

# Sexually Transmitted Infections

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FOR THE PREVENTION AND TREATMENT  
OF CHILD ABUSE AND NEGLECT



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# Review: Clinical Decision-Making Considerations

## Decision:

(1) Testing

(2) prophylaxis vs. treatment

(3) forensic relevance

vary with individual STD...

- Incubation Period
- Clinical Manifestations
- Diagnostic tests available: culture, NAAT, serology, wet mount, other

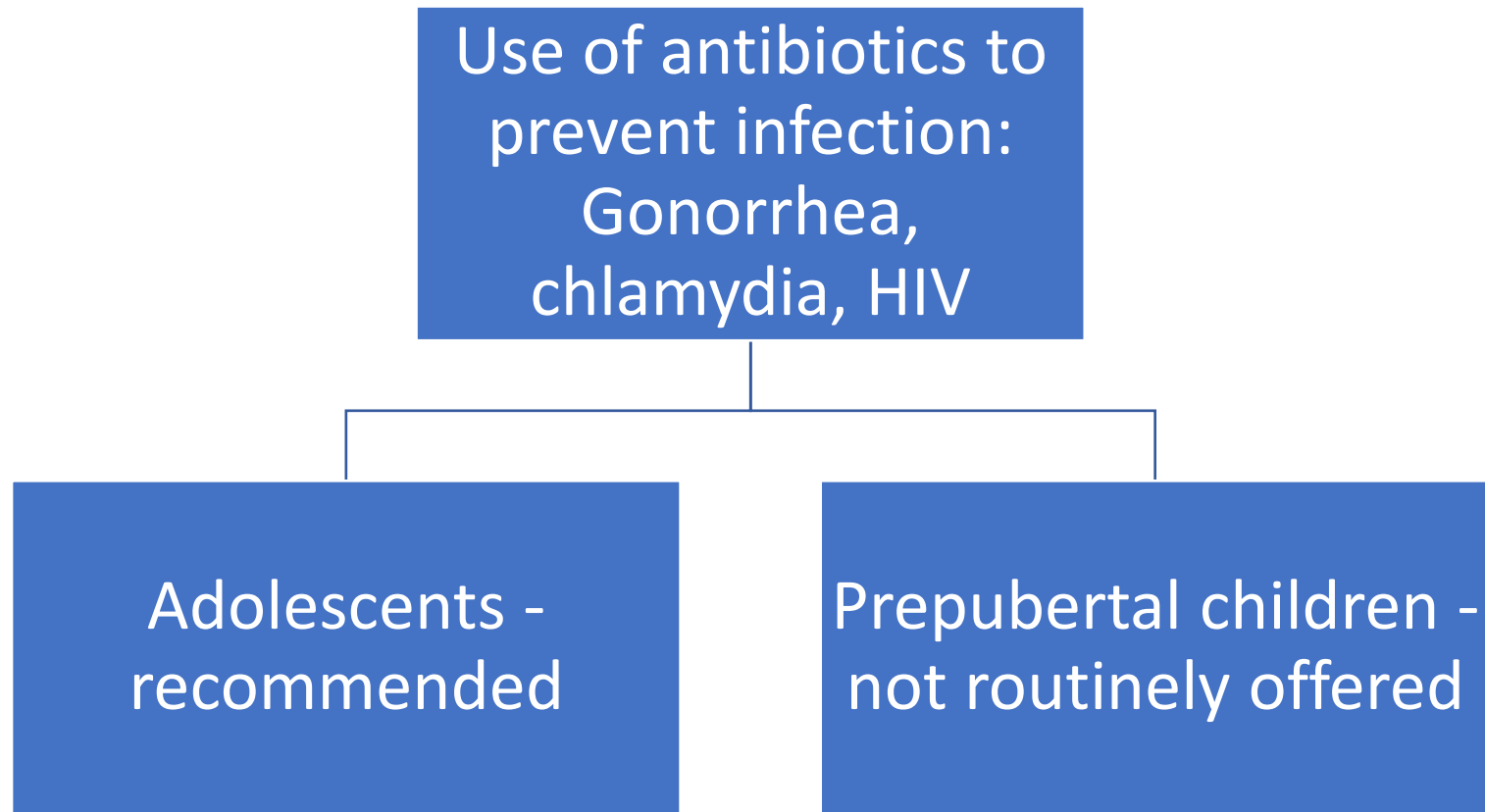
# STD Tests: Forensic Consideration

- Actual frequency of STDs in sexually abused US prepubertal children is unknown
  - Studies suggest 5% or less
- Diagnosis of an STD in a prepubertal child is usually significant
  - Need to distinguish if infection was acquired by sexual transmission or nonsexual mode
  - Important to obtain confirmatory testing prior to treatment
  - Confirmation needed to meet legal certainty criteria
