

# **General Background on HIV/AIDS**

**Part A: Module A1  
Session 2**



# Objectives

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1. Discuss the impact of the HIV/AIDS epidemic globally and in Africa
2. Describe the various types and subtypes of HIV
3. Discuss how HIV is transmitted and the biological and socioeconomic factors that facilitate transmission



# Epidemic Update

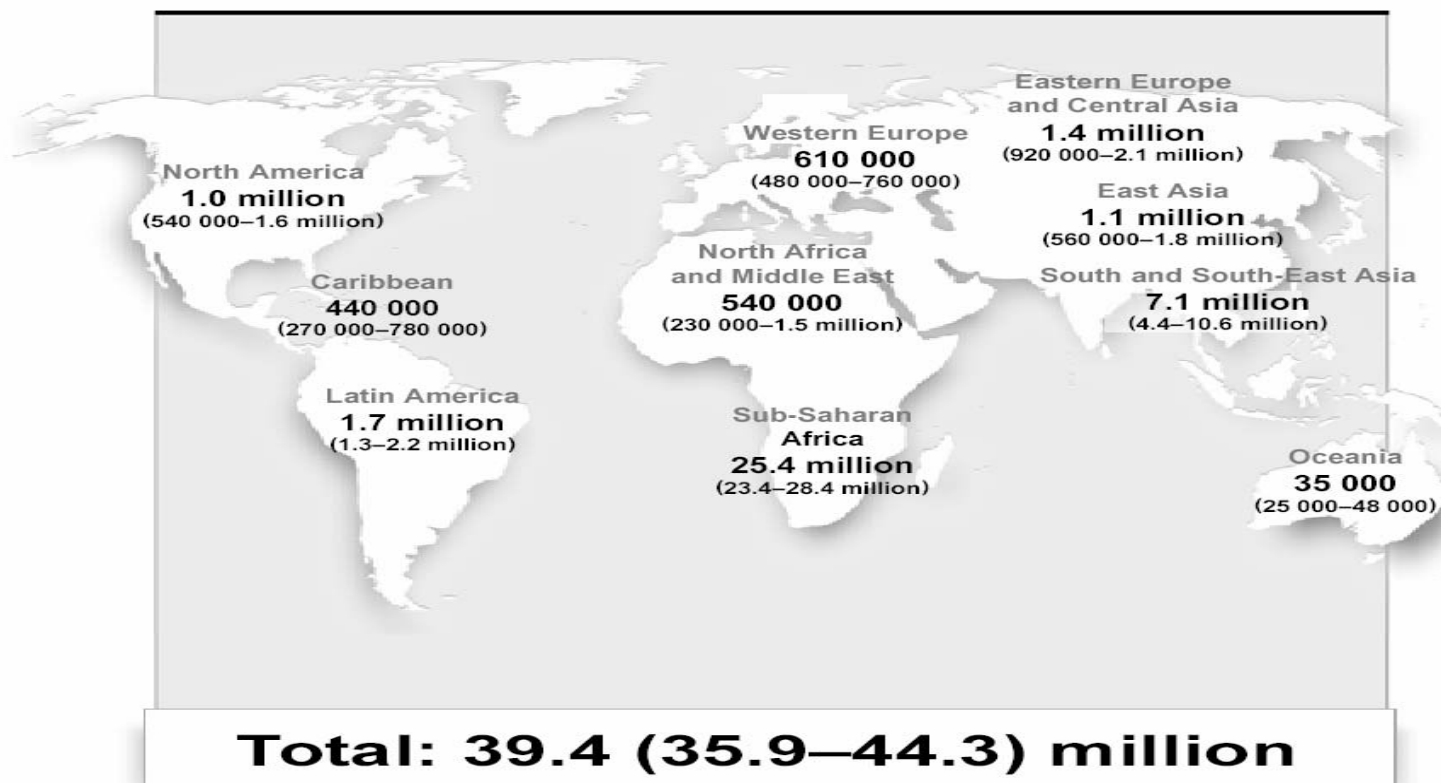
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## Global Picture:

- Fourth leading cause of mortality in the world
- Estimated 42 million persons living with HIV/AIDS
- About one-third are between 15-24 years old
- Most people are unaware they are infected
- Young women are more vulnerable

