Introduction to STDs
Definition: Sexually Transmitted Diseases are infectious diseases that spread from person to person through intimate or close sexual contact (anal, oral, or vaginal sex).
General Symptoms: skin changes (sores, rashes, bumps, warts); irritation or burning sensation during urination; unusual discharge from sex organs; noticeable pelvic pain; possible to have none.
General Complications: death; emotional pain (fear, shame, guilt); pre and/or post pregnancy problems; risk of infertility.
Approximately 75% of people don’t know they’re infected. Therefore, they continue to spread the disease instead of being treated.

Chain of Infection

<table>
<thead>
<tr>
<th>Agent</th>
<th>Bacteria—syphilis, Chlamydia, gonorrhea, vaginitis, and nongonococcal urethritis; Viruses—herpes, AIDS, and Chlamydia; Fungi—yeast infections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reservoir</td>
<td>Human body</td>
</tr>
<tr>
<td>Place of Exit</td>
<td>Penis, vagina, rectum, mouth, open cuts/sores on skin, mucous membranes, and blood</td>
</tr>
<tr>
<td>Route of Transmission</td>
<td>Intimate or close sexual contact – penis to vagina, penis to rectum, mouth to penis, and so on</td>
</tr>
<tr>
<td>Place of Entry</td>
<td>Penis, vagina, rectum, mouth, open cuts/sores on skin, mucous membranes, and blood</td>
</tr>
<tr>
<td>Susceptible Host</td>
<td>Those involved with sexual contact, those participating in drug use, newborns of infected women, and rarely those receiving blood transfusions.</td>
</tr>
</tbody>
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Risky Behaviors
Some of the things that increase a person’s chances of getting an STD are:
- *Sexual activity at a young age.* The younger a person starts having sex, the greater their chance of contracting an STD.
- *Lots of sex partners.* People who have sexual contact with many different partners are more at risk than those who stay with the same partner.
- *Unprotected sex.*

STD Specifics (including defining characteristics, tests, and treatments)

**Syphilis**
- Over 70,000 new cases each year in the US
- Caused by the bacterium *Treponema pallidum*
- Spread through direct contact with infected sores, mainly occurring on external genitalia, vagina, anus, or rectum; less commonly occurring on lips or mouth
- Mothers can pass it to newborns, 12% will die
  - Congenital syphilis (present at birth) can cause heart defects and bone abnormalities.
- **Symptoms**
  - Stage 1 (primary): sore(s) usually small, firm, round, and painless. They appear at the place of entry; lasting 1-5 weeks and heal on their own. Often internal in females.
  - Stage 2 (secondary): copper-colored skin rash appearing on palms of hands, soles of feet, and in more severe cases covers the whole body. Often accompanied by fever, headache, indigestion, loss of appetite, or loss of hair. Lasts 3-6 weeks.
Lecture Notes for SEXUALLY TRANSMITTED DISEASES

- **Syphilis**
  - **Late and Latent Stages:** all symptoms disappear. If untreated, syphilis remains in the body and begins attacking internal organs. Can last for years.
  - **Testing:** diagnosed with the presence of bacteria in a sample of an infectious sore.
  - **Treatments:** curable in early stages with one injection of penicillin. Congenital syphilis will need daily injections for 10 days.

**Chlamydia**
- Most widespread, with 4 million new cases every year
- More common among teens and young adults
- Caused by the bacterium *Chlamydia trachomatis*
- It is the major cause of Pelvic Inflammatory Disease and urethritis
- Spread through unprotected vaginal and/or anal sex.
- If left untreated, Chlamydia can cause painful results – arthritis, permanent reproductive damage, chronic and pain, infertility, sterility, ectopic/tubal pregnancies.
- Babies born to infected mothers may contract eye, ear, and lung infection and may even die.
- **Symptoms:** fever, unexpected weight loss, swollen glands, fatigue, diarrhea, white spots on mouth, discharge, burning with urination.
  - **Female:** lower abdomen pain and bleeding between menstrual periods
  - **Male:** burning and itching around the opening of penis; pain and swelling of the testes
- **Testing:** diagnosed with laboratory tests using urine or a specimen collected from the penis or cervix.
- **Treatments:** easily treated or cured with antibiotics. The two most common are – one dose of azithromycin or daily doses of doxycycline for a week.

