STD Overview for Non-Clinicians

Participant Manual

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Learning Objectives

Goal:

Participants will be able to successfully integrate STD risk-reduction into teaching or counseling about sexual and reproductive health.

By the end of the training, participants will be able to:

1. Describe common STDs;
2. Explain the health consequences of STDs for adults and newborns;
3. Describe which behaviors are high risk for STD transmission;
4. Summarize STD trends locally and nationally;
5. Explain the impact of STDs on certain populations based on age, gender, sexual orientation, and race/ethnicity;
6. Describe the similarities, differences, and inter-relationship between HIV and other STDs;
7. Provide clear and simple risk-reduction messages about STDs to various priority populations.
Framing the Facts
Behavior Change Theory and Client–Centered Messages

1. Knowledge of STD Transmission
   oral, anal, vaginal sex (asymptomatic)

2. Perception of Susceptibility
   chance of exposure to STD and
   chance of infection if exposed

3. Perception of Severity
   consequences and their likelihood and
   seriousness of consequences

4. Perception of Self-Efficacy
   next step and incremental change over time
   leads to risk reduction methods
External Female Reproductive System

This diagram does not represent the biological diversity of human bodies. Please refer to the “Specific Populations” section for information on transgender and intersex people.
Internal Female Reproductive System

This diagram does not represent the biological diversity of human bodies. Please refer to the “Specific Populations” section for information on transgender and intersex people.
External Male Reproductive System

This diagram does not represent the biological diversity of human bodies. Please refer to the “Specific Populations” section for information on transgender and intersex people.
This diagram does not represent the biological diversity of human bodies. Please refer to the “Specific Populations” section for information on transgender and intersex people.
Common STDs

Syphilis

Chlamydia - (PID) - Gonorrhea

Trichomonas

Shigella

Giardia

Entamoeba

Cryptosporidium

Herpes Simplex Virus (HSV)

Human Papillomavirus (HPV)

Human Immunodeficiency Virus (HIV)

Hepatitis B Virus (HBV)

Hepatitis C Virus (HCV)

Hepatitis A Virus (HAV)

Other STDs include: crabs or pubic lice; scabies
Not sexually transmitted: yeast infections (*candida*); bacterial vaginosis (BV)
STD Overview

I. Viral STDs
   • Herpes Simplex Virus (HSV) – Genital Herpes
     ➢ Common STD caused by Herpes Simplex Virus 2 (HSV 2) or less often, Herpes Simplex Virus 1 (HSV 1).
     ➢ Can be transmitted by vaginal, anal or oral sex through direct contact with a lesion, sore, or infected tissue.
     ➢ Symptoms do not have to be present for HSV to be passed.
     ➢ Transmission without symptoms is very common because of asymptomatic viral shedding, especially during the first couple years of a new herpes infection.
     ➢ Up to 90% of infections are asymptomatic, or mildly symptomatic and unrecognized.
     ➢ Most common symptoms include blisters on the skin, or pain, itching or a tingling of the skin in the genital or rectal area before an outbreak occurs.
     ➢ There is no cure for HSV, but treatment can minimize the length and pain of outbreaks.
     ➢ Daily treatment may also decrease asymptomatic viral shedding and transmission to others. However, shedding does not stop completely and condoms are still recommended.
     ➢ Condoms are a good barrier to HSV when they cover the infected area.
     ➢ HSV increases chance for HIV transmission by three to six times.

Asymptomatic viral shedding is when live virus is produced and released through infected skin, even though there is not a visible sore or lesion.
• **Human Papillomavirus (HPV)**
  
  - There are over 100 different viruses that are a part of the HPV family of which about 40 types are sexually transmitted to genital tissues.
  
  - Certain HPV types can cause cervical cancer and do not cause genital warts. Over 95% of cervical cancers are associated with HPV.
  
  - Some HPV types have also been linked to anal cancers, especially among people living with HIV.
  
  - Some clinical providers are doing anal pap testing though at this time it is not recommended by the CDC.
  
  - A few HPV types cause warts to grow in the genital and anal area, however only 7% of HPV cases have visible warts.
  
  - Common sites of infection are the cervix, vagina, vulva, perineum, anus, rectum, penile shaft, corona of penis, scrotum.
  
  - Most people with genital HPV infections will show *no symptoms* (no visible warts, normal Pap tests).
  
  - HPV can shed from infected skin/membranes and can be transmitted without the presence of any warts through direct contact.
  
  - The vast majority of people (probably greater than 90%) with HPV will self-resolve the infection within two years.
  
  - There is no cure for HPV, but there are treatments for removal of warts and abnormal cell growth. These treatments remove the visible wart and/or abnormal cell growths but they do not clear the underlying HPV infection. Warts and abnormal Paps can come back even after treatment.
  
  - Regular Pap tests for women are extremely important for prevention of cervical cancer.
  
  - Condoms are a good barrier to HPV for areas they cover. Transmission occurs when infected areas are not covered by condoms – or with viral shedding to areas not covered with condoms.
A highly effective HPV vaccine (Gardasil) is recommended for 11-12 year old girls, and can be given to girls as young as 9. It is also recommended for 13-26 year old girls and young women who have not yet received the vaccine.

The FDA recently (10/2009) approved the use of Gardasil for preventing genital warts in males nine through 26 years old.

The FDA also recently (10/2009) approved the use of Cervarix (another HPV vaccine) for females 10-25 years old to prevent cervical cancer.

Many viruses are considered **incurable**, because there is no medication that will completely get rid of the virus from the body. However, many viruses have **treatment** for symptoms, and in some cases, these treatments can reduce the amount of virus in the body.

Some viruses like HBV and HPV **self-resolve** in most cases. Self-resolving a virus is when the body’s own immune system gets rid of the virus by fighting the infection (like with a cold or flu).

- **Hepatitis B Virus (HBV)**
  - Sexually transmitted liver infection which can cause inflammation and cell damage leading to cirrhosis and liver cancer.
  - Transmitted via sexual fluids, blood (sharing needles, razors, toothbrushes) or mother to baby.
  - HBV is 100 times more infectious than HIV.
  - Can be asymptomatic or can cause abdominal pain, flu-like symptoms, dark urine, light-colored feces, jaundice, fatigue and fever.
  - About 95% of persons who become infected as adults will self-resolve the virus with their own immune system; only 5% become chronically infected.
- Children and babies have much higher rates of chronic infection (90% of infants and 25-50% of children ages 1-5 will become chronic carriers of HBV)
- HBV is a hardy virus - able to remain infectious even when outside the body for long periods of time (such as in dried blood).
- There is a vaccine that prevents HBV (required for kids entering school; series of 3 shots).
- Condoms may reduce the risk of sexual transmission of HBV when they cover areas exposed to infected blood or sexual fluids.

- **Hepatitis C Virus (HCV)**
  - Transmitted by blood to blood contact.
  - Not easily sexually transmitted – but risk may be increased if there is physical trauma (i.e. tears, micro-abrasions, or damage to the skin) and/or blood present during sex.
  - Can cause inflammation of the liver and cell damage leading to cirrhosis and liver cancer.
  - There is no vaccine for HCV.
  - Various types of treatments can be used, with some successful control of the virus reported. However, the treatment for HCV often has many side effects: depression, nausea and lethargy.
  - Up to 80% of persons with HCV have no signs or symptoms.
  - 25% of people infected with HCV as adults will self-resolve the virus with their own immune system; 75% will develop chronic infection.
  - Effectiveness of condoms in preventing sexual transmission of HCV is unknown, but it is biologically plausible that condoms would be effective.
• **Hepatitis A Virus (HAV)**
  - Liver infection transmitted mainly via fecal-oral contact (i.e. poor hand washing after contact with anus/feces or oral-anal sex - “rimming”). The organism must be ingested in order to infect.
  - HAV can be asymptomatic or can cause the same symptoms as HBV and HCV. Usually HAV infections self-resolve and it seldom causes the kinds of serious consequences as with HBV or HCV.
  - Once a person has developed antibodies for HAV they are immune for life.
  - There is a vaccine for HAV (series of 2 shots).
  - Use of latex gloves or dental dams for rimming can reduce chances for transmission of HAV.
  - The three types of Hepatitis mentioned (A, B & C) are not closely related viruses – their main commonality is that they attack the liver.

Some viruses like HBV and HAV are usually more **acute** infections, meaning they only affect the body for a short period of time (under 6 months) before they self-resolve. Other viruses are **chronic** infections that can remain in the body and affect organs, tissues or cells for a long time. If someone has a chronic STD infection, they can pass it to others. Some viruses, like HSV, have acute symptoms (outbreaks with sores) that come and go, but the virus itself is in the body for life, and is, therefore, chronic.

• **Human Immunodeficiency Virus (HIV)**
  - HIV is found in several types of white blood cells (WBCs) in blood, semen, vaginal fluids, and possibly breast milk.
  - Sexual transmission of HIV occurs mainly through vaginal and anal sex.
HIV can be transmitted from mother to infant during gestation, birth or breast feeding.

A person can have HIV for many years before developing symptoms or other serious complications.

HIV disease is characterized by a gradual deterioration of immune functions that may lead to opportunistic infections or AIDS (Acquired Immunodeficiency Syndrome)

There is no cure for HIV, only anti-retroviral treatment. Anti-retroviral treatments control the replication of HIV and slow down disease progression.

People may have acute symptoms (fever, malaise, skin rash) after the first few weeks of HIV infection but before the HIV antibody test shows a positive.

Condoms are a good barrier to HIV.

II. **Bacterial STDs**

- **Chlamydia** *(CT – Chlamydia trachomatis)*
  - Very common STD that infects the cervix, urethra, rectum, or throat.
  - Up to 80% of women have no signs or symptoms. Untreated or under-treated Chlamydia can lead to PID in women.
  - Up to 50% of men have no signs or symptoms.
  - Chlamydia can be transmitted even when symptoms are absent.
  - New, accurate, non-invasive (urine) tests, can be used to diagnose Chlamydia.
  - Curable with antibiotics.
  - Condoms are a good barrier to Chlamydia.
  - Chlamydia increases the chance for HIV transmission by three to five times.
• **Gonorrhea (GC – Gonococci or Neisseria gonorrhoeae)**
  - Common STD that infects the cervix, urethra, rectum or throat
  - Up to 50% of women have no signs or symptoms.
  - Many men have no signs or symptoms.
  - New, accurate, non-invasive (urine) tests, can be used to diagnose Gonorrhea.
  - Gonorrhea can be transmitted even when symptoms are absent.
  - Curable with antibiotics.
  - Gonorrhea is becoming resistant to many medications; the guidelines for treatment have changed recently as a result.
  - Condoms are a good barrier to Gonorrhea.
  - Gonorrhea increases the chance for HIV transmission by two to five times.

• **Non-gonoccocal urethritis (NGU)/Non-specific urethritis (NSU)**
  - NGU/NSU can be caused by Chlamydia, or other organisms.
  - Some of the organisms that cause NGU/NSU in men can cause vaginitis and cervicitis in women.
  - Treated with antibiotics.
  - Condoms are a good barrier to the organisms that cause NGU/NSU.
  - Having NGU/NSU might increase the chances of HIV transmission during sex.
• **Syphilis**
  - A complex STD which can spread to all organs of the body after the bacteria enters the blood at the initial site of infection.
  - Transmitted through direct contact with syphilis sores or lesions during vaginal, anal or oral sex.
  - Untreated syphilis progresses in “stages”, with periods of no symptoms (called “latency”) occurring between the symptomatic stages. The symptoms that appear through the different stages of syphilis may go away on their own, even without treatment, however the infection is still present and may progress.

- **Primary Stage:**
  - A painless sore (called a chancre) appears at the site of infection, which is highly infectious by direct contact. It goes away on its own (without treatment) after a couple of weeks.

- **Secondary Stage:**
  - A few weeks after the primary chancre has disappeared, a variety of other symptoms *can* appear – including a rash on the body (trunk), palms of the hands and soles of the feet; hair loss; sore throat; swollen glands; wart-like growths on the genitals; and lesions in the mouth or in other areas with mucous membrane tissue. These lesions (mucous patches) and wart-like growths are the only secondary symptoms infectious to other people. The bacteria are passed through direct contact with these symptoms. These symptoms too will go away on their own without treatment.

- **Tertiary Stage**
  - Five to twenty years after untreated infection, syphilis begins to affect the internal organs (heart, lungs, brain) or cause large, destructive skin sores. In this stage the person is no longer infectious to other people.
Syphilis stages generally follow the above order and timeline. However, for some people (including those who are HIV positive), the first, second and third stages may overlap and/or occur at a much faster pace.

- A pregnant woman with untreated syphilis can pass the infection to her fetus – causing serious damage to the baby’s internal organs, resulting in stillbirth or permanent birth defects.
- Syphilis is curable at every stage with antibiotics-but damage done to the body (i.e. organs) may not be reversible with treatment.
- Condoms are a good barrier to syphilis when they cover the chancre or the mucous patches.
- Symptomatic syphilis increases the chance for HIV transmission by three to four times.

III. Protozoan STDs
  - Trichomoniasis (Trich)
    - Usually transmitted through vaginal sex; but can be transmitted by objects (sex toys), and transmission between women who have sex with women is documented.
    - Most common site of infections are the vagina and male urethra.
    - Up to 50% of women are asymptomatic.
    - Men are usually asymptomatic.
    - Trichomonas can be transmitted when symptoms are absent.
    - Curable with medication.
    - Condoms are a good barrier to trichomonas organisms.
    - Trichomonas increases the chances for HIV transmission by two to five times.
IV. **Sexually Transmitted Enteric Diseases (STEDs)**

- **Giardia, Entamoeba, Cryptosporidium and Shigella**  
  (Shigella is a bacterium and the others are protozoa)
  
  - The vast majority of enteric infections are passed through contaminated water and food via fecal-oral contact (poor hand washing, river water, etc.).
  - Sexually transmitted enteric infections are passed through contact with the anus (feces) through oral-anal sex or “rimming”. The microscopic organism must be ingested in order to infect.
  - Often asymptomatic, but symptoms can include: diarrhea, abdominal cramps, bloating, fatigue, and weight loss.
  - Infection is usually self-limiting unless the person is HIV co-infected – then the infection is more serious and prolonged.
  - Curable with specific medications.

