



# MODULE 1

## Introduction to HIV/AIDS



# Module 1: Objectives

- Describe the global and local impact of the HIV/AIDS epidemic.
- Discuss HIV transmission
- Describe the progression from HIV infection to AIDS.
- Answer basic questions about HIV/AIDS in women, children and families.



# Introduction to HIV/AIDS

## Section 1:

### Scope of the HIV/AIDS Pandemic

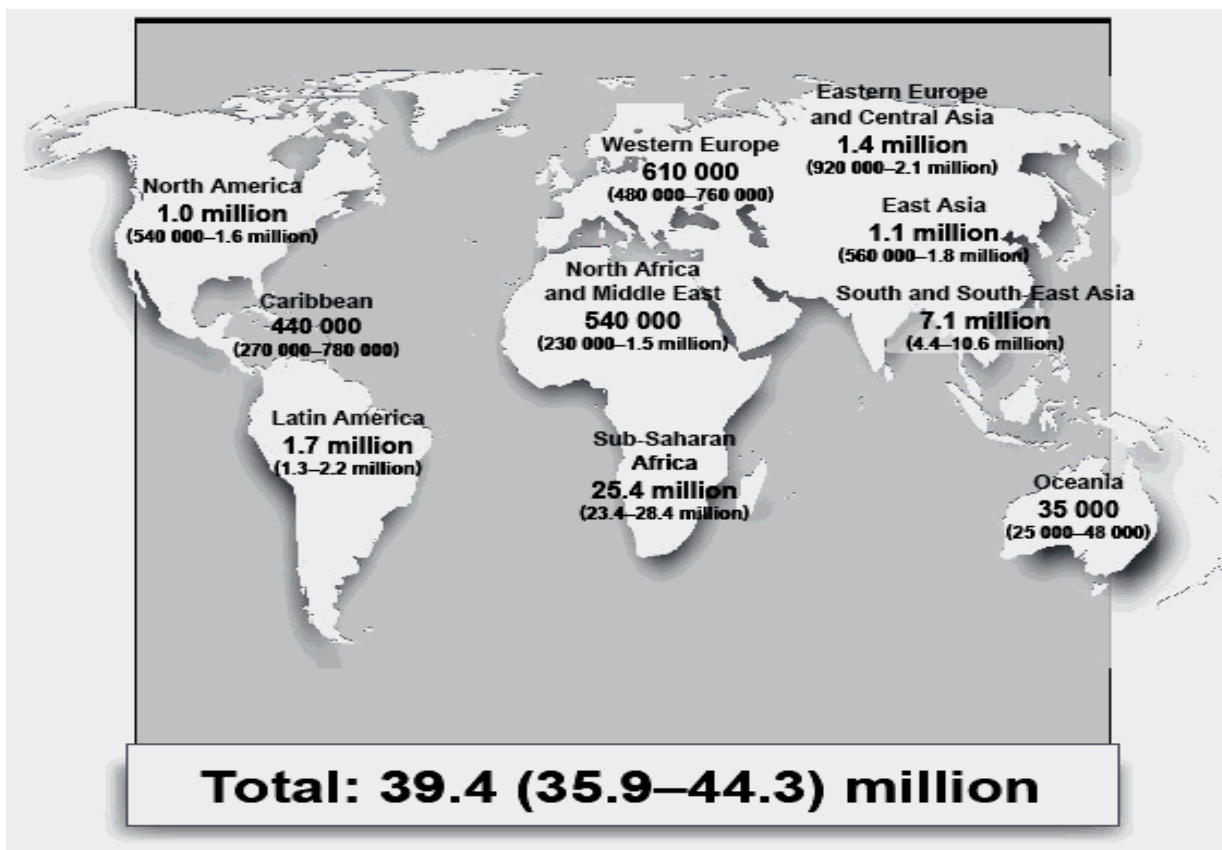


## Scope of the HIV/AIDS Pandemic

- 40 million people are living with HIV/AIDS --  
90% are in the developing world
- 2.2 million people with HIV/AIDS are children under 15 years of age
- 14,000 new infections occurred *each day* in 2004
- 95% of the HIV related deaths are in the developing world



# Scope of the HIV/AIDS Pandemic





# HIV in Nigeria

- 3.8 million Nigerians are estimated to be living with HIV; the third-largest number in the world
- 350,000 to 700,000 PLWHA require antiretroviral therapy (ART)
- Heterosexual transmission accounts for nearly 80 % of all infections



