

Table of contents

STIs

Evidence-Based Education

Updated November 2022

Quick reference

Background

Gonorrhea

General Prevention

Syphilis

Risk Factors

Trichomoniasis

Sexual History Taking

Herpes

Chlamydia

Additional Information



Quick Reference



- [Vaccinations](#)
- [Screening](#)
- [EPT](#)
- [Risk factors](#)
- [Sexual history taking](#)
- [Chlamydia](#)
- [Gonorrhea](#)
- [Syphilis](#)
- [Trichomoniasis](#)
- [Herpes](#)
- [HIV: PrEP and PEP](#)
- [Genital warts](#)
- [Chancroid](#)
- [PID](#)
- [Syndromic management](#)
- [CDC 2021 STI Treatment Guidelines](#)



Background



Definitions

- What is an STI?
- What is an STD?

8 pathogens are linked to the greatest incidence of STIs worldwide

- Which 4 pathogens are curable?
- Which 4 pathogens are incurable viral infections?

What are the broad complications of mother-to-child transmission of STIs?

Which STIs are directly linked to cancer?

Which STIs are major causes of PID and infertility in women?





General prevention

Which STIs have vaccines available, and who are they recommended for in Zambia?

What preventive measures can help decrease STI transmission?

What are the population-based screening recommendations for specific STIs?

If a patient tests positive for an STI, what should be done other than treating for that STI?





Risk Factors

Which groups are considered at-risk for STIs?

What individual factors increase the risk of acquiring an STI?

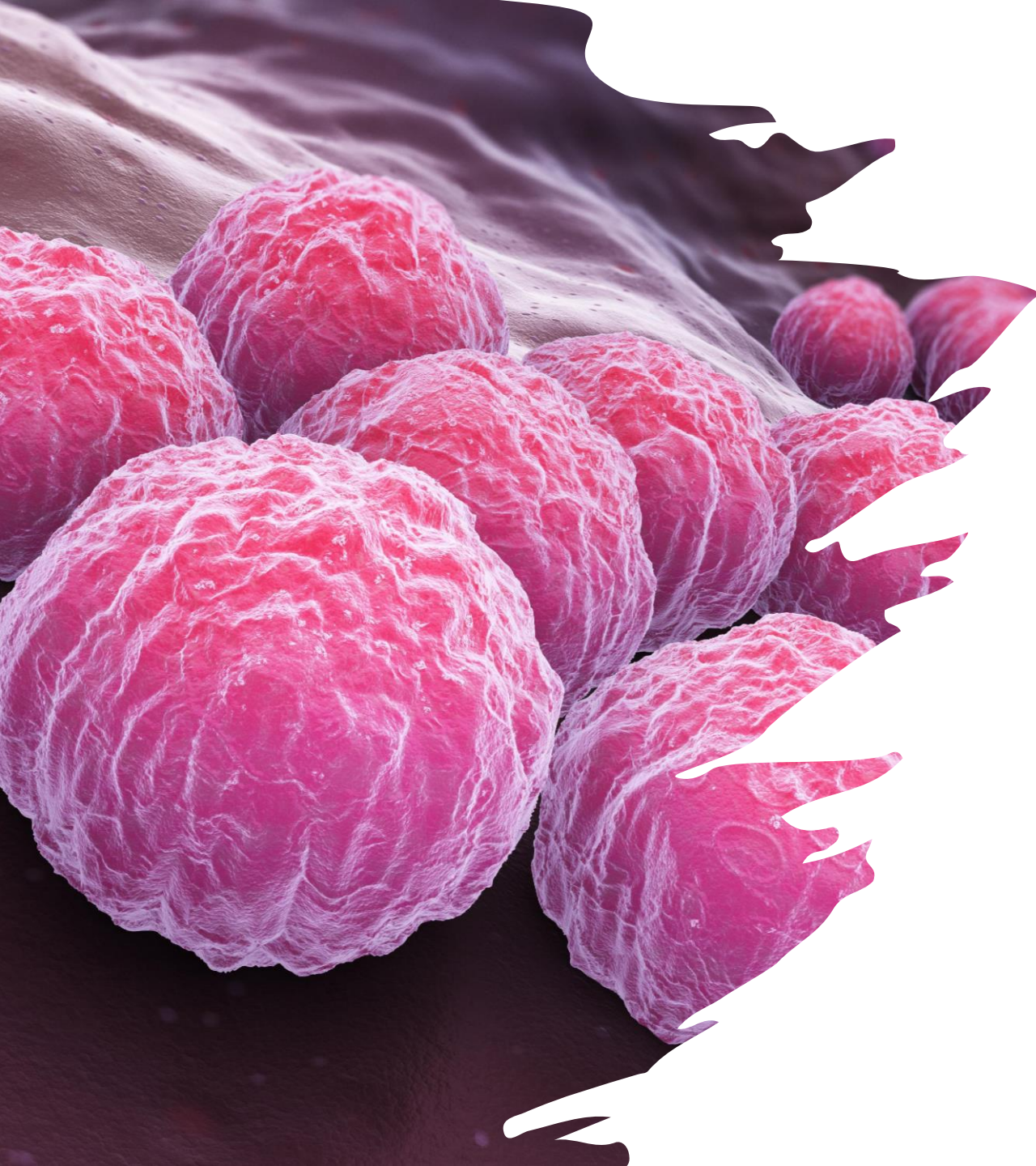


Sexual History Taking

What general questions should be included?

What are the 5Ps that should be considered when obtaining a thorough sexual history?





Chlamydia

What are the sequelae of chlamydia, particularly if untreated?

Who is at risk?

How does it present?

How is it diagnosed?