# Global Epidemiology

## ADULTS AND CHILDREN ESTIMATED TO BE LIVING WITH HIV AS OF END 2004



## Epidemic Update, continued

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### Sub-Saharan Africa:

- Is the most affected region
- HIV is now the leading cause of death
- Estimated 3.5 million new HIV infections in 2002
- 29 million Africans live with HIV
- By 2010, an estimated 106 million children under age 15 are projected to have lost one or both parents, with 25 million of this group orphaned due to HIV/AIDS

## Epidemic Update, continued

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- National and Local Data:
  - Nigeria: Estimated 5% National Prevalence
  - Prevalence ranges from 1%-12% in various states
  - Estimated 3.2-3.8 million Nigerians are HIV-infected (3<sup>rd</sup> highest worldwide next to South Africa and India)

# HIV: Two Types Recognized

HIV-1	HIV-2
Both transmitted through sexual contact, blood, from mother to child, and cause indistinguishable AIDS	
Predominant virus	Less easily transmittable
Due to high rate of replication, mutates rapidly into subtypes	Period between initial infection and illness longer than HIV-1

# HIV-1 Subtypes

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- 10 genetically distinct subtypes known
  - Major group (*Group M*) contains subgroups A to J
  - Group O (*Outliers*) contains distinct group of heterogeneous viruses
- These subtypes are unevenly distributed throughout the world
- Nigeria: predominantly subtypes A and G

# HIV-1 Subtype Distribution

Subtype	Region found (predominantly)
<b>B</b>	Americas, Japan, Australia, the Caribbean, and Europe
<b>A and D</b>	Sub-Saharan Africa
<b>C</b>	Southern Africa, Brazil, India
<b>E</b>	Central African Republic, Thailand, and other Southeast Asian countries
<b>F</b>	Brazil and Romania
<b>G and H</b>	Russia and Central Africa
<b>I</b>	Cyprus
<b>O</b>	Cameroon

# HIV-2

- Human retrovirus, causing similar immune deficiency due to depletion of CD4 cells
- Confined primarily to West Africa
- Compared to HIV-1:
  - Less transmissible
  - Associated with less viral burden
  - Slower rate of cell decline and clinical progression
  - Does not respond to NNRTIs
- In 2003 sentinel survey in Nigeria, only 3 samples out of 27,708 were of HIV-2 (0.01% prevalence, and 0.2% of all HIV+ people)

# Modes of Transmission

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- Sexual contact
  - Male-to-female, female-to-male, male-to-male, and female-to-female
- Parenteral
  - Blood transfusion, IDU through needle-sharing, needle stick accidents
- Perinatal
  - In utero, during labor/delivery, postpartum through BF
- Worldwide, sexual transmission is the predominant mode
- HIV cannot be transmitted by casual contact, surface contact, or insect bites

# Socio-economic Factors Facilitating Transmission

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- Social Mobility
  - Global economy
  - HIV/AIDS follows routes of commerce
- Stigma and Denial
  - Denial prevents acknowledgment of risk
  - Stigma
    - People may feel isolated and rejected
    - Prevents risk reduction efforts and care-seeking
- People in Conflict
  - Context of war and struggle of power spreads AIDS

## Socio-economic Factors, continued

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- Cultural Factors

- Traditions, beliefs and practices affect understanding of health and disease and acceptance of conventional medical treatment
- Culture can create barriers which prevent people, and especially women, from taking precautions
  - For instance, pressure to breastfeed may expose more infants
  - Spousal inheritance
  - Pressure to bear children inhibits condom promotion

- Poverty

- Lack of information needed to understand and prevent HIV
- Poor nutritional status
- Commercial sex for income
- Reduced access to health care services

## Socio-economic Factors,continued

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- Gender inequalities
  - In many cultures men are expected to have many sexual relationships
  - Women suffer gender inequalities, often economic in nature
  - Women may not feel empowered to negotiate whether sex happens at all or to negotiate condom use
  
- Drug Use and Alcohol Consumption
  - Impaired judgment
  - Sharing of needles and equipment

# Other risk factors

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- Early age of coitus
- Multiple sex partners (unprotected sex) among males or females
  - Keep in mind, that a person who is a virgin before marriage (and/or is HIV-negative before marriage), but does not get the spouse tested, can contract HIV during marriage even if the spouse does not cheat
- Mode of exposure
  - Anal sex: risk higher than vaginal