  - May link victim to perpetrator
- Diagnosis of an STD in an adolescent is rarely forensically significant

# AAP Guidelines for Reporting an STD as Child Sexual Abuse

<b>STD</b>	<b>Sexual Abuse</b>	<b>Action</b>
Gonorrhea	Diagnostic	Report
Syphilis	Diagnostic	Report
HIV	Diagnostic	Report
Chlamydia	Diagnostic	Report
Trichomonas vaginalis	Highly suspicious	Report
Condyloma acuminata	Suspicious	(Consider) Report
Genital Herpes	Suspicious	(Consider) Report
Bacterial vaginosis	Inconclusive	F/U

# Non-actue Sexual Abuse Prophylaxis



# Acute Sexual Assault Prophylaxis

Take into consideration:

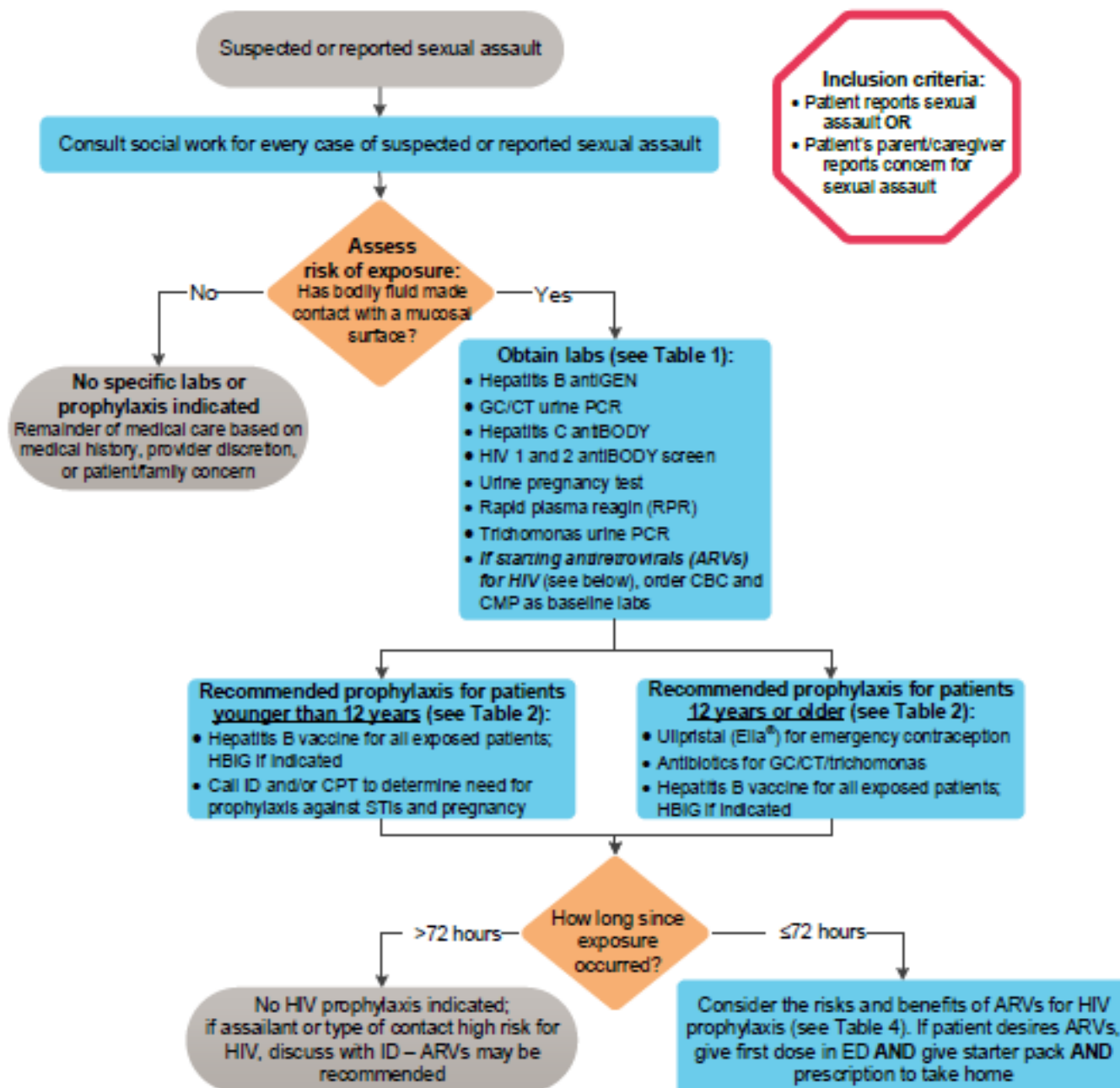
- Type of sexual contact
- Mucosal surface(s) involved
- Pubertal status of patient
- Vaccination status of patient (hepatitis B)
- Is the assailant known to the patient?
  - Is assailant known to be infected with (or agree to be tested for) HIV, hepatitis B, or hepatitis C?

