



Sexually Transmitted Diseases

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STDs

What are STDs?

How do you get an STD?

What happens if you get an STD?

How is STD transmission
prevented?

How do I test for STDs?

What are Sexually Transmitted Diseases?

- [What are STDs? #FactCheck \(youtube.com\)](#)
- Diseases that are spread through sexual contact or exposure to infected bodily fluids, including blood.
- What kind of sexual contact can transmit an STD?
 - Intercourse or sexual contact involving:
 - Penis
 - Scrotum
 - Vulva
 - Vagina
 - Mouth
 - Anus

STD Review:

Other:

HPV

Hepatitis B and

Hepatitis C

Trichomoniasis

Chancroid

Zika Virus

Curable STDs

Gonorrhea

Chlamydia

Syphilis

Treatable STDs

HIV – Human

Immunodeficiency Virus

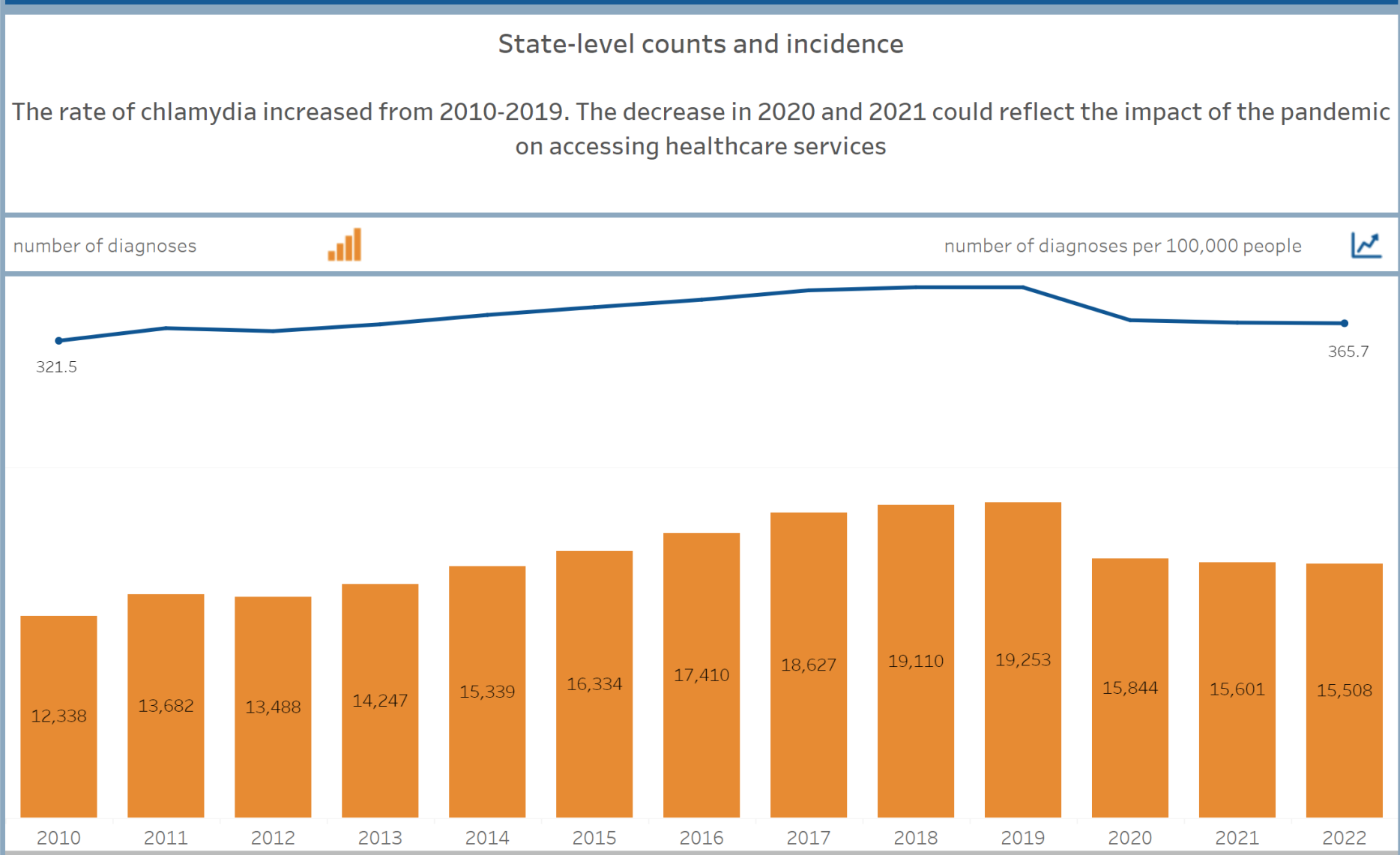
HSV – Herpes Simplex Virus

(HSV1 and HSV2)

Definitions:

- **Curable:** The disease will be completely gone from the body after medical treatment
- **Treatable:** the disease will still exist but the symptoms can be decreased with medical therapies or pharmaceutical drugs

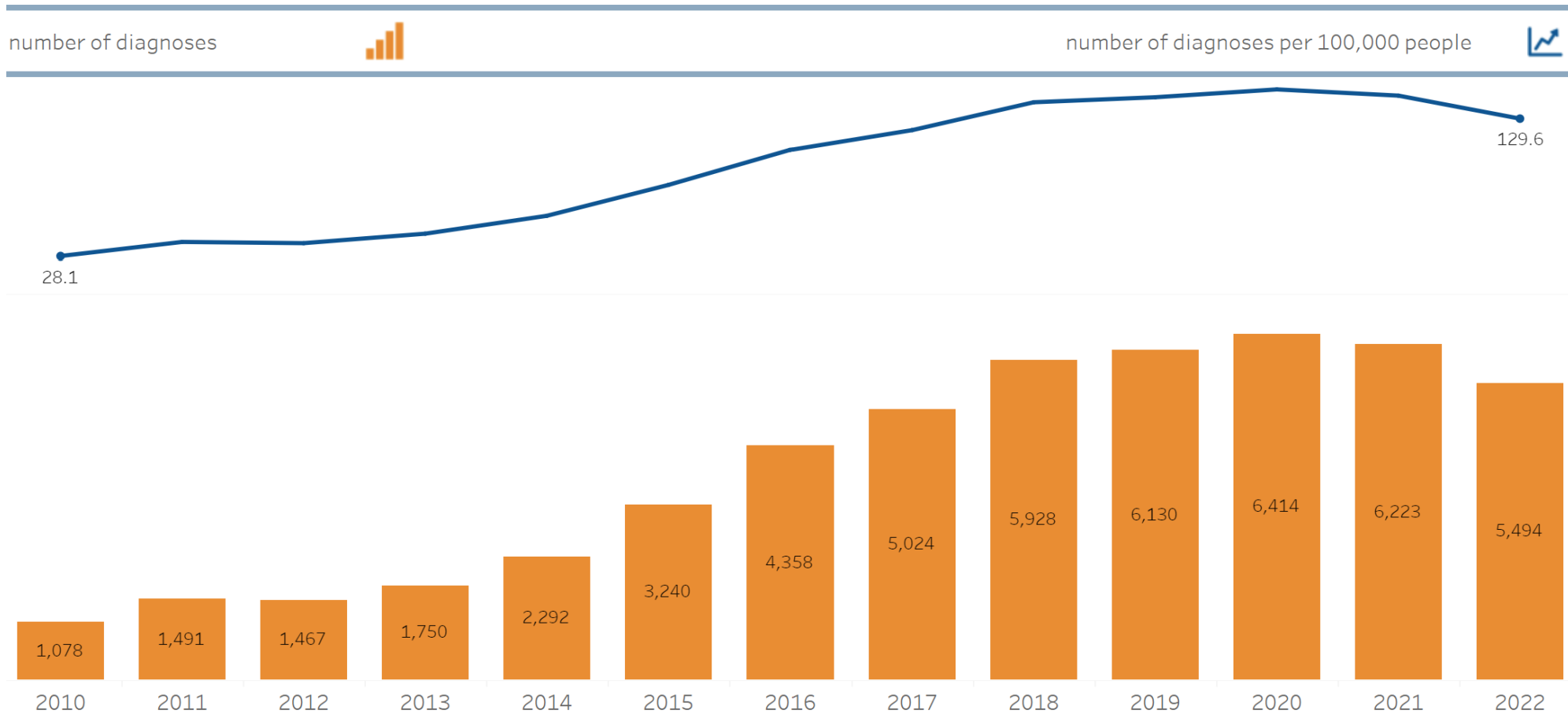
Chlamydia Cases in Oregon



Gonorrhea Cases in Oregon

State-level counts and incidence

The rate of gonorrhea had been on the rise from 2010 to 2020. The decrease in 2021 could reflect the impact of the pandemic on accessing healthcare services