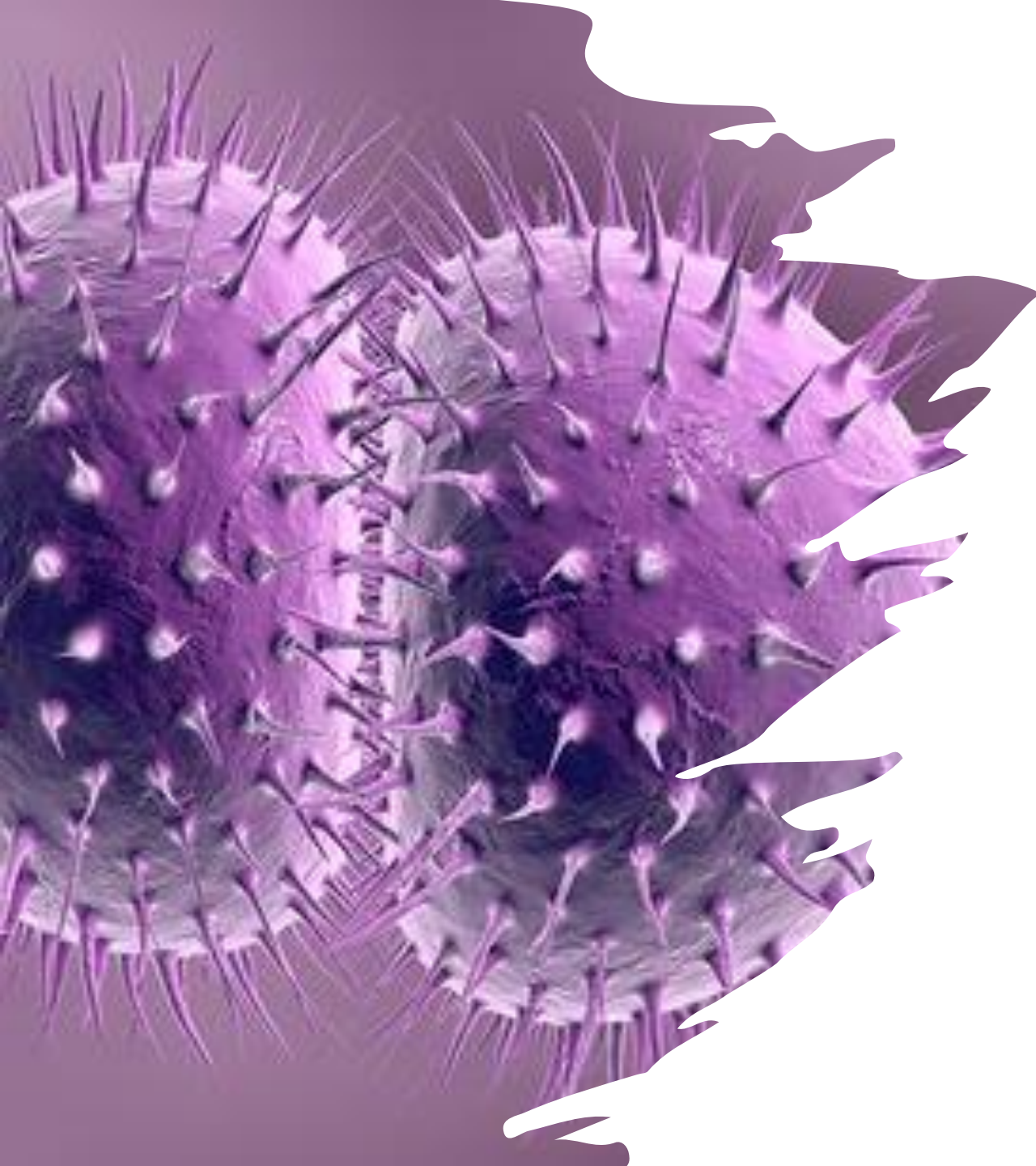
What is the recommended treatment?

What are the alternative treatments?

What follow-up is needed after treatment?

What chlamydia-specific preventive measures exist?





Gonorrhoea

What are the sequelae of gonorrhoea, particularly if untreated?

Who is at risk?

How does it present?

How is it diagnosed?

What is the recommended treatment?

What are the alternative treatments?

What follow-up is needed after treatment?

What gonorrhoea-specific preventive measures exist?





Syphilis

What are the sequelae of syphilis, particularly if untreated?

Who is at risk?

How does it present?

How is it diagnosed?

What is the recommended treatment?

What are the alternative treatments?

What follow-up is needed after treatment?

What syphilis-specific preventive measures exist?





Trichomoniasis

What are the sequelae of trichomoniasis, particularly if untreated?

Who is at risk?

How does it present?

How is it diagnosed?

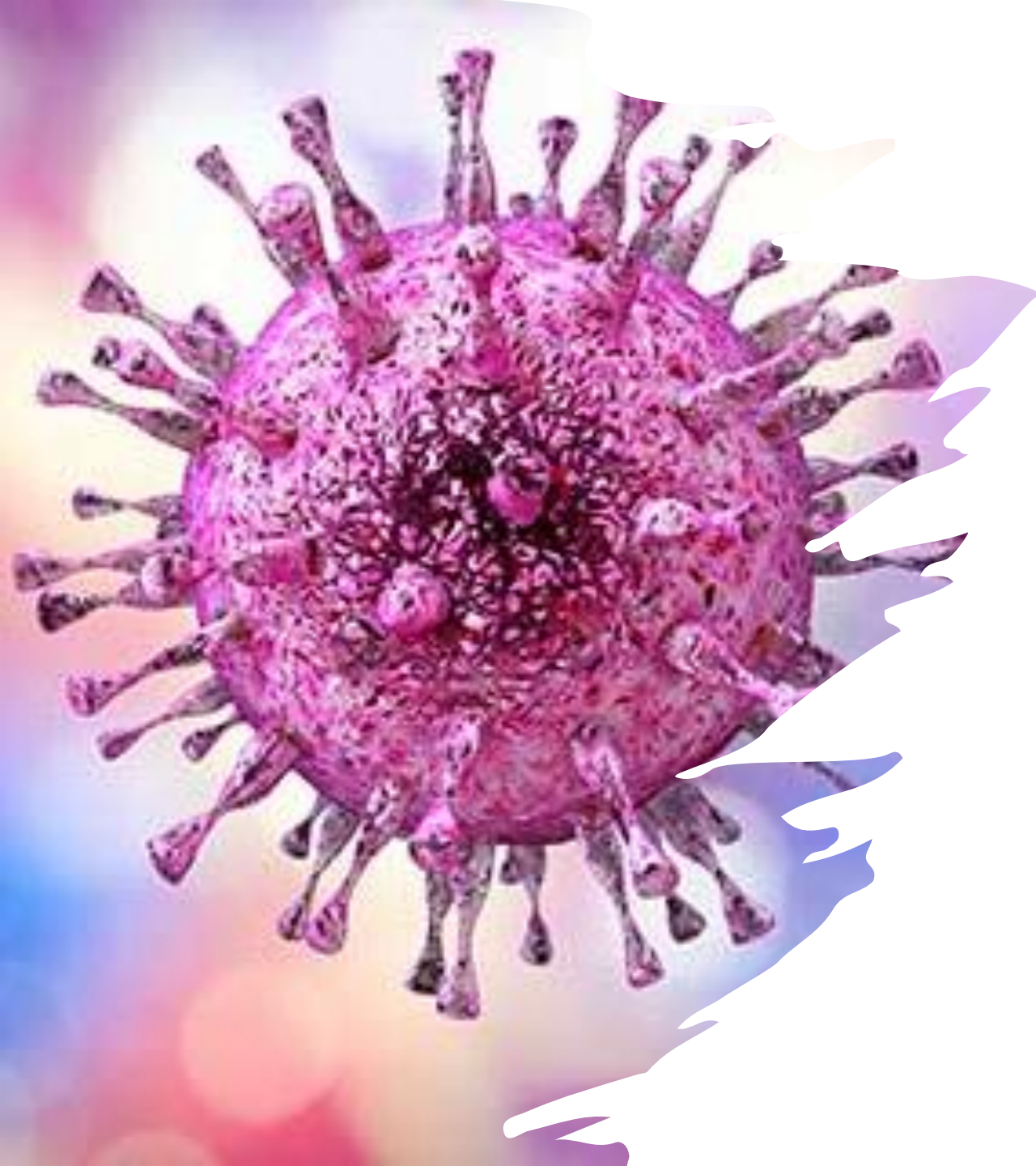
What is the recommended treatment?

