

STI Basics for Health Educators

Taylor Starr DO, MPH

Associate Professor

Division of Adolescent Medicine

Department of Pediatrics

Golisano Children's Hospital

The University of Rochester School of Medicine and Dentistry

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Learning Objectives

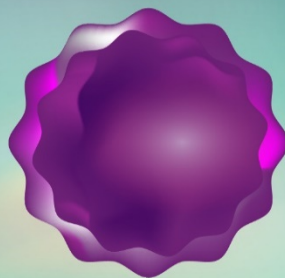
- Describe STD epidemiological trends in the US and NY
- Define basic reproductive system anatomy
- Categorize the primary types of STDs
- Explain basic modes of transmission of specific STDs
- Explain the most common symptoms of specific STDs
- Explain the most common testing methods of specific STDs
- Explain the most common treatment for specific STDs
- Describe the possible long term complications of specific STDs

STDs IN THE UNITED STATES



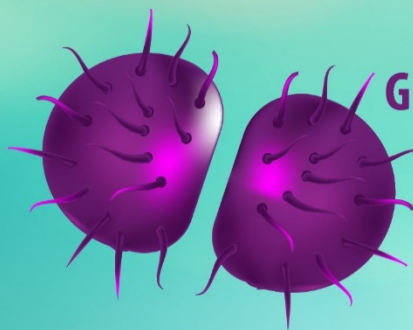
STDs tighten their grip on the nation's health as rates increase for a fifth year.

Source: U.S. Centers for Disease Control and Prevention



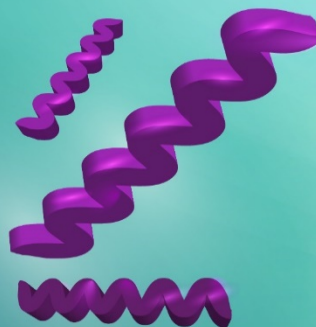
CHLAMYDIA 1,758,668

TOTAL CASES IN 2018
2.9% INCREASE SINCE 2017



GONORRHEA 583,405

TOTAL CASES IN 2018
5.0% INCREASE SINCE 2017



SYPHILIS 115,045

TOTAL CASES IN 2018
13.3% INCREASE SINCE 2017

**CONGENITAL
SYPHILIS 1,306**

TOTAL CASES IN 2018
39.7% INCREASE SINCE 2017

**PRIMARY AND
SECONDARY
SYPHILIS 35,063**

TOTAL CASES IN 2018
14.4% INCREASE SINCE 2017

Snapshot: STIs in 2018

STIs in the United States

Chlamydia

Cases reported in 2018: **1,758,668**

Rate per 100,000 people: **539.9**

19% increase since 2014

Gonorrhea

Cases reported in 2018: 583,405

Rate per 100,000 people: 179.1

63% increase since 2014

Syphilis (primary and secondary)

Cases reported in 2018: **35,063**

Rate per 100,000 people: 10.8

71% increase since 2014

Syphilis (congenital)

Cases reported in 2018: 1,306

Rate per 100,000 live births: **3.1**

185% increase since 2014

STIs in New York

Chlamydia

Cases reported in 2018: 119,571

Rate per 100,000 people: **602.4 (10th)**

Gonorrhea

Cases reported in 2018: 37,262

Rate per 100,000 people: **187.7 (18th)**

Syphilis (primary and secondary)

Cases reported in 2018: 2,654

Rate per 100,000 people: **13.4 (10th)**

Syphilis (congenital)

Cases reported in 2018: 28

Rate per 100,000 live births: 12 (24th)

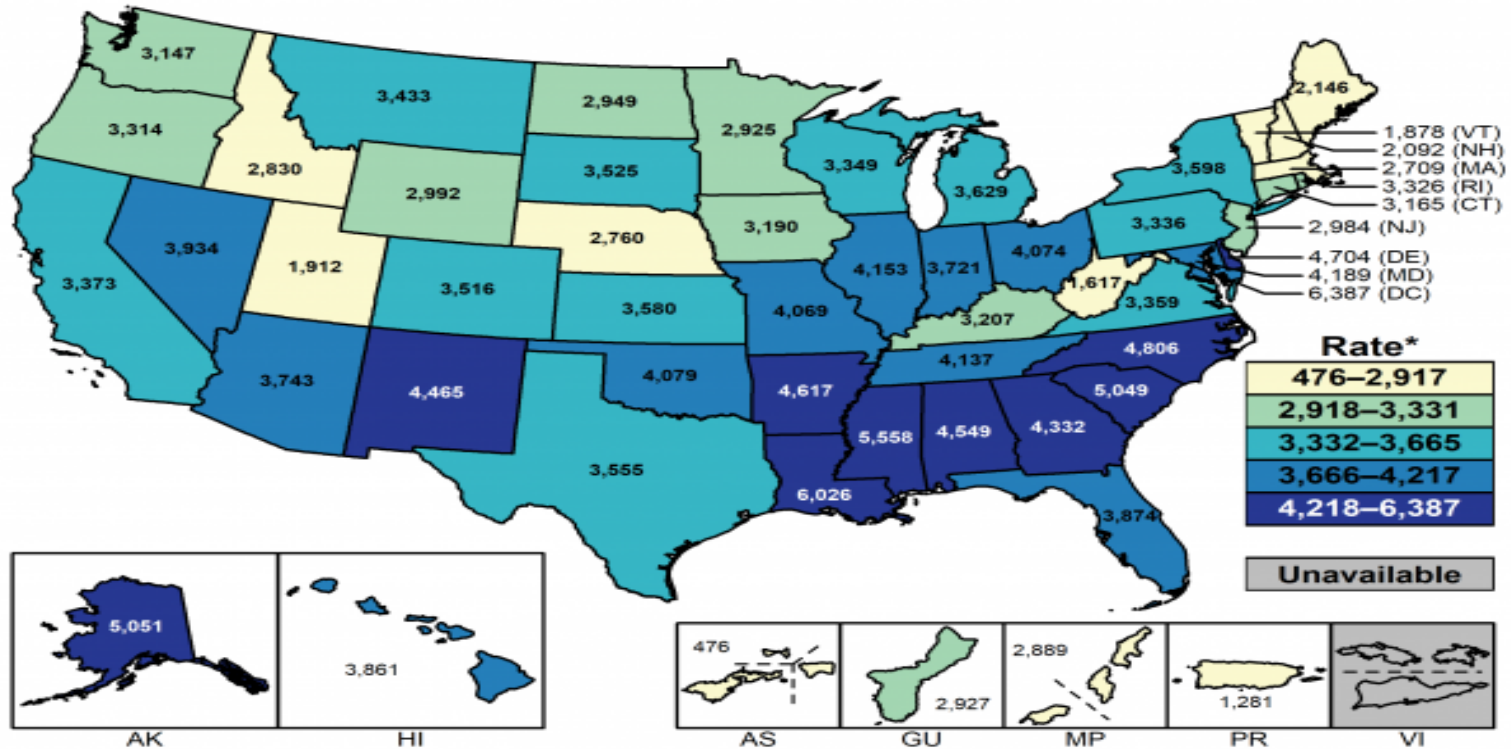


2018 STI rates per 100,000 population by NYS Region

Region	Chlamydia	Gonorrhea	Syphilis (early)
NYS	614.4	190.6	34.7
NYC	839.1	289.1	60.7
NYS excl NYC	435.8	105.4	11.5
Buffalo	538.9	197.7	7.8
Capital	408.0	91.9	9.8
Central	427.6	108.7	6.1
Rochester	560.4	178.6	18.6
Hudson valley	400.8	67.6	14.6
Long Island	374.6	58.3	12.2



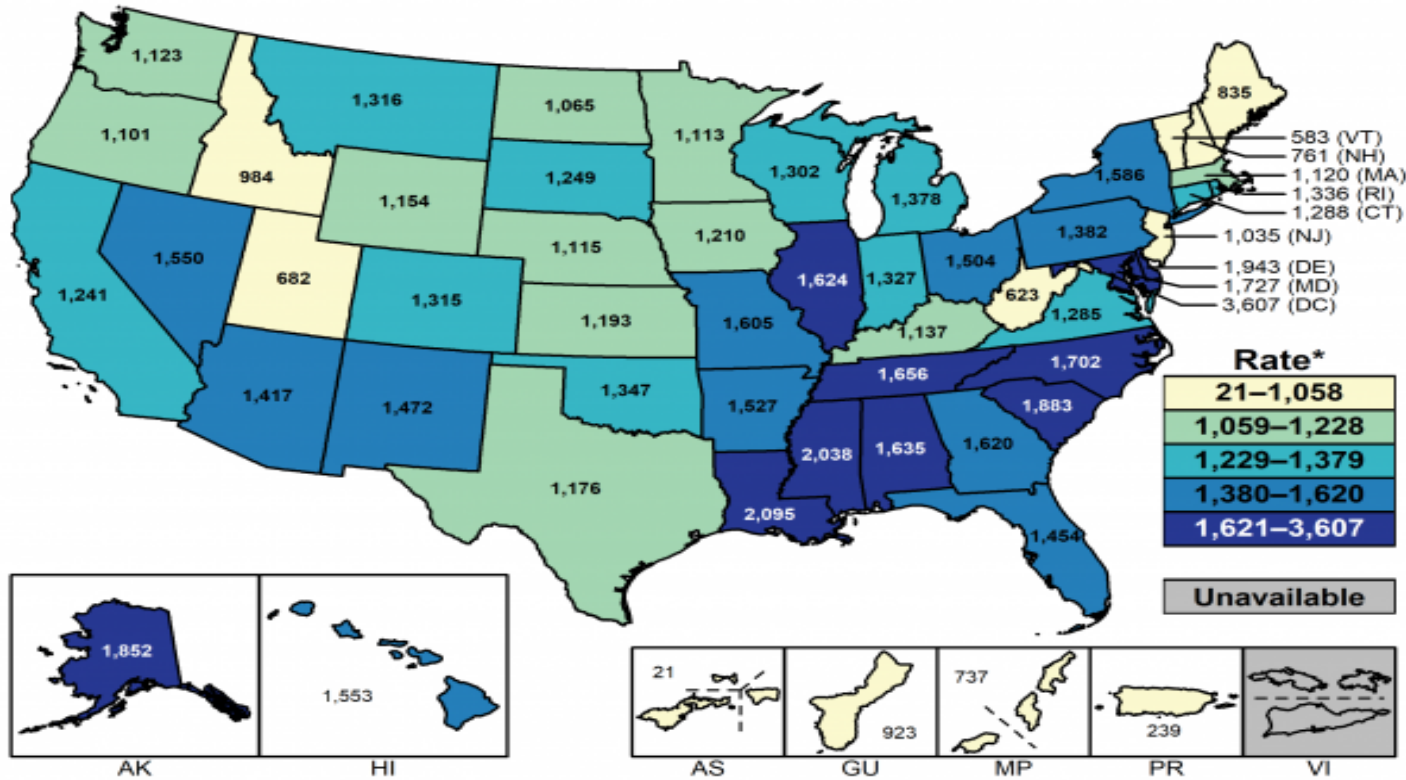
Figure K. Chlamydia — Rates of Reported Cases Among Females Aged 15–24 Years by State and Territory, United States, 2018



* Per 100,000.

NOTE: See Sections A1.2 and A1.11 in the Appendix for more information on interpreting and estimating reported rates in US territories.

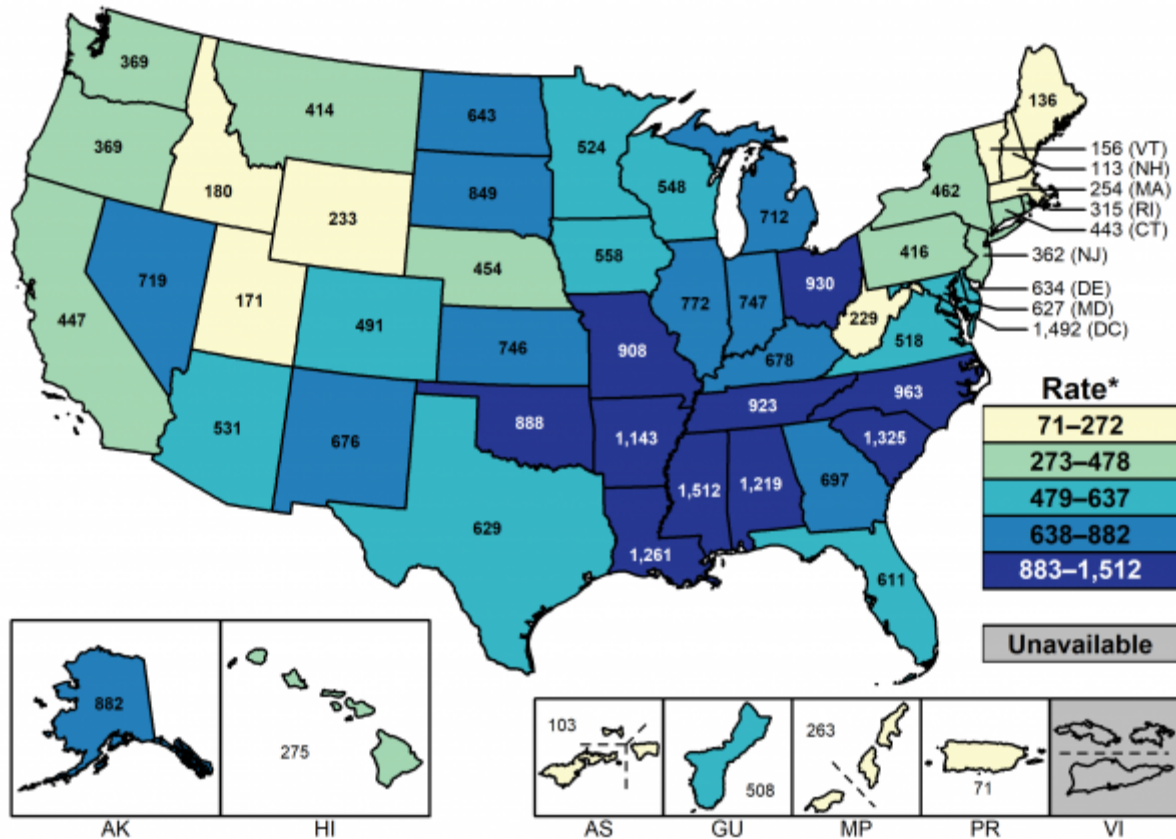
Figure L. Chlamydia — Rates of Reported Cases Among Males Aged 15–24 Years by State and Territory, United States, 2018



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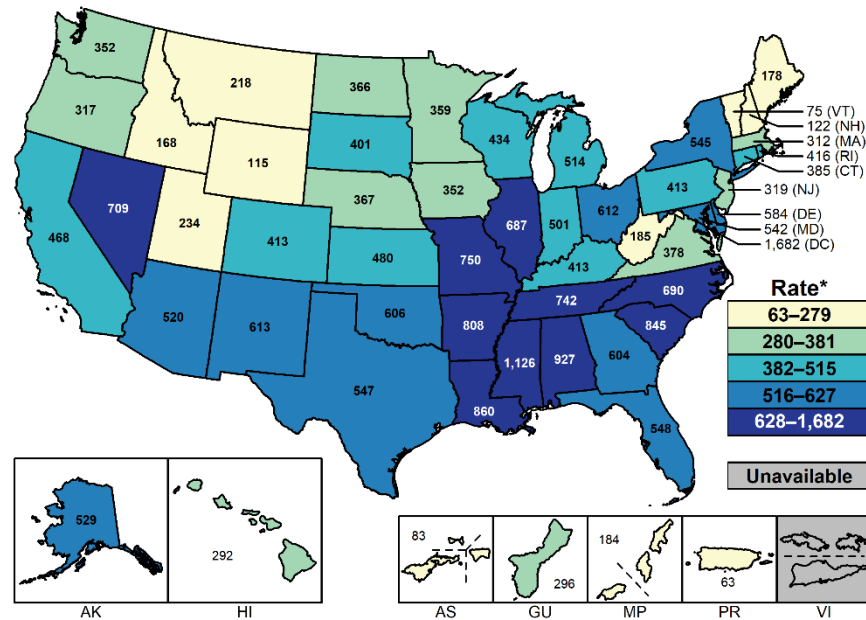
Figure M. Gonorrhea — Rates of Reported Cases Among Females Aged 15–24 Years by State and Territory, United States, 2018



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Figure N. Gonorrhea — Rates of Reported Cases Among Males Aged 15–24 Years by State and Territory, United States, 2018



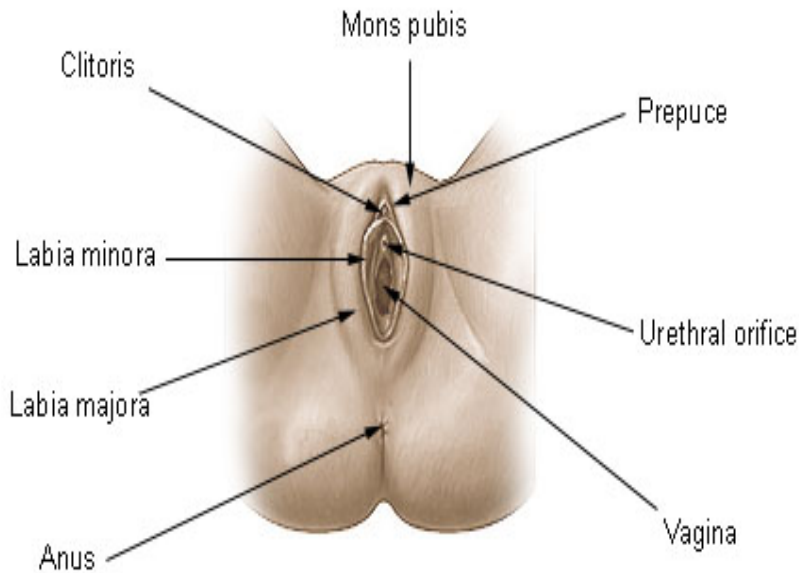
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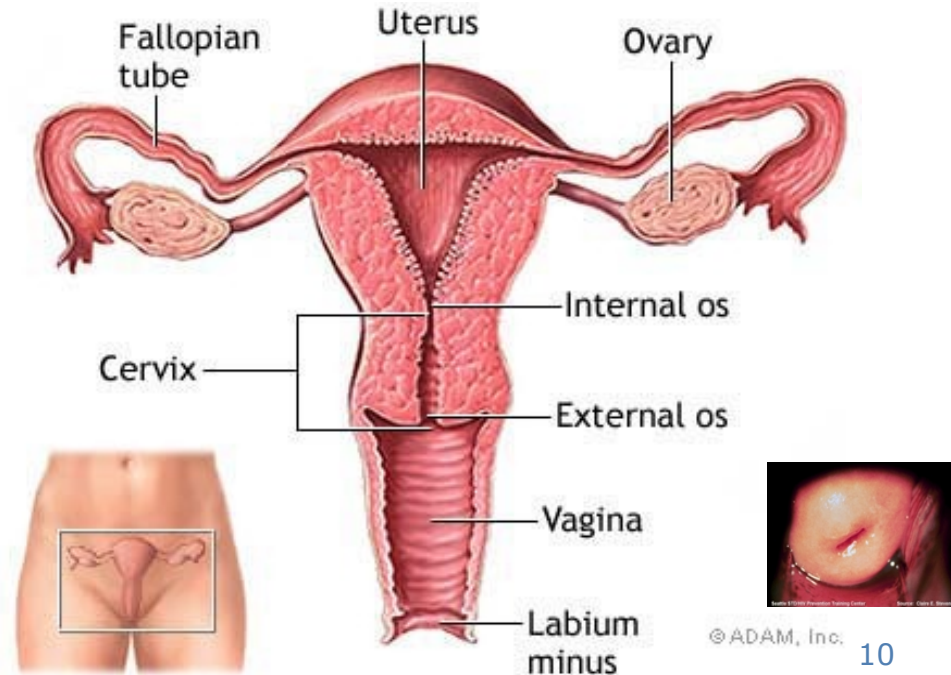
Reproductive System Anatomy

External Genitalia

Female External Genitalia

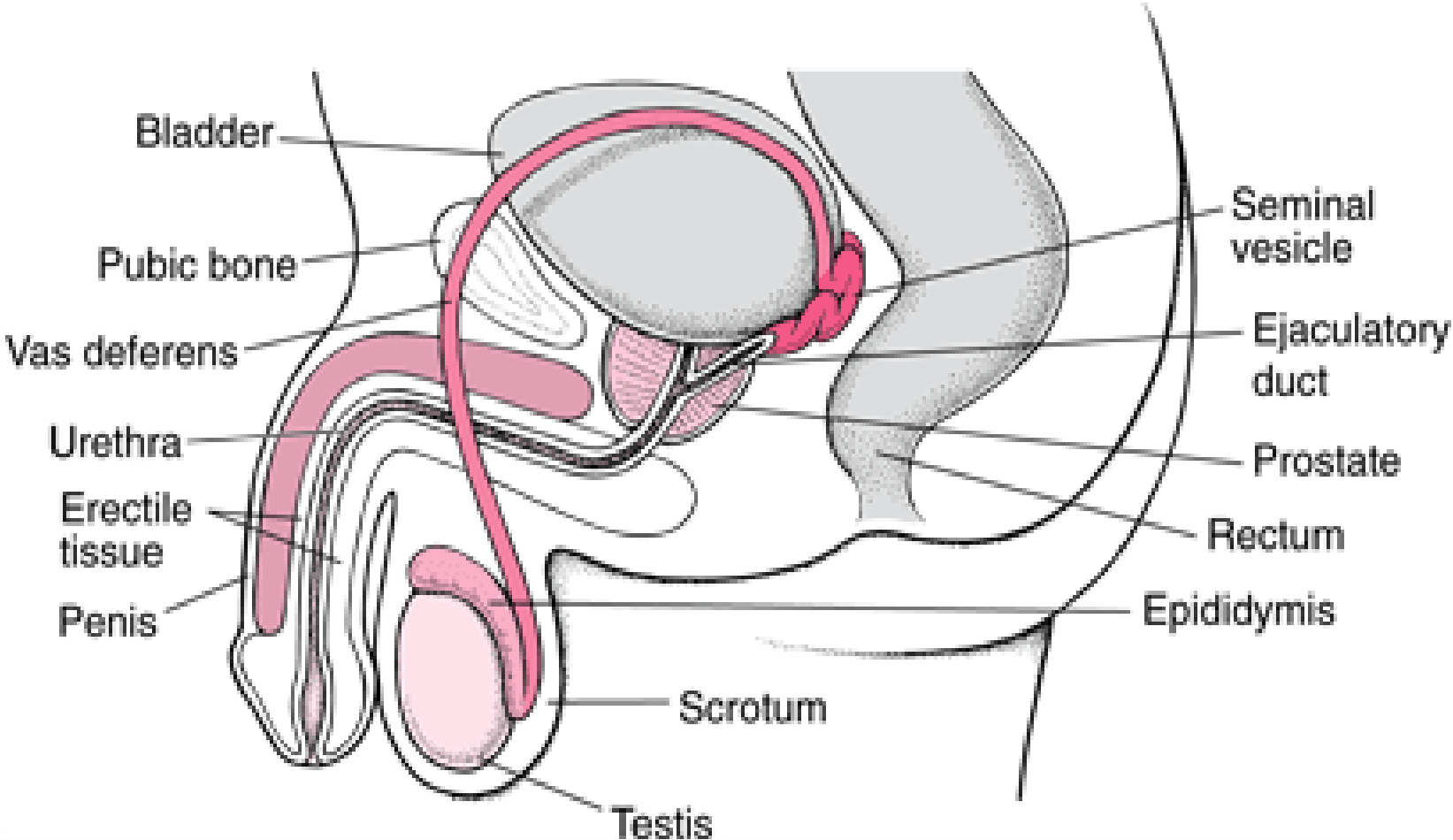


Internal Organs



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Reproductive System Anatomy



Primary Types of STDs

BACTERIAL

- Chlamydia
- Gonorrhea
- Non-gonococcal urethritis (NGU)
- Shigella
- Syphilis

VIRAL

- Hepatitis B
- Herpes simplex (HSV)
- Human Immunodeficiency Virus (HIV)
- Human Papilloma Virus (HPV)

PROTOZOAN

- Trichomoniasis

OTHER

- Molluscum Contagiosum
- Pubic Lice
- Scabies

STDs

“Drips”: Discharges

- Gonorrhea
- Chlamydia
- Trichomoniasis

Skin Lesions: “Sores/Ulcers”

Painful

- Genital herpes simplex (HSV)
- Chancroid

Painless

- Syphilis
- Human Papilloma Virus (HPV)
- Lymphogranuloma Venereum
- Granuloma Inguinale

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STI Prevention Strategies

- Abstinence
- Vaccination: Hepatitis B and HPV
- Mutual Monogamy
- Reducing the number of sex partners
- Avoid drugs and alcohol
- Condoms
- Dental dams
- Use a water based lubricant
- Avoid sex with anyone who has symptoms of an STD
- Avoid sex with anyone who uses IV drugs
- Regular STD screening for self and all partners

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STD-HIV Connection

- Having another STD increases HIV acquisition because:
 - STDs cause sores
 - STDs cause inflammation
- Having HIV increases other STD transmission
- STD treatment slows the spread of HIV

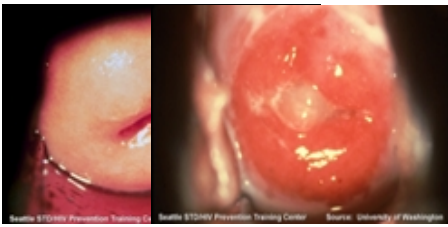




Chlamydia (CT)



- **Organism:** Chlamydia trachomatis(CT)
- **Sites of infection:** penis, vagina, cervix, urethra, anus, throat, or eye
- **Transmission:** in sexual fluids and discharge during oral, vaginal, and anal sex even when asymptomatic; to fetus during vaginal delivery
- **Symptoms:** up to 80% of women and 50% of men have no visible signs or symptoms
- **Testing:** urine or swab
- **Treatment:** oral antibiotic; Expedited Partner Therapy is available in New York
- **Long term effects:** untreated or under-treated CT can lead to pelvic inflammatory disease (PID), which can cause scarring and infertility
- **Prevention:** condoms, when used consistently and correctly, can reduce the risk of acquiring or transmitting chlamydia



Chlamydia



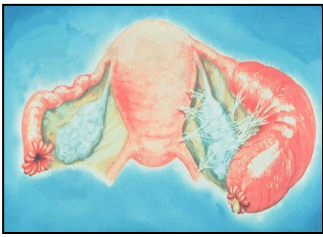
MOST PEOPLE HAVE NO SYMPTOMS!!!!!!

Vaginal Symptoms

- Painful urination
- Vaginal discharge
- Rectal infection: rectal pain, discharge, bleeding

Penile/Testicular Symptoms

- Painful urination
- Penile discharge
- Painful/swollen testicles
- Rectal infection: rectal pain, discharge, bleeding



Chlamydia



Complications:

Pelvic Inflammatory Disease(PID):

Infection spreads:

- up to the uterus
- through fallopian tubes

May result in:

- Permanent scarring
- Increased risk of ectopic pregnancy
- Infertility
- Chronic pelvic pain

Complications:

Epididymitis:

• Infection spreads:

- through epididymis into testicles

May have:

- Pain
- Fever
- Sterility (rare)



Chlamydia



Easy Testing

- Urine sample
- Cotton swab
 - may be self swab

Easy Antibiotic Treatment

Oral antibiotic:

- Doxycycline (for 7 days)
- OR
- Azithromycin (one dose)

KEY MESSAGES TO AVOID RE-INFECTION

- abstain from sex (vaginal, oral and anal) for 7 days after treatment **and** 7 days after partner(s) have been treated
- partner(s) should be notified and should seek STD testing as soon as possible
- should be **re-tested** for Chlamydia and other STDs **3 months** after treatment

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Source: health.ny.gov/publications/3849/index.htm

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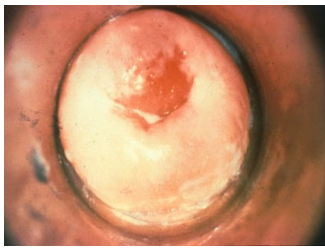
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Gonorrhea (GC)



- **Organism:** Neisseria Gonorrhoea
- **Sites of Infection:** penis, vagina, cervix, urethra, anus, throat and eyes
- **Transmission:** sexual fluids or discharge during oral, vaginal, and anal sex even when asymptomatic; to fetus during vaginal birth
- **Symptoms:** up to 50% of women and many men have no symptoms
- **Testing:** urine; may need: pharyngeal, rectal, or urethral swab
- **Treatment:** injectable antibiotic
- **Long term effects:** untreated or under-treated GC can lead to pelvic inflammatory disease (PID), which can cause infertility
- **Prevention:** condoms, when used consistently and correctly, can reduce the risk of acquiring or transmitting GC



Gonorrhea: Symptoms

MOST PEOPLE HAVE NO SYMPTOMS!!!!

Vulvar/Vaginal Symptoms:

- painful urination
- vaginal discharge
- vaginal bleeding
- vulvar inflammation
- pain during intercourse

Rectal Symptoms

- discharge
- itching
- soreness
- bleeding
- pain with defecation

Penile/testicular symptoms:

- painful urination
- penile discharge
- painful/swollen testicles

Throat Symptoms:

- Sore throat

SOURCES:

CDC/NCHSTP/Division of STD Prevention, STD Clinical Slides
cdc.gov/std/Gonorrhea/STDFact-gonorrhea.htm
 Florida STD/HIV Prevention Training Center





Gonorrhea



Complications:

Pelvic Inflammatory Disease(PID):

Infection spreads:

- up to the uterus
- through fallopian tubes
- Results in:
 - permanent scarring
 - Increased risk of ectopic pregnancy
 - Infertility

Disseminated Gonococcal Infection:

- Blood infection
- Arthritis
- Meningitis
- Endocarditis

Complications:

Epididymitis:

Infection spreads:

- from the urethra to the epididymis

Urethral stricture

Infertility

Disseminated Gonococcal Infection:

- Blood infection
- Arthritis
- Meningitis
- Endocarditis

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Gonorrhea

Easy Testing

- Urine sample
- Swab of:
 - Urethra
 - Cervix
 - Pharynx
 - Rectum

Easy Treatment

Injectable Antibiotic

- Single Dose (Ceftriaxone)

PLUS

Oral Antibiotic if CT not excluded

- Doxycycline x 7 days

KEY MESSAGES TO AVOID RE-INFECTION

- partner(s) should be notified and should seek STD testing as soon as possible
- abstain from sex (vaginal, oral or anal) for 7 days after treatment **and** 7 days after partners(s) have been treated
- **pharyngeal gonorrhea**: test of cure **7-10 days** after treatment
- should be **re-tested** for Gonorrhea and other STDs **3 months** after treatment

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Expedited Partner Therapy (EPT)



- Patient's sexual partner(s) are unable or unlikely to seek prompt clinical services
- Provider gives medication or prescription to treat CT for all sexual partners exposed within the last 60 days
- Patient has a clinical diagnosis of Chlamydia ONLY
 - Doxycycline x 7 days
- Patient has a clinical diagnosis of Gonorrhea ONLY
 - Cefixime x 1 dose
- If GC or CT not excluded
 - EPT for both

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Source: [cdc.gov/std/ept/](https://www.cdc.gov/std/ept/)

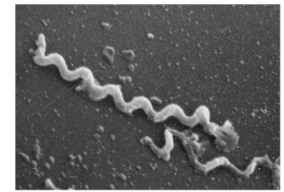
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Syphilis



Organism: *Treponema pallidum* (spirochete)

Transmission: direct contact with sores during oral, vaginal or anal contact; pregnant women can pass it onto fetus

Sites of infection: penis, vulva, vagina, anus, rectum, lips, mouth

Symptoms: different at each stage of disease

Testing: blood test

Treatment: antibiotics

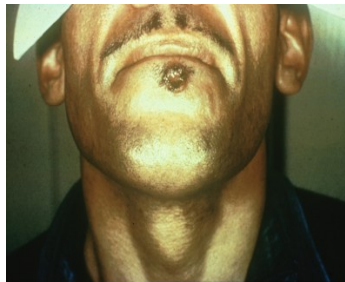
Prevention: correct and consistent use of latex condoms can reduce the risk of syphilis when the sore or site of potential exposure is covered

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Syphilis: Primary Stage

Symptoms:

- Chancre: a painless sore on:
 - Genitals
 - Lips
 - Anus
 - Other area of direct contact
- Chancre will last 1-5 weeks and heal without treatment
- Can be transmitted at this stage



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SOURCE: CDC/NCHSTP/Division of STD Prevention, STD Clinical Slides

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Syphilis: Secondary Stage



Symptoms:

- skin rashes
 - genital lesion (condyloma lata): painless
 - fever
 - swollen lymph glands
 - headache
 - hair loss
 - muscle ache
-
- The rash may be on the palms, soles, or any part of the body
 - The rash may last 2-6 weeks (average of 4 weeks); it will heal without treatment
 - The person may be able to pass it on

Syphilis: Late Stage



Symptoms:

- Paralysis
- Personality changes
- Blindness
- Damage to joints
- Impotency
- Aneurysm (ballooning of a blood vessel)
- Tumor on the skin



Syphilis

Easy Testing

- Blood test

Easy Antibiotic Treatment

Primary and Secondary

- Intramuscular injection
 - Penicillin (one dose)

KEY MESSAGES

- **must be re-examined and re-tested 3 and 6 months after treatment**
- **partners exposed within 90 days should be treated**



Genital Herpes (HSV)

Organism: Herpes Simplex (HSV): HSV I or HSV II

Transmission: through direct contact with skin and/or a lesion; oral, vaginal, anal sex

Symptoms: painful fluid filled sore(s)

Testing: generally not necessary

Treatment: antiviral medications (not curative)

Prevention: correct and consistent use of latex condoms can reduce the risk of genital herpes



Genital Herpes



Symptoms:

- **Painful** fluid filled sore(s) on the:
 - penis
 - vulva
 - vagina
 - anus
 - thighs
 - mouth, or finger
 - Swollen lymph nodes
 - Muscle aches
 - Headache
 - Fever
 - Difficult or painful urination
- Symptoms may or may not recur

Herpes (HSV)



Testing

- Diagnosis made by visual exam
- Blood test available
 - CDC does not recommend screening for HSV-1 or HSV-2 in the general population

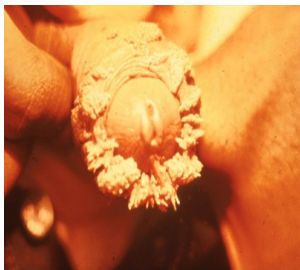
Treatment

Antiviral Medications:

- prevent/shorten outbreaks

Daily suppressive therapy

- reduce transmission



HPV: Genital Warts



Organism: Human Papillomavirus (HPV)

Transmission: skin-to-skin contact during vaginal, and anal sex

Sites of Infection: penis, vagina, vulva, anus, urethra

Association with cancer: HPV is causally associated with cervical, anal, penile, vulvar, vaginal, and oropharyngeal cancers

Treatment: topical used to destruct lesions (not curative)

Prevention: HPV Vaccine and Condoms



HPV: Genital Warts



Symptoms:

- Warts:
 - single or multiple generally painless fleshy growths
 - penis
 - vagina
 - anus
 - urethra
- Itching
- Bleeding
- Burning
- Pain

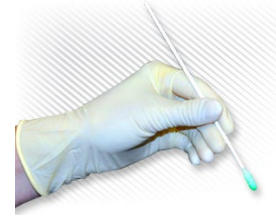
The symptoms may recur from time to time



HPV: Potential Complications

- Warts can go away, remain unchanged, or increase in size or number
- Virus may destroy the tissue around the genitals and anus
- It may lead to cervical, vulvar, vaginal, penile, anal, and oropharyngeal cancers

HPV



Testing

- Visual examination:
 - warts
- Pap Test (indirect):
 - Looks for pre-cancer cells
 - 21 years or older
- HPV Blood Test (direct):
 - Looks for the virus (HPV)
 - 30 years or older

Treatment: removal

External Warts:

- Provider applied treatments
- Patient applied medication

Internal Warts:

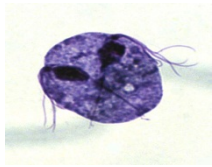
- Provider applied treatments

PREVENTION

HPV Vaccine:

- against common types of HPV that can lead to disease and cancer

Recommendations: routine HPV vaccine at 11 or 12 years; 2 dose series



Trichomoniasis (Trich)

Organism: Trichomonas vaginalis (protozoan parasite)

Mode of transmission: through semen, vaginal fluid and discharge

Sites of Infection: vulva, vagina, urethra, penis/urethra

Symptoms: often asymptomatic; vaginal or penile discharge

Testing: vaginal or urethral swab

Treatment: oral medication; curative

Prevention: using latex condoms correctly every time you have sex will help reduce the risk of acquiring or transmitting trichomoniasis

Trichomoniasis: Symptoms



MOST PEOPLE HAVE NO SYMPTOMS!!!

- Vaginal discharge
- Vaginal itching/irritation
- Pain with urination
- Pain with intercourse
- Penile itching
- Burning after urination or ejaculation
- Penile discharge

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Trichomoniasis



Easy Testing:

Urine

Swab

- vagina
- urethra

Easy Treatment:

Oral antibiotic:

- metronidazole

KEY POINTS

The medication is curative, but to avoid re-infection:

- all partners must be notified and treated
- avoid all sex until symptoms resolved
- if symptoms return, get re-tested

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STI Review

STD	Organism Type					Transmission	
	Bacterial	Viral	Protozoa	Curable	Non-curable BUT Manageable	fluids	skin to skin
Chlamydia	X			X		X	
Gonorrhea	X			X		X	
Syphilis	X			X			X
Trichomoniasis			X	X		X	
HSV		X			X		X
HPV		X			X		X





Where to Go for STI Screening and Treatment

Clinics in NY State by county:

- health.ny.gov/diseases/communicable/std/clinics/clinics.htm

National STD hotline (1-800-232-4636)

Resources

- *cdc.gov*
- CDC's annual report:
 - <https://www.cdc.gov/nchhstp/newsroom/2019/2018-STD-surveillance-report.html>
- *youngwomenshealth.org*
- *youngmenshealth.org*





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