Gonorrhea

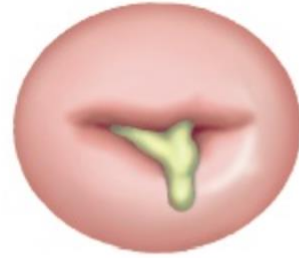
What: Bacteria: *N. gonorrhoeae*

Symptoms: vaginal discharge, painful intercourse, penile discharge

Curable or Treatable:

Treatment: Ceftriaxone

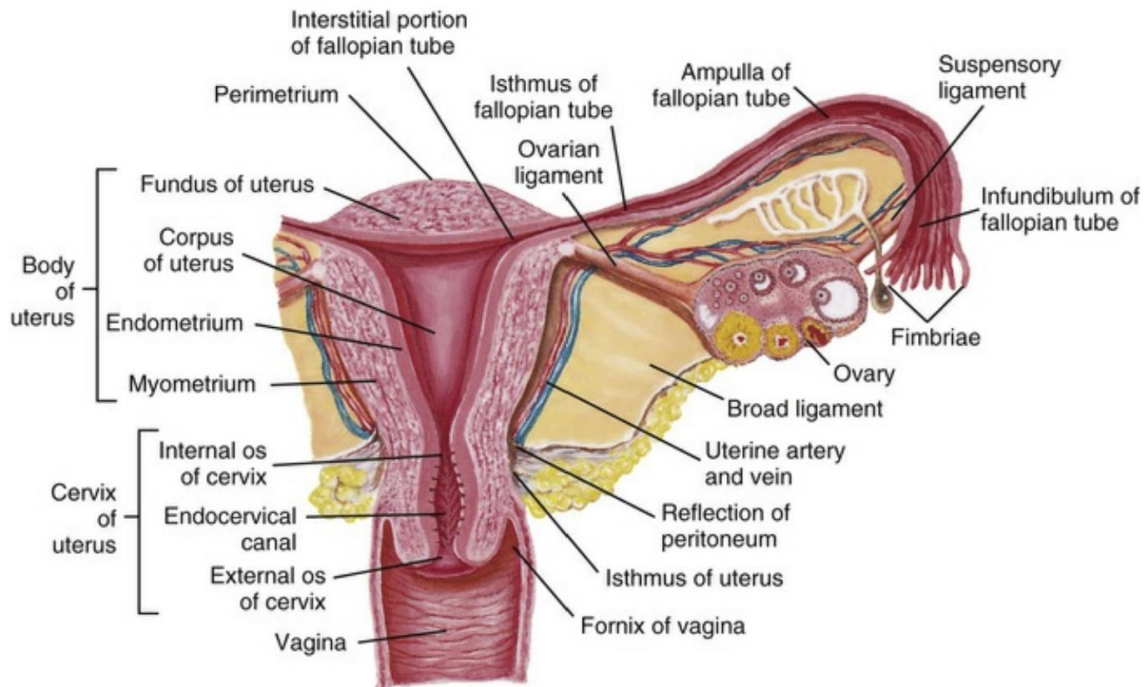
Curable with antibiotics. Treatment resistant bacteria is a growing concern.⁶



Mucopurulent Cervicitis

Mucopurulent cervicitis produces purulent yellow drainage from the cervical os, usually from *C. trachomatis*, *N. gonorrhoeae*, or herpes infection. These infections are sexually transmitted and may occur without symptoms or signs.

Chlamydia is the most common bacterial STD in the US.



Chlamydia

What: Bacteria: *Chlamydia trachomatis*

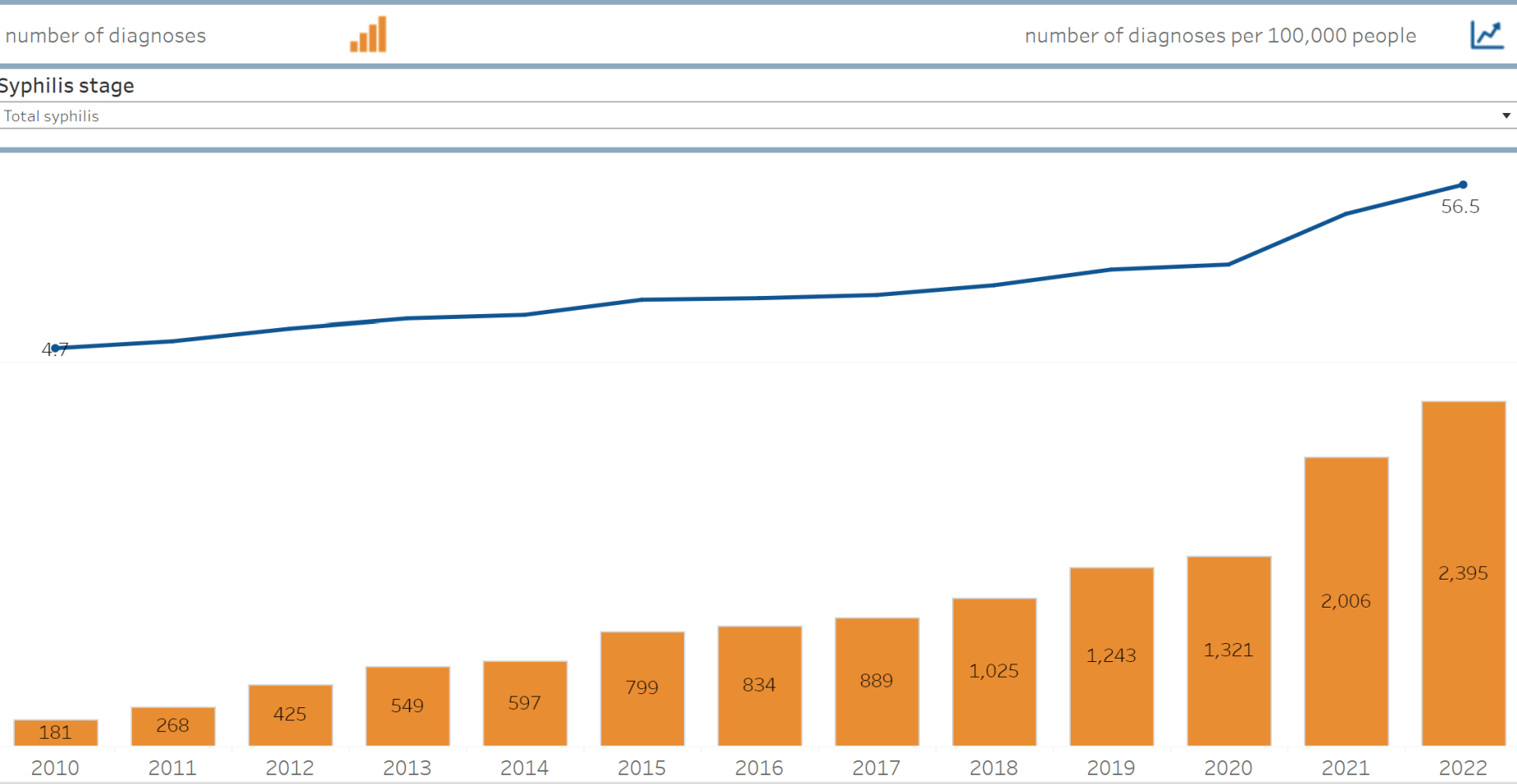
Symptoms: 90% of cases are asymptomatic. Pain with urination, clear urethral discharge. Vaginal discharge, pain with urination, frequent need to urinate.

