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Epidemiology & control of HIV/AIDS



OBJECTIVES

- Describe the epidemiological determinants, frequency and distribution of HIV/AIDS
- Explain the preventive and control measures of HIV/AIDS
- Describe the scope of HIV/AIDS control program

HIV

Human Immunodeficiency Virus

- **H** = Infects only **H**uman beings
- **I** = **I**mmunodeficiency virus weakens the immune system and increases the risk of infection
- **V** = **V**irus that attacks the body

AIDS

Acquired Immune Deficiency Syndrome

- **A** = **A**cquired, not inherited
- **I** = Weakens the **I**mmune system
- **D** = Creates a **D**eficiency of CD4+ cells in the immune system
- **S** = **S**yndrome, or a group of illnesses taking place at the same time

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



DETERMINANTS OF HIV/AIDS

Studies consistently shows that increased vulnerability to HIV is due to:

- Low income,
- Unemployment,
- Food insecurity and
- Lack of access to **education** and health care

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
- HIV-infected mothers to infants during pregnancy, delivery, or breastfeeding.

THE STAGES OF HIV

- When people with HIV don't get treatment, they typically progress through three stages.
- But HIV medicine /ARV can slow or prevent progression of the disease.
- With the advancements in treatment, progression to Stage 3 is less common today than in the early days of HIV.



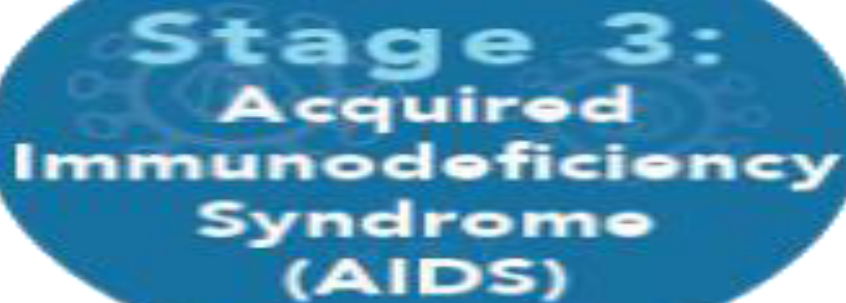
Stage 1: Acute HIV Infection

- People have a large amount of HIV in their blood. They are very contagious.
- Some people have flu-like symptoms. This is the body's natural response to infection.
- But some people may not feel sick right away or at all.
- If there are flu-like symptoms and the person thinks that he may have been exposed to HIV, seek medical care and ask for a test to diagnose acute infection.
- Only antigen/ antibody tests or nucleic acid tests (NATs) can diagnose acute infection.



Stage 2: Chronic HIV Infection

- This stage is also called asymptomatic HIV infection or clinical latency.
- HIV is still active but reproduces at very low levels.
- People may not have any symptoms or get sick during this phase.
- Without taking HIV medicine, this period may last a decade or longer, but some may progress faster.
- People can transmit HIV in this phase.
- At the end of this phase, the amount of HIV in the blood (called *viral load*) goes up and the CD4 cell count goes down. The person may have symptoms as the virus levels increase in the body, and the person moves into Stage 3.
- People who take HIV medicine as prescribed may never move into Stage 3.



Stage 3: Acquired Immunodeficiency Syndrome (AIDS)

- The most severe phase of HIV infection.
- People with AIDS have such badly damaged immune systems that they get an increasing number of severe illnesses, known as **opportunistic infections**.
- People receive an AIDS diagnosis when their CD4 cell count drops below 200 cells/mm, or if they develop certain opportunistic infections.
- People with AIDS can have a high viral load and be very infectious.
- Without treatment, people with AIDS typically survive about three years.

Country factsheets

PAKISTAN 2019

HIV and AIDS Estimates

Adults and children living with HIV	190 000 [160 000 - 210 000]
Adults aged 15 and over living with HIV	180 000 [160 000 - 200 000]
Women aged 15 and over living with HIV	53 000 [47 000 - 60 000]
Men aged 15 and over living with HIV	130 000 [110 000 - 140 000]
Children aged 0 to 14 living with HIV	6100 [5300 - 6900]
Adult aged 15 to 49 HIV prevalence rate	0.1 [0.1 - 0.2]
Women aged 15 to 49 HIV prevalence rate	<0.1 [<0.1 - 0.1]
Men aged 15 to 49 HIV prevalence rate	0.2 [0.2 - 0.2]
HIV prevalence among young women	<0.1 [<0.1 - <0.1]
HIV prevalence among young men	<0.1 [<0.1 - <0.1]
https://www.unaids.org/	

FACTS

- HIV remains one of the most serious global health threats of our time. In 2017, [1.8 million people](#) were infected with HIV, and [940,000 died of AIDS-related causes](#).
- Since 2010, deaths related to AIDS have dropped by 35% in the some parts of the world .
- More people are getting treatment than ever before.
- By keeping the focus on the needs and rights of key populations, new HIV infections can be prevented and to ensure those living with AIDS are not left behind.