What are the alternative treatments?

What follow-up is needed after treatment?

What trichomoniasis-specific preventive measures exist?





Herpes

What are the sequelae of herpes?

Who is at risk?

How does it present?

How is it diagnosed?

What is the recommended treatment?

What are the alternative treatments?

What follow-up is needed after treatment?

What herpes-specific preventive measures exist?



Additional Information

What is the causal organism, typical presentation, and recommended treatment for each of the following?

- [Genital warts](#)
- [Chancroid](#)
- [PID](#)

HIV: Which acts are the highest risk for transmission, and who qualifies for PreP and PEP?

- [Rate of acquisition by act](#)
- [Transmission prevention: PrEP and PEP](#)

Where molecular testing is not readily available, what is the recommended [syndromic management](#) for each of the following clinical presentations?

- Urethral discharge (penis)
- Vaginal discharge
- Lower abdominal pain among women
- Genital ulcer disease, including anorectal ulcers
- Anorectal discharge



Did You Know?

Definitions

- STI: A pathogen that causes **infection** through sexual contact
- STD: A recognizable **disease** state that has developed from an infection

4 curable pathogens

- Syphilis (bacterial)
- Gonorrhea (bacterial)
- Chlamydia (bacterial)
- Trichomoniasis (parasitic)

4 incurable viral infections

- Hepatitis B
- Herpes simplex virus (HSV)
- HIV
- Human papillomavirus (HPV)

Mother-to-child transmission of STIs:

- Stillbirth, neonatal death, LBW, prematurity, sepsis, neonatal conjunctivitis, congenital deformities.

Cancer-causing STIs:

- HPV: Cervical cancer, head/neck, anal
- HBV: Hepatocellular carcinoma
- HIV: Non-Hodgkin Lymphoma, cervical, lung, Kaposi Sarcoma and more

PID and infertility in women:

- Gonorrhea
- Chlamydia





Prevention

Vaccinations:

- HepB, HPV

Decrease transmission risk:

- Condom use, decrease number of partners, abstinence during STI treatment, male circumcision. Offer HIV PEP/PrEP for patients who qualify.

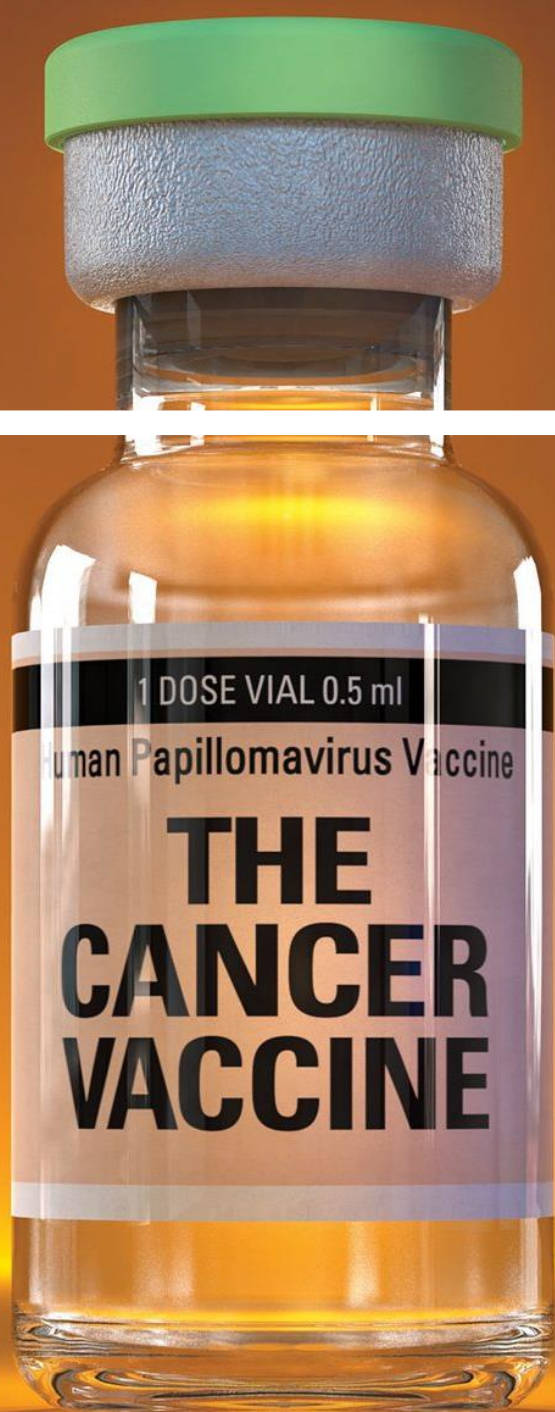
Population-based screening:

- HIV, syphilis, chlamydia

Recommendations for patients with an STI

- Screen for HIV and syphilis if positive for chlamydia/gonorrhea/trich
- Abstinence until completion of treatment and asymptomatic (or for 7 days after Tx if single-dose Tx)
- EPT if indicated





Vaccinations

Hepatitis B

- *Childhood*: 6 weeks, 10 weeks, 14 weeks
- *Adults*: DM, HIV+, alcoholism, Immunocompromised, asplenia, ESRD, heart/lung disease, chronic liver disease, MSM, healthcare workers