Curable or Treatable: curable with antibiotics: Doxycycline.⁶

Syphilis in Oregon

State-level counts and incidence

The rate of syphilis has increased twelve-fold in the last decade.



Syphilis

Syphilis

Syphilis cases have been rising in Oregon

What: Bacteria: *Treponema pallidum*

Transmission: Sexually transmitted, vertical transmission

Symptoms:

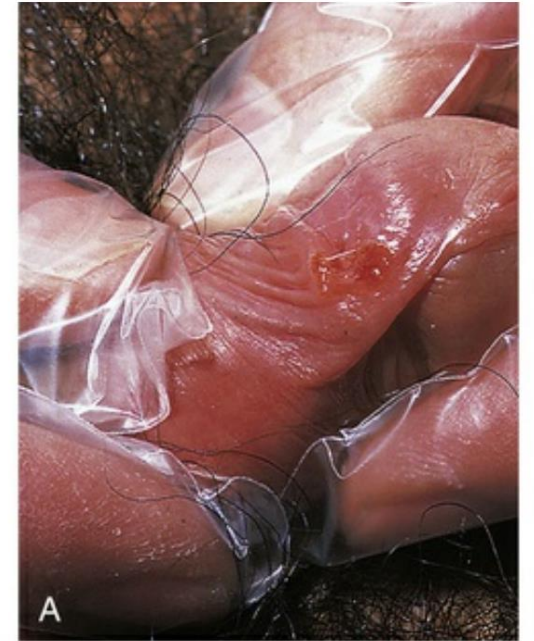
Stage 1: genital chancre (sore) that is painful, firm, hard, and can be associated with swollen inguinal lymph nodes. ⁶

Stage 2: Original skin lesion disappears. Low grade fever. Rash of palms and soles. Sore throat, hoarseness, swollen lymph nodes.

Stage 3 (latent syphilis): no signs, can be transmitted through sexual contact

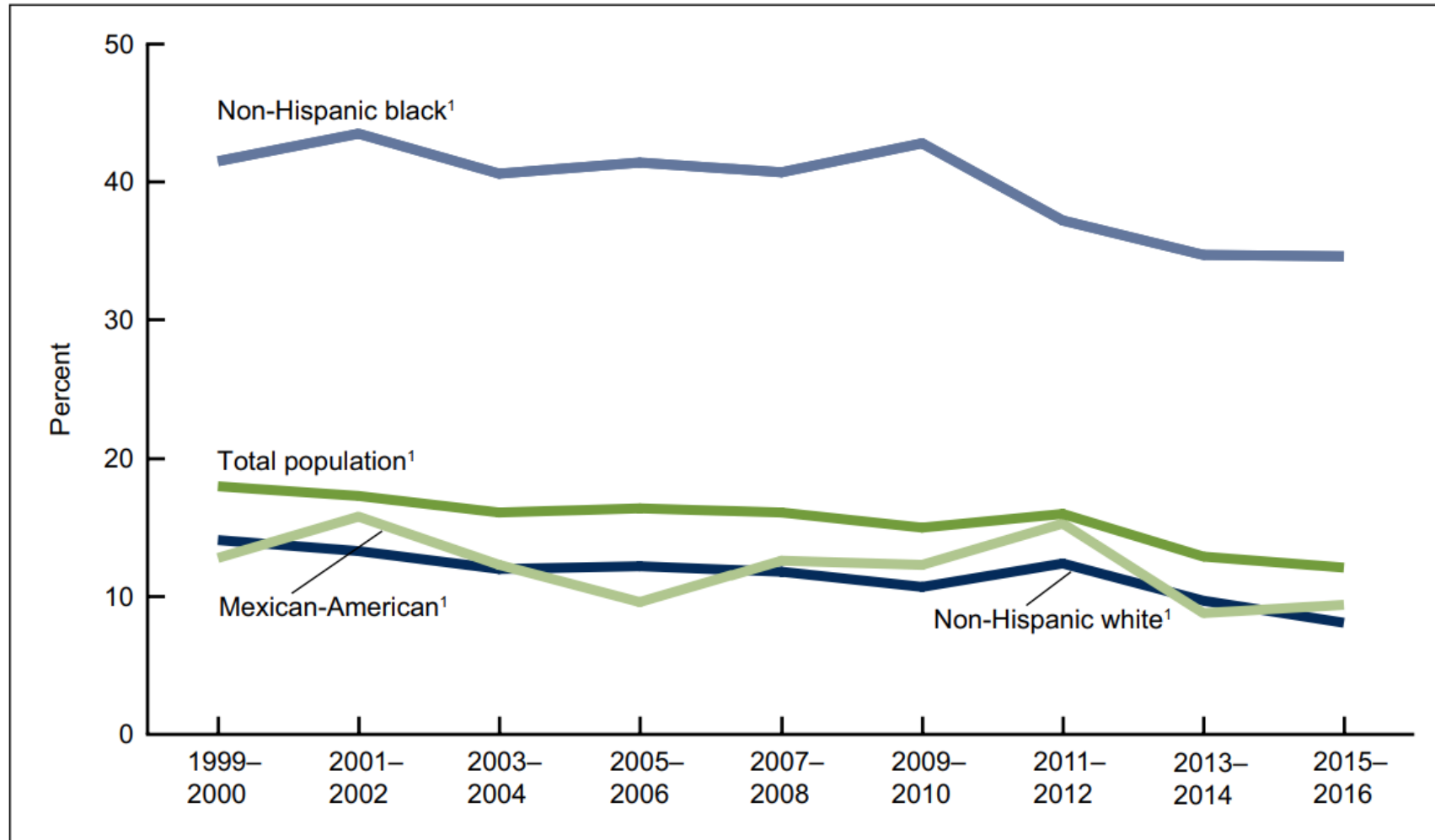
Stage 4 (tertiary syphilis): bone, skin, soft tissue, neurosyphilis

Curable or Treatable: Curable with the antibiotic penicillin. ⁶



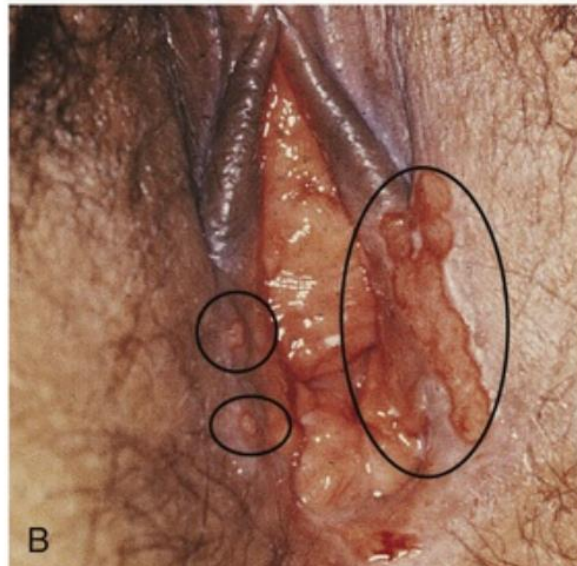
HSV 2 in the United States

Prevalence of HSV-2 decreased over time from 1999–2000 to 2015–2016.



Herpes Simplex Virus

Most common cause of genital sores in the US.



HSV 2 (Herpes Simplex Virus)

What: Virus - Human Simplex Virus ⁶

Transmission: contact with active herpes lesions. Can be transmitted when asymptomatic. Condoms help prevent transmission but are not 100% effective.

Symptoms: Infections are asymptomatic 50 – 70% of the time.

Characterized by intermittent outbreaks of painful genital blisters. Symptoms vary between a single lesion and multiple lesions.

Curable or Treatable:

Treatable with antiviral medication:

- Acyclovir

Antiviral medication effects:

- Speed up healing
- Prevents complications
- Reduces asymptomatic viral shedding ⁶

8,044 people were living with HIV in Oregon as of December 31, 2021. Some groups were disproportionately affected by HIV, associated with systematic denial of opportunities for health.