# Post Exposure Prophylaxis PEP

## **COMMUNITY (NON-OCCUPATIONAL) BLOOD OR BODILY FLUID EXPOSURE:**

[https://ccguidelinesportal.childrenscolorado.org/guidelines/Documents/Community%20\(Non-Occupational\)%20Blood%20or%20Bodily%20Fluid%20Exposure%20Pathway.pdf](https://ccguidelinesportal.childrenscolorado.org/guidelines/Documents/Community%20(Non-Occupational)%20Blood%20or%20Bodily%20Fluid%20Exposure%20Pathway.pdf)

## ALGORITHM 1. Sexual Assault





**TABLE 1: Recommended Immediate Testing after Exposure**

	<u>ALL</u> At-Risk Exposures					<u>ADD IF</u> Sexual Exposure				<u>ADD IF</u> Starting HIV PEP	
	Hep B Surface AntiGEN	Hep C Ab	HIV 1 and 2 Ab screen	HIV RNA PCR	Chemistry Hold serum + plasma	Urine GC/CT PCR*	RPR	Preg Test	Vaginal pathogen screen	CBC with diff	CMP
<b>Source# (If available)</b>	X	X	X	X	X	X	X				
<b>Exposed Patient</b>	X	X	X		X	X	X	X	X	X	X

- Purpose: rule out infection PRIOR to current exposure
- CBC, metabolic panel only if starting HIV PEP

- Gonorrhea – all patients  $\geq 12$  years old with sexual exposure (do not await results of PCR testing)
  - Weight  $\leq 45$  kg- Ceftriaxone IV/IM 250 mg once
  - Weight 46-149 kg- Ceftriaxone IV/IM 500 mg once
  - Weight  $\geq 150$  kg – Ceftriaxone IV/IM 1000mg once
  - If renal insufficiency, please contact ID for alternative
- Chlamydia – all patients  $\geq 12$  years old with sexual exposure (do not await results of PCR testing)
  - Weight  $< 50$  kg- Azithromycin 20 mg/kg PO once
  - Weight  $> 50$  kg- Azithromycin 1000 mg PO once
- Trichomonas – patients  $\geq 12$  years old and  $\geq 45$  kg with positive trichomonas PCR. Note that metronidazole can cause nausea and vomiting; recommend pre-medicating with ondansetron. Recent consumption of alcohol greatly increases the likelihood of nausea and vomiting.
  - Metronidazole 2000 mg PO once