HPV

- 14 year-old females



KNOW
YOUR
STATUS
— Get Tested —

Screening

Based on current anatomy and sexual practices

Chlamydia

- All patients < 25yo who have a cervix
- > 25yo with a cervix and risk factors
- MSM: At least annually based on risk factors. Screen each anatomic site of sexual exposure – *urine-only screening misses up to 83% of infections among MSM.*

HIV

- Universal routine testing at all health service delivery points
- Pregnant/breastfeeding: Screen every 3 months regardless of risk or exposure

Syphilis

- Increased risk (HIV+, MSM, h/o incarceration or sex work, high-prevalence areas, pregnancy)



EPT



Treating sex partners of patients diagnosed with chlamydia or gonorrhea by providing prescriptions or medications to the patient to take to his/her partner *without the health care provider first examining the partner*

Prevents reinfection and further transmission





Risk Factors

Groups

- Sexually active adolescents/young adults
- MSM
- Transgender
- Mental health conditions
- Sex workers
- Incarcerated

Individual risk factors

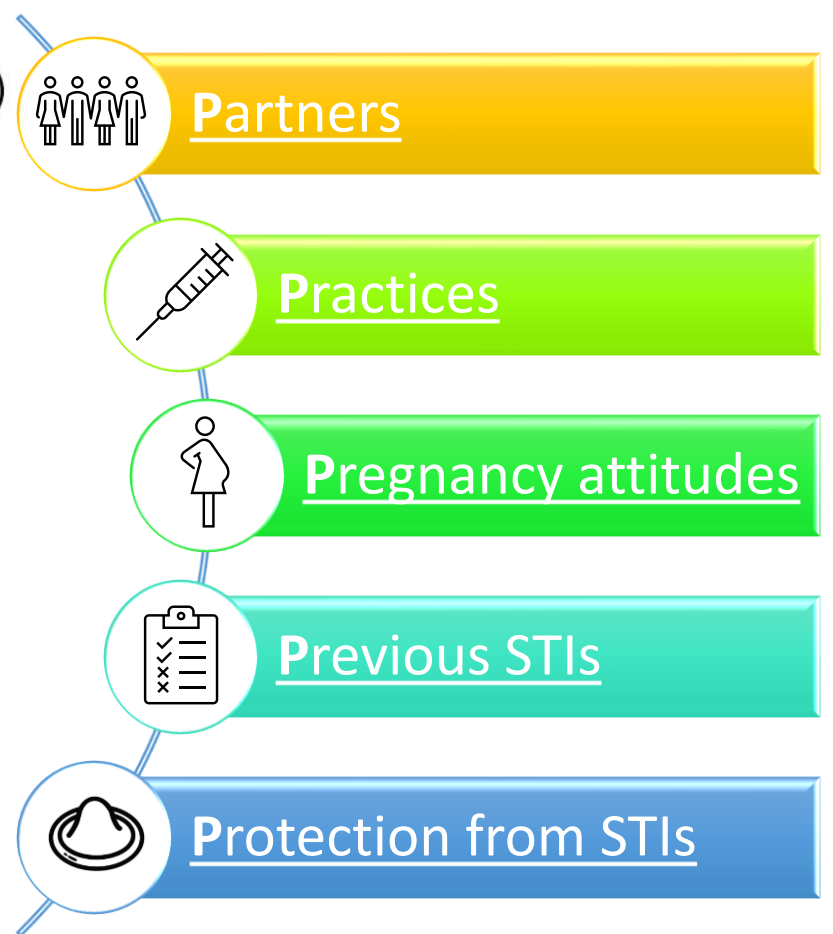
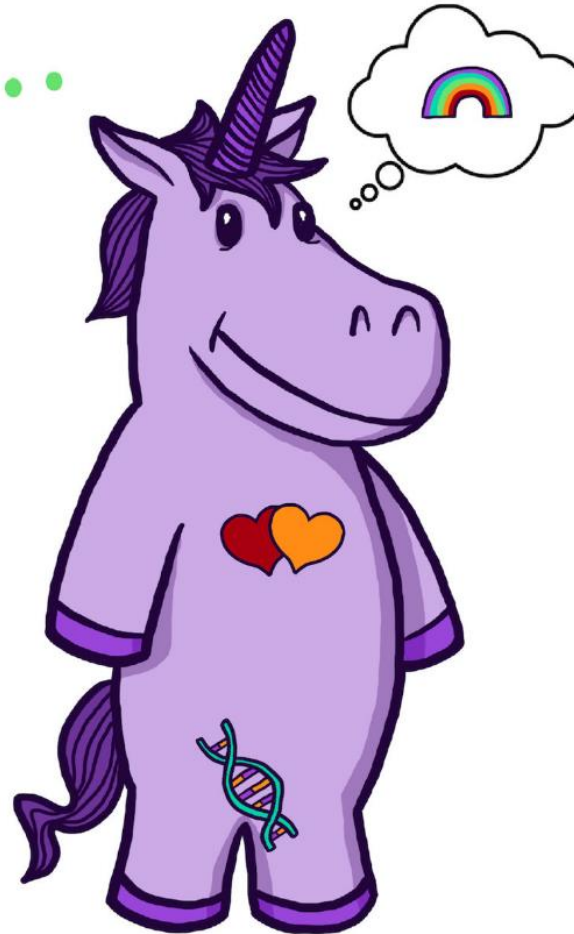
- Multiple sex partners
- Partner with a STI
- Early sexual experiences
- Engagement in exchange sex (e.g., for \$\$)
- Injection drug use



Sexual History Taking

General questions

- What are your pronouns?
- Do you identify as male, female, transgender, or something else?
- What sex were you assigned at birth?
- When was the last time you were sexually active?





Partners

What gender do your partners identify as?

How many sex partners have you had in the past *2 months*? Past *12 months*?

Is it possible that any of your partners in the past 12 months were sexually active with someone else while they were sexually active with you?



Practices

How do you have sex?

What parts do you use? (e.g., oral, rectal, vaginal/frontal receptive sex)





Pregnancy Attitudes

Would you like to have (more) children?

If so, when do you think that might be?

How important is it to you to prevent pregnancy?





Previous STIs

Have you ever had any STIs?





Protection from STIs

How do you protect yourself from STIs and HIV?

Have you ever injected drugs?

Have you ever been tested for STIs?



Chlamydia



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Sequelae: PID, ectopic pregnancy, infertility, easier transmission of new HIV infection, vertical transmission

Risk factors: Age < 25yo, current STI or partner w/ an STI, transactional sex, partner w/ concurrent partners, multiple partners, inconsistent condom use

Presentation: Asymptomatic common in both sexes.