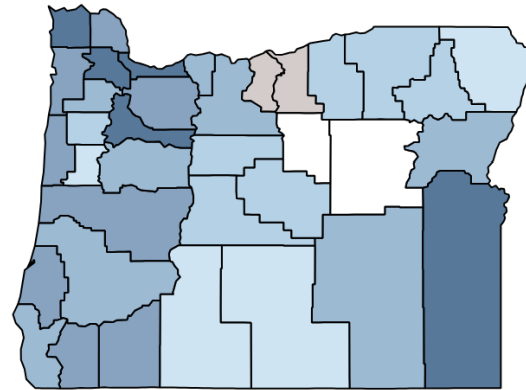
HIV in Oregon

(Prevalence: # of people with the disease)

Overview

The map and demographics graphics are not linked. Hover over or select an Oregon county to show the number and proportion of people in each county living with HIV. To the right is a filter which you can use to compare demographics by number and proportion. *To de-select, click Esc.

People living with HIV by County of residence per 100,000 residents, 2021



PLWH/100,000 residents

- 0 PLWH
- 1-4 PLWH
- ≤84
- 85-93
- 94-129
- 130-142
- 143+

Map of Oregon:

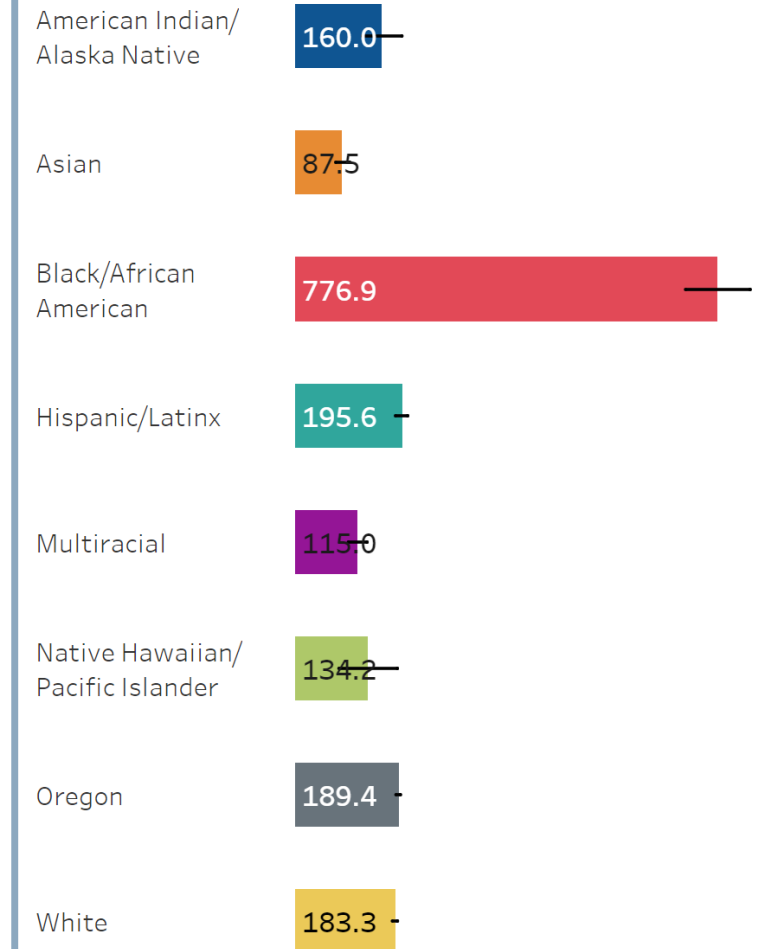
Counties shown in grey in the map had 1-4 people living with HIV as of 12/31/2020. Small numbers of PLWH tend to be in counties with small overall populations. This makes the comparison of PLWH/100,000 residents in these counties to other counties less precise. If the county is shown in white, there were zero PLWH in those counties.

*County-specific demographic data was not presented to protect the identities of PLWH.

Select a demographic for PLWH/100,000 residents

(Multiple values) ▾

Number of people living with HIV per 100,000 residents, Oregon 2021

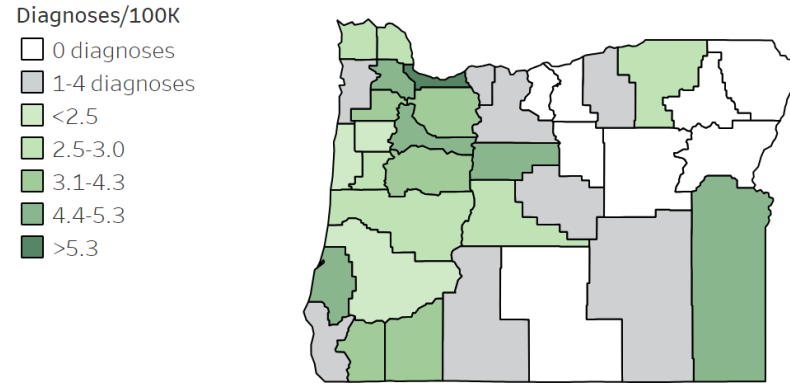


Between 2012 and 2021, the number of new HIV diagnoses **decreased** from 271 to 200 per year. During the same period, the average annual HIV incidence in Oregon was 5.4 cases per 100,000 people. Some groups were disproportionately affected by HIV, associated with systematic denial of opportunities for health.

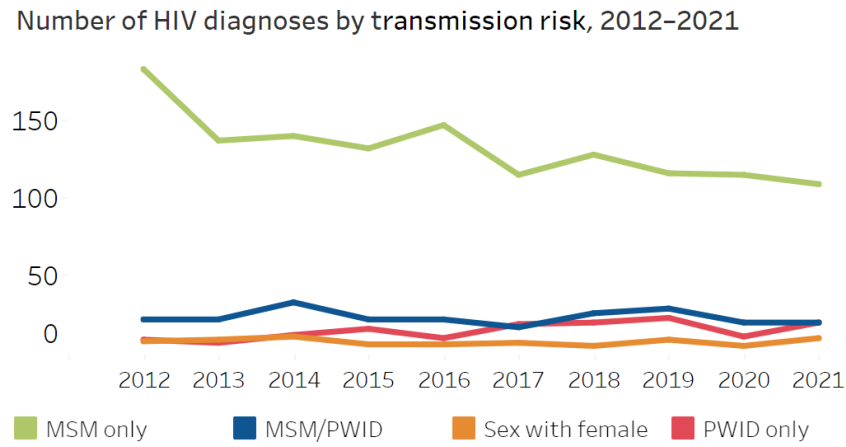
HIV in Oregon

Incidence: # of new diagnoses

Average annual diagnoses per 100,000 residents, 2017–2021
Counties are grey if there were 1-4 diagnoses and white if zero diagnoses

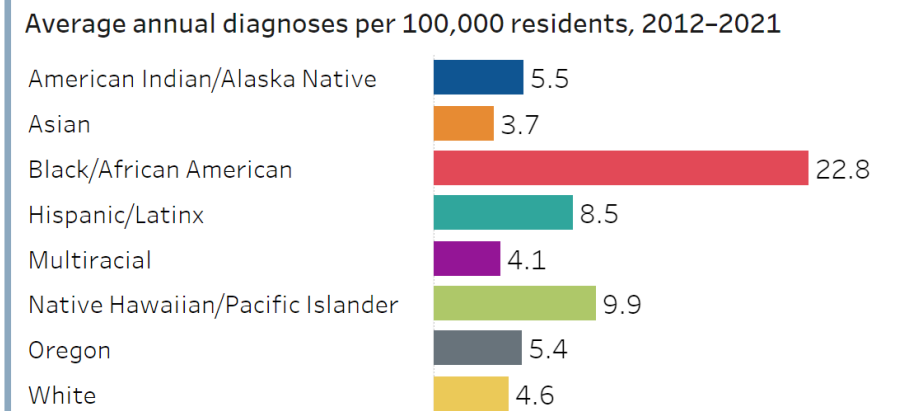
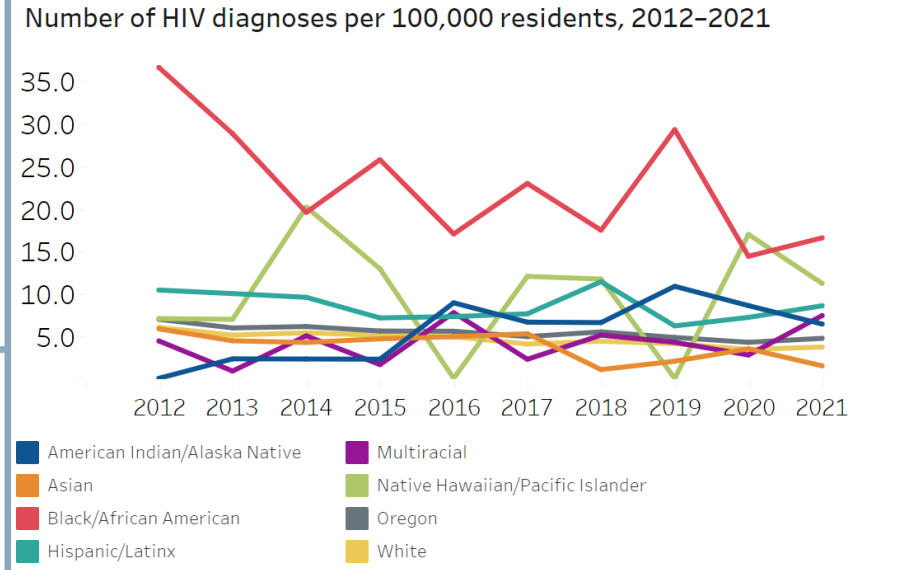