# HIV Prophylaxis

- Consider PEP on a case-by-case basis
- Increase risk:
  - Trauma from assault
  - Oral sores
- If the perpetrator is known to be HIV+, PEP given
- Meds:
  - Baseline labs
  - 28 days, compliance important
  - Can be expensive
  - Relatively well tolerated
  - Pharmacy issues

Exposure Type	Transmission Risk per Exposure to a Known HIV Positive Source
<b>Sexual Exposures</b>	
Receptive anal intercourse	1.38% <i>(1 per 72)</i>
Receptive vaginal intercourse	0.08% <i>(1 per 1,250)</i>
Insertive anal intercourse	0.11% <i>(1 per 909)</i>
Insertive vaginal intercourse	0.04% <i>(1 per 2,500)</i>
Oral sex with ejaculation	Low risk

# Hepatitis

## HEPATITIS B - PROPHYLAXIS

**TABLE 2: Recommended Prophylaxis for Exposed Patients**

Condition	Population Indicated		Prophylaxis
HIV	Patient/parent decision after discussion of risks/benefits (see pp. 8-10)		HIV PEP regimen PO x4 weeks
Hepatitis B	All exposed patients, even if fully vaccinated		Hep B vaccine
	Patients who are unvaccinated against Hep B, received <3 doses of Hep B vaccine, or vaccination status unknown	<b>AND</b>	Source is KNOWN TO BE INFECTED with Hep B
			Hep B vaccine <b>PLUS</b> Hep B Immune Globulin (HBIG) 0.06 mL/kg IM
Hepatitis C	None		None

NO HEPATITIS C OPTIONS

# Follow Up Labs

**TABLE 5: Recommended Follow-Up Labs**

	ALL EXPOSURES				SEXUAL EXPOSURES		
	Hep B Surface AntiGEN	Hep B Surface AntiBODY	Hep C Ab	HIV 1 and 2 Ab screen	GC/CT PCR	RPR	Pregnancy Test
6 Weeks		X		X	X*	X	X#
3 Months				X			
6 Months	X\$	X\$	X	X		X	

\* Only if did NOT receive prophylaxis against GC/CT during initial visit.

# Only if did NOT receive emergency contraception during initial visit.

\$ Only if 6 week Hep B Surface Antibody is undetectable.

- Vaccines
  - HPV series
  - Complete Hep B series if indicated (if un/undervaccinated or 6 week HBsAb <10)

# Gonococcal Infections: Clinical Manifestations

## 3 Age Groups

- **Newborn**
  - Ophthalmia, scalp abscess, bacteremia
- **Prepubertal** - sexually acquired or household contact
  - Females: vaginitis, anorectal/ tonsillopharyngeal infection
  - Males: uncommon
- **Adolescents** – 15-19 yo highest rates
  - Females: asymptomatic, urethritis, endocervicitis, PID
  - Males: urethritis
  - Both: anorectal/pharyngeal infection, arthritis
  - Co-infection with Chlamydia is common

# Gonorrhoea: Diagnosis

## Gram stain

- Traditional but subject to misinterpretation

## Culture of secretions on selective media

- Needs careful handling because *N. gonorrhoea* is sensitive to drying and temperature changes
- Need 2 confirmatory biochemical tests

## Nucleic acid amplification tests (NAAT)

- PCR, LCR, SDA on secretions or urine
- Highly sensitive and specific
- Permits dual testing for chlamydia

# Gonorrhea: Forensic Considerations

- Vaginal infection usually symptomatic in young children
  - Rectal/pharyngeal GC often asymptomatic
- Assume sexual contact in young child
  - Fomite transmission unlikely
  - Attempt identification of initial contact
- 95% untreated GC resolves within 6 mo without antibiotic therapy
- If diagnosis made by nonculture test in prepubertal child, results should be confirmed by culture or 2<sup>nd</sup> NAAT test with different DNA sequence before treatment



