HIV & AIDS 101

Corazon R. Manaloto, MD, DTM&H
Office of Health
USAID - Philippines
USAID/Philippines Health Program

Strategic objective: “Improved Family Health Sustainably Achieved”

- Strengthening Local Governance for Health (HealthGov)
- Sustainable Health Improvements through Empowerment and Local Development (SHIELD)
- Private Sector Mobilization for Family Health (PRISM)
- Health Promotion and Communication Project (HealthPro)
- Health Policy Development Program (HPDP)
- TB/infectious diseases (TB LINC)
  - FP, MCH, Avian influenza, HIV/AIDS are integrated
By the end of 2007, it was estimated that there were 33 million HIV infections worldwide.

In 2007 alone, there was an estimated total of 2.7 million new HIV infections.

By the end of 2005, there were about 2.0 million AIDS-related deaths.

Source: AIDS Epidemic Update, July 2008, UNAIDS
Adults and children estimated to be living with HIV, 2007

- **North America**: 1.2 million
  - [760,000 – 2.0 million]
- **Caribbean**: 230,000
  - [210,000 – 270,000]
- **Latin America**: 1.7 million
  - [1.5 – 2.1 million]
- **Western & Central Europe & Central Asia**: 730,000
  - [580,000 – 1.0 million]
- **Eastern Europe & Central Asia**: 1.5 million
  - [1.1 – 1.9 million]
- **Middle East & North Africa**: 380,000
  - [280,000 – 510,000]
- **Sub-Saharan Africa**: 22.0 million
  - [20.5 – 23.6 million]
- **East Asia**: 740,000
  - [480,000 – 1.1 million]
- **South & South-East Asia**: 4.2 million
  - [3.5 – 5.3 million]
- **Oceania**: 74,000
  - [66,000 – 93,000]

**Total**: 33 million (30 – 36 million)
What is HIV?

H | Human
I | Immunodeficiency
V | Virus
What is HIV?

**HIV** is a *virus* that infects the cells of the immune system (mainly *CD4 positive T cells* and *macrophages*) and destroys or impairs their function.
What is AIDS?

- Acquired
- Immune-Deficiency
- Syndrome
What is AIDS?

- CD4 (T-cell) count less than 200 cells per microliter of blood (less than half of what is considered to be the bottom of the normal range);

- Opportunistic infections
Common Opportunistic Infections

- **Tuberculosis** (M. Tuberculosis, M. Avium intracellulare) all throughout the body
- **Candidiasis** - fungal infection affecting oral cavity, GIT and vagina
- **Kaposi’s Sarcoma** – cancer affecting small blood vessels and internal organs
- **Pneumocystis Carinii Pneumonia** – fungal infection
- **Cytomegalovirus Infection** – causes blindness, affects lungs, brain and gut
Common Opportunistic Infections

- **Toxoplasmosis** – protozoal infection affecting central nervous system
- **Cryptococcal Meningitis**
- **Cryptosporidiosis** – protozoal infection causing chronic diarrhea
- **Non Hodgkins Lymphoma** – cancer of the lymph nodes; a late manifestation of HIV infection
HIV Progression

- Sexual or parenteral infection with HIV
- Disease progress is influenced by viral characteristics and individual host factors

**CD4 Cell Counts (cells/mm3)**
- Normal range if uninfected: 500-1,600

**Antibodies produced**
- (seroconversion), median 2.5 days

**Early Symptoms**
- Generalized lymphadenopathy, oral hairy leukoplakia, diffuse histiocytic lymphoma, dermatologic changes, herpes zoster, tuberculosis

**Neoplastic Diseases**
- Kaposi’s sarcoma, lymphoma, invasive cervical cancer

**Opportunistic Infections**
- Bacterial, viral, fungal, parasitic infections

**Viral burden ‘set point’**
- <1,000 - 1,000,000

**Neurologic Manifestations**
- Dementia; changes in gait, concentration, memory, affect; peripheral neuropathy

**AIDS diagnosis automatic**
- <200 CD4 cells

**Primary HIV infection, mononucleosis-like illness (fever, rash)**

**After the primary infection period, a higher viral burden predicts more rapid disease progression and a higher risk of transmission from pregnant women to offspring**

**Wasting, opportunistic infections, neoplastic diseases, and neurologic manifestations occur more frequently in late HIV/AIDS and may become chronic**
Let’s have a PARTY!
HIV Transmission
Bebang’s Story

Agripino worked as an OFW in Saudi. Because he was often away from his girlfriend, Bebang for long stretches, he became lonely. One evening, he found a woman to ease his loneliness. Soon after, Agripino found a job back home and he and Bebang got married.

Years later, Bebang gave birth to her child, Conching. She didn’t thrive and died young. The doctors tell Bebang that the baby died as a result of AIDS and suggest she be tested. The test turns out positive. Bebang is afraid to talk to Agripino about the situation, fearing that he might blame her, react violently, or abandon her; she feels numb. The doctor has urged her to return to the clinic for counseling with her husband.
Bebang’s Story

Questions:

• Provide a working definition for transmission.

• How was HIV transmitted to Bebang? To her daughter?

• Which bodily fluid can transmit HIV?

• What are the possible “doors” (portals of entry) that may allow HIV to enter the bloodstream?
HIV Transmission

Requisites of HIV Infection

• Body fluid with adequate infectious load (*blood, semen, cervical and vaginal secretions, and breast milk*)

• Portal of entry of the virus into the bloodstream
HIV and STIs

Sexually transmitted infections (STIs)- infections passed by sexual contact. Two broad groups:

- **Curable STIs** - can be treated (include syphilis, gonorrhea, chlamydia, trichomonas infection, chancroid,

- **Incurable STIs**, such as HIV, hepatitis B, genital herpes, and human papilloma virus (genital warts) infection, are caused by viruses. In some settings they can be managed by preventing, relieving, or reducing their symptoms.
HIV and STIs

- Ulcerative STI - HIV risk increased 10 - 300 times per exposure
- Non-ulcerative STI - HIV risk increased 3 - 10 times

  - Although HIV can pass more easily through genital ulcers, STIs that do not cause ulcers also increases the risk because they increase the number of white blood cells (which have receptor sites for HIV) in the genital area and because genital irritation may cause tiny cuts or sores that can allow HIV to enter the body.

  - The “shedding” of HIV in genital fluids is increased by the inflammation related to STIs, making those who are infected with both HIV and other STIs even more infective.
HIV Transmission

What’s the fluid?
Where’s the door?
Modes of Transmission

• **Sexual intercourse**

• **Blood transfusions** and **sharing of infected syringes and needles** in health care settings and drug injection

• **Mother to child** (during pregnancy, child delivery or breastfeeding)
## HIV Transmission

### Risk of HIV Transmission and the Contribution of Each Mode of Transmission to Global Infections

<table>
<thead>
<tr>
<th>Exposure</th>
<th>% of global infections</th>
</tr>
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<tbody>
<tr>
<td>Blood transfusion</td>
<td>5-10%</td>
</tr>
<tr>
<td>Mother to child</td>
<td>2-3%</td>
</tr>
<tr>
<td>Sexual intercourse without preventive measures¹</td>
<td>70-80%</td>
</tr>
<tr>
<td>Injecting drug use</td>
<td>5-10%</td>
</tr>
<tr>
<td>Needle stick &amp; other health care setting exposures</td>
<td>0.01%</td>
</tr>
<tr>
<td>Household contact from exposure to blood</td>
<td>-</td>
</tr>
</tbody>
</table>

¹ Vaginal or anal sex without the use of a latex condom or similar protective barrier.

2 Risk is cumulative and increases exponentially with each exposure

3 Several co-factors, such as STIs and lack of circumcision, may increase risk.
It is not possible to become infected with HIV through:

• Sharing crockery and cutlery
• Insect/animal bites
• Touching, hugging or shaking hands
• Eating food prepared by someone with HIV
• Toilet seats
HIV facts and myths

- People with HIV look like everybody else
- "Sex with a virgin can cure HIV"
- "It only happens to gay men/black people/young people, etc"
- "HIV can pass through latex"
- If people smell good they are not infected
Prevention of HIV
Prevention: Using Decision-Making Skills

- A: Abstinence
- B: Be faithful
- C: use Condom
What does Safe Sex mean?