- **GU** (*dysuria, frequency, AUB, postcoital bleeding, discharge, pruritus*), **anorectal** (*pruritus, constipation, pain, bleeding, discharge, tenesmus*), **lymphogranuloma venereum** (*swollen/tender/unilateral inguinal/femoral LN, self-limited ulcer/papule, rectal bleeding/discharge/pain, fever, tenesmus, constipation*), **perihepatitis** (*F, N/V, normal/slightly elevated AST/ALT, pelvic pain, RUQ pain*), **Reactive arthritis** (*aseptic arthritis, conjunctivitis, urethritis*). **Oropharyngeal rarely symptomatic.**

Diagnosis: NAAT most sensitive (first-stream urine or site-specific swabs).

- Self-collected vaginal and rectal swabs comparable to clinician-collected. +LE on urinalysis.

Treatment: 1st line is Doxycycline 100mg BID x 7d (Azithromycin 1g x 1 if pregnant)

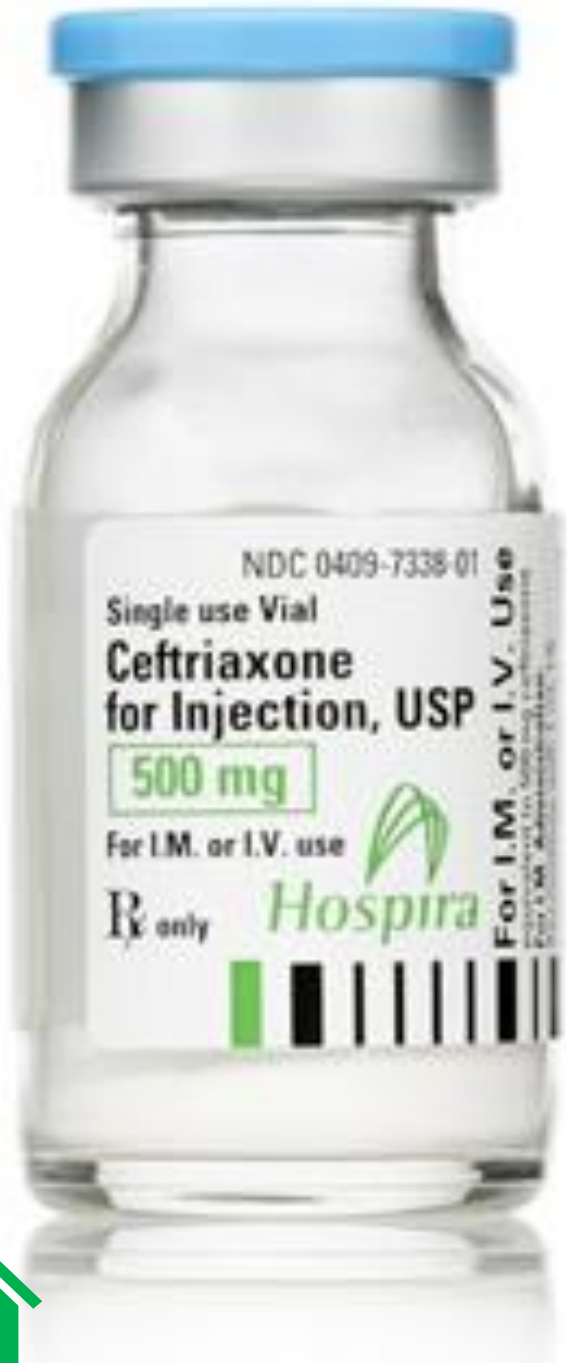
- Alternative: Azithromycin 1g x 1 or levofloxacin 500mg qd x 7d.

Follow-up: Test of cure not routinely recommended (high FPs), but test of reinfection 3 months after Tx is

- Retest 4 weeks after Tx IF: pregnant, nonadherence suspected, azithro used for rectal infection, Sx's persist, reinfection suspected.

Prevention/other: Screen if < 25yo with a cervix, MSM (at least annually – site-specific), other high risk. EPT with doxy for all partners during 60d preceding patient's onset of sx's or dx, OR most recent partner even if > 60d. Erythromycin ointment for all newborns. Offer HIV PrEP if MSM with rectal chlamydia and HIV-.





Gonorrhea

Sequelae: PID, ectopic pregnancy, infertility, easier transmission of new HIV infection, vertical transmission

Risk factors: Age < 25yo, current STI or partner w/ an STI, transactional sex, partner w/ concurrent partners, multiple partners, inconsistent condom use. *Personal history of STI, substance use (risk factor for MSM).*

Presentation: Asymptomatic common in both sexes.

- **GU** (*dysuria, frequency, AUB, postcoital bleeding, discharge, pruritus*), **anorectal** (*pruritus, constipation, pain, bleeding, discharge, tenesmus*), **lymphogranuloma venereum** (*swollen/tender/unilateral inguinal/femoral LN, self-limited ulcer/papule, rectal bleeding/discharge/pain, fever, tenesmus, constipation*), **perihepatitis** (*F, N/V, normal/slightly elevated AST/ALT, pelvic pain, RUQ pain*), **Reactive arthritis** (*aseptic arthritis, conjunctivitis, urethritis*). **Oropharyngeal** (*cervical lymphadenitis, exudates, sore throat*), **Disseminated** (*F/C, asymmetric polyarthralgia, oligoarticular septic arthritis, rash, tenosynovitis*).

Diagnosis: NAAT most sensitive (first-stream urine or site-specific swabs).

- Self-collected vaginal and rectal swabs comparable to clinician-collected. +LE on urinalysis.

Treatment: 1st line is Ceftriaxone 500mg IM x 1 (no longer cotreat with azithro). If > 150kg (331 lbs), dose is 1g.

- If chlamydial infection not excluded, cotreatment (doxy 100mg BID x 7d) is required

Follow-up: Test of cure not routinely recommended (high FPs), but test of reinfection 3 months after Tx is

- Retest 4 weeks after Tx IF: pregnant, nonadherence suspected, Sx's persist, reinfection suspected.
- If pharyngeal infection: test of cure at 7-14d (early testing increases FPs)

Prevention/other: EPT for all partners during 60d preceding patient's onset of sx's or dx, OR most recent partner even if > 60d. If partner unlikely to seek care/get IM ceftriaxone, single-dose cefixime (Suprax) 800mg po can be used as an alternative.



Syphilis



Sequelae: movement disorders, sensory deficits, dementia, paralysis, visual changes, blindness, hearing loss. Increased risk HIV acquisition and transmission.