# HIV in Nigeria

- 5% HIV prevalence in ANC women
- 10% of HIV infections are a result of mother-to-child transmission
- An estimated 100,000 HIV- infected infants are born each year
- 1.2 million children have been orphaned since the beginning of the epidemic; the highest for any country globally



# Global Impact of HIV

- Negative impact on economic development
- Overwhelmed healthcare systems
- Decreasing life expectancy
- Deteriorating child survival rates
- Increasing number of orphans



# Introduction to HIV/AIDS

## Section 2:

### Basic Facts about HIV/AIDS



# HIV and AIDS

## Human Immunodeficiency Virus

**H** = **H**uman

**I** = **I**mmunodeficiency

**V** = **V**irus



# HIV and AIDS

## **A**cquired **I**mmuno**D**eficiency **S**yndrome

**A** = not inherited

**I** = immune system

**D** = deficiency – inability to protect against illness

**S** = syndrome, a group of symptoms or illnesses that occur as a result of HIV infection



# HIV and AIDS

- When the immune system becomes weakened by HIV, the illness progresses to AIDS.
- Some blood tests, symptoms or infections can indicate progression of HIV to AIDS.



# HIV-1 and HIV-2

- HIV-1 and HIV-2
  - Transmitted through the same routes
  - Associated with similar opportunistic infections
- HIV-1 is more common worldwide.
- HIV-2 is found primarily in West Africa, Mozambique and Angola



# HIV-1 and HIV-2

## Differences between HIV-1 and HIV-2

- HIV-2 is less easily transmitted.
- HIV-2 develops more slowly.
- MTCT is relatively rare with HIV-2.



# Introduction to HIV/AIDS

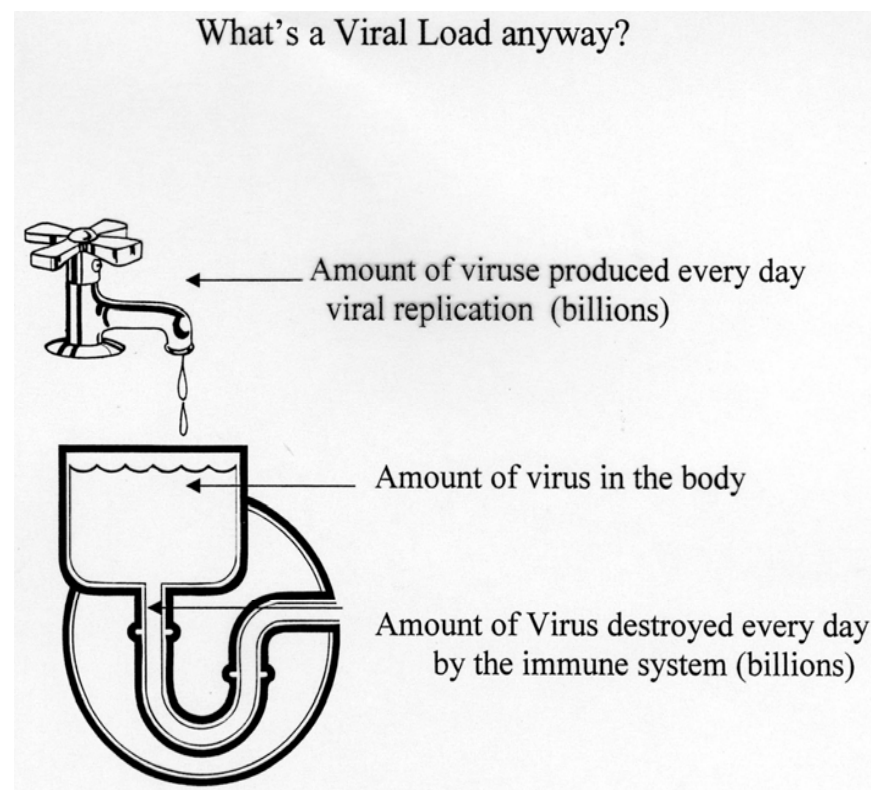
## Section 3:

# Natural History and Transmission of HIV/AIDS



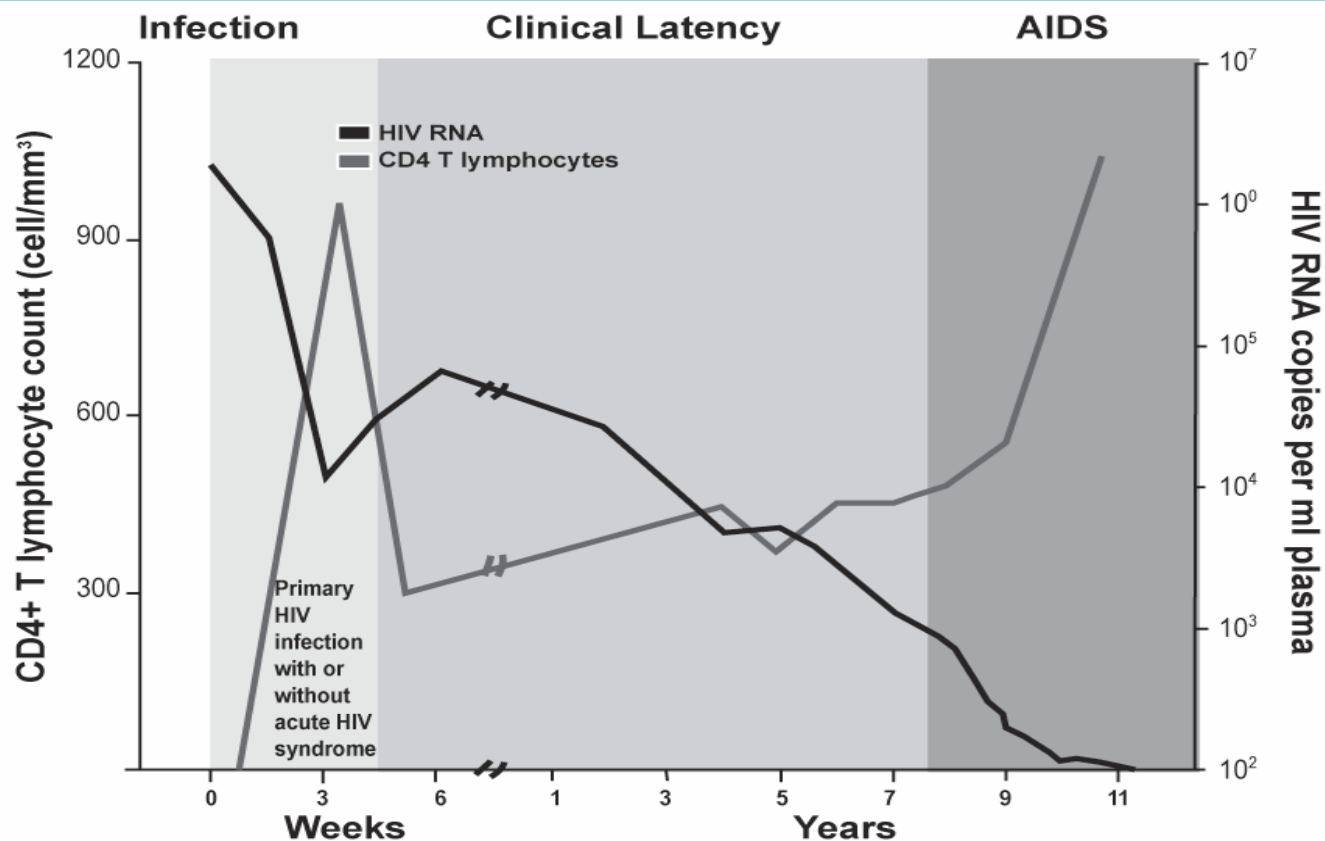
# Natural History of HIV

- Severity of illness is determined by amount of virus in the body (increasing viral load) and the degree of immune suppression (decreasing CD4 count).
- Higher the viral load, the sooner immune suppression occurs.





# Natural History of HIV Infection





# Natural History of HIV Infection

HIV can be transmitted during **each** stage

- **Seroconversion**
  - Infection with HIV, antibodies develop
- **Asymptomatic**
  - No signs of HIV, immune system controls virus production
- **Symptomatic**
  - Physical signs of HIV infection, some immune suppression
- **AIDS**
  - Opportunistic infections, end-stage disease



# Natural History of HIV Infection

## Immune suppression

- HIV attacks white blood cells, called CD4 cells, that protect body from illness.
- Over time, the body's ability to fight common infections is lost.
- Opportunistic infections occur.