V. **Douching**

- Several recent studies reveal that women who douche get more PID than women who do not douche.
- Women who douche also are more likely to get Bacterial Vaginosis (BV), a common sexually associated vaginal infection.
- Experts in women's health recommend that women do **not** douche.
- Although more research needs to be done on the effects, anal douching, enemas, or colonics are not recommended.
- People who receive anal sex and want to douche anally, using only water is one form of risk reduction.
Questions and Answers about STDs

I. What are the Common STDs?

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<tr>
<th>Syphilis</th>
<th>Herpes Simplex Virus (HSV)</th>
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<tbody>
<tr>
<td>Chlamydia – (PID) – Gonorrhea</td>
<td>Human Papillomavirus (HPV)</td>
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<td>Trichomonas</td>
<td>Human Immunodeficiency Virus (HIV)</td>
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<td>Hepatitis B Virus (HBV)</td>
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<td>Hepatitis C Virus (HCV)</td>
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<td>Entamoeba</td>
<td>Hepatitis A Virus (HAV)</td>
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<td>Cryptosporidium</td>
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</table>

- Other STDs include: crabs or pubic lice; scabies
- Not sexually transmitted: yeast infections (candida); bacterial vaginosis

II. What do some STDs have in common?

- Which are generally incurable (medication can treat but not get rid of it)?
  - Viruses

- Which cause sores or ulcers on the genitals (Genital Ulcer Diseases – or G.U.D.s)?
  - Syphilis and HSV

- Which are protozoal?
  - Trichomonas, Giardia, Entamoeba, and Cryptosporidium

- Which are the most common?
  - HSV, HPV, Trichomonas, and Chlamydia

- Which are Sexually Transmitted Enteric Diseases (STEDs)?
  - Shigella, Giardia, Entamoeba, Cryptosporidium, and Hepatitis A

- Which are curable with medication?
  - All bacterial and protozoal STDs
III. **What are some common signs and symptoms of STDs?**

- Most people with STD infections do not have any obvious signs or symptoms and are likely unaware of their infection. The most common sign or symptom of STD infection is to have NO signs or symptoms. However, if symptoms are present, they may include:
  - discharge (genitals/anus)
  - itching/burning
  - blisters
  - abdominal pain
  - abnormal bleeding
  - painful intercourse
  - open sores (pain/no pain)
  - burning w/ urination
  - warts (on genitals/anus)
  - rash (body, palms, soles)

- If a client describes any of the above symptoms, do not try to tell them which STD they might have, instead, refer them to a doctor or clinic for the appropriate tests.

IV. **What are some long term consequences and/or complications of STDs?**

- **Infants**
  - Eye infection (CT or GC) – may lead to blindness if not treated
  - Lung infection (CT)
  - Warts in throat (HPV)
  - Chronic infections (HIV, HBV, HCV)
    - (Ex. 90% of infants born to a mother infected with HBV will be chronic carriers)
  - Brain infections (HSV)
  - Birth defects (HSV or Syphilis)
  - Stillbirth/neonatal death (HSV or Syphilis)
• **Young Girls or Women**
  - Cervical cancer (HPV)
    - Around 4,000 deaths annually
  - Infertility (CT or GC)
    - Occurs in 14-20% of women with PID
  - Tubal pregnancy (CT or GC)
    - Occurs in 9% of women with PID
  - Permanent pelvic pain (CT or GC)
    - Occurs in 18% of women with PID

• **Anyone with an STD can get**
  - Damage to aorta, nervous system, skin, and/or internal organs (Syphilis)
  - Anal cancer (HPV)
  - Oral or throat cancer (HPV)
  - Liver problems
    - Cirrhosis (HBV or HCV)
    - Liver Cancer (HBV or HCV)
  - Death (HIV, Syphilis, HBV, or HCV)

V. **How are STDs transmitted?**
- STD bacteria, viruses, and protozoa are passed from person to person via:
  - **Direct Contact**
    - Lesion-to-skin, lesion to mucous membrane, skin-to-skin, mucous membrane-to-mucous membrane
  - **Sexual Fluids/Discharge/Blood**
    - Infected fluid or discharge to mucous membrane; infected fluid to blood; or blood to damaged mucous membranes
Fecal/Oral

- Infected bits of feces taken into the mouth through cunnilingus, analingus, fellatio, vaginal intercourse, anal intercourse, digital sex, fisting, and sharing of sex toys; organism must be ingested in order to infect

VI. How is STD transmission reduced?

- Abstinence from sexual activity is the only guarantee to avoid infection.

- Good communication and mutual agreement among sex partners who only have sex with each other and have been tested for STDs.

- Using condoms (male or female) with lubrication and changing condoms between different sexual activities and/or partners can reduce STD risk.

- Latex gloves with lubrication and/or dental dams may also reduce risk of STD transmission for some forms of sex (i.e. rimming, fisting, cunnilingus)

- Reducing the number of partners to one or as few as possible also lowers the risk of STD infection.

- **Remember**, STD prevention involves **more** than not sharing blood, semen, or sexual fluids, since transmission of some common STD organisms occurs by direct contact with STD sores, lesions or infected skin. Condoms help reduce transmission of most STDs during sex.

The spermicide Nonoxynol-9 is not recommended for STD prevention, alone or with condoms, due to the possible irritation of the genital tissues resulting in an increase chance for HIV infection.

VII. Where can I refer people for STD testing and treatment?

See your local referral list, or call the National CDC Hotline in English & Español 24 hours/day, 7 days/week: Toll free: 1-800-CDC-INFO (1-800-232-4636), TTY for the Deaf and Hard of Hearing: 1-888-232-6348.
Or call your county health department (the telephone number will be in the white pages under “County Government”) and ask to speak to someone in the STD clinic or STD program.

- Family PACT: Phone: 1-800-942-1054; Online: www.familypact.org

STD Transmission

I. Direct Contact with Lesion, Sore or Infected Tissue
- Rubbing, sliding, grinding, licking and/or friction contact between: penis – anus – mouth, lips, tongue – scrotum – rectal area – genital area – vagina – vulva
  - Lesion → Mucous Membrane (MM) or damaged skin (micro-cut, tear, scrape, puncture)
  - Infected skin w/ no symptoms → MM or damaged skin

Diseases: Herpes, Syphilis and Human Papillomavirus
*Friction increases the chances of transmission

II. Transfer of Infected Sexual Fluids¹, Discharge², Blood³
- Through exchange of infected fluids: vaginal fluids, semen, rectal secretions, blood and/or discharge (pus) from STD infection:
  - penis (urethra) ↔ anus
  - penis (urethra) ↔ throat
  - penis (urethra) ↔ cervix (far end of vagina) or in vagina
  - cervix, anus, or throat → cervix, anus, or throat

Diseases: Gonorrhea¹,², Chlamydia¹,², NGU¹,², Hepatitis B¹,³, Hepatitis C³, HIV¹,³, Trichomonas¹,²
III. **Fecal – Oral**- ingestion (swallowing) of micro-organisms

- Mouth/tongue on anus (rimming), then ingestion of micro-organisms
- Penis in rectum of infected person, then penis in mouth of another person and ingestion of organisms
- Finger in rectum, then finger in mouth of yourself or another person

**Diseases:** Hepatitis A, Giardia, Entamoeba, Shigella and Cryptosporidium
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<th>STDs</th>
<th>Lesion Sore or Wart</th>
<th>Infected Tissue (no lesion)</th>
<th>Semen, Vaginal fluids</th>
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<td>Entamoeba</td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td></td>
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<tr>
<td>Cryptosporidium</td>
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<tr>
<td>Shigella</td>
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</tr>
</tbody>
</table>

* In a HIV + person with a co-infection of another STD, HIV may be passed through open lesions and/or discharge from the STD infection.

** Syphilis may be passed through blood to blood contact (i.e. needles) only during a very small and specific time period during the infection – and this is not common.
Introduction to Data & Disease Reporting

I. Different Ways We Report Data

- **Number** = a count of the number of cases or infections
  
  *Example:* 30 cases

- **Percent** = the fraction of the whole that one group represents multiplied by 100. For example, out of all the cases, how many are women?
  
  *Example:* 20 out of 30 cases are women
  
  \[
  \frac{20}{30} = 0.6666 \times 100 = 67\%
  \]
  
  67% of cases are women

  *Example (For a larger population):*
  
  335 out of 500 cases are women
  
  \[
  \frac{335}{500} = 0.67 \times 100 = 67\%
  \]
  
  67% of cases are women

- **Rate** = the number of cases in a specific group based on a standard population size of 100,000 (in order to account for differences in population size). In other words, how much disease per population?
  
  *Example:* 30 cases among Town A (3,000 in total population of Town A) * 30 cases among Town B (20,000 in total population of Town B.)
  
  Town A rate = \(\frac{30}{3,000} = 0.01 \times 100,000 = 1,000\) cases per 100,000 population
  
  Town B rate = \(\frac{30}{20,000} = 0.0015 \times 100,000 = 150\) cases per 100,000 population

  *Town A rate is 6.7 times higher than Town B rate (1,000 ÷ 150 = 6.7) even though the number of cases are both 30.*

- **Ratio** = a number that represents the proportion of something in one group compared to another group.

  *Example:* 150 male cases compared to 100 female cases
  
  150 divided by 100 = 1.5. *The ratio of male to female cases is 1.5:1*
  
  In other words, for every 1 case among females, there are 1.5 cases among males.
  
  (The numerator is the larger number stated first in the sentence).

- **Incidence** = the number of newly diagnosed cases in a population of individuals during a specific time period (i.e. one year).

- **Prevalence** = the total number of people who have a disease at a specific point in time (including previously and newly diagnosed cases).
II. **What do we mean by a reportable STD?**

It is mandated by law that certain communicable (infectious) diseases be reported to the local health department (LHD) when there is a positive test or disease diagnosis. By documenting age, gender, ethnicity, and addresses for all reportable STDs, local (County or City) and State health departments can establish a database for monitoring disease trends and planning interventions. Although the personal information of the patient is attached to the diagnosis, **the reporting process is highly confidential**. All identifying information is removed from disease data that is sent to the Centers for Disease Control (CDC). This way patient confidentiality is maintained while CDC is still able to monitor State and local trends.

**Positive Test ➔ Patient ID to LHJ ➔ Patient ID to State ➔ without IDs to CDC**

The Health Department disease database has several critical purposes, including to:

1. monitor the trends of different diseases;
2. plan appropriate responses to disease outbreaks or epidemics;
3. target the distribution of resources to the most critical geographical areas (i.e., build clinics, distribute vaccines, apply for grants, etc.);
4. monitor and evaluate the effectiveness of these responses, and if need be,
5. declare a public emergency to protect the public’s health.

In California the following STDs are reportable and non-reportable:

<table>
<thead>
<tr>
<th>Reportable</th>
<th>Not Reportable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia</td>
<td>Human Papillomavirus (HPV)</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>Genital Herpes (HSV)</td>
</tr>
<tr>
<td>Pelvic Inflammatory Disease (PID)</td>
<td>Trichomoniasis</td>
</tr>
<tr>
<td>Non-Gonococcal Urethritis (NGU)</td>
<td></td>
</tr>
<tr>
<td>- (NGU) is no longer reportable as of January, 2007</td>
<td></td>
</tr>
<tr>
<td>Syphilis</td>
<td></td>
</tr>
<tr>
<td>Chancroid</td>
<td></td>
</tr>
<tr>
<td>Hepatitis B</td>
<td></td>
</tr>
<tr>
<td>Hepatitis C</td>
<td></td>
</tr>
<tr>
<td>AIDS</td>
<td></td>
</tr>
<tr>
<td>HIV Infection (as of April, 2006)</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* Shigella, Hepatitis A, Giardia, Entamoeba, and Cryptosporidium are also reportable and can be sexually transmitted. *Acute* is an infection of 6 months or less and *Chronic* is an infection of more than 6 months.
III. **Benefits of Data Collection**

STD data are used to:

- Track trends over time
- Allocate funds for testing, treatment, prevention, and research
- Assure correct treatment of individual cases
- Notify sex and needle sharing partners of exposure for testing and treatment
- Identify and fight outbreaks when they happen
- Conduct program planning & community advocacy

IV. **Limitations of Data**

- Reported data only includes those patients who seek care, get diagnosed and tested, and have a provider and/or laboratory who reports that diagnosis. *It is estimated that there may be 2 to 5 times more cases per year than are actually reported.*

- Race and ethnicity data are not as well captured in STD reporting. Race and ethnicity are not specified in about one fourth of all the reported cases in California and even up to two thirds of the cases in some health jurisdictions.

- Sometimes an increase in incidence can be due to increased screening or better reporting. Therefore, although the numbers go up, it doesn’t always necessarily mean there is more disease transmission, sometimes just more detection of disease that is already present in the population.

- Estimates for STDs that are not reportable are based on studies and then calculated for larger populations. Depending on how the study was conducted, this can affect the estimated verses actual rates. Some national data (like NHANES) may be extrapolated for state data based on percent of population alone.
<table>
<thead>
<tr>
<th>Rank</th>
<th>Disease</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chlamydia</td>
<td>140,080</td>
</tr>
<tr>
<td>2</td>
<td>Gonorrhea</td>
<td>22,822</td>
</tr>
<tr>
<td>3</td>
<td>Campylobacteriosis</td>
<td>5,877</td>
</tr>
<tr>
<td>4</td>
<td>Syphilis</td>
<td>5,651</td>
</tr>
<tr>
<td>5</td>
<td>Salmonellosis</td>
<td>4,835</td>
</tr>
<tr>
<td>6</td>
<td>Meningitis (viral)</td>
<td>2,423</td>
</tr>
<tr>
<td>7</td>
<td>Coccidioidomycosis</td>
<td>2,404</td>
</tr>
<tr>
<td>8</td>
<td>Tuberculosis</td>
<td>1,814</td>
</tr>
<tr>
<td>9</td>
<td>Giardiasis</td>
<td>1,797</td>
</tr>
<tr>
<td>10</td>
<td>Foodborne Illness</td>
<td>1,229</td>
</tr>
</tbody>
</table>

- STDs account for 89% of these cases
- Chlamydia accounts for 74% of these cases

*Note: The STDs in the above list are in bold.*
I. U.S. National Data on Viral STDs

- **Herpes Simplex Virus (HSV) – data on HSV 2**
  - estimated prevalence: 45 million infected, or 1 in 6 people
  - estimated incidence: 1.6 million new cases each year

- **Human Papillomavirus (HPV)**
  - estimated prevalence: 20 million infected, or 1 in 8 people
  - subgroups may have 50% or more infected, 20 to 24 year old women have highest prevalence
  - estimated incidence: 6.2 million new cases each year

- **Hepatitis C Virus (HCV) – not commonly transmitted sexually**
  - estimated prevalence: 3.2 million chronically infected
  - estimated incidence: 17,000 new cases each year

- **Hepatitis B Virus (HBV)**
  - estimated prevalence: 1.4 million chronically infected
  - estimated incidence: 43,000 new cases each year

- **Human Immunodeficiency Virus (HIV)**
  - estimated prevalence: 1.1 million infected
  - estimated incidence: 56,300 new cases each year

HSV is a life-long STD. Cases build up as the pool of infected people gets larger over time.

Some viruses like HBV and HPV self-resolve in most cases. Therefore, the prevalence may not be as high over time, even though they may have a high incidence rate each year.
II. **U.S. National Data on Bacterial STDs**  
*(Note: Prevalence data is not generally shown for curable STDs.)*

**Chlamydia (CT) – 2.8 million estimated new cases in 2009**
- Most Chlamydia cases go undiagnosed
- Reported cases of CT continue to increase slightly, but this may reflect continued expansion of CT screening programs and increased use of more sensitive diagnostic tests.
- CT testing is recommended for all sexually active females under the age of 26.

**Gonorrhea (GC) - 700,000 estimated new cases in 2009**
- During 2006-2009 GC rates have decreased across all ethnic/racial groups, across all ages & among both genders
- However, there still exists disproportionate rates among African-Americans
- The South has highest rates, but incidence has increased in Western states recently
- Increase of GC among MSM continues
- Increasing antibiotic resistance (floroquinolones) no longer considered effective by CDC
The bars in the graph represent the percentage of gonorrhea cases [from the Gonococcal Isolate Surveillance Project (GISP)] found to be resistant (in blue) to a particular type of antibiotic (Ciprofloxacin – in the fluoroquinolone group) as well as the percentage of cases found to have a decreased susceptibility (in yellow).

Each bar represents one year, showing the rapid increase of this particular antibiotic resistance to GC in the last several years.

Clinical recommendations to not use fluoroquinolones to treat GC came out from the CDC in 2007, which may account for some of the decrease in the last couple years.

Knowing about the existence of antibiotic resistant GC may increase someone’s perception of severity of this STD (i.e. Certain strains of GC may not be able to be treated with certain types of antibiotics).
• As with any asymptomatic STD that is not treated, a GC infection that is not fully treated (including by antibiotic resistance), can remain in the body and continue to infect other sex partners.

• Most of the fluoroquinolone-resistant cases of GC have an association with travel in Hawaii or Asia. There have also been high rates of fluoroquinolone-resistance in MSM.

• There is also some preliminary indication of reduced susceptibility to cephalosporins (a different category of antibiotics) in gonorrhea in California.

Syphilis – 27,063* estimated new cases in 2009

  o Rate of 1° & 2° syphilis rose 3.7% from 2008-2009

  o Most syphilis found in southeastern U.S. and certain urban areas

  o Highest rates among MSM: In 2009, 62% of 1° & 2° syphilis cases from reporting states were among MSM

  o Disproportionate rates among African-Americans and Native Americans

(note: *Early Syphilis Cases-primary, secondary, early-latent))
Annual New Cases of STDs (estimated incidence in U.S. = 19 million)

- Trich: 7.4 million
- HPV: 6.2 million
- CT: 2.8 million
- Herpes: 1.6 million
- GC: 700,000
- HIV: 56,300*
- Hep B: 43,000*
- Syphilis: 27,063
- Hep C: 17,000*

*Total includes infections as a result of sexual and non sexual transmission
III. The 4 Most Common STDs in the U.S. (and in California)

(In order of the most common using prevalence for the viruses and incidence for the bacteria & protozoa)

1. HSV-2
2. HPV
3. Trichomonas
4. Chlamydia

- Account for at least 90% of all STD cases in U.S.
- Top 3 STDs are not reported in the United States
Rates of Chlamydia, Gonorrhea, P&S Syphilis, and AIDS by Age Group (in years) and Gender — California, 2009

- **Chlamydia**
  - Female
  - Male

- **Gonorrhea**
  - Female
  - Male

- **P&S Syphilis**
  - Female
  - Male

- **AIDS (living 5/31/09)**
  - Female
  - Male

**Age Group**
- 0-9
- 10-14
- 15-19
- 20-24
- 25-29
- 30-34
- 35-44
- 45+

**Rate per 100,000 population**
- Chlamydia
- Gonorrhea
- P&S Syphilis
- AIDS (living 5/31/09)
Rates of Chlamydia, Gonorrhea, P&S Syphilis, and AIDS by Race/Ethnicity and Gender — California, 2009

Note: NA/AN = Native American/Alaskan Native, A/PI = Asian/Pacific Islander

CA DPH STD Control Branch (rev 6/2010)
Chlamydia, Rates for Females by Race/Ethnicity
California, 1990–2009

Note: NA/AN = Native American/Alaskan Native, A/PI = Asian/Pacific Islander.
Race/ethnicity “Not Specified” ranged from 32.6% to 56.3% of cases for females in any given year.

CA DPH STD Control Branch (rev 6/2010)
What can affect our sexual health?

- Sexual relationships with people who are infected, even when they don’t know they have an STD
- Having multiple partners increases chance of infection
- Difficulty or discomfort in talking about sex and STDs
- Myths and misinformation about who is at risk for STDs and how STDs are passed (“My partner’s clean!”)
- Sexual experiences we have without fully thinking through the consequences of unprotected sex.
- Not getting screened regularly for STDs.
- Re-infection by untreated partners is common. Sex partners must be treated even if they have no symptoms.
- Physically or emotionally abusive relationships where people feel unable to say “no” to their partners.

Alcohol and other Drugs

Sex Under the Influence (SUI)

I. Emotional and Psychological Issues:

- discomfort with sober sex
- decreases inhibitions
- affects choice of sexual partners
- less condom use
- increased sexual appetite
- do not remember sexual behavior (i.e. blackouts)
- increased sexual assault and intimate partner violence
II. **Drugs physically affect the body in many ways that influence STD transmission**

- Dehydration and decreased pain sensation can lead to dryness and increases trauma
- Stimulants may prolong sex and increase trauma
- “Sextacy” with Viagra and Ecstasy (or meth for deadly combo)
- Sharing drug equipment (needles, cocaine straws) can spread infections
- “Booty bumping” (inserting drugs) in anus or vagina causes micro-trauma to tissues

III. **Other Facts:**

- 6.4% of US teens (in 9th-12th grades) surveyed have used cocaine in their lifetime
- 16.3% of adults 26 or older have used cocaine in their lifetime
- 4.1% of US teens (in 9th-12th grades) surveyed have used meth in their lifetime
- 5.7% of adults 26 and older have used meth in their lifetime
- Trading sex for drugs is associated with increased risk of infection
- Drug users (who don’t use needles) still have higher HIV rates than people who don’t use any drugs
- MSM who use meth have higher rates of HIV, syphilis and gonorrhea than MSM who don’t use meth
STDs Have A Higher Impact on Certain Groups:

- Youth and Young Adults
- Women
- Men who have sex with men (MSM)
- Transgender persons
- Certain Racial/Ethnic Groups

Impact of STDs on Youth and Young Adults

I. Teen Sexual Health and Behavioral Data

- By the time they finish high school, nearly 2 of every 3 (65%) teens have had some type of intimate sexual experience (oral, anal, or vaginal sexual contact).

- Nearly 8 of every 10 (82%) teen males have had sex by age 19.

- Nearly 9 of every 10 (88%) teen females have had sex by age 19.

- Almost 3 of every 5 (58%) sexually active teens have had 2 or more sexual partners by age 19.

- Nearly 2 of 5 (39%) sexually active teens (15 – 19 years of age) did not use a condom the last time they had sexual intercourse.

- 1 of every 9 female and 1 of every 22 male high school students have been forced to have sexual intercourse.
• In 2008, the teen birth rate for California was 35.2 per 1000 teen females. This is four times higher than the median teen birth rates for Australia, Canada, France, Germany, Spain, Italy, Sweden, the United Kingdom and Japan!

• Although 15-24 year-olds represent only one-quarter of the sexually active population, they account for nearly half of all new STDs each year.

• Nationally, an estimated 1,901 teens (ages 13-19) received a diagnosis of HIV infection during 2008, representing about 4.6% of all new HIV infections in 2008.

• 1 of every 5 sexually active teen female will get pregnant this year.

• Nearly 4 of every 5 teen pregnancies are unplanned.

II.

In CA 62% of Reported STDs Are Among Youth

* Most reported STDs are chlamydia, gonorrhea, and early syphilis
Prepared by CDPH STD Control Branch, 2009 Data; December, 2010
• According to a national survey, almost half (46%) of all high school students in the U.S. have had sexual intercourse.

• Therefore, of the 3 million high school age students in CA, approximately half of them (1.5 million) are sexually active.

• If 1 of every 4 (25%) of sexually active teens will get an STD this year….

  ➢ Nearly 375,000 sexually active 15-19 year olds in CA will get a STD this year.

III. What are the Chances of STD Exposure for CA Youth?

  ▪ More than 1 out of 3 (36%) sexually active persons 15 – 24 years old in California is infected with Human Papillomavirus (HPV)

  ▪ At least 1 out of 6 (17%) sexually active persons 15 - 24 years old in California is infected with Genital Herpes.

  ▪ 1 of every 10 sexually active teens has Chlamydia

IV. The Good News…

• Among teens who are sexually active, condom use has increased from 41% between 1991 to 2009.

• The number of teens who have had sexual intercourse has declined from 54% in 1991 to 46% in 2009.

• The teen birth rate has decreased nationwide from 56.8 (per 1,000) in 1995 to 41.5 (per 1,000) in 2008.
Impact of STDs on Women’s Health

According to the CDC: 1 out of 4 (26%) teen females in the U.S. between the ages of 14 and 19 years of age has at least one of the most common STDs (HPV, CT, HSV, and or Trich).

I. Pelvic Inflammatory Disease (PID)

Pelvic Inflammatory Disease (PID) is caused when bacteria ascends from the cervix (often during menstruation or as a result of douching) into the uterus and up into the fallopian tubes, ovaries or abdominal cavity. PID can result in scar tissue, adhesions, abscess formation, and can lead to infertility, ectopic pregnancy, painful periods, painful intercourse or chronic pelvic pain.

- 80% of women with chlamydia are asymptomatic
- PID can occur in women who have not been treated, or were inadequately treated, for gonorrhea or chlamydia.
- The chance of infertility increases with each time a woman has PID (even if she is treated for each case).
- PID affects 1.5 million women each year in the U.S.
- Complications of PID cost the U.S. medical system $1.06 billion a year.
- 100,000 women become infertile every year due to PID.
- Scarring from PID causes 40,000 tubal pregnancies per year. (That’s half of all tubal pregnancies.)
Chlamydia Sequelae in Females:

- Untreated Chlamydia

Pelvic Inflammatory Disease (PID)
(20 to 50%)

- Recurrent PID
  (23%)
- Ectopic pregnancy
  (9%)
- Chronic pelvic pain
  (18%)
- Infertility
  (14 to 20%)

II. STD Related Deaths in U.S. Women

In 2007 in the United States there were…

3,714 deaths due to AIDS in women

In 2009 there will be an estimated

4,070 deaths due to cervical cancer

Death rate of cervical cancer has declined 4% each year.

III. HPV Vaccine

Gardasil made by Merck
- Gardasil protects against 4 HPV types that cause about 70% of cervical cancer and 90% of genital warts
- Nearly 100% effective in clinical trials
- Recommended for girls 11-12 years old (approved for up to age 26 & as young as 9) for prevention of genital warts as well as cervical, genital and anal cancer
- May be given to boys and men between the ages of 9 and 26 for prevention of genital warts and anal cancer
- Cost for Gardasil is $375 for series of 3 shots. Covered by State Vaccines for Children (VCF) program and some private insurance
Cervarix made by GlaxoSmithKline (another HPV vaccine)

- The FDA recently (10/2009) approved the use of Cervarix for females 10-25 years old to prevent against 2 HPV types that cause 70% of cervical cancer (HPV 16 & 18).
- Cervarix does not protect against the HPV types that cause genital warts
- 93% effective in clinical trials
- Cost of cervarix: $365

- Both vaccines are best if given before first sexual intercourse
- Parental consent is required for vaccines in CA. It is not a confidential service like many other adolescent sexual health services in CA.
- Efficacy studies are currently being done on women and men 26-45 years old. Women over 26 are not FDA approved to receive the shot; Merck has been rejected approval for Gardasil for women over 26. They will keep seeking approval for this age group.

IV. Pap Tests – Early Detection of Cervical Cancer

- A pelvic exam allows for examination of the female genitals and genital tract (using an instrument called a speculum), and may include various tests, including STD tests and Pap tests
- The Pap test is a test to detect abnormal cells on the cervix (called dysplasia). It is the same thing as a pap smear; the name change is a reference to a new lab method that does not require a smear sample
- The Pap test itself is not a STD test.
- STD tests are not done with every pelvic exam. Patients need to discuss their desire for STD testing with their clinician before a pelvic exam.
- Pap tests are recommended every 2 years for women under age 30. The frequency of testing for women over 30 depends on
previous Pap results. Pap tests should be started by age 21. (ACOG)

Impact of STDs on women who have sex women in the U.S.

• Studies have detected **HPV** in 13%-30% of lesbians screened. Pap test screening is recommended.

• Shared penetrative sex items can transmit secretions. Reports of **trichomonas** transmitted between women; partners should be treated.

• Direct contact STDs can be transmitted between women i.e. HSV, HPV and Syphilis.

• No confirmed cases of WSW sexual transmission of **HIV** in the US database.
Impact of STDs on men who have sex with men in U.S.

- More men than women get Syphilis mostly due to an increase in MSM cases.

- Even though only about 5% to 7% of men in the United States reported having sex with other men, in 2007, MSM made up more 60% of all men living with HIV.

- Anal cancer is also associated with HPV. “Anal Paps” are still being researched yet some experts recommend them for MSM every 1-2 years, especially for MSM living with HIV. Anal Paps are not always available as part of standard care.

Primary & Secondary Syphilis, Cases by Gender
California, 1996–2009

CA DPH STD Control Branch (rev 6/2010)
Impact of STDs on Transgender Persons in U.S.

A recent national meta-analysis of 29 studies concludes that the average HIV prevalence for trans women (MTF or Male to Female) is:

- 28% or 1 in 4 (lab-confirmed)
- 12% (self report)
- African American transwomen have the highest prevalence (56%), compared to other racial/ethnic groups (lab confirmed)

Some transgender men (FTM or Female to Male) do engage in high-risk sex, including sex industry work with men.

- **HIV prevalence in FTM: 1 - 3%**

More research still needs to take place regarding STDs and trans persons.

Impact of STDs on Racial/Ethnic Groups in U.S.

Chlamydia (CT) rates for certain groups are much higher than among Whites:

- African Americans = 8 X higher
- American Indians/Alaska Natives = 4 X higher
- Hispanics = 3 X higher

Gonorrhea rates for certain groups are higher than among Whites:

- African Americans = 20 X higher
- American Indians/Alaska Natives = 4 X higher
- Hispanics = 2 X higher

Syphilis rates for certain groups are much higher than among whites:

- African Americans = 9 X higher
- Hispanics = 2 X higher
- American Indian/Alaska Natives = 1.1 X higher

The syphilis rate for African Americans has increased for the fifth straight year.
Herpes (HSV-2) Seroprevalence in U.S. by Age and Race/Ethnicity
NHANES V Survey 2005-2008: N=7,293

[Bar graph showing seroprevalence rates by age and race/ethnicity]
Why Teens and Young Adults Have High Rates of STDs

- Immature cells on the cervix of younger women
- High prevalence of STDs among young sex partners
- Almost 3 out of 5 (58%) sexually active teens have had two or more sex partners—short duration relationships common
- Lack of assertiveness and communication skills essential for maintaining sexual health
- Power dynamics involved in dating older people
- Lack of access to appropriate health information & services

Why women are more at-risk for STDs

Biological Susceptibility to STDs

**Anatomy/Physiology**

- Abnormal discharge and painless lesions are more likely to go unnoticed by women—particularly internal lesions.
- Mechanics of vaginal sex—more extended contact with the pathogen after sexual exposure.
- Chlamydia and gonorrhea infect columnar cells. Since the bacteria have easier access to these cells when they are on the outside of the cervix, this makes younger women biologically more at risk for STDs. Older women too can have a cervical ectopy condition, which also puts them at higher risk for STDs.
- Women are far more likely to be asymptomatic.
Menstrual cycle – appears to influence risk of upper tract infection in women.

Transmission

Data suggests that transmission of STDs that cause a discharge or residue in genital secretions (e.g. HIV, Hepatitis B, GC, CT) are generally more efficient from male to female than female to male.

Pregnancy

Pregnancy – immunological, anatomical and microbiological change that affect risk of STDs. Host defenses are normally depressed during pregnancy. This immune suppression often affects the course of genital tract infections.

Gestational changes – may increase susceptibility to cervicitis but tend to protect the upper tract from infection

Gender norms/sexism

Relationship dynamics

Women are more concerned about their male partner’s reactions if they introduce condom use.

One study found that women often switch to ‘pregnancy prevention’ or other reasons for safer sex that are more acceptable to both their partner and themselves.

More young women report forced or coerced first sexual encounter.

Structural sexism

Historically, health care systems have added to the gender differences in access to STD care.

Provider bias: One example has been the failure to identify HIV infections in women compared with men because of a different threshold of suspicion by providers.

Female (Reality) condoms (and dental dams) are only options for female-controlled STD prevention. They are expensive and not readily available.
Cultural norms in female sub-groups

- Women are more likely to use over the counter douches, vaginal yeast products and other intravaginal preparations as home remedies for symptoms of STDs; thus increasing the severity of the symptoms of STDs due to delayed or inaccurate diagnosis or treatment.

- Women who have sex women report lower perceived risk in terms of acquiring STDs.

- Competing priorities (children’s health, home-based work, single parenthood) in some households and communities may diminish a woman’s ability to seek healthcare, particularly for asymptomatic or preventive health issues.

- Gender Role: sexuality related beliefs, attitudes, values, norms, behaviors.
## Factors linked to Disparities rates among gender, MSM, Transgender, & Race/Ethnicity

<table>
<thead>
<tr>
<th>Root Causes</th>
<th>Contributing Factors</th>
<th>Transmission-Related Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexism</td>
<td>Reduced health care access</td>
<td>Higher risk social-sexual network</td>
</tr>
<tr>
<td>Poverty</td>
<td>Differences in quality of health care received</td>
<td>Higher STD prevalence in communities</td>
</tr>
<tr>
<td>Classism</td>
<td>Cultural competency of providers</td>
<td>Longer duration of infectiousness</td>
</tr>
<tr>
<td>Racism (external/internal)</td>
<td>Disproportionately high rates of incarceration</td>
<td>Individual sexual behavior (e.g. number of partners, condom use)</td>
</tr>
<tr>
<td>Capitalism</td>
<td>Gender ratio imbalances affecting networks and concurrency</td>
<td></td>
</tr>
<tr>
<td>Homophobia</td>
<td>Lack of education, information, and skill building</td>
<td>Serial monogamy</td>
</tr>
<tr>
<td>Transphobia</td>
<td>Language/structural barriers</td>
<td>Concurrency</td>
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<tr>
<td>Policies</td>
<td>Unstable housing situations</td>
<td>Dissortative mixing</td>
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<tr>
<td>Laws</td>
<td>Distrust of the public health system</td>
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</tbody>
</table>
## Possible solutions to health disparities in STD rates

<table>
<thead>
<tr>
<th>Individual Level</th>
<th>Organizational Level</th>
<th>Policy Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health education and skill-building interventions to reduce risk</td>
<td>Expand health care access programs (e.g. Family PACT)</td>
<td>Social/ Political/ Economic changes</td>
</tr>
<tr>
<td>Increase screening in highest rate populations</td>
<td>Recruit &amp; hire staff from the impacted community</td>
<td>Implement policies in correctional and educational facilities to increase STD screening, treatment, education, and condom use</td>
</tr>
<tr>
<td>Educate providers on disparities and cultural competency</td>
<td>Improve PH – community collaborations</td>
<td>Fund additional research on racial disparities in STDs and effective prevention strategies</td>
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<tr>
<td></td>
<td>Culturally-appropriate interventions</td>
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<td></td>
<td>Prioritized testing based on racial and geographic STD data</td>
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</tbody>
</table>
The STD – HIV Connection

I. What is the STD – HIV connection?

- Some sexual behaviors, like vaginal and anal sex, that put one at risk for HIV, also put one at risk for many other STDs.
- STD infections increase the chance of acquiring HIV infection:
  - Open sores and breakdown of cell layers provide easy entry for HIV into the body
  - White blood cells that go to the STD site of infection to fight act as HIV receptors
  - Infections change natural defenses in vagina (pH, & loss of good bacteria)
  - STD infections in throat and mouth may increase HIV transmission via this route.
- STD infections increase the chance of transmitting HIV infection to others:
  - Open sores and breakdown of cell layers provide easy exit for HIV out of the body
  - White blood cells containing HIV are closer to skin surface, fighting at the STD infection site
  - Increase in the amount of HIV in semen (Ex. 8x higher w/ gonorrhea)
  - Underlying HIV infection increases disease progression and complications of Hepatitis C, HPV-related cancers, etc.
  - Underlying HIV infection alters symptoms of Herpes, Syphilis, Hepatitis, etc.
Treatment of STDs can help prevent HIV transmission

II. Syphilis & HIV Co–Infection

- Out of all the interviewed Primary and Secondary Syphilis cases in California in 2009 (N=2,005), 79% were among men who have sex with men (MSM).

Graph: HIV Status among interviewed MSM P & S Syphilis Cases in 2009 (n = 1,422)

About half of all the Syphilis cases among men who have sex with men in CA in 2009 were among men living with HIV.

- High rates of HIV/syphilis co-infection among MSM could partly be the result of the proactive risk reduction method of sero-sorting – where people living with HIV make a conscious decision to have sex with each other to avoid transmission of HIV. If both partners are living with HIV, they may have sex without barriers, which may lead to the transmission of syphilis.
III. STDs and HIV: What are the differences in transmission?

- Some STDs can be passed by direct lesion-to-skin or lesion-to-mucous membrane contact, with no blood, semen, or vaginal secretions involved.

- Some STDs are relatively easy to transmit by oral sex, whereas HIV is not easily transmitted this way. (Gonorrhea can be passed through fellatio and Herpes and Syphilis can be passed through fellatio, cunnilingus, and analingus/rimming).

- Although it has not been proven, it may also be possible that STD infections in the throat or mouth may increase the chances for HIV infection via this route.

- Most STDs are much more sexually infectious than is HIV for any sexual route of transmission.

- STDs are much more common than HIV.

For example:

- In the U.S. each year there are:
  - 56,300 new cases of HIV
  - 19 million new cases of STDs

- Total # of persons infected with either a STD or HIV in the U.S.:
  - 1.1 million with HIV
  - 100 million with STDs
IV. STDs Increase the Chances for HIV Infection

- **STDs Increase the Risk of Acquiring HIV**
  - Chlamydia  
    - ↑ risk 3 – 5 times
  - Genital Herpes  
    - ↑ risk 3 – 6 times
  - Gonorrhea  
    - ↑ risk 3 – 5 times
  - Syphilis  
    - ↑ risk 3 – 4 times
  - Trichomoniasis  
    - ↑ risk 2 – 4 times

- **Immune Response to Invading Organisms**
  - **Systemic:** blood circulating antibodies, immune cells, immune factors
  - **Mucosal:** Langerhans Cells, Monocytes, Macrophages, T Lymphocytes
    - skin
    - mucus layer
    - outer mucosal tissue
    - submucosal tissue
Structure of Mucous Membranes

Urethra  Rectum  Cervix  Throat

Mucous Layer

Monocytes

Macrophages

T-lymphocytes

Submucosa (immune system white blood cells)

Vascular System (blood vessels)

Epithelium (3-5 cell layers thin)

Squamous
V. Mucous Membrane Sites

- Oral
  - Mouth – Squamous Epithelium
  - Throat – Columnar Epithelium

- Vaginal
  - Vagina – Squamous Epithelium
  - Cervix – Columnar Epithelium

- Urethral
  - Urethral Opening (Meatus) – Squamous Epithelium
  - Urethra – Columnar Epithelium

- Rectal
  - Anus – Squamous Epithelium
  - Rectum – Columnar Epithelium

Most of our body is protected:
- External skin is covered with Keratin (wax-like coating)
- Mucous membranes (or internal squamous cells) do not have keratin
VI. How Common STDs Affect Mucosal Immunity

- Gonorrhea and Chlamydia bacteria destroy columnar cells on the cervix, in the urethra, rectum, or throat;
- Trichomonas organisms destroy squamous cells of vaginal walls;
- When certain STDs are present, the WBC are closer to the surface of the skin (in the submucosa), therefore putting someone at more risk for HIV infection;
- Herpes and Syphilis create lesions which are openings into the submucosa of the vaginal walls, cervix, urethra, anus, rectum, lips, and mouth.