Risk factors: HIV+, MSM, geography, history of incarceration or sex work, males < 29yo, race/ethnicity

Presentation and Treatment

Diagnosis

- **Nontreponemal test (RPR or VDRL):** usually (+) w/in 3 weeks of primary chancre development, resolve after previous infection. Quantify using titer (>1:4 suggests current infection). Used to monitor treatment response and determine presence of reinfection.
- **Confirm with treponemal test (TP-PA, EIA, CIA, or fluorescent treponemal Ab absorption):** Often (+) earlier than nontreponemal tests. Remain (+) indefinitely, cannot be used to detect reinfection.

Follow-up: Test for HIV in all cases of confirmed syphilis. Repeat serologic testing at 6 and 12mo after Tx. 4-fold ↓ in nontreponemal titer is indicative of cure, < 4-fold ↓ may suggest Tx failure.

Prevention/other

- **Screening:** All pregnant patients (first prenatal visit; repeat if high risk patient or area). All patients at ↑ risk (high-prevalence areas, HIV+, MSM, h/o incarceration or sex work). If HIV+ and MSM, screen more frequently (consider q3mo).
- If treating primary, secondary, early latent, or unknown duration with high titers (>1:32), partners need clinical and serologic evaluation to determine the [appropriate treatment](#).





Syphilis Presentation and Treatment



Stage		Timing	Clinical	Treatment	Other
Primary		10-90d after exposure	Painless chancre	<i>Penicillin G benzathine 2.4 million units IM x 1 dose</i>	Most infectious stages
Secondary		1-3mo after primary infection	Painless maculopapular rash (often face, trunk, palms/soles), arthralgias, condylomata lata, fatigue, generalized lymphadenopathy, HA, hepatosplenomegaly, myalgias, nephrotic syndrome, pharyngitis		
Latent	Early Latent	Up to 1 year of no symptoms	Asymptomatic Detectable only through serologic testing		
	Late Latent	> 1 year of no symptoms		Latent of unknown duration treated as late latent	
Tertiary		Year/decades after primary infection (develops in ~1/3 pt's with untreated latent)	Late neurosyphilis, CV syphilis, gummatous lesions, tabes dorsalis, general paresis	<i>IV Penicillin G 18-24 million units/d (3-4 MU q4hrs) x 10-14d</i>	Jarish-Herxheimer Reaction: Acute febrile reaction within 1 st 24 hours after initiation of any syphilis therapy (HA, F, myalgias) – reaction to tx, NOT a PCN allergy
Neurosyphilis		Any stage	Aseptic meningitis, hemiplegia, aphasia, seizures, general paresis, progressive dementia/seizures/psych symptoms, tabes dorsalis, CN palsies		



Trichomoniasis



Sequelae: Increased risk of HIV acquisition and transmission. Pregnancy – low BW, preterm birth.

Risk factors: Low SES or education level, multiple partners, other STIs, unprotected intercourse, drug use, smoking, history of incarceration, douching

Presentation: 70-85% asymptomatic (untreated may last months to years).

- Green/yellow frothy discharge, foul odor, vaginal pain/soreness. Men – urethritis, epididymitis, prostatitis.

Diagnosis

- Pelvic exam: inflammation, strawberry cervix
- Microscopy (wet mount): Motile, flagellated protozoa (51-65% SN).
- NAAT (endocervical, vaginal, or urine specimens): Recommended if symptomatic or high risk and wet mount negative (95-100% SN)

Treatment: 1st line Metronidazole

- Women: Metronidazole 500mg po BID x 7d
- Men: Metronidazole 2g po x 1
- Alternative: Tinidazole 2g po x 1

Follow-up: Test for other STIs (HIV, syphilis, gonorrhea, chlamydia). Test women for reinfection 3mo after treatment (high rate of recurrence), if using NAAT do not repeat w/in 3 weeks of treatment completion (can detect residual nucleic acid).

- Most recurrent infections are likely the result of reinfection

Prevention/other: Treat partners. Abstinence until partners are treated and symptom-free.

Herpes (HSV)



Sequelae: Lifelong infection with periodic reactivation. HSV-2 3-fold increased risk of HIV acquisition. Psychological burden. Urinary retention, aseptic meningitis, disseminated HSV, encephalitis, hepatitis, neonatal infection, PID, pneumonitis.

Risk factors: Female (2:1 F:M), hormonal contraception, BV, vaginal GBS colonization, # of lifetime partners, oral-genital contact, presence of other STIs

Presentation: 65-90% with genital HSV are unaware of its presence

- Single or clustered vesicles on genitalia, perineum, buttocks, upper thighs, or perianal areas – ulcerate before resolving.
- Primary infection: malaise, fever, lymphadenopathy. Subsequent outbreaks milder.

Diagnosis: NAAT of genital or other mucocutaneous lesions – more SN and faster than culture.

- Type-specific serologic testing considered IF: negative NAAT/culture, clinically diagnosed HSV w/o confirmation, partner w/ genital herpes.

Treatment

- Episodic: Initiate Rx with prodrome (pain, tingling, itching, burning) preceding outbreak or w/in 1d of lesion onset
- Suppressive (intermittent or continuous): Reduces symptom severity, duration, and recurrence. If HIV-, reduces risk of HSV transmission to partners.

Prevention: Inform partners. Consistent condom use. Abstain from sex with uninfected partners when active lesions or prodromal symptoms are present.

- Pregnancy: Acyclovir prophylaxis from 36 weeks until delivery. Elective c/s if active lesions.
- [USPSTF \(D\)](#): Do NOT screen asymptomatic patients with serologic testing.