Pakistan at a Glance

- Population: 176,940,000
- Life expectancy at birth women/men: 66/64 years
- Infant mortality rate: 64/1000 live births
- the latest estimate (2017) of people living with HIV (PLHIV) was 150,000 .
- In 2018, 21,000 new cases were recorded.

INTEGRATED BIOLOGICAL AND BEHAVIORAL SURVEILLANCE (IBBS)

This report provides biological and behavioral information related to HIV infection among four key populations:

- People who inject drugs (PWID)
- Men who have sex with men (MSM)
- Transgender populations
- Female Sex Workers (FSWs)

Data was collected from 23 sites in Punjab, 6 in Sindh and 2 each in Baluchistan and KPK.

PREVENTIVE & CONTROL MEASURES

- Care for pregnant women with HIV to prevent the transmission of HIV from mother to child
- Deliver comprehensive care to people living with HIV and their families in the privacy and comfort of their homes.
- Support key population including
 - a. men who have sex with men
 - b. prisoners
 - c. female sex workers
 - d. transgender women—to make sure they can exercise their rights and receive high quality services free from stigma or judgment
- Promote testing—in communities, facilities, and at hotspots—so people know their status and can initiate treatment as early as possible.

Interventions

- To promote the use of condoms
- Increase demand for services
- Raise the awareness for information on HIV and AIDS
- Create demand/awareness for appropriate STI services
- Interest of policymakers for helping establish more conducive environment for behavior change communication (BCC)
- Promote acceptance among communities of BCC services and the value of information, and education services.

- Increase self-risk assessment
- Increase confidence in condom use
- Increase knowledge about HIV/AIDS, STIs, and VCT and demand for services
- Increase discussion about HIV/AIDS and STIs
- Increase knowledge about standard precautions
- Improve attitudes and behavior among healthcare and other service delivery workers who interact with, sex workers, injection drug users, and other marginalized groups



LET'S STOP

HIV

TOGETHER

References :

- K. Park
- Illyas Ansari
- Integrated Biological and Behavioral Surveillance in Pakistan: Round 5 - 2016-17 **Publications - Released in 2017**
- [Report on the global HIV/AIDS epidemic-June 1998](#)
- [WHO Consolidated guidelines on HIV testing services, July 2015](#)
- [WHO Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection, second edition 2016](#)
- Population Reference Bureau World Population Data Sheet, 2011
- [UNAIDS Pakistan country profile](#)
- <https://www.unaids.org/en/resources/presscentre>
- <https://www.pathfinder.org/focus-areas/hiv-aids>
- <https://www.unaids.org/>

SYPHILIS

- Syphilis is a systemic ,sexually transmitted disease.
- It is caused by Treponema pallidum bacterium.
- Three means of transmission are

PERSON TO PERSON

1. Through vaginal, anal or oral sex through direct contact with a syphilis chancre.
2. Person to person during foreplay.
3. Pregnant mother with syphilis to fetus

CLINICAL MANIFESTATION

PRIMARY SYPHILIS

- chancre develop at the site of inoculation. which is painless, indurated and has a clean base.
- They are highly infectious and heals spontaneously within 3 to 6 weeks.



SECONDARY LESION

- secondary lesions occur several weeks after the primary lesion.
- May persist for weeks or months



LATENT SYPHILIS

- Host suppresses infections but no lesions are clinically apparent.
- Only evidence is a positive serological test.
- Early latent syphilis is less than one year duration.
- Late latent syphilis is greater than one year duration

RESISTANCE

- Inactivated in one hour at 41 to 42 degree centigrade.
- Inactivated when in contact with oxygen, soap, distilled water, arsenical, mercurial, and common antiseptic agents.

PREVENTION/TREATMENT

- Avoid sexual contact with diseased persons
- Use physical barriers and antiseptics
- Prompt and adequate treatment of all new cases.
- Follow up on source of infection and contact so as to get them cured.

THANK U