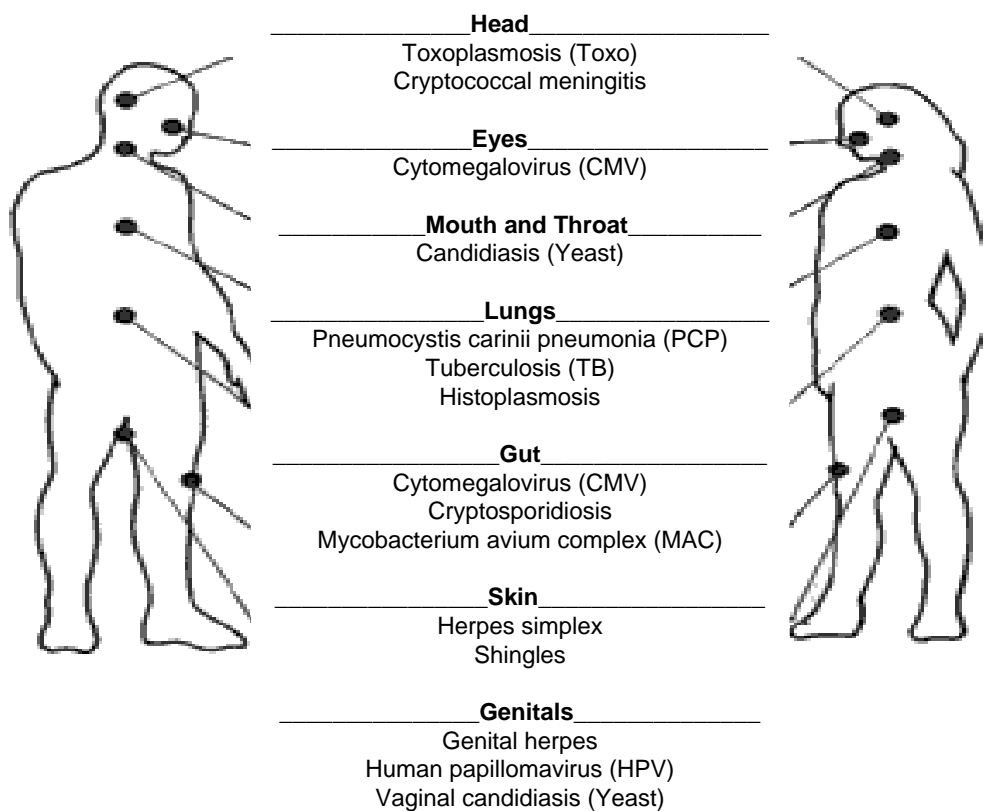
# Natural History of HIV Infection

## Direct infection of organ systems

- **Brain (HIV dementia)**
- **Gut (wasting)**
- **Heart (cardiomyopathy)**



# HIV-Related Opportunistic Infections





# Progression of HIV Infection

- **HIGH viral load** (number of copies of HIV in the blood)
- **LOW CD4 count** (type of white blood cell)
- Increasing clinical symptoms (such as opportunistic infections)



## Summary of Natural History

- HIV multiplies inside the CD4 cells, destroying them.
- As CD4 cell count decreases and viral load increases, the immune defences are weakened.
- People infected with HIV become vulnerable to opportunistic infections.
- HIV is a chronic viral infection with no known cure.
- Without ARV treatment, HIV progresses to symptomatic disease and AIDS.



# Transmission of HIV

HIV is transmitted by:

- Direct contact with infected blood
- Sexual contact: oral, anal or vaginal
- Direct contact with semen or vaginal and cervical secretions
- Mothers infected with HIV to infants during pregnancy, delivery and breastfeeding



# Transmission of HIV

HIV **cannot be** transmitted by:

- Coughing, sneezing
- Insect bites
- Touching, hugging
- Water, food
- Kissing
- Public baths/pools
- Toilets
- Handshakes
- Work or school contact
- Telephones
- Cups, glasses, plates, or other utensils



# Prevention of HIV Transmission

Public health strategies to prevent HIV transmission

- Screen all blood and blood products
- Follow universal precautions
- Educate in safer sex practises
- Identify and treat STIs
- Provide referral for treatment of drug dependence
- Apply the comprehensive PMTCT approach to prevent perinatal transmission of HIV



# Module 1: Key Points

- HIV is a global pandemic. In Nigeria, the number of people living with HIV is the third-largest number in the world (after South Africa and India)
- The number of people living with HIV worldwide continues to increase
- The HIV epidemic is especially severe in sub-Saharan Africa
- HIV is a virus that destroys the immune system, leading to opportunistic infections
- The progression from initial infection with HIV to end-stage AIDS varies from person to person and can take more than 15 years.



# Module 1: Key Points

- The most common route of HIV transmission worldwide is heterosexual transmission.
- Women of childbearing age are at particular risk for acquiring HIV. The main behaviour that places them at risk is unprotected sex with an infected male partner.
- Pregnant women who are HIV-infected are at risk of passing HIV infection to their newborn
- Risk of HIV transmission from mother-to-child can be greatly reduced through effective PMTCT programmes