HSV Treatment



First Clinical Episode of Genital Herpes

<i>Drug and dose</i>	<i>Frequency</i>	<i>Duration</i>
Acyclovir 400mg	3 times per day	7-10d
Famciclovir 250mg	3 times per day	7-10d
Valacyclovir (Valtrex) 1g	2 times per day	7-10d

Recurrent Genital Herpes: SUPPRESSIVE Treatment

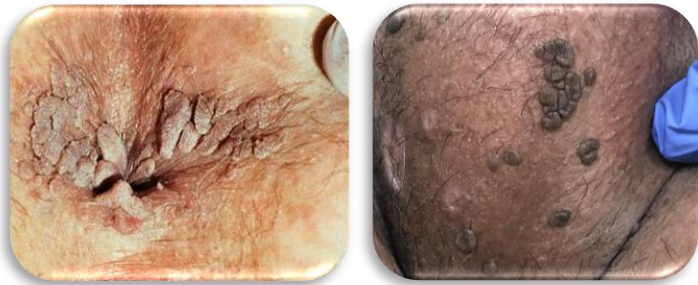
<i>Drug and dose</i>	<i>Frequency</i>
Acyclovir 400mg	2 times per day
Famciclovir 250mg	2 times per day
Valacyclovir (Valtrex) 500mg	Once per day
Valacyclovir (Valtrex) 1g	Once per day

Recurrent Genital Herpes: EPISODIC Treatment

<i>Drug and dose</i>	<i>Frequency</i>	<i>Duration</i>
Acyclovir 800mg	2 times per day	5d
Acyclovir 800mg	3 times per day	2d
Famciclovir 125mg	2 times per day	5d
Famciclovir 1g	2 times per day	1d
Famciclovir 500mg and 250mg	500mg x 1 (day 1), then 250mg BID x 2d (days 2,3)	3d
Valacyclovir 500mg	2 times per day	3d
Valacyclovir 1g	Once per day	5d



Genital Warts



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Caused by: HPV (90% by non-oncogenic types 6 and 11)

Presentation: Usually asymptomatic, but may be painful or pruritic

- Flat, popular, or pedunculated growths on genital mucosa

Treatment

- *Patient-administered*
 - **Imiquimod** (may weaken condoms): Wash with soap/water 6-10 hrs after application
 - 5% cream: once at bedtime, 3x/week x up to 16 weeks
 - 3.75% cream: once at bedtime, every night for up to 8 weeks
 - **Podofilox 0.5%**: Causes wart necrosis. 2x/d x 3d, then 4d of no therapy. Repeat cycle as necessary for up to 4 cycles.
 - Solution: Apply using a cotton swab
 - Gel: Apply using a finger
- *Clinician-administered*: Cryotherapy (liquid nitrogen) or surgical removal





Chancroid

Caused by: *H. ducreyi* – definitive Dx requires special culture media that is not widely available

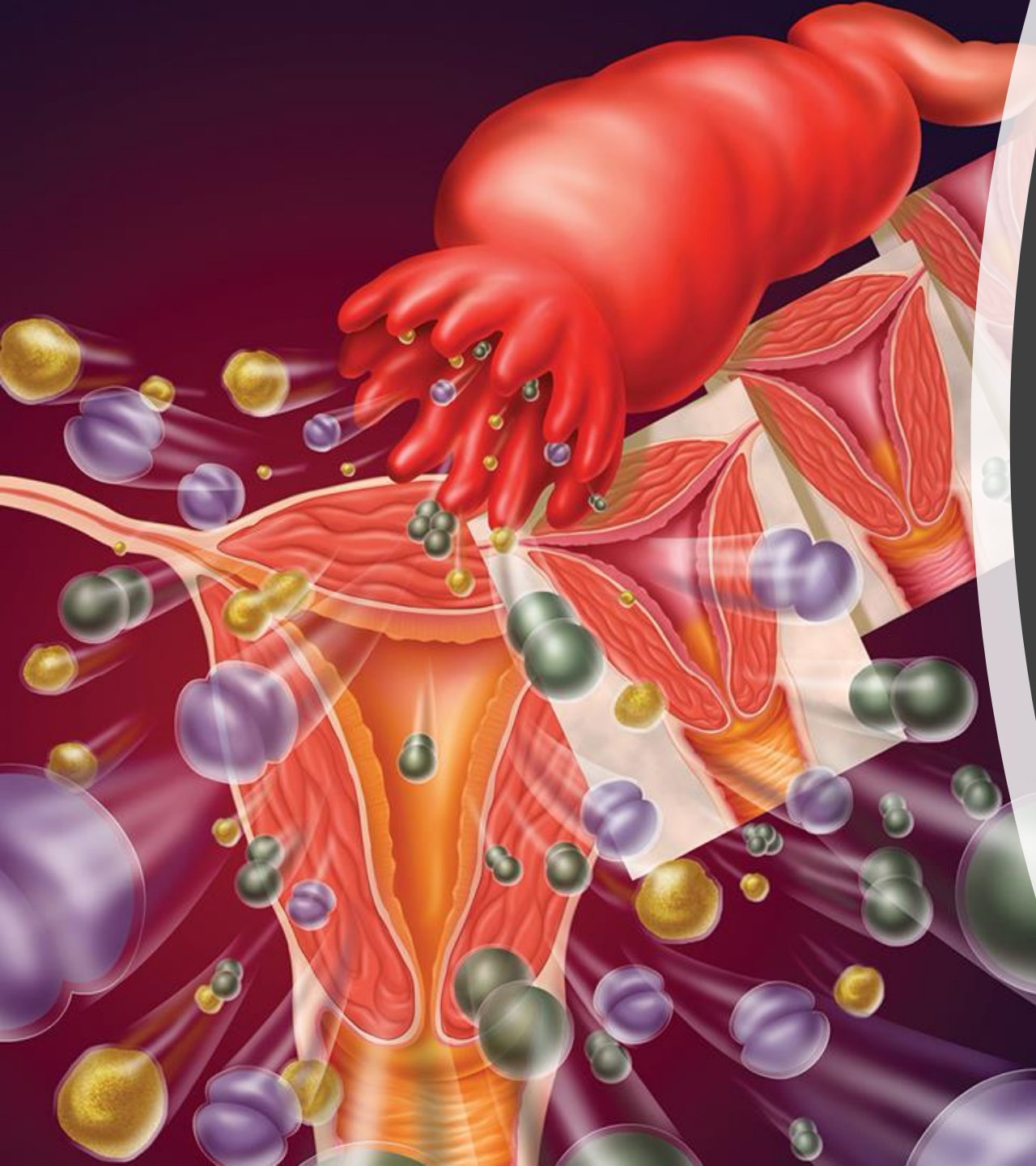
Presentation: ≥ 1 deep, *painful* genital ulcers + tender suppurative inguinal adenopathy (present in $< 50\%$) + no evidence of syphilis or herpes

Treatment (curative): 1 of the following

- Azithromycin 1g po x 1
- Ceftriaxone 250mg IM x 1
- Ciprofloxacin 500mg po BID x 3d
- Erythromycin 500mg po TID x 7d

Examine partners and treat if they had contact during the 10d preceding patient's symptom onset





PID

Definition: Upper female genital tract inflammatory disorders, including any combination endometritis, salpingitis, tubo-ovarian abscess, and pelvic peritonitis