# Chlamydia trachomatis: Clinical Manifestations

Neonatal conjunctivitis

Trachoma

Pneumonia in young infants

Genital tract infection

- Males: urethritis, epididymitis
- Adolescents: cervicitis, salpingitis, proctitis, PID
- Prepubertal girls: vaginitis, urethritis

Lymphogranuloma venereum

# Chlamydia: Diagnosis

Culture of infected site which contains epithelial cells, not just exudate

- Culture is technically difficult. Many false negatives.

Nucleic acid amplification (NAAT): PCR, LCR, SDA

- More sensitive than culture, more specific and sensitive than DNA probe, Direct fluorescent antibody (DFA), Enzyme immunoassay (EIA)

# Chlamydia: Forensic Consideration

Genital infection in adolescents and adults is transmitted sexually & often asymptomatic

Abuse likely in children beyond infancy

- Asymptomatic infection acquired at birth can persist for at least as long as 3 years
- Important to review PMH, prenatal, birth records

Diagnosis by nonculture technique needs confirmation if court likely

# Trichomonas Vaginalis

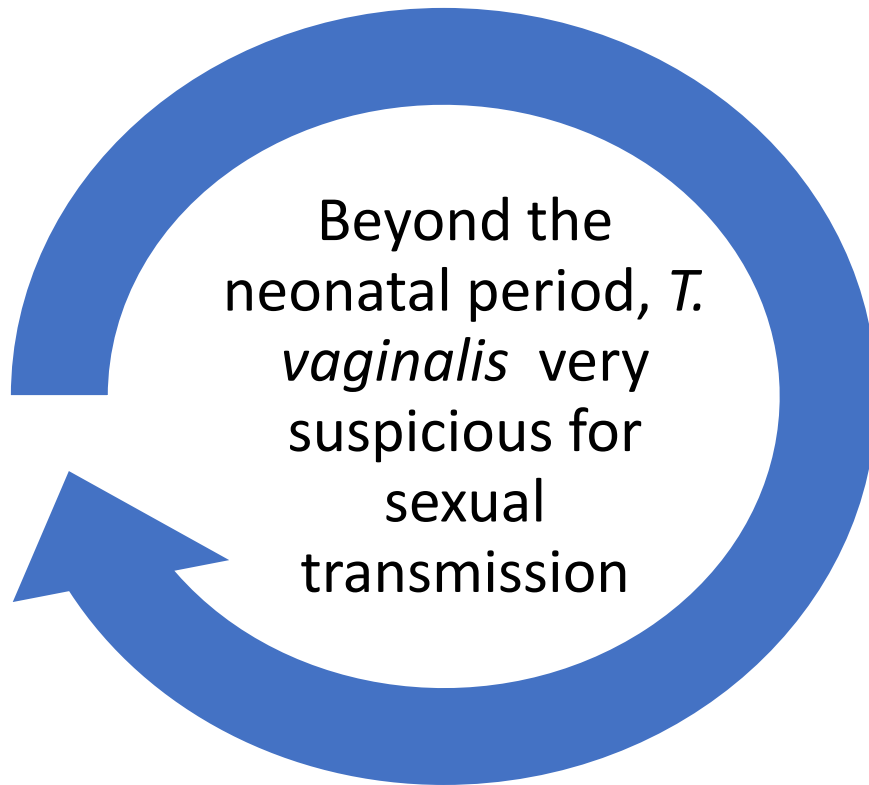
## Clinical Manifestations

- Neonatal vaginitis (rare, from passage thru birth canal)
- Sexual transmission -- women vaginitis, men urethritis
  - Frequently asymptomatic but can cause pain and discharge.

## Diagnosis

- Wet mount - sensitivity 60-70%
  - Flagellated protozoan can be confused with sperm!!!
- Culture : >95% sensitivity
- PCR: sensitive and specific
- Pap smear

# T. vaginalis: Forensic Considerations



- Survives several hours on moist surfaces, but nonsexual transmission never documented
- Self-limited in 40% men
- Recovered from >60% of women partners of infected men
- 30-80% of male partners of infected women

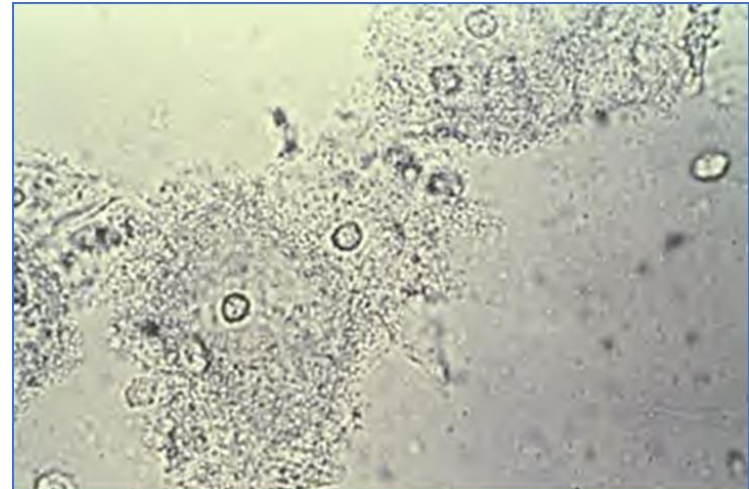
# Bacterial Vaginosis: Etiology

Results from replacement of normal hydrogen peroxide-producing *Lactobacillus* sp. in the vagina with high concentrations of three microbial populations. Causes adherent grey discharge.

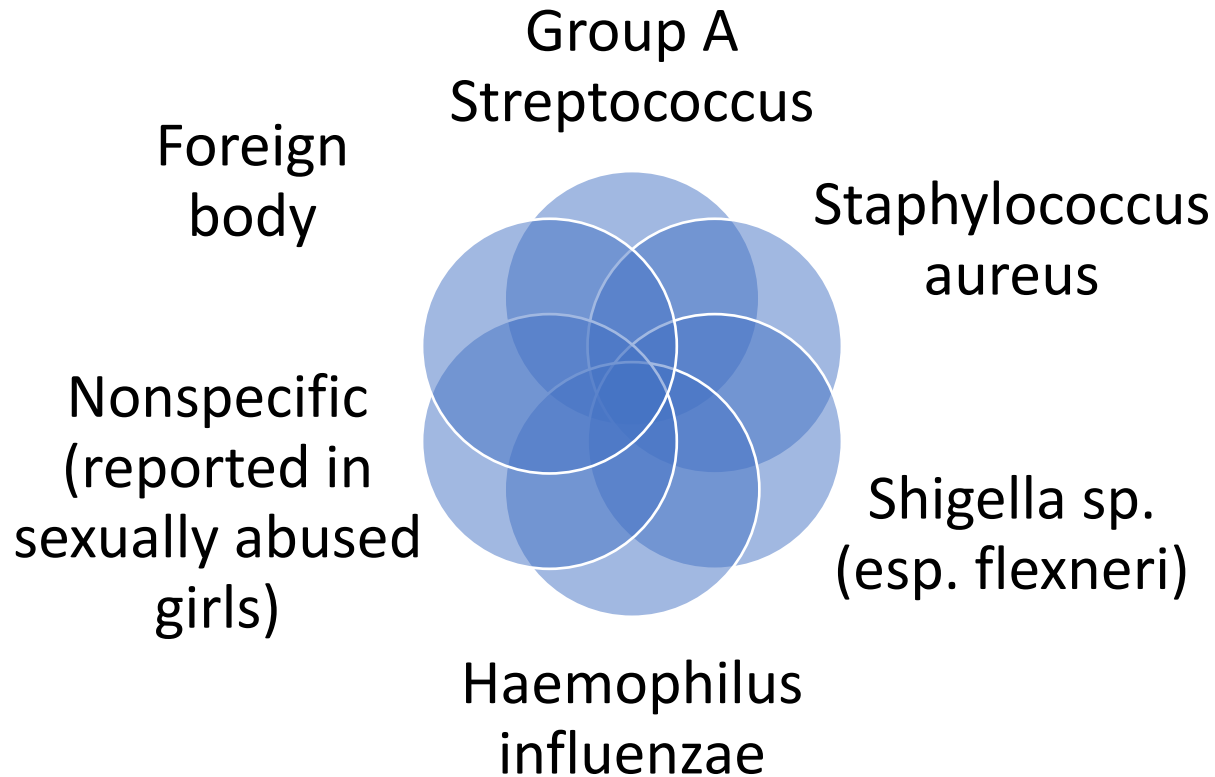
- Anaerobes (*Prevotella* sp/*Mobiluncus* sp)
- *Gardnerella vaginalis*
- *Mycoplasma hominis*

Incubation period: Unknown

Not specific for sexual abuse.



# Non-STD Causes of Vaginal Discharge



# STDs Characterized by Genital Ulcers

## Sexually transmitted

- Herpes
- Syphilis
- Chancroid
- LGV
- Granuloma inguinale

## Non sexually transmitted

- Behcet Disease
- EB virus
- Crohn Disease



# Herpes simplex virus (HSV): Beyond the neonatal period

## Transmission

- From asymptomatic or symptomatic persons
- With primary or recurrent lesions
- By person to person contact with infected lesions

## Presentations

- HSV 1: gingivostomatitis, herpes labialis
- HSV 2: vesicular or ulcerative lesions of the male or female genitalia
- Persist for life in latent form with recurrences
- Both HSV 1 and HSV 2 can be found above the waist or below the waist depending on the source of the infection

# HSV: Diagnostic Tests

Cell culture – grows readily in 1-3 days

- Material from intact vesicle is best - old vesicles may not yield positive culture

PCR – preferred due to test sensitivity

- Results can be available quickly

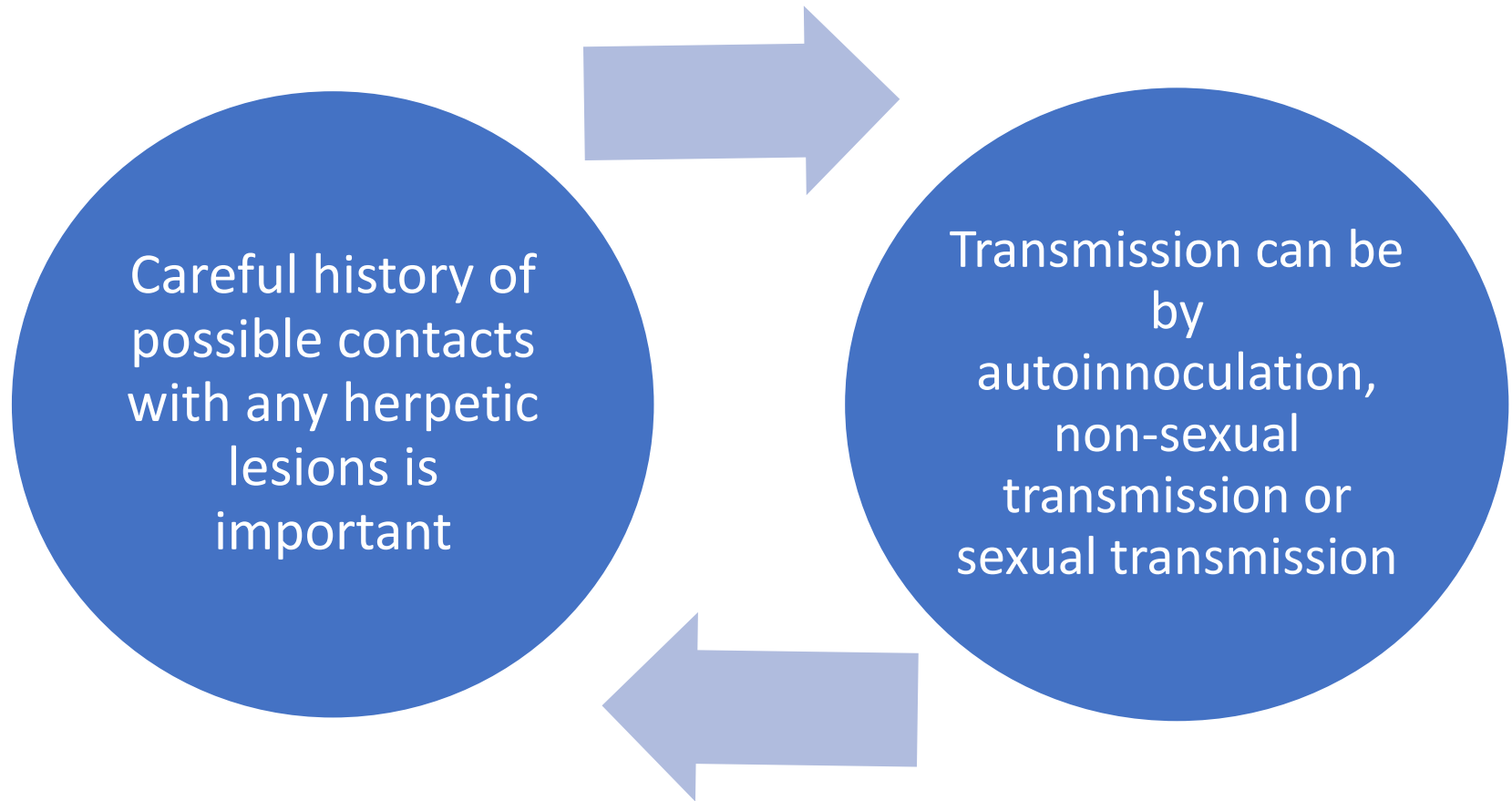
Serology - paired sera (acute/convalescent)

- Distinguishes Type 1/ Type 2 Can confirm seronegativity

Tzanck preparation – low sensitivity

- Identifies multinucleated giant cells

# HSV: Forensic Consideration



# HPV

HPVs are members of the Papovaviridae family - DNA viruses with >100 types identified - a small number account for most warts

- Cutaneous nongenital warts: common skin warts, plantar warts, flat warts, filiform warts
- Mucous membrane warts: anogenital, oral, nasal, conjunctival, respiratory papillomatosis

# HPV: Epidemiology

Common  
infection  
among  
humans

- Transmitted from person-person by close contact - Trauma to skin aids in spread
- Anogenital warts transmitted by sexual contact, acquired at delivery, or transmission from nongenital sites

Incubation period 3 mo - several years

# HPV: Forensic Considerations

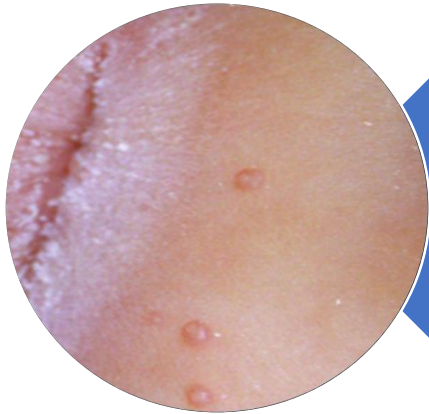
Difficult to connect child to perpetrator on basis of genital warts alone

Additional assessment indicated

- Psychosocial evaluation
- Forensic interview of child
- Genital examination for injury
- Tests for other STDs

# Molluscum contagiosum:

A common virus of childhood and not specific for sexual abuse



Multiple discrete, flesh-colored to translucent, dome shaped papules - Occur on trunk, face, extremities, anogenital area



Some lesions have central umbilication

# QUESTIONS?

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