Select a demographic
Assigned male at birth



Select a demographic for diagnoses/100,000 residents
(Multiple values)

Select to compare groups in bar and line charts
(All)



HIV – Human Immunodeficiency Virus

What: Virus – infects and destroys the immune system by infiltrating white blood cells. ⁶

Transmission: Sexually transmitted, transmitted through blood exposure, vertical transmission

Symptoms:

Early symptoms could be asymptomatic or could include: fever, fatigue, swollen lymph nodes, headache, sore throat, sore muscles, skin rash.

Without treatment HIV can become AIDS, which can increase the risk of illness, other infections, and death.

Curable or Treatable:

Treatable: What does the treatment do?

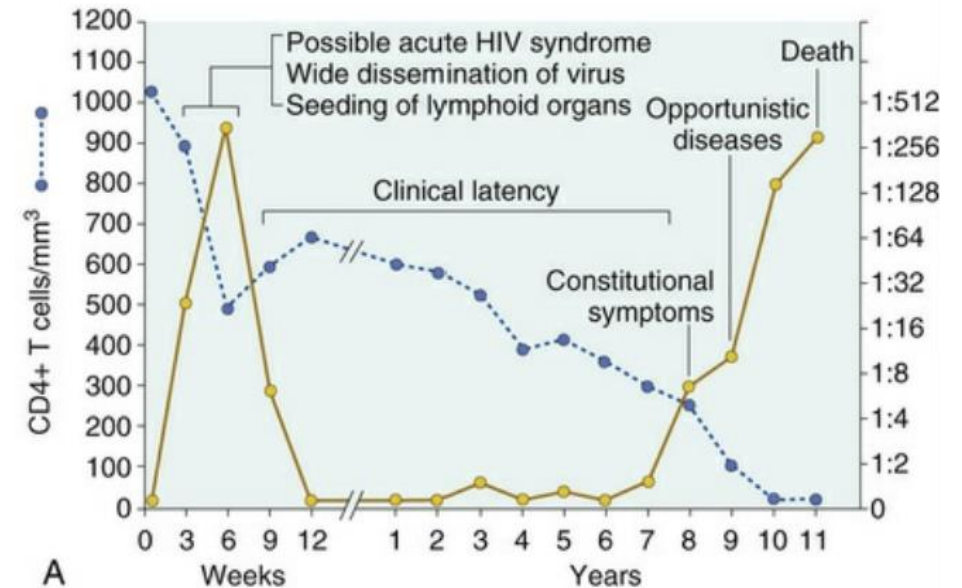
Decreases the viral load of HIV

Prevents serious illness that often occur with HIV

Prolongs survival

Decrease risk of transmission of HIV ⁶

HIV Human Immunodeficiency Virus



- What is PREP?
 - Pre-Exposure Prophylaxis of HIV
- What does PREP do?
 - Reduces risk of getting HIV from sex and injection drug use¹²

HIV / AIDS

HIV: CD4 count > 200

AIDS: CD4 count < 200

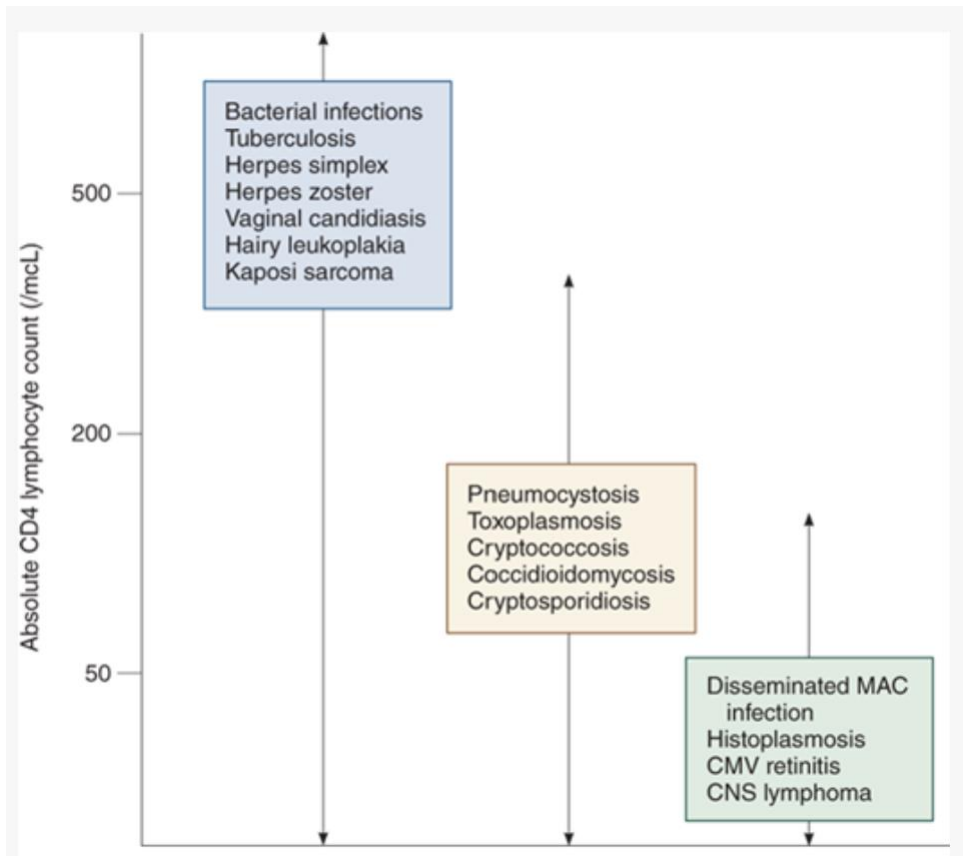
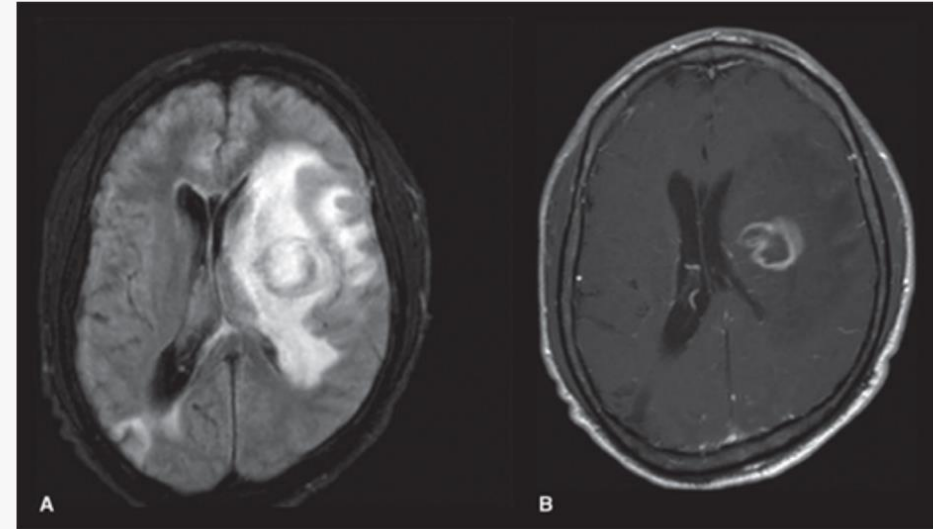


FIGURE 20-5

Toxoplasmosis. **A:** Axial FLAIR MRI demonstrating left frontal lesion surrounded by extensive edema causing mass effect on the left lateral ventricle. **B:** Axial T1-weighted postcontrast MRI demonstrating that the lesion in **A** is ring enhancing.



