STD’s continued

HIV
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IV. HIV - AIDS
A. Overview: Human Immunodeficiency virus – retrovirus that causes AIDS (acquired immunodeficiency syndrome)
   ■ Transmitted via:
   1) **Bodily fluids**, including semen and vaginal secretions (through sexual contact with an infected person) and blood. There is no evidence that HIV infection is transmitted through saliva.
   2) Infected blood from **shared drug injection needles** or an accidental needle stick with a needle contaminated with infected blood.
   3) Infected blood and blood products though transfusion (this is rare in developed countries but still occurs in countries with inadequate blood donor testing programs).
Results indicate that approximately 994,000 individuals were living with HIV at the end of 2003, and that HIV prevalence increased by approximately 112,000 (or 11%) from 2003 to 2006 (from 994,000 to 1,106,400 total persons). CDC
Between 2000 through 2004, the estimated number of AIDS cases in the United States increased 10% among females and 7% among males.

The rate of AIDS diagnosis for black women (45.5/100,000 women) was approximately 23 times the rate for white women (2.0/100,000) and 4 times the rate for Hispanic women (11.2/100,000).
- **Symptoms** - HIV infection is often accompanied by a variety of symptoms, which can vary, depending on how long a person has been infected.
  - Opportunistic Infections - Since HIV affects the way the immune system functions, people who are infected develop illnesses that could previously be fought off by the immune system.
  - Symptoms tend to increase in severity and number the longer the virus is in the body if the patient remains untreated.
- **Early detection CRITICAL** - Treatments are available that slow the decline of immune system function
  - Also enables health-care providers to counsel such patients, refer them to various support services, and help prevent HIV transmission to others
- **Diagnosis** - HIV infection usually is diagnosed by tests for antibodies against HIV-1 and HIV-2 (HIV-1/2)
  - HIV blood screen for antibodies (ELISA)
  - Confirmatory Western-blot performed, Rapid Home Tests available
When should you be tested?

- Individuals who are infected with STDs are at least 2-5x more likely than uninfected individuals to acquire HIV if they are exposed to the virus through sexual contact.
- Take the test approximately 3 months after your last possible exposure to HIV.
- “Window” period – time between infection and the build up of detectable antibodies.
  - Although a negative antibody test result usually indicates that a person is not infected, antibody tests cannot exclude recent infection.
- Testing available in hospitals, clinics, test sites and doctor’s offices, anonymous or not – “confidential” test results recorded in your medical record.

1) General Symptoms

- Symptoms vary considerably, and they may occur 2 to 10 years after infection
- **Seroconversion** – after initial infection, individual produces antibodies to HIV with few initial signals of illness, CDC estimates 280,000 people in the U.S. don’t know they are infected
  - Swollen lymph nodes
  - Fever, chills, and night sweats
  - Diarrhea
  - Weight loss
  - Coughing and shortness of breath
  - Persistent tiredness
  - Skin sores
  - Blurred vision and headaches
  - Development of other infections, such as certain kinds of pneumonia
- **AIDS** – last stage of HIV infection, T Cells depleted to a point of immune system failure
2) Female specific problems:

- Vaginal yeast infections, common and easily treated in most women, often are particularly persistent and difficult to treat in HIV-infected women & these infections are considerably more frequent in HIV-infected women.

- STIs, particularly infections that cause ulcerations of the vagina greatly increase a woman's risk of becoming infected with HIV.

- Other vaginal infections may occur more frequently and with greater severity in HIV-infected women, i.e. bacterial vaginosis and common STIs such as gonorrhea, chlamydia, and trichomoniasis.

- Idiopathic genital ulcers, with no evidence of an infectious organism or cancerous cells in the lesion, are a unique manifestation of HIV infection.

- HPV infections
- PID appears to be

B. Women & HIV

- In U.S. – initial focus was homosexual males

- Worldwide, more than 90% of all adolescent and adult HIV infections have resulted from heterosexual intercourse.

- By the end of 2007, according to the World Health Organization (WHO), women were infected with HIV worldwide.

- Of the new HIV infections diagnosed among women in the United States, through 2002, the CDC estimated that 70.3% were attributed to heterosexual contact and 27.6% to injection drug use.

- Nearly 50% of people living with HIV/AIDS are women.

- Between 2000 through 2004, the estimated number of AIDS cases in the United States increased 10% among females, yet only 7% among males.

- In 2005, women accounted for 26% of the 37,163 newly reported AIDS cases among adults and adolescents.

http://www.niaid.nih.gov/factsheets/womenhiv.htm
http://www.cdc.gov/hiv/topics/women/resources/factsheets/women.htm
- **Lack of control** over own sexuality and sexual relationships
- **Neglect of health needs**, nutrition, medical care etc. Women's access to care and support for HIV/AIDS is much delayed (if it arrives at all) and limited. Family resources nearly always devoted to caring for the man. Women, even when infected themselves, are providing all the care.
- **Stigma and discrimination** in relation to AIDS (and all STIs): much stronger against women who risk violence, abandonment, neglect (of health and material needs), destitution, ostracism from family and community. Furthermore, women, are often blamed for spread of disease, always seen as the “vector” even though the majority have been infected by only partner/husband.
- **Adolescents**: lack of access to education for prevention - Promotion and protection of adolescent reproductive rights (particularly girls) is necessary. Obstacles: laws and policies, health service provision, cultural attitudes and expectations of girls and boys' sexual behavior, cultural practices, and unequal educational opportunities.

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**Women more susceptible**

“WHO report on the health of women:

- Women are particularly vulnerable to heterosexual transmission of HIV
  - Studies have shown that during unprotected heterosexual intercourse with an HIV-infected partner, women have a greater risk of becoming infected than uninfected men who have heterosexual intercourse with an HIV-infected woman
  - Infected semen stays in contact with the vaginal lining and cervix longer than infected vaginal secretions remain on the penis
  - Studies in both the United States and abroad have demonstrated that STIs, particularly infections that cause ulcerations of the vagina (for example, genital herpes, syphilis, and chancroid), greatly increase a woman's risk of becoming infected with HIV.
Gender inequity –

- **Coerced sex** – from violent rape to cultural/economic obligations to have sex when it is not really wanted, increases risk of microlesions and therefore of STI/HIV infection.
- **Harmful cultural practices**: from genital mutilation to practices such as “dry” sex.
- **Lack of disclosure**: Women don’t know if their male partners are having sex with men - women have usually been infected by their only partner/husband.
- **Sexual abuse**: there is now evidence that this is an underestimated mode of transmission of HIV infection in children (even very small children). Adult men seek ever younger female partners (younger than 15 years of age) in order to avoid HIV infection, or if already infected, in order to be “cured”.

HIV in the U.S. – disproportionately affects minority women and women of low socioeconomic status

- **African-American & Hispanic women affected at a higher rate.** Together they represent less than 25% of all U.S. women, yet they account for more than 82% of AIDS cases in women.
- Poorer, less educated HIV patients are much more likely to die sooner than patients with a higher socioeconomic status

- Frequently, women with HIV infection have great difficulty accessing health care, and carry a heavy burden of caring for children and other family members who may also be HIV-infected.
  - **Poor reproductive and sexual health**, leading to serious morbidity and mortality. Rates of infection in young
98% of women living with HIV/AIDS live in the developing world (2002, United Nations Joint Program on HIV/AIDS)


Global epidemic, highly underreported

- HIV+ women –
- South & Central America – 510,000
- In China (2003), 420,000 women reportedly were diagnosed with HIV/AIDS, 35% of adults as of 2007
- Southeast Asia – 413,500 women
- India – 2.5 million women (39%)
- Africa – 12.7 million women
The number of people living with HIV rose from around 8 million in 1990 to 38.6 million in 2005, and is still growing. Around 63% of people living with HIV are in sub-Saharan Africa.

Figure 4  Knowledge and behaviours related to HIV and condoms among female sex workers in Dili, East Timor, 2003
HIV-Positive Young Women in Sub-Saharan Africa

Sub-Saharan Africa as Share of Global HIV/AIDS Prevalence, Incidence, and Deaths Compared to Share of World Population, 2007

- **World Population**: Total = 6.6 billion
- **People Living with HIV/AIDS**: 67%
- **New HIV Infections**: 70%
- **AIDS Deaths**: 75%


[http://www.youtube.com/watch?v=mogTwwepces](http://www.youtube.com/watch?v=mogTwwepces)
C. HIV & Pregnancy

- In CA, providers required to offer HIV test – Only 4 states require providers to test, unless the mother refuses. 2 States mandate testing for newborns.
- In the U.S., approximately 25% of pregnant HIV-infected women who do not receive AZT or a combination of antiretroviral therapies pass on the virus to their babies.
- If women do receive a combination of antiretroviral therapies during pregnancy, however, the risk of HIV transmission to the newborn drops below 2%
- HIV may also be passed via breast milk
- The risk of MTCT is significantly increased if the mother has advanced HIV disease, high amounts of HIV in her bloodstream, or fewer-than-normal amounts of the CD4+ T cells

D. Treatment

- **NO CURE**, but treatment to improve quality and length of life available and always changing
- Begin treatment if
  - Symptomatic (AIDS, severe symptoms)
  - Asymptomatic, CD4 count <200 cells/µL
- Early treatment is KEY to delaying the onset of AIDS and can even reduce the virus to immeasurable levels
- Combination therapies are affective
- Nucleoside analogs, protease inhibitors, AZT Non-nucleoside analogs –
Current Antiretroviral Medications

**NRTI** *(nucleoside reverse transcriptase inhibitors)*
- Abacavir (ABC)
- Didanosine (DDI)
- Emtricitabine (FTC)
- Lamivudine (3TC)
- Stavudine (D4T)
- Zidovudine (ZDV)
- Zalcitabine (DDC)
- Tenofovir (TDF)

**NNRTI** *(non-nucleoside reverse transcriptase inhibitors)*
- Delavirdine (DLV)
- Efavirenz (EFV)
- Nevirapine (NVP)

**PI** *(Protease Inhibitors)*
- Amprenavir (APV)
- Atazanavir (ATV)
- Fosamprenavir (FPV)
- Indinavir (IDV)
- Lopinavir (LPV)
- Nelfinavir (NFV)
- Ritonavir (RTV)
- Saquinavir (SQV)
- Tipranavir (TPV)

**Fusion Inhibitor**
- Enfuvirtide (T-20)

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E. Prevention of HIV and STIs

- Abstain from sexual contact or to be in a long-term mutually monogamous relationship with a partner who has been tested and is not infected.
- For those that cannot adhere to the aforementioned suggestions, avoid **RISKY** or **DANGEROUS** Sex:
  - Safer sex
    - (dry kissing, hugging, mutual masturbation on healthy skin)
  - Less risky sex
    - Use of a latex condom (anal, vaginal, oral) - Consistent and correct use of male latex condoms greatly reduces the risk of becoming infected with HIV. In studies of heterosexual couples, in which one individual was HIV-positive and the other uninfected and regular condom use was reported, the rate of HIV transmission was extremely low.
  - **Risky sex**

- **Dangerous sex**