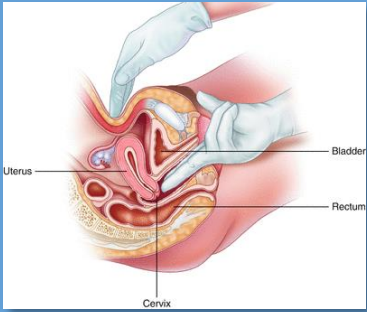
Caused by

- ~50% *N. gonorrhoea* and *C. trachomatis*
- Vaginal flora (anaerobes, *G. vaginalis*, *H. influenzae*, enteric gram-negative rods, *S. agalactiae*)
- Others: CMV, *T. vaginalis*, *M. hominis*, *U. urealyticum*

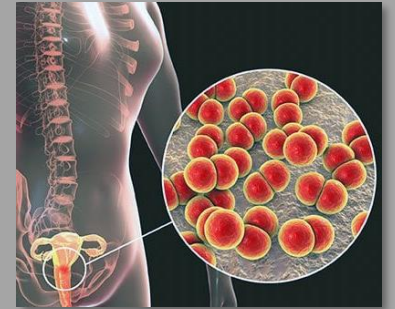
Presentation: Often subtle/nonspecific symptoms or asymptomatic

- ≥ 1 of 3 *minimum clinical criteria* present in sexually active young women with pelvic or lower abdominal pain and no alternative cause identified
- Cervical motion tenderness
- Uterine tenderness
- Adnexal tenderness
- *Additional criteria:* Tempe $> 38.3C$ (101F), abnormal cervical mucopurulent discharge or cervical friability, abundant WBCs on wet mount, elevated ESR/CRP, lab confirmed gonorrhea or chlamydia





PID Treatment



Recommended PID Treatment Regimens

Who?	Pathogens to Cover	Rx	Other Considerations
Recommended Parental Regimen			
Cannot exclude surgical emergency Tubo-ovarian abscess Pregnancy Severe illness, N/V, T > 38.5 Unable to follow or tolerate outpatient po No clinical response to po	<i>N. gonorrhoea</i>	Ceftriaxone 1g IV q24hrs PLUS	Consider transition to oral therapy within 24-48 hours of clinical improvement
	<i>C. trachomatis</i>	Doxycycline 100mg po or IV q12 hrs PLUS	
	Anaerobes, <i>T. vaginalis</i> , <i>BV</i>	Metronidazole 500mg po or IV q12hrs	
Recommended IM/Oral Regimen			
Mild-moderate acute PID	<i>N. gonorrhoea</i>	Ceftriaxone 500mg IM x 1 PLUS	If no response within 72 hours, re- evaluate Dx and switch to IV
	<i>C. trachomatis</i>	Doxycycline 100mg po BID x 14d PLUS	
	Anaerobes, <i>T. vaginalis</i> , <i>BV</i>	Metronidazole 500mg po BID x 14d	



Estimated HIV Acquisition Risk by Act



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



HIV: Transmission Prevention

	Indications		Medications	Other
<u>PrEP</u>	Sexually active adult with anal or vaginal sex in the past 6 months AND <i>any</i> of the following	<ul style="list-style-type: none"> HIV+ partner (esp if unknown or detectable viral load) Bacterial STI in the past 6mo History of inconsistent condom use 	Truvada [emtricitabine (F) / tenofovir DF (TDF)] Long-acting injectable Apretude (cabotegravir) available (qmo x 2 then q2mo)	Clinician Quick Guide
	Persons who inject drugs AND <i>any</i> of the following	<ul style="list-style-type: none"> HIV+ injecting partner Sharing injection equipment Have sexual risk for acquiring HIV 	Consider Descovy for men and transgender women [emtricitabine (F) / tenofovir alafenamide (TAF)]	
<u>PEP</u>	Give within 72hrs if substantial risk of transmission through HIV+ or HIV unknown source	Non-occupational Vagina, rectum, eye, mouth or other mucous membrane, non-intact skin, or perforated skin (e.g., needle stick) in contact with potentially contaminated body fluids from an HIV-infected source	Tenofovir disoproxil fumarate (TDF) 300mg + emtricitabine (FTC) 200mg once daily PLUS Raltegravir (RAL) 500mg twice daily OR Dolutegravir (DTG) 50mg once daily	If ongoing risk is present, transition to PrEP at the end of PEP course
		Occupational Contact of blood, tissue, or other potentially infectious body fluid via <ul style="list-style-type: none"> Needlestick or cut w/ sharp object Mucous membrane exposure Contact w/ non-intact skin 	Raltegravir 400mg twice daily PLUS Tenofovir DF-emtricitabine once daily	
HIV	All HIV+ patients		ART	Have a (+) HIV result and do not know the 1 st step or next step in management: National Clinician Consult Center (800)933-3413





Syndromic Management



Clinical Syndrome	Pathogens to Cover	Empiric Treatment
Urethral discharge (penis)	<u><i>N. gonorrhoea</i></u> <u><i>C. trachomatis</i></u>	Ceftriaxone 500mg IM x 1 PLUS Doxycycline 100mg BID x 7d
Vaginal discharge	<u><i>N. gonorrhoea</i></u> <u><i>C. trachomatis</i></u> <u><i>T. vaginalis</i></u>	Ceftriaxone 500mg IM x 1 PLUS Doxycycline 100mg BID x 7d PLUS Metronidazole 500mg BID x 7d
Lower abdominal pain (women) <i>Cover for PID if indicated based on history/exam</i> <i>Consider hospitalization if: pregnant, oral Rx intolerance, possible appendicitis, tubo-ovarian abscess</i>	<u><i>N. gonorrhoea</i></u> <u><i>C. trachomatis</i></u> <u><i>T. vaginalis</i></u> + anaerobes	Ceftriaxone 500mg IM x 1 PLUS Doxycycline 100mg BID x 7d PLUS Metronidazole 500mg BID x 7d
Genital ulcer disease, including anorectal ulcers	<u>Syphilis</u> <u>HSV</u> <i>Chancroid only if reported or emerging cases</i>	PCN G 2.4 million units IM x 1 PLUS Acyclovir, famciclovir, or valacyclovir
Anorectal discharge	<u><i>N. gonorrhoea</i></u> <u><i>C. trachomatis</i></u> <u>HSV</u> if anorectal pain	Ceftriaxone 500mg IM x 1 PLUS Doxycycline 100mg BID x 7d PLUS Acyclovir, famciclovir, or valacyclovir <i>+Ulcer guidelines if present</i>