Source: Aaron L. Berkowitz.

Toxoplasmosis: A common brain infection in people with AIDS and a CD4 count less than 100.

How is STD transmission prevented?

STD Prevention

Abstinence avoiding having intercourse or sexual contact ¹

Condoms (male or female condoms)

- Must be used every time for the duration of sexual contact in order to be effective ¹
- New condoms should be used each time

Decreasing number of sexual partners.¹

Avoiding drugs and alcohol when engaging in sexual contact

Drugs and alcohol can affect decision making ¹

Clear Consent and Communication with Sexual Partners

- Ask your partner for consent before sexual contact
- Ask you partner about STDs and using a condom

PREP

Daily medication to prevent HIV infection for those at higher risk

STD testing

- Women under the age of 25 should be tested yearly for STDs
- STD testing if you experience symptoms or if you are at increased risks for exposure to an STD. ¹

HPV Vaccination

Helps prevent HPV infection and transmission

Consent

- Ask for consent before sexual contact
- Ask about STD testing and using a barrier method before sexual contact

[A Cup of Tea and Consent - Bing video](#)

STD Transmission Activity

- Each person will get one cup of water and 1 slip of paper with a number on it.
- The number represents the number of people you will share water with. For example, if you get a number 5 you will share your water with 5 other people.
- After everyone has shared water, sit in your seat if your water is clear. Remain standing if your water is colored.

We are starting with three cups of colored water. How many cups of colored water will we end with?



HPV – Human papilloma Virus

HPV¹¹

What: VIRUS Human Papillomavirus¹¹

Common virus, transmitted by sexual contact

Symptoms: usually asymptomatic

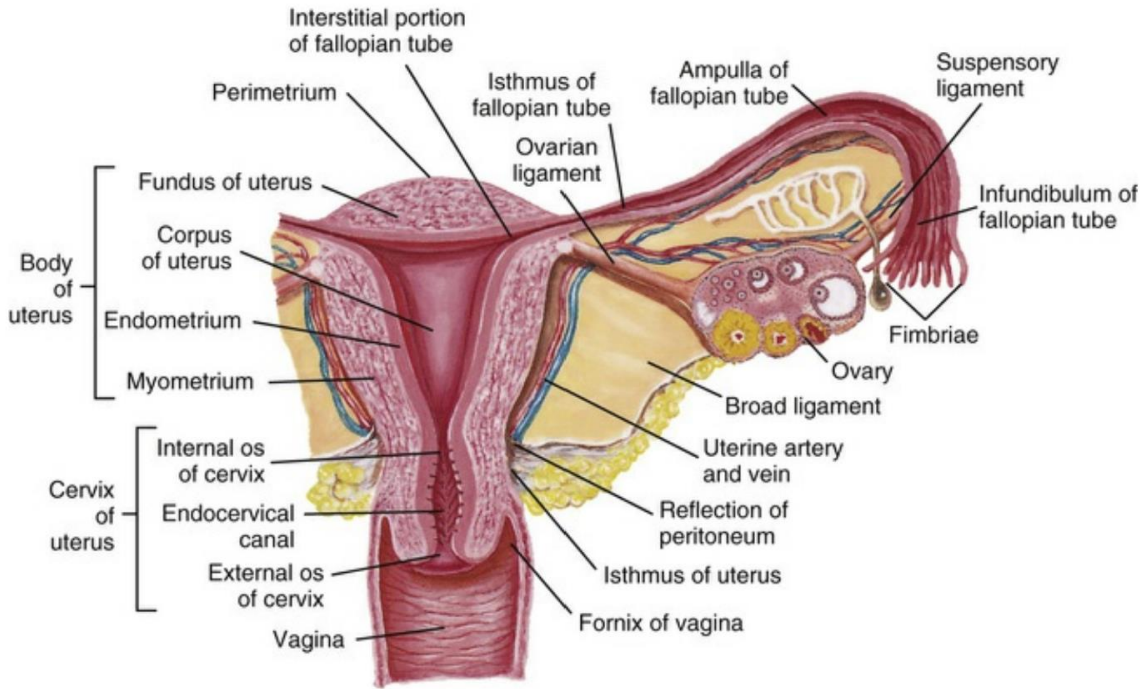
Complications:

- Can cause cancers including cervical cancer, esophageal cancer, penile cancer, anal cancer.
- Can cause genital warts.

Treatment: variable depending on how severe the cancer growth becomes.

Prevention:

- Standard STD prevention tactics.
- HPV vaccination.
- **Pap smears** – testing for HPV and cancer cells before the cancer becomes malignant.¹¹



HPV Vaccine is recommend for ages 12 – 26.

- Recommended for both men and women.
- Protects against cervical cancer, genital warts, esophageal cancer.
- Only works prior to HPV exposure.

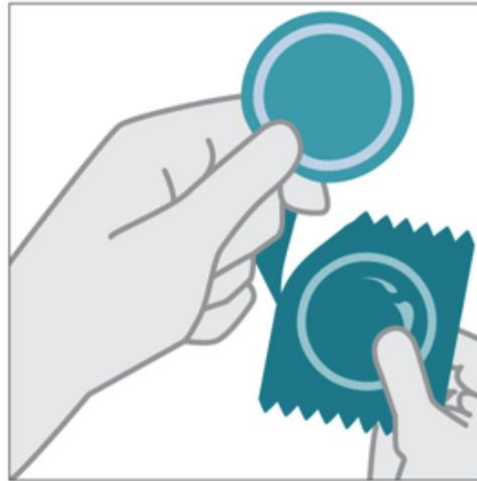


CONDOM USEAGE

Male and Female condoms

- Prevents STDs
- Prevents unwanted pregnancy

How To Put On and Take Off a Male (External) Condom



Carefully open and remove condom from wrapper.



Place condom on the head of the erect, hard penis. If uncircumcised, pull back the foreskin first.



Pinch air out of the tip of the condom.

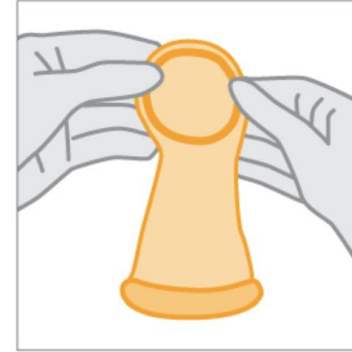
Female Condom (Internal Condom)

- Prevents STDs
- Prevents unwanted pregnancy

How To Insert and Remove a Female (Internal) Condom



Carefully open and remove the condom from package to prevent tearing.



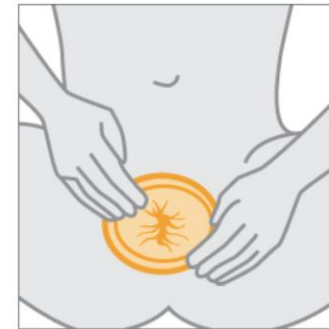
The thick, inner ring with closed end is used for placing in the vagina and holds condom in place. The thin, outer ring remains outside of body, covering vaginal opening.



Find a comfortable position. While holding outside of condom at closed end, squeeze sides of inner ring together with your thumb and forefinger and insert into vagina. It is similar to inserting a tampon.



Using your finger, push inner ring as far up as it will go until it rests against cervix. The condom will expand naturally and you may not feel it.



Be sure condom is not twisted. The thin, outer ring should remain outside vagina.