**Resulting in greater access to target cells for HIV.**

Remember…

- If HIV (via blood, semen, vaginal fluids) contacts these surfaces, and the protective cell layers are removed, monocytes, macrophages, and T Lymphocytes are left exposed to be directly attacked by HIV.
- Successful STD treatment does **not** replace the destroyed mucosa right away. This may take a couple of weeks or more.
- This is one reason why patients are asked to abstain from sexual activity during STD treatment.
STD Prevention Methods

I. Biomedical Interventions

- Antibiotics cure bacterial infections
- Convenient diagnostic technologies (urine)
- Early diagnosis and treatment may interrupt transmission
- Male circumcision reduces HIV/STD transmission
- Screening of asymptomatic infection prevents complications
- Effective vaccines for Hepatitis A & B
- New HPV vaccine for girls and young women

II. Health Care Policies

- Health insurance access
- HEDIS measures (i.e. yearly screening of sexually active females 25 and under for CT)
- Culturally competent health care services

III. Behavioral Interventions

- Community-level (i.e. media campaign)
- Group-level (i.e. educational workshop)
- Individual-level (i.e. counseling)

IV. Health Education Messages

- Not having sex is the only sure method
- Talk to your partner about STDs and agree to protect yourselves if and when you have sex
- If you have sex - use condoms properly and consistently
- Have sex with only one partner, who has sex only with you – and who doesn’t have an STD infection
- Avoid sex-under-the-influence (SUI) of alcohol and other drugs.
- If you have sex, ask your doctor about testing for STDs regularly. If you are female – also get Pap tests.
V. Minor Consent for STD Care

“A minor who is 12 years old or older and who may have come into contact with an infectious, contagious, or communicable disease may consent to medical care related to the diagnosis or treatment of the disease, if the disease...is a related sexually transmitted disease...” - Family Code 6926(a)

- There is no law in California requiring providers to notify parents or guardians when minors consent for STD services & other sexual health services
- Information about testing and/or test results are confidential and cannot be shared with a parent or guardian without the teen’s consent.
- The CA Family PACT program can pay for reproductive and sexual health services for teens and adults who qualify.

- Family PACT:
  - Phone: 1-800-942-1054
  - Online: www.familypact.org

VI. Pregnancy versus STD/HIV Prevention

- Effective & consistent condom use are a good form of pregnancy prevention and STD/HIV prevention
- Hormonal methods of contraception are effective pregnancy prevention methods but not STD/HIV prevention
- Anal & oral sex can be methods of pregnancy prevention but not effective methods of STD/HIV prevention
1. Knowledge of STD Transmission
   oral, anal, vaginal sex (asymptomatic)

2. Perception of Susceptibility
   chance of exposure to STD and
   chance of infection if exposed

3. Perception of Severity
   consequences and their likelihood and
   seriousness of consequences

4. Perception of Self-Efficacy
   next step and incremental change over time
   leads to risk reduction methods
How People Change Behavior

⇒ Over time....
⇒ Step...by...step... ⇒...forward...

(...with temporary set-backs) ⇐
⇒...with support... ⇒...

(...and occasional “slips”)... ⇐
⇒...and success experiences

- Knowledge alone is insufficient to achieve behavior change.
- Motivation for behavior change comes from within the individual and is highly influenced by a sense that one is vulnerable to a disease or condition.
- Motivation to change is also influenced by a person’s confidence that she/he can perform a specific behavior (self efficacy).
- Individuals are more likely to change behavior when they choose what, when, where, and how much they will change.
- Individuals are less likely to change behavior when they are “prescribed” only one acceptable behavior by someone else.
- Behavior change is complex. Many internal and external factors can influence an individual’s motivation, commitment, and ability to change behavior. These factors vary from person to person.
STD Facts for Educators

- STDs are much more common than most people think (estimated 19 million new cases in the U.S. each year). STDs are sexually transmitted (vaginal, anal, oral) easily between sex partners.

- STDs are commonly asymptomatic.

- Re-infection by untreated and asymptomatic partners is common, and therefore, sex partners must be treated even if they have no symptoms.

- Serious consequences (PID, sterility, stillbirth, tubal pregnancy, cervical cancer, liver failure, etc.) can occur – and infants suffer too.

- Many STDs increase chance for HIV infection and transmission.

- If a person is concerned with having a STD, advise him/her to go to their doctor, healthcare provider, or STD clinic for help. Any necessary STD tests will be performed based upon a person’s sexual history and symptoms. There is no single test for all STDs, so be sure to ask which STDs you are getting tested for.

- Certain STDs can be cured with specific medications prescribed by a clinician. There are no home remedies or over the counter drugs that cure STDs.

- ALL STDs are preventable – with abstinence and correct & consistent condom use being the most effective methods.
COUNSELING TIPS: KEY FACTS FOR PERSONS AT SEXUAL RISK FOR HIV AND OTHER STDs

- **Sexual Behavior**
  - HIV and other STDs are passed by the same sexual behaviors (oral, anal, & vaginal sex)

- **STDs *increase* HIV transmission**
  - Syphilis & Herpes sores 🕹️ HIV entry into & exit from body
  - Chlamydia, Gonorrhea & Trichomonas cause damage to cells that 🕹️ HIV transmission

- **STDs are often passed with no symptoms**

- **STDs can be passed through direct contact with sores or infected tissue**
  - Syphilis, HSV, HPV don’t need blood or sexual fluids to infect

- **STDs can be passed through oral sex**
  - Syphilis, HSV, HPV and GC are transmitted via oral sex

- **STDs are more sexually infectious than HIV**
  - Hepatitis B is 100 times more infectious than HIV

- **Many STDs are more common than HIV**

- **Condoms reduce the risk of HIV and most STDs**

- **Get symptoms **and** partners checked**
  - don’t take chances, partners may re-infect you

- **Do **not** self-treat**
  - medications change and dosage varies
Programmatic Recommendations for Schools, Community Agencies, & Local Health Departments

- Integrate STD, HIV, pregnancy, and substance abuse issues and programs into the context of other courses.

- Utilize theory and research-based interventions that focus on attitudes, beliefs (perception of risk), skills, and behaviors – CDC validated curricula

- Evaluate the effectiveness of current interventions and strategies

- Supplement school-based interventions with community-placed interventions addressing sexual and reproductive health – community health education through STD Community Interventions Program (SCIP)

- Supplement school-based interventions by addressing underlying environmental, socioeconomic, and social justice issues that influence risk taking behavior (see National Syphilis Elimination Plan and issues of social justice)

- Implement school and community behavioral monitoring (Healthy Kids Survey, YRBS, etc.) including on-going assessment of the beliefs, attitudes, behaviors, etc. of priority populations

- Maintain an updated list of local and reliable referrals.
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