

**Human Immunodeficiency Virus (HIV)**

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HIV is a common virus in human beings that attacks one's immune system such that the body is left defenseless against other infections and diseases. Lack of HIV treatment leads to acquired immunodeficiency syndrome (AIDS). HIV attaches itself to the DNA of cells. Thus, it is a permanent condition, and currently, it has no cure though the search for a cure is still the focus of many scientists.

Scientists believe that HIV originated from some chimpanzees found in the African continent that had a version of the virus commonly identified as the simian immunodeficiency virus (SIV). The virus was then transferred to human beings after people came into contact with the infected blood of the chimpanzees. Research suggests that HIV was passed on to human beings in the late 1800s. The spread of HIV began in Africa, and later on, it spread to the rest of the world. The virus has been in the United States since the mid-1970s.

Once a person is infected with HIV, he or she might experience flu-like symptoms that appear between the first four weeks. The infection is known as acute HIV infection. Symptoms usually last for several days or weeks. Some of the noticeable symptoms include high fever, chills, body rash, intense night sweats, mouth ulcers, extreme fatigue, sore throat, and muscle pain.

HIV has three progressive stages: the acute infection stage, chronic HIV infection, and AIDS stage. In the acute phase, HIV is in high amounts in the bloodstream. At this stage, a person is very contagious. Some people exhibit flu-like symptoms as their body responds to the infection. In the chronic HIV infection stage, HIV is vigorous, but its reproduction rate is very low. It is common to have no symptoms at this phase. When an individual in this stage fails to take medication, the stage lasts longer, and he or she can easily transmit the virus to another

person. However, if a person takes medicines as prescribed, he or she may never move into the AIDS stage. The AIDS stage is the most serious phase of HIV infection. The immune system of a person with AIDS is badly damaged such that the person is vulnerable to other illnesses referred to as opportunistic infections. At this stage, treatment is critical because, without it, a person can typically survive for about three years only.

The most common mode of HIV transmission is through anal or vaginal sex, sharing of sharp objects such as needles and syringes. HIV is transmitted when an infected person has sexual contact with an uninfected person without using protection. HIV can also be transmitted from an infected mother to her child either during pregnancy, birth, or breastfeeding the baby. Moreover, people who share equipment such as needles are at high risk of contracting HIV, especially if one of them is HIV infected. Body fluids are the main carriers of HIV (REDFIELD & BURKE, 1987). These fluids include blood, breast milk, vaginal fluids, semen, and rectal fluids. When these fluids come into contact with injured tissues or mucous membranes (at times, they are inserted directly into the bloodstream), they easily transmit HIV.

A person with HIV is likely to experience complications as a result of the virus. These complications are due to the weakened state of the immune system. Some of the common infections of HIV/aids include tuberculosis, thrush, pneumonia, cryptococcal meningitis, and cytomegalovirus. HIV is also associated with lymphoma cancer and Kaposi's sarcoma cancer. Other complications include wasting syndrome, whereby an individual loses significant amounts of weight, often tied in with diarrhea, fever, and prolonged weakness. Neurological complications such as depression, anxiety, and confusion also result from HIV. Kidney disease and liver disease are major complications of HIV.

HIV treatment requires an individual to continuously take medication that lowers the amount of HIV in the bloodstream. The medication used to treat HIV is known as antiretroviral therapy (ART). With correct medical care, it is possible to get control over HIV within six months. HIV medicine lowers the viral load (amount of HIV in the blood) and maintains the CD4 cell count on high levels.

In the United States in 2019, the number of deaths due to HIV and aids was 5,044. The death per population of 100 000 was 1.5. In 2018, the number of HIV diagnoses was 37,378. The approximated number of HIV infections in the United States was 36,500, and the infection rate was 13.2 for every 100 000 people as of 2018. Reports indicate that as of the end of 2018, approximately 1.1 million people ranging from 13 years and over had contracted HIV in us (Danforth et al., 2018). This included an estimated 162,800 people living with the virus but had not been diagnosed.

HIV is a reportable disease. In the United States, health care providers across the 50 states and the District of Columbia require that every new case of HIV be reported to the appropriate state health department. New infections are to be reported immediately after a diagnosis is given. Reporting of HIV infections helps the government and other health organizations determine the best way to care for people living with HIV and how to prevent further spreading of the disease.

### **Social Determinates of Health (SDOH)**

Social determinants of health refer to the prevailing conditions in the homes, schools, workplaces, and play areas where people are mostly found. These places impact a broad scope of health risks and outcomes. The first key area of SDOH is healthcare access and quality. This area relates to the relationship between access to healthcare, people's understanding of health services,

and individual health. People who have access to primary care and have health insurance cover are likely to experience better health care than those without access and the insurance coverage (Magnan, 2017). Health literacy also plays a significant role in promoting a community's health. When it comes to HIV, access to medication is essential as medicines reduce the amount of the virus in the body. Also, most new health insurance plans are required to cover some specific commended preventive services such as HIV testing without additional cost-sharing. People's understanding of health and risk factors such as those associated with HIV helps prevent new infections and spread the disease.

The second area of SDOH is education access and quality. This area looks at the relationship between education and individuals' health and well-being. Education is a significant aspect that can promote health. For instance, educated people are better positioned to understand how their daily choices affect their general health. Education plays a key role in stopping the spread of HIV as people better understand the causes and preventative measures they can undertake.

The third area is the social and community context. This domain includes topics such as workplace discrimination, civic participation, and cohesion that exists within a given community. There is a significant connection between the community that surrounds an individual and their well-being. A community in which people have a peaceful co-existence promotes people's health and encourages activities to improve the health status of the community. For instance, such a community may have low rates of HIV infection as each person is concerned about the other's health. People take care of each other and engage in activities that promote the well-being of the entire community.

The fourth area of SDOH is economic stability. This area focuses on the association between an individual's financial resources, including income, cost of living, socioeconomic status, and well-being. Factors such as poverty and unemployment affect a person's health status. When individuals experience high levels of poverty or unemployment, their health status is not prioritized as people are more concerned with surviving each day. The situation is worsened by a lack of security and housing stability. People experiencing these conditions can barely afford essential healthcare services because their lives are all about finding a way to fend for themselves and their children. Such conditions accelerate the rate at which HIV spreads among people. If a person in the community is infected, they are likely to transmit the disease to others due to a lack of awareness. Prostitution is prevalent among the poor, and this helps in the spreading of HIV.

The last area is the neighborhood and built environment. Where a person lives (housing and the surrounding) relates to their health and well-being. This involves topics such as the availability of healthy foods, the rate of crime and violence within the neighborhood, and air and water quality. Having a conducive environment promotes an individual's well-being. In an environment where the rate of crime and violence is high, there is a likelihood of high HIV infection rates. The availability of healthy foods is also essential in promoting the health of people living with HIV. HIV-infected people need proper care that includes healthy eating.

### **Epidemiological Triangle of HIV**

The epidemiological triangle is a model that attempts to describe an infectious disease. The triangle encompasses an external agent, a vulnerable host, and the environment that makes it possible for the agent and the host to interact. Agent, host, and environmental factors interconnect in a range of several complicated ways to create disease. In the HIV

epidemiological triangle, HIV is the external agent. This agent targets an individual's immune system, making it more susceptible to attacks from other forms of infections. When the immune system is affected, it cannot effectively fight off the virus on its own. The HIV agent must be present for the disease to be produced.

The host is an HIV-infected person. Scientists claim that the original hosts of HIV were chimpanzees and that the virus was transmitted to human beings after some people hunted the chimpanzees for meat, where they came into direct contact with the infected blood. The mutated version of the virus got into human beings, which is when HIV developed in human beings. People who are at the most risk of contracting the virus are those who share needles and syringes and those who have unprotected sexual relationships with multiple partners.

Certain environmental factors promote the spread of HIV. For instance, a community with an increased concentration of STIs (sexually transmitted infections) and especially one that rarely reports incidences due to factors such as social pressure, creates room for HIV to flourish. A community with high levels of poverty experiences reduced access to care and treatment, which may increase HIV infections in the community. Discrimination can also deter people from being tested or seeking care.

Communities and the general population must learn the preventive measures of HIV. School-going children must be educated on the causes of HIV and prevention methods to help reduce the rate of infection. Since HIV is more prevalent among the LGBTQ community, the topic of HIV must be discussed openly in order to create awareness.

### **Role of the Community Health Nurse**

The community health nurse helps target resources at groups thought to be at high risks of contracting a specific disease. The nurses actively perform a systematic search for at-risk

individuals instead of waiting for them to come to the health centers with symptoms of active disease. The nurse is also responsible for reporting any new infections, trends in infections, or any other relevant information useful in promoting a community's health.

The community health nurse monitors and identifies any health concern a community might have by conducting home visits. He or she makes use of effective data collection methods in observing the health status of the patients who seek care. The nurse assesses the data collected to determine whether there is any need for concern and, if so, what the best course of action would be to provide the most appropriate care. Furthermore, the nurses follow up on patients to review their health conditions and encourage them to integrate particular behaviors into their lifestyles to promote good health. They also check whether patients adhere to medications and help elaborate lab results that might be unclear.

Demographic data are necessary to the community's health because they are used to provide for the community's health and health care needs. Knowing the size and characteristics of a population ensures that the population's health needs are met accordingly. Demography seeks to understand population dynamics that involve changes in a population due to the interaction between fertility, mortality, and migration. This awareness is necessary for making predictions about future population size and composition, which will be used as the basis for health care planning.

Changes in the size and structure of the population affect the healthcare resources needed, the price of healthcare services, and the conditions that relate to the different population groups. Demographic data enables organizations to plan for the changes that might come up in the future to adapt promptly to meet the fast-changing needs of their patients while still attending to health

reform necessities. This planning ensures that a community's health is addressed appropriately and the correct measures are taken.

### **National Agency that Addresses HIV**

International AIDS Society (IAS) is an international organization established in 1988 to spearhead collective action on every façade of the worldwide HIV response by using its vast membership base, scientific mandate, and convening power. The IAS remains the worlds leading association of professionals in fields related to HIV (Deeks et al., 2016). It has membership in more than 169 countries. The IAS works with its members whereby it advocates and encourages urgent action to lower the effect of HIV.

The IAS contributes to reducing the impact of HIV by supporting the implementation of evidence cognizant strategies and human rights-based approaches for bettering the lives of HIV-infected people and those people who are at the most risk of acquiring HIV. The IAS uses its various programs and promotions to research, mold the evidence base, and intensify the voices of susceptible communities to impact policy across the HIV prevention to care spectrum.

### **Global Implication of HIV**

HIV has devastated many communities all over the world. It has caused a lot of deaths, leaving millions of children orphaned. The virus has unsettled village and community life and has continued to increasingly play a part in the destruction of civil order and economic development. The continued spread of the disease despite medication to regulate HIV and to reduce the spread implies that there is still more that needs to be done. HIV is still a leading killer disease in most communities and a health risk to millions globally.

In other countries, HIV is addressed in various ways. Some institutions have been established to deal with HIV specifically. The institutions aim to reduce the rate of infections and

promote healthy living among those living with HIV. Many countries have also prioritized HIV education programs to create awareness of the disease to encourage people to take the necessary precautions to protect themselves against HIV. HIV studies have been integrated into the school curriculum so that children are made aware of the disease from an early age. Mass testing of HIV is also encouraged in many countries, such that the testing is offered free of charge to encourage more people to get tested. In some countries, ARVs are given out for free to make them accessible to more people living with HIV. Also, some countries provide their populations with protective measures (condoms) to help reduce the rate of HIV infection.

In sub-Saharan Africa, HIV infection is turning into an endemic. Sub-Saharan Africa is home to more than 11% of the global population, and approximately more than two-thirds of the people live with HIV (Baral & Phaswana-Mafuya, 2012). For instance, South Africa has the highest number of people living with HIV.

## References

- Baral, S., & Phaswana-Mafuya, N. (2012). Rewriting the narrative of the epidemiology of HIV in sub-Saharan Africa. *SAHARA-J: Journal of Social Aspects of HIV/AIDS*, 9(3), 127-130. <https://doi.org/10.1080/17290376.2012.743787>
- Danforth, K., Granich, R., