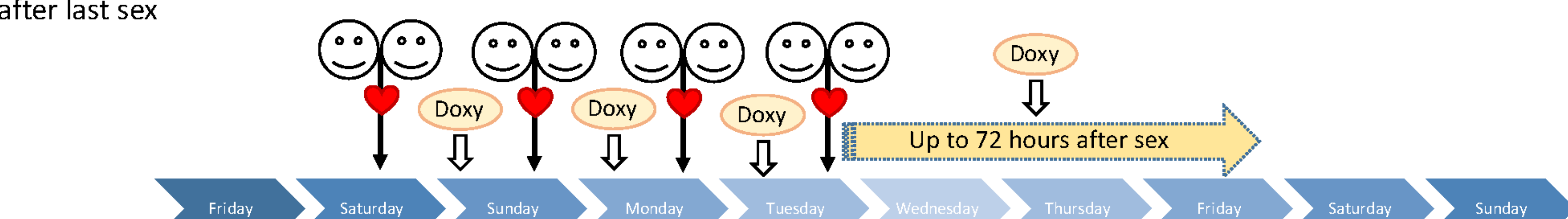
Two 100 mg pills of doxycycline ideally <u>within 24 hours</u> but no later than 72 hours after condomless oral, anal or vaginal sex

Example: Sex on Sat; take dose of doxy by Tues

Example: Sex on Thursday; take dose of doxy by Sunday



Example 2: Daily (or more) sex Sat-Tues; take daily dose of doxy and last dose within 24 hours *but not later than 72 hours* after last sex



***No more than* 200 mg every 24 hours**

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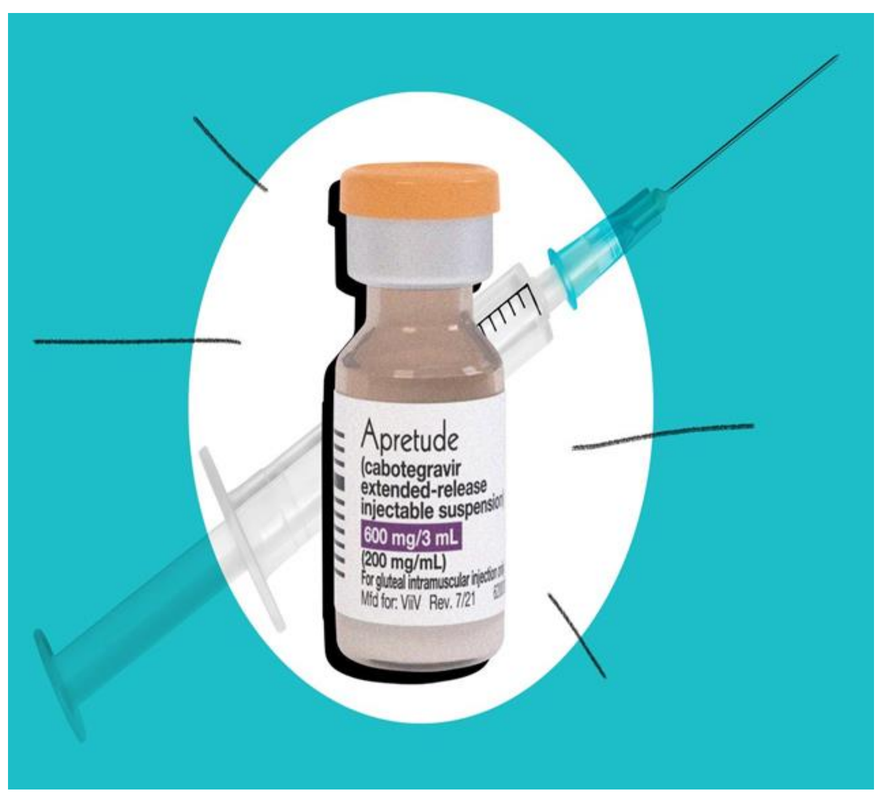
HIV Prevention

HIV Pre-Exposure Prophylaxis

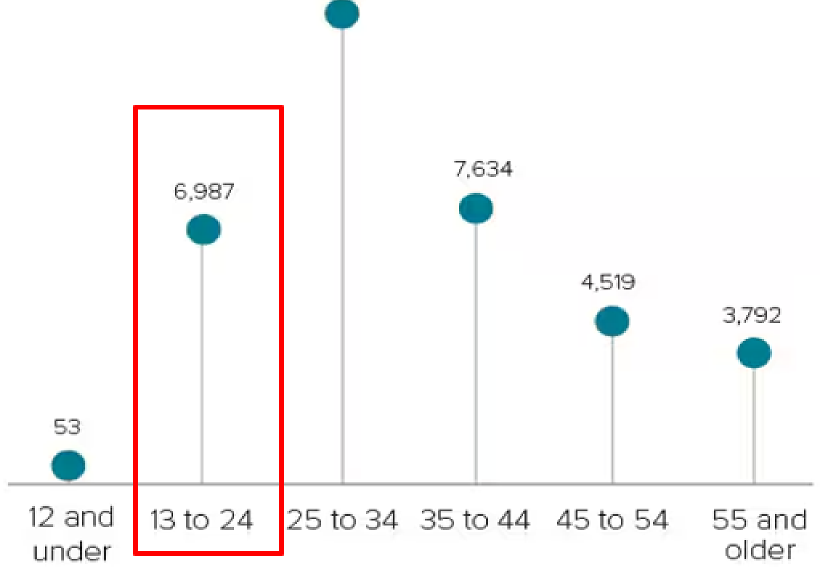


Why is PrEP important in pediatrics

- PrEP reduces the risk of getting HIV from sex by about 99% *when taken as prescribed*.
- In 2023, 8 patients were referred to Special Immunology Services (SIS) clinic with newly diagnosed HIV that was sexually transmitted:

  16-21yo, 7 male, 1 female, 3 MSM, 2 bisexual, 3 heterosexual

- In 2021, people aged 13–24 years old accounted for 19% of all new HIV diagnoses in the United States (CDC, 2023).



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Who is eligible for PrEP?

- HIV-positive sexual partner *with an elevated viral load*
- History of inconsistent or no condom use
- Bacterial STI in past 6 months
- Persons who inject drugs and/or share injection equipment
- High HIV prevalence area and/or high HIV prevalence sexual network
- Multiple of sexual partners
- Exchanging sex for drugs or money
- History of multiple courses of PEP
- **Persons who request it**
- **Normalize discussions about PrEP before patients become sexually active**

PrEP Options

Truvada:	Descovy:	Cabotegravir:
200mg Emtricitabine-300mg Tenofovir disoproxil fumarate	200mg Emtricitabine-25mg Tenofovir alafenamide	**Vocabria:** 30mg tablet **Apretude:** 600mg/3ml XR gluteal IM injection
FTC/**TDF**	FTC/**TAF**	CAB
1 pill once a day	1 pill once a day	1 pill once a day or injection every 2 months
Generic equivalent available	No generic	No generic
≥ 35kg	≥ 35kg	≥ 35kg
CrCl ≥ 60	CrCl ≥ 30	Any CrCl
Approved for males and females	Not approved for individuals assigned female at birth	Approved for males and females

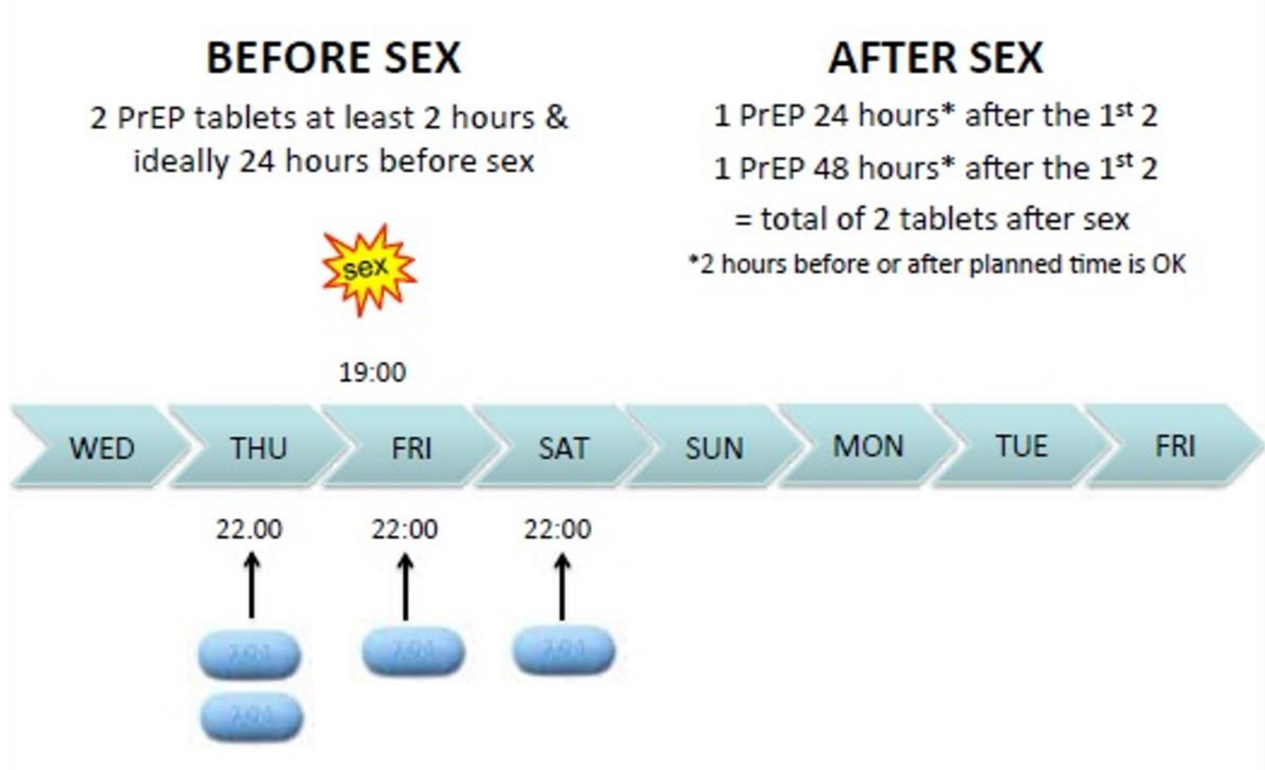
Labwork

Baseline	Every 3mo	Every 6mo	Every 12mo	*Apretude
• HIV test • STD testing • Hep B (HBsAg, HBcAb, HBsAb) • Hep C if MSM, TGW or PWID • CrCl • Pregnancy test • Lipid panel if starting Descovy * Sxs of acute HIV: LAD, fever, fatigue, weight loss, diarrhea, night sweats	HIV testing	CrCL if baseline CrCl was <90	CrCl if baseline CrCl was >90	• HIV testing every 2 months • STI testing every 4 months
	STI testing (MSM & TGW)	STI testing	Lipid panel and weight if on Descovy	
			Hep C if MSM, TGW or PWID	

PrEP Choice	Formulation	Dosing Frequency	Gender	CrCl	Weight	Baseline labs	Every 3mo	Every 6mo	Every 12mo
Truvada	200mg Emtricitabine-300mg Tenofovir disoproxil fumarate *Generic available*	Once daily *Or* 2-1-1	All genders	≥60	≥35kg	•4th gen HIV test • STD testing based on what sites are being used for sex •Hep B (HBsAg,HBs Ab & HBcAb) •Hep C Ab if MSM, TGW or PWID •CrCl •Pregnancy test •Lipid panel if starting Descovy * Sxs of acute HIV: LAD, fever, fatigue, weight loss, diarrhea, night sweats	•HIV testing •STD testing for MSM & TGW	•HIV & STD testing for everyone •CrCL if baseline was <90	•CrCL if baseline was >90 •Hep C for MSM, TGW and PWID •Lipid panel if on Descovy
Descovy	200mg Emtricitabine-25mg Tenofovir alafenamide *No generic*	Once daily	NOT approved for receptive vaginal sex	≥30					
Apretude	Get an HIV-1 viral load (HIV-1 RNA Quantitative PCR) then refer to SIS or other Apretude provider								

MSM: Men who have sex with men, TGW: Transgender women, PWID: Persons who inject drugs, LAD: Lymphadenopathy

On-Demand PrEP/ 2-1-1 PrEP



Remember:
On-demand PrEP is only for use of Truvada in MSM engaging in unprotected anal sex

Regimen can be adjusted if repeat potential exposure while still completing treatment

Upcoming PrEP Modalities

Medscape Medical News

No HIV Infections After Twice-a-Year PrEP

Brian Owens
July 05, 2024

Press Releases

June 20, 2024

Gilead's Twice-Yearly Lenacapavir Demonstrated 100% Efficacy and Superiority to Daily Truvada® for HIV Prevention

– First Phase 3 HIV Prevention Trial Ever to Show Zero Infections –

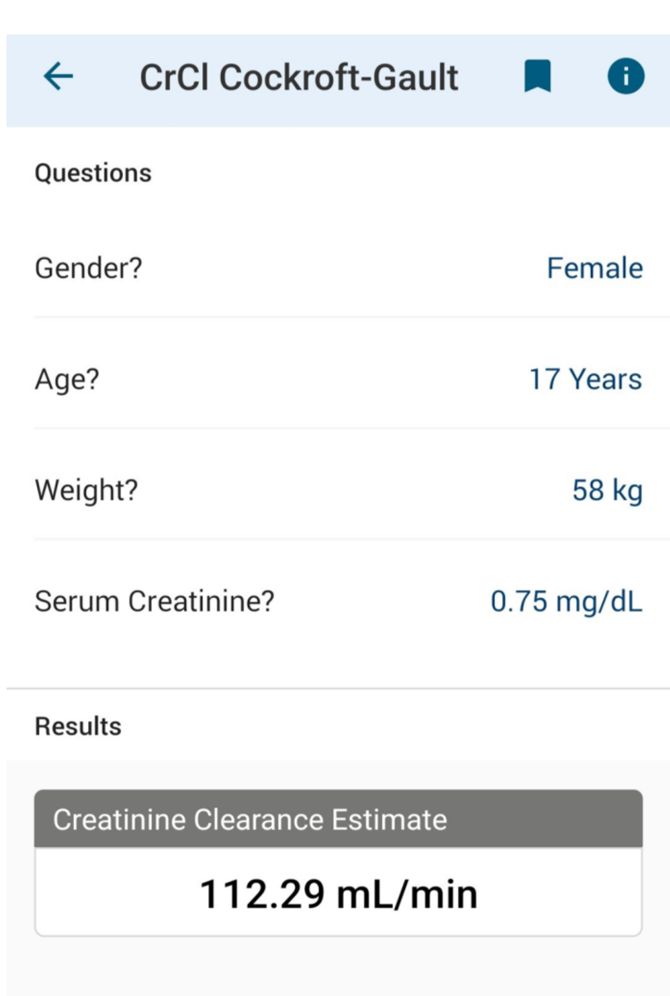
– Independent Data Monitoring Committee Recommended That Gilead Stop the Blinded Phase of the PURPOSE 1 Trial at Interim Analysis and Offer Open-Label Lenacapavir to All Participants –

FAQ

- Side effects?
  - *Truvada & Descovy- headache, fatigue, nausea, vomiting and diarrhea. Apretude- injection site redness, swelling and pain.*
- What drug interactions to be aware of?
  - *Carbamazepine, oxcarbazepine, phenobarbital, phenytoin & rifampin. Nephrotoxic medications together with Truvada or Descovy.*
- If you start someone on PrEP and they can't/don't make it in for a 3 month follow-up but request refills. Is this OK to refill if they can make it in for a 6 month follow-up?
  - *Yes, use shared decision making*
- Are there any risks to a patient taking PrEP if they become pregnant?
  - *Truvada and Apretude have been studied in pregnancy and are safe.*
- Do you counsel patients on what to do if they miss a pill?
  - *Ideal window period but can be taken later. Do not double up on pills.*
- When prescribing, do you run into insurance issues or cost – especially w/Medicaid?
  - *Insurance might want generic Truvada instead of brand name Truvada*
- Contraindications for prescribing PrEP?
  - *Person is HIV positive or drug interactions*

Streamlining PrEP in your EMR

Chlamydia and Neisseria (CTGC) PCR Rectum
Chlamydia and Neisseria (CTGC) PCR Throat
Chlamydia and Neisseria (CTGC) PCR Urine
Chlamydia and Neisseria (CTGC) PCR Vagina
Creatinine
Descovy 200 mg-25 mg oral tablet
emtricitabine-tenofovir disoproxil 200 mg-300 mg oral tablet
Gram Smear
Hepatitis B Core Ab Total (SO)
Hepatitis B Surf Ag Rflx to Cnfrm (SO)
Hepatitis C Antibody Total (SO)
HIV-1 Viral Load (SO)
HIV-1,2 (4th Gen) w/ Reflex Confirmation
Lipids, Total (Cholesterol, HDL, VLDL, LDL, Triglycerides)
RPR w/ Reflex Titer and FTA-ABS
Trichomonas vaginalis PCR Urine
Trichomonas vaginalis PCR Vagina
Truvada 200 mg-300 mg oral tablet



HIV Post-Exposure Prophylaxis

Who is eligible for PEP?

People who have had any of the following tissues come into contact with potentially contaminated body fluids from an HIV-infected source

- Vagina
- Rectum
- Eye
- Mouth or other mucous membrane
- Non-intact skin/perforated skin

Must be started within 72 hours of exposure event

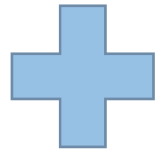
Who is NOT eligible for PEP?

- It has been >72 hours after exposure.
- People who engage in behaviors that result in frequent, recurrent exposures to HIV (ex: frequent IVDU, sex-work with frequent unprotected sex).

Prescribing

- The preferred PEP regimen is:

Truvada (200mg Emtricitabine-300mg Tenofovir disoproxil fumarate) once daily



Dolutegravir 50 mg once daily

- Take daily for 28 days after a high-risk exposure event.
- Advise patients to use condoms
- Side effects: nausea, abdominal pain, vomiting, diarrhea, headaches, fatigue
- Dolutegravir is **SAFE** in individuals who are pregnant or can become pregnant

Table 2. Recommended schedule of laboratory evaluations of source and exposed persons for providing nPEP with preferred regimens

Test	Source	Exposed persons			
	Baseline	Baseline	4–6 weeks after exposure	3 months after exposure	6 months after exposure
		For all persons considered for or prescribed nPEP for any exposure			
HIV Ag/Ab testing[a] (or antibody testing if Ag/Ab test unavailable)	✔	✔	✔	✔	✔[b]
Hepatitis B serology, including: hepatitis B surface antigen, hepatitis B surface antibody, hepatitis B core antibody	✔	✔	—	—	✔[c]
Hepatitis C antibody test	✔	✔	—	—	✔[d]
		For all persons considered for or prescribed nPEP for sexual exposure			
Syphilis serology[e]	✔	✔	✔	—	✔
Gonorrhea[f]	✔	✔	✔[g]	—	—
Chlamydia[f]	✔	✔	✔[g]	—	—
Pregnancy[h]	—	✔	✔	—	—
		For persons prescribed tenofovir DF+ emtricitabine + raltegravir or tenofovir DF+ emtricitabine + dolutegravir			
Serum creatinine (for calculating estimated creatinine clearance[i])		✔	✔	—	—
Alanine transaminase, aspartate aminotranferase		✔	✔	—	—
	For all persons with HIV infection confirmed at any visit				
HIV viral load	✔	✔[j]			
HIV genotypic resistance	✔	✔[j]			

Abbreviations: Ag/Ab, antigen/antibody combination test; HIV, human immunodeficiency virus; nPEP, nonoccupational postexposure prophylaxis; tenofovir DF, tenofovir disoproxil fumarate.

[a] Any positive or indeterminate HIV antibody test should undergo confirmatory testing of HIV infection status.

[b] Only if hepatitis C infection was acquired during the original exposure; delayed HIV seroconversion has been seen in persons who simultaneously acquire HIV and hepatitis C infection.

[c] If exposed person susceptible to hepatitis B at baseline.

