

HIV / AIDS

Wyoming Department of Health-Communicable Diseases

What is HIV/AIDS?

- Human Immunodeficiency Virus (HIV) is a virus that is transmitted through:
 - Unprotected Sex
 - Blood to blood contact (e.g. Sharing Needles)
 - Mother to Child
 - Breast Milk
- Retrovirus
 - Transcribes RNA to DNA
- Virus replicates rapidly in the body
 - Virus attaches to CD4 antigen in host
 - Many immune cells carry the CD4 antigen
- The virus destroys cells in the body that aid in fighting infection
- HIV infection can progress to AIDS

- Acquired Immune Deficiency Syndrome (AIDS)
 - Final Stage of the HIV Infection
 - Complex condition with many complications/symptoms
 - CD 4 count below 200



Symptoms of HIV/AIDS

▶ HIV

- ▶ Flu-like symptoms within a few weeks after becoming infected
- ▶ Most people will show **NO SYMPTOMS!**



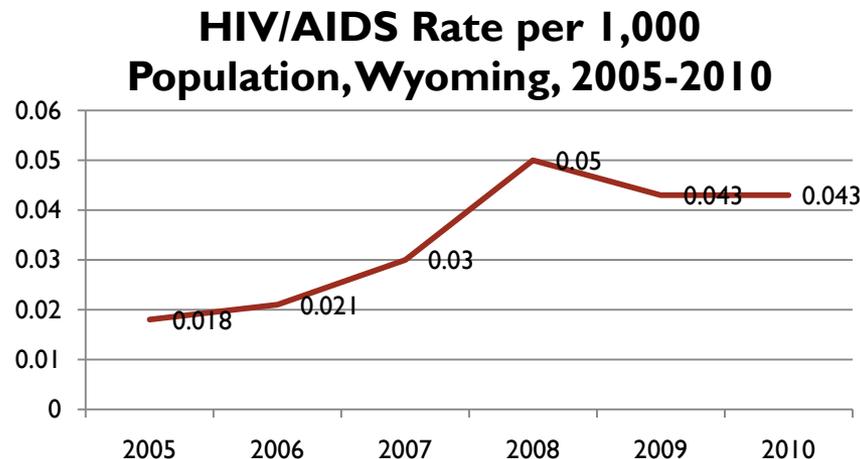
▶ AIDS

- ▶ Opportunistic Infections (e.g. Thrush)
- ▶ Cancer
- ▶ Wasting
- ▶ Skin Rashes
- ▶ Fatigue
- ▶ Night Sweats
- ▶ And many more



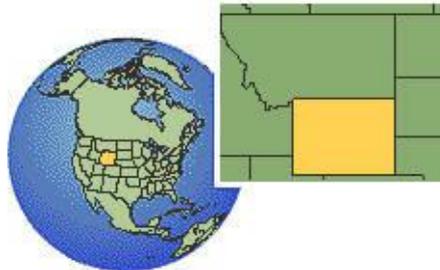
US Statistics

- Every 9.5 minutes someone in the US is diagnosed with HIV
- 1.2 million people are living with HIV in the United States, 20% don't know they are infected
- 50,000 people become infected with HIV in the US each year
- 16,000 with AIDS die each year
- The cost of new HIV infections in the United States in 2002 was estimated to be \$36.4 billion
 - \$6.7 billion in direct medical costs
 - \$29.7 billion in productivity losses



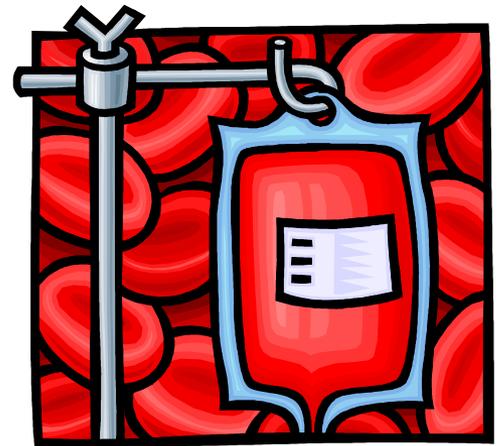
Wyoming Statistics

- Wyoming is a low incidence state
- From 1984 through June, 2011
 - 118 Individuals were diagnosed with HIV in Wyoming
 - 110 Adults
 - 8 Children (<13 years)
 - 276 individuals were diagnosed with AIDS
 - 274 Adults
 - 2 Children (<13 years)
 - 299 (75.9%) were Non-Hispanic White
 - 251 (63.7%) were 25-44 years old
 - 318 (80.7%) were males



Risk Factors

- Risk factors for HIV include:
 - Having unprotected anal, vaginal, or oral sex
 - Sharing needles for injection drugs, tattoos, or piercings
 - Having other STDs
 - Having a diagnosis of hepatitis, tuberculosis, or malaria
 - Received a blood transfusion or organ transplant in the US before 1985



Screening

- All individuals aged 13-64 years should get tested for HIV at least once in their lifetime
 - HIV testing may be recommended more frequently if risk factors are present
- HIV testing is a grade A recommendation from the US Preventive Services Task Force (USPSTF) if risk factors are present
 - Grade A indicates there is strong evidence to suggest this practice improves health outcomes and the benefits outweigh the risks



Testing

- Clearview Stat-Pak- Offered at Family Planning and Public Health Nursing offices in Wyoming
 - Rapid Test
 - Finger stick
 - Get results in 15-20 minutes
 - If reactive, a confirmatory test must be done
 - Tests for HIV antibodies
- OraQuick
 - Finger Stick OR Cheek Swab
 - Get results in 20 minutes
 - Tests for HIV antibodies
 - If reactive, a confirmatory test must be done
- OraSure
 - Cheek Swab
 - Non-invasive
 - Takes 2 weeks to get results
 - Tests for HIV antibodies



<http://www.orasure.com/products-infectious/products-infectious-oraquick.asp>



Testing

- ELISA
 - Venipuncture
 - Results can take up to 2 weeks
 - Tests for HIV antibodies
- Western Blot
 - Confirmatory Test
 - Results can take up to 2 weeks



•Negative tests do not rule out infection. If an individual believes they have recently been infected they should come back in 6 to 8 weeks to get tested for the virus again.