STD Testing – When should I get tested?

Reasons to talk with your healthcare provider about STD testing and sexual health:

- Abnormal genital symptoms including sores, redness, itching, unusual vaginal odor or discharge, painful urination, painful intercourse²
- Exposure to a partner with an STD²
- Increased risk of STD infections including not using barrier methods, multiple partners. ²

CDC recommendation:

- All people from 13-64 should be tested for HIV at least 1 time ²
- All sexually active women younger than 25 would be tested yearly for Gonorrhea and Chlamydia. ²
- Consider testing with increased risk of STD infection including: multiple or new sex partners, or a partner with a known STD. ²
- Sexually active gay, bisexual, and men who have sex with men should be tested at least yearly, and more frequently (every 3 – 6 months) with multiple or anonymous partners. ²

STD Testing – how do I get tested?

Call your health care provider to ask about STD testing.	
Ask about STD testing at your provider's office.	At age 15 and older you can request STD testing for HIV, gonorrhea, Chlamydia Syphilis without the consent from your parents. ³
Find STD testing by mail or tele-health.	This may require collecting your own samples. Search Results Get Tested (cdc.gov)

Why Should I Tell My Healthcare Provider About My Sexual Contact History?

18 year old with genital redness and itching:
What is it?



Tinea Cruris (Jock Itch)

Fungal infection. Not sexually transmitted.⁸



20 year old girl with severe abdominal pain and pelvic pain in the ER



Pelvic Inflammatory Disease ¹⁰

Etiology:

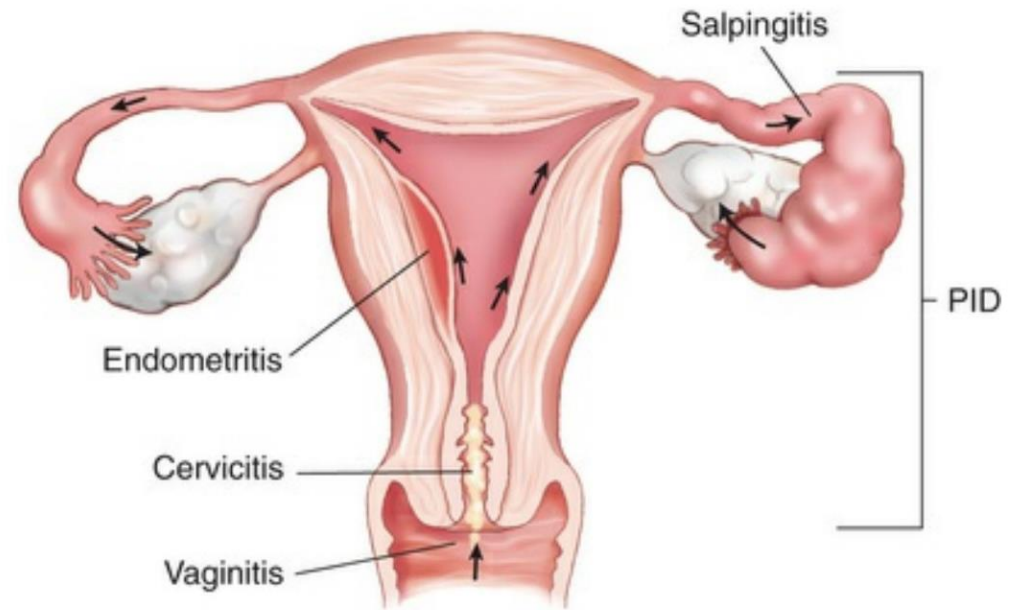
Caused by **Chlamydia** or **Gonorrhea** infection that travels into the uterus fallopian tubes, and other structures.

Treatment:

Sometimes patient need to be in the hospital. Treatable with antibiotics.

Prognosis:

- Even after treatment, infection can return.
- Chronic pelvic
- Dyspareunia
- Infertility



27 year old with rash on hands and feet



Secondary Syphilis⁹



Curable? Or Treatable?

THINK PAIR SHARE

What is one way to decrease the risk of getting or transmitting a STD?

Aubrey Mullins
OHSU

Physician Assistant Student



OREGON
HEALTH & SCIENCE
UNIVERSITY

**1. What is a Physician
Assistant?**

**2. Sexually Transmitted
Diseases**

Physician Assistant (PA)



OHSU PA Class of 2024

What is a Physician Assistant?

- PAs are medical providers with a graduate level education (usually about 2 years long) who are licensed to diagnose and treat illness.
- What can PAs do?
 - prescribe medications
 - perform physical exams
 - interpret labs
 - interpret imaging
 - give health advice
 - perform procedures – stitches, skin biopsies, pap smears
 - assist in surgeries
- PAs collaborate with other physicians, PAs and Nurse Practitioners in hospital or clinical environments
- PAs can work in any specialty. Some common specialties include: Surgery, Family Medicine, OBGYN, Orthopedics, Dermatology, ICU, ER.

Requirements for PA School:

- Bachelor's degree (in ANY subject)
- GPA 3.0+ (average is around 3.5)
- Prerequisite classes: biochemistry, anatomy and physiology, biology, organic chemistry, statistics
- 40+ hours of shadowing PAs and other healthcare providers
- 2000 – 5000 hours of patient care experience.
 - Examples: CNA, Medical Assistant, phlebotomy, clinical research, ER tech, paramedic.

What is PA school like?

PA School Duration: 24 – 32 months

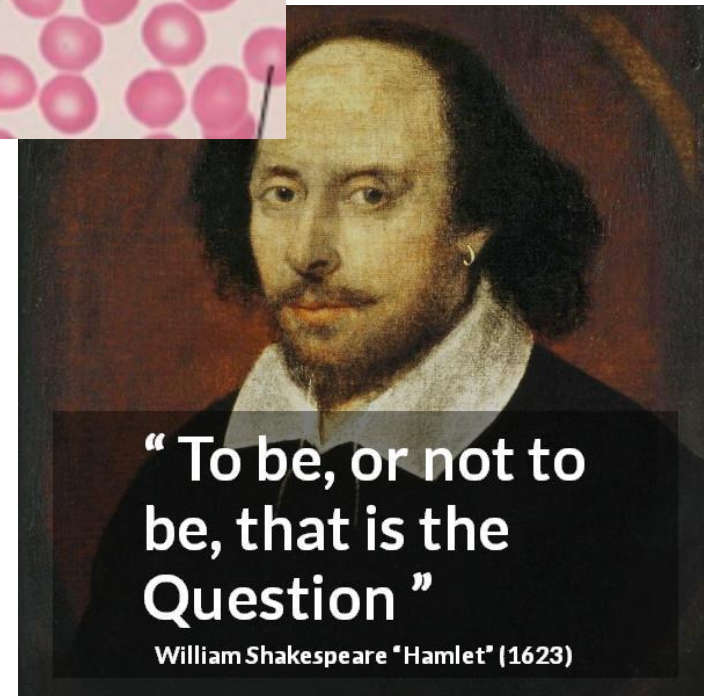
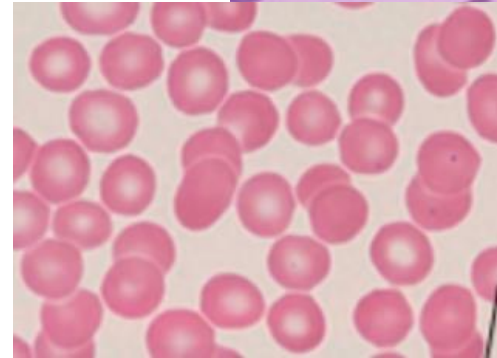
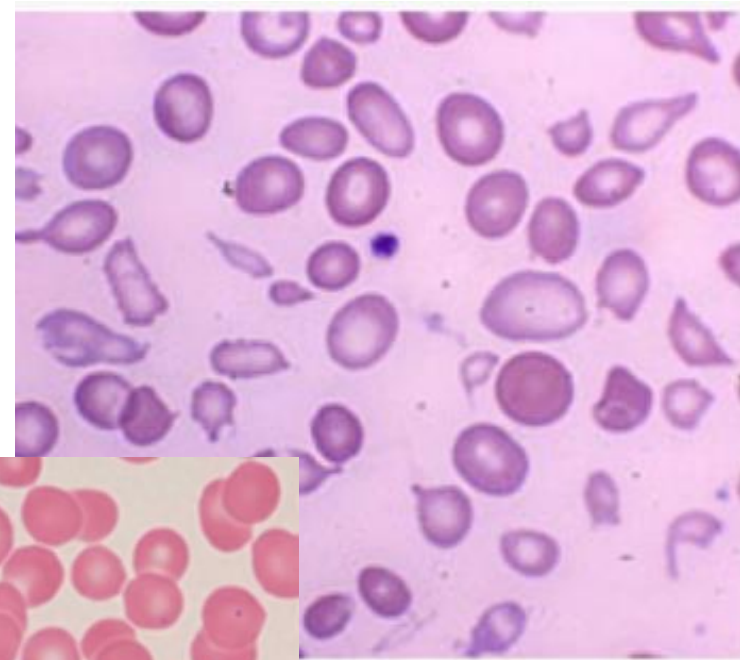
PA School Cost: \$80,000 – \$200,000