[d] If exposed person susceptible to hepatitis C at baseline.

[e] If determined to be infected with syphilis and treated, should undergo serologic syphilis testing 6 months after treatment

[f] Testing for chlamydia and gonorrhea should be performed using nucleic acid amplification tests. For patients diagnosed with a chlamydia or gonorrhea infection, retesting 3 months after treatment is recommended.

- For men reporting insertive vaginal, anal, or oral sex, a urine specimen should be tested for chlamydia and gonorrhea.
- For women reporting receptive vaginal sex, a vaginal (preferred) or endocervical swab or urine specimen should be tested for chlamydia and gonorrhea.
- For men and women reporting receptive anal sex, a rectal swab specimen should be tested for chlamydia and gonorrhea.
- For men and women reporting receptive oral sex, an oropharyngeal swab should be tested for gonorrhea. (http://www.cdc.gov/std/tg2015/tg-2015-print.pdf)

[g] If not provided presumptive treatment at baseline, or if symptomatic at follow-up visit.

[h] If woman of reproductive age, not using effective contraception, and with vaginal exposure to semen.

[i] eCrCl = estimated creatinine clearance calculated by the Cockcroft-Gault formula; eCrClCG = [(140 − age) x ideal body weight] ÷ (serum creatinine x 72) (x 0.85 for females).

[j] At first visit where determined to have HIV infection.

Updated Guidelines for Antiretroviral Postexposure Prophylaxis After Sexual, Injection-Drug Use, or Other Nonoccupational Exposure to HIV—United States, 2016 (cdc.gov)

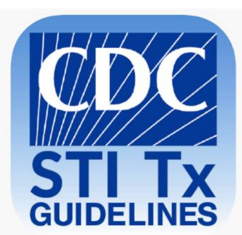
Clinical Tools

Digital Resources

PrEP:
Learn About PrEP | Preventing New HIV Infections | Clinicians | HIV | CDC
National Clinicians Consultation Center PrEPline at 1-855-448-7737 (9:00 AM – 8:00 PM EST)

PEP:
Learn About PEP | Preventing New HIV Infections | Clinicians | HIV | CDC

STIs:
Anonymous partner notification sites- TellYourPartner.org (allows you to select certain STDs), Anonymous STD Test Notification | Anonymous STD Text | STDCheck.com (does not specify which STD)



Clinician Resources: STI Management

General CDC STI Information
https://www.cdc.gov/std/default.htm

Centers for Disease Control and Prevention. Sexually Transmitted Infections Treatment Guidelines, 2021. MMWR Recomm Rep 2021;70(No. RR-4): 1-192.
https://www.cdc.gov/std/treatment-guidelines/toc.htm

Guide to Obtaining a Sexual History
https://nationalcoalitionforsexualhealth.org/tools/for-healthcare-providers

CNH is here to support you!

Adolescent Medicine Contacts

- **Appointments or Referrals: 202-476-5464**

Clinic Sites:

Shepard Park
7125 13th Place NW, Washington DC 20012

Shaw Metro
641 S St. NW, Washington DC 20001

SIS Contacts

- **SIS Attending On Call:** (202) 476-2083
- **Lorato Anderson, MD, AAHIVS:**
  Office: (202) 476-4378
  landerson1@childrensnational.org
- **Tierra Williams, MSN, APRN, FNP-C:**
  Office: (202) 476-1007
  tierra.williams@childrensnational.org
- Children's Confidential PrEP Hotline: 202-476-7779
- PrEPServicesSIS@childrensnational.org

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Question & Answer Session

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References:

https://npin.cdc.gov/publication/sexually-transmitted-infections-among-young-americans

https://www.hivguidelines.org/guideline/goals-framework/?mycollection=sexual-health

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8344968/

National Coalition of Sexual Health (https://www.nationalcoalitionforsexualhealth.org/tools/for-healthcare-providers/asset/Adolescent-Pocket-Card_May-2022.pdf?_gl=1*afxevv*_ga*ODcwNjM4OTk3LjE3MjI0MjkxNDk.*_ga_JGN7KNQRNM*MTcyNDMyNjI5My42LjEuMTcyNDMyNjM2Ny4wLjAuMA..)