• Sexual activities which do not involve any blood or fluid from one person getting into another's body – i.e. cuddling, etc

What is Safer Sex?

• little risk; often taken to mean using a condom.
• A condom when used properly prevents infected fluid getting into another
Is kissing risky?

• Kissing on the cheek, “social kissing” – no risk
• Deep or open-mouth kissing - considered low risk
• One documented instance of HIV infection: both partners had seriously bleeding gums
Prevention: Communication

Between partners:

• Do the topics of AIDS and sex normally come up?

• Why is it important for two people to talk about HIV and AIDS?

• Why don’t people talk about HIV/AIDS?
Preventing Sexual Transmission

In the case of HIV-discordant couples (where only one partner is HIV infected)

• discontinue sex or engage in sex that do not involve exchange of body fluids (safe sex)

• consistent and correct condom use
Other Methods of Transmission

• Mother-to-child (MTCT)  
  – 17 reported cases

• Injecting drug use (IDU)  
  – 7 reported cases

• Blood/Blood products  
  – 19 reported cases
  – 3 cases needle prick
Preventing MTCT

• Not getting infected with HIV
• If HIV positive, the mother may choose not to get pregnant
• If pregnant, the mother should take antiretroviral medications
• Replace breast milk with infant formula
Preventing Transmission: Blood/Blood Products

- Don’t share needles
- Clean needles
Universal Precautions

• Careful handling and disposal of ‘sharps’ (items that could cause cuts or puncture wounds, including needles, hypodermic needles, scalpel and other blades, knives, infusion sets, saws, broken glass, and nails);

• Hand-washing with soap and water before and after all procedures;

• Use of protective barriers such as gloves, gowns, aprons, masks and goggles when in direct contact with blood and other body fluids;

• Safe and disposal of waste contaminated with blood or body fluids;

• Proper disinfection of instruments and other contaminated equipments; and

• Proper handling of soiled linen.
Understanding the HIV Test
Voluntary Counseling & Testing

• *Voluntary counseling and testing (VCT)* is a supportive process between a client and counselor.

• A person is counseled prior to being tested to:
  – Determine his/her HIV knowledge and beliefs
  – Assess his/her HIV risk
  – Explain the test and the meaning of test results
  – Get his/her consent or permission to give the test

• After the test, the client and the counselor develop a personal risk reduction plan.
Does testing and counseling match epidemic need?

- Most testing done for applying work overseas, blood safety settings and in surveillance
  - 6 regional hubs VCT
  - +100 screening places for OFW
  - 10 HIV sentinel sites
IHBSS - HIV Surveillance
Key barriers to HIV testing

• Cost of testing (WB test must confirm + results on EIA; available only in Manila)
• Delay in results & Poor rates of return for results
  – Centralized system 4-6 wks delay
  – Integrity of samples?
  – Shipping & infrastructure costs (costly)
“Cure” vs. Treatment of HIV
There is **NO CURE** for HIV and AIDS.
Treatment & Care for PLHIV

Treatment and care for PLHIV include:

- Voluntary counseling and testing (VCT)
- Support for the prevention of onward transmission of HIV
- Follow-up counseling
- Advice on food and nutrition
- Treatment of STIs
- Management of nutritional effects
- Prevention and treatment of opportunistic infections
- Provision of antiretroviral drugs
Antiretroviral Drugs

*Antiretroviral (ARV) drugs* work against HIV infection by slowing down the reproduction of the virus in the body.
Antiretroviral Drugs

- Multiple drugs have to be combined to prevent emergence of resistance... 3-4 drugs. This is what is known as combination therapy or the ‘Highly Active Anti-Retroviral Therapy’ (HAART).
## Antiretroviral Drugs

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tr>
<td>A longer life</td>
<td>Serious side-effects</td>
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<tr>
<td>Delayed disease progression</td>
<td>Impairment of quality of life because of difficult regimen</td>
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<tr>
<td>Decreased risk of hospitalisation</td>
<td>Development of drug resistance</td>
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<tr>
<td>Control of viral replication</td>
<td>Raising of false hopes in patients not-responding or not tolerating</td>
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<td></td>
<td>Potential toxicity during pregnancies</td>
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<td>Cost, direct and indirect, for the whole family</td>
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Thank You!