Treatment

- There is NO CURE for HIV
- Antiretroviral Therapy
 - Often a combination of 2 or more medications
 - Help reduce replication of the virus
 - Delays the onset of AIDS
 - Helps reduce transmission of the virus
- Treatment for opportunistic infections and other conditions



Disease Progression

- HIV can progress to AIDS
- AIDS is diagnosed when your body's CD4 cell count (an immune cell) drops below 200.
- AIDS can also be diagnosed when an opportunistic infection is present
- Once someone is diagnosed with AIDS they always remain diagnosed as having AIDS, even if the CD4 count rises above 200
 - New medication can prevent progression for years or decades
 - Many things affect progression
 - Overall Health Status
 - Nutrition
 - Medication Adherence/Appropriate Regimen
 - Age
 - Genetics



Prevention

- Sexual Transmission
 - Condoms
 - Female Condoms
 - Dental Dams
 - Get tested and treated for all other STDs
 - Make sure your partners are tested/treated for all other STDs
 - Know your Status
 - Know your Partners' status
 - Blood to Blood
 - Don't share needles
 - Don't share "works"
 - Avoid blood transfusions/organ donations in countries outside of the US
 - Avoid accidental needle sticks
 - Get tattoos and piercings done professionally
 - Wear gloves when handling blood or blood products
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Prevention

- Mother to Child

- Combination antepartum antiretroviral drug regimen for HIV women that do or do not require therapy for their own infection
 - Should be given as soon as the second trimester begins unless patient already requires therapy for their own health
- If status is not discovered until late in the pregnancy, prophylaxes treatment should be given
- Starting therapy early can greatly reduce the risk of transmission from mother to child
- Children born to mothers of unknown HIV status should receive a rapid test and Infant Antiretroviral Prophylaxis if necessary

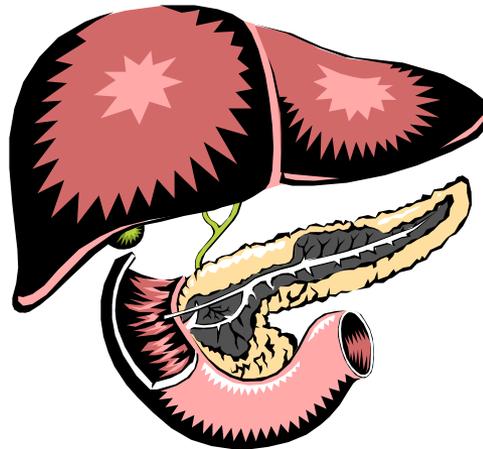
- Breast Feeding

- Mothers with HIV infection should not breastfeed their children



Viral Hepatitis and HIV Coinfection

- Hepatitis B Virus (HBV) and HIV share modes of transmission. (Risk for HBV = Risk for HIV)
 - Individuals infected with HIV are at higher risk of developing **CHRONIC** Hepatitis B
 - MSM disproportionately infected with Hep B (15% of new US infections)
- Nationally, 25% of HIV infected individuals are also co-infected with Hepatitis C Virus (HCV), mainly those populations acquiring their diseases through Injection Drug Use.
 - HCV infections progress more rapidly to liver damage in HIV-infected individuals
 - HCV impacts course and management of HIV treatment



STD & HIV Coinfection

- Individuals infected with 2.3 gonorrhea infections are 11 times more likely to be infected with HIV later in their lifetime.
 - Non-ulcerative STDs (Chlamydia & Gonorrhea) increase the risk of HIV transmission **2 to 5 times** than those with no other STD.
 - Ulcerative STDs (Syphilis & Herpes) may increase the risk of HIV transmission 10 to 300 times.
 - Men with gonorrhea and HIV are more than 2 times as likely to have HIV in their genital secretions than HIV infected men with no STDs
 - The higher the concentration of HIV (viral load), the more likely it is to be transmitted
 - Individuals infected with both HIV and STDs are shown to have increase HIV concentration in genital secretions
 - Ulcers caused by STDs allow HIV to enter through breaks in the skin.
 - Inflammation caused by non-ulcerative STDs result in increased cells in genital secretions which HIV targets
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Tuberculosis and HIV Coinfection

- Risk of progression from Latent TB infection to Active TB disease in HIV infected individuals is 7% - 10% **each year.**
 - Individuals without HIV infection only have a 7-10% risk **over their lifetime.**
- Annual screening is recommended for HIV co-infected individuals
- Co-infection of HIV and Active TB:3
 - Potentially increases infectiousness the Active TB patient
 - Initiation of antiretroviral therapies may result in a false-negative test



Services

The Wyoming Department of Health's HIV/AIDS Treatment and ADAP Program provides persons living with HIV/AIDS access to comprehensive health care and other supportive services. These programs serve as the payer of last resort for persons who are uninsured, under-insured, or are otherwise unable to access medical treatment. Some of the available services provided by the programs include:

- Primary medical care
- Laboratory and diagnostic services
- Dental care services
- Vision care services
- Case management services
- Prescription medications
- Mortgage and rent assistance
- Utility assistance
- Transportation assistance



References

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