**Gonorrhea** (the clap)
- In the US approximately 700,000 people are infected every year
- More easily contract HIV
- Caused by the bacterium *Neisseria gonorrhoeae*
- Spread through close sexual contact; spread to unlikely body part (eye infections — touch genitals then eyes); spread to newborns during delivery, which can cause blindness, joint infection, or life threatening blood infection
- If left untreated, Gonorrhea can spread to pelvic and sex organs, cause permanent reproductive damage, pain and swelling in joints, skin problems, and heart problems.
- **Symptoms:** sore or red throat, rectal pain, blood or pus present in bowel movements, yellow or white discharge, pain or burning with urination.
  - **Female:** heavy or painful periods, bleeding between periods, cramps in lower abdomen, and sometimes nausea or fever.
  - **Male:** frequent urination and swollen testes.
- **Testing:** diagnosed with laboratory tests using a sample from possible infection site. Also, it is possible to see the bacterium under a microscope using a Gram stain.
- **Treatments:** can be cured with medications. However, it is possible to become re-infected.

**Herpes**
- Not all forms are STDs, Herpes simplex type 2 is and STD.
- Once infected, you remain infected for life.
- Some will experience herpes “outbreaks.”
- One in six Americans aged 14-49, have genital HSV-2 infection
- Caused by a virus and spread through close sexual contact
- **Symptoms:** blisters or ulcers around vagina or on penis.
- **Testing:** diagnosed by visual examination of sores and laboratory testing of a sore sample.
- **Treatments:** there is no cure, but antiviral medications can reduce and prevent outbreaks.
- To prevent the spread from mother to newborn, a Cesarean section is recommended.

**Hepatitis**
- This is an inflammation of the liver.
- It is caused by a virus.
- Most common types in US are Hepatitis A, B, and C.
- It can be prevented by a vaccination.

**Genital Warts**
- Approximately 5.5 million new cases every year in the US.
- Three out of four Americans ages 15-49 have been infected.
- Growthths appearing on vagina or penis, near the anus, and sometimes in the throat.
- Caused by viruses called Human Papilloma Virus (HPV)
- Spread through close sexual contact
- **Symptoms:** cauliflower looking or flat warts may cause some itching, burning, or pain.
- **Treatments:** the goal of treatment is to remove warts and reduce symptoms.
  - Self-applied liquids or gels (Podofilox and Imiquimod cream)
  - Cryotherapy (freezing off with liquid nitrogen)
  - Chemical compounds applied by a doctor (Podophyllin and Trichloracetic acid)
  - Laser therapy (intense light used to destroy warts) or surgical removal
  - Medications like Interferon

**STD Protection and Prevention**
How do you prevent STDs?
- **Practice abstinence (only 100%)**
  - The only way to completely prevent STDs is to abstain from all types of sexual contact.
- **Practice responsible sexual behaviors**
  - If someone is going to have sex, the best way to reduce the chance of getting an STD is by using a condom every time. Latex condoms are the only form of birth control that reduce your risk of getting an STD, and must be used every time.
- **Get educated and regularly visit your doctor**
  - People who are considering having sex should get regular gynecological or male genital examinations. There are two reasons for this. First, these exams give doctors a chance to teach people about STDs and protecting themselves. And second, regular exams give doctors more opportunities to check for STDs while they’re still in their earliest, most treatable stage.

**HIV/AIDS in brief**
AIDS is Acquired immune deficiency syndrome and attacks the immune system resulting in a person’s inability to fight off infection.
It has an incubation period of 7–10 years.
It was first reported in 1981.
AIDS is caused by Human Immunodeficiency Virus (HIV).
As of November 2011:
- 1.2 million American are infected; 1 in 5 are unaware
- Since 1981, over 1 billion Americans have been infected; almost 600,000 have died