1st Year: School Work (Didactics)

2nd Year: Clinical Rotations

Aubrey's Path to PA School

- Bachelors of Arts (BA) in English Literature + PA school prerequisites classes
 - Taught anatomy and physiology lab
 - Shadowed in a Hospital in Uganda, Africa
 - Volunteered
 - Shadowed other PAs and Physicians
- 1 year working in pharmaceutical clinical research
 - Volunteering, shadowing
- 1 year working as a Medical Assistant in an OBGYN office
 - Volunteering, shadowing
- PA school application



SOOOO... What does a PA do again?

65 y/o female with left knee pain x 1 year

Julie is 65 year old retired greenhouse attendant who presents today for worsening left knee pain for the last year. She notices her pain the most when walking, kneeling, and transitioning from sitting to standing. Her pain is 7/10 and is preventing her from going on her daily walks with her dog. She takes 200 mg of ibuprofen 4 times daily which sometimes helps her pain.



Knee Exam

Gait: Antalgic gait- Weight bearing with pain. Patient uses cane for a assistance.

Inspection: No redness, swelling, or bruising

Palpation: No pain to palpation. Some crepitus along medial joint line.

Range of Motion: Limited range of motion on extension. Pain with flexion, extension.

Strength: 4/5 for flexion due to pain. 5/5 extension

Julie's XRAY



Osteoarthritis

Normal XRAY



Julie's XRAY

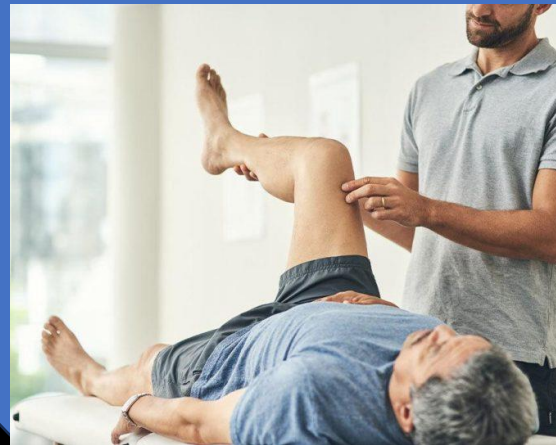


Treatment Options for Julie:

Knee injections
PAs do that!



Send a Physical Therapy Referral



Total Knee Arthroplasty
PAs assist in surgeries



Prescribe medications:
Naproxen 250mg PO
q 12 hours



RESOURCES

- [Sexually Transmitted Diseases - Information from CDC](#)
- [Search Results | Get Tested \(cdc.gov\)](#)
- [A Cup of Tea and Consent - Bing video](#)
- [Bedsider Birth Control Support Network](#)

Questions and Survey



https://ohsu.ca1.qualtrics.com/jfe/form/SV_bDTblAdaf5NFL2S

Images

- <https://kwize.com/pics/William-Shakespeare-quote-about-life-from-Hamlet-1c950.jpg>
- <https://th.bing.com/th/id/R.1bd0aebc646c4df67086b33766f5d844?rik=xSbWUDsOpwBW0w&riu=http%3a%2f%2fvestaviamedcenter.com%2fwp-content%2fuploads%2f2020%2f04%2fpt3-680x540.jpg&ehk=ktwqvUAYKgWmiwRoiJ2o8iC6hxBLElhRPaQmZrw3CVA%3d&risl=&pid=ImgRaw&r=0>
- <https://thumbs.dreamstime.com/z/pretty-grandma-happy-senior-woman-smiling-camera-isolated-over-white-34274882>
- [Knee Osteoarthritis - Recon - Orthobullets](#)

- <https://i.pinimg.com/originals/68/56/77/685677b06051a7b7479eae483faec78.jpg>
- Ebraheim NA, Thomas BJ, Fu FH, Muller B, Vyas D, Niesen M, Pribaz J, Draenert K. Orthopedic Surgery. In: Brunicardi F, Andersen DK, Billiar TR, Dunn DL, Kao LS, Hunter JG, Matthews JB, Pollock RE. eds. *Schwartz's Principles of Surgery, 11e*. McGraw Hill; 2019. Accessed January 11, 2024. <https://accessmedicine.mhmedical.com/content.aspx?bookid=2576§ionid=216216909>
- [How to Use a Internal Condom | CDC](#)
- [How to Use a Male \(External\) Condom | CDC](#)
- Philip SS. Clinical Stages of Syphilis. In: Papadakis MA, McPhee SJ, Rabow MW, McQuaid KR. eds. *Current Medical Diagnosis & Treatment 2023*. McGraw-Hill Education; 2023. Accessed January 22, 2024. <https://accessmedicine.mhmedical.com/content.aspx?bookid=3212§ionid=269144415>
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Citations

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3. Oregon Law on Consent for STI Testing and Treatment of Minors. Oregon Health Authority. Public Health Division: STD Prevention Program. [STI Minors Fact Sheet 2019.pdf \(oregon.gov\)](#)
4. Dolan B, Walsh J. Prevention of Sexually Transmitted Infections in Women. In: Papadakis MA, McPhee SJ, Rabow MW, McQuaid KR. eds. *Current Medical Diagnosis & Treatment 2023*. McGraw-Hill Education; 2023. Accessed January 28, 2024. <https://accessmedicine-mhmedical-com.liboff.ohsu.edu/content.aspx?bookid=3212§ionid=269130644>
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6. Kathryn McCance; Sue Huether. Pathophysiology: The biologic basis for disease in adults and children. Eighth Edition. Elsevier, Inc 2019.
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9. Philip SS. Clinical Stages of Syphilis. In: Papadakis MA, McPhee SJ, Rabow MW, McQuaid KR. eds. *Current Medical Diagnosis & Treatment 2023*. McGraw-Hill Education; 2023. Accessed February 08, 2024. <https://accessmedicine-mhmedical-com.liboff.ohsu.edu/content.aspx?bookid=3212§ionid=269144415>
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12. Pre-Exposure Prophylaxis (PREP). HIV. Centers for Disease Control and Prevention. July 2022. [Pre-Exposure Prophylaxis \(PrEP\) | HIV Risk and Prevention | HIV/AIDS | CDC](#)
13. Infectious Diseases of the Nervous System. In: Berkowitz AL. eds. *Clinical Neurology & Neuroanatomy: A Localization-Based Approach, 2e*. McGraw Hill; 2022. Accessed February 14, 2024. <https://accessmedicine-mhmedical-com.liboff.ohsu.edu/content.aspx?bookid=3206§ionid=267390614>

Learning Objectives

- Students will
 - Define Sexually Transmitted Infections
 - Know the 6 most common STDs including symptoms and treatment.
Chlamydia, Gonorrhea, HIV, Syphilis, HSV 2, HPV
 - Understand how STDs are transmitted
 - Understand risk reduction practices including abstinence, condom use, STD testing, fewer sexual partners, avoiding drugs / alcohol with intercourse.
 - Know how to access STD testing and will understand privacy policies in Oregon.
 - Practice open communication with partners and medical professionals to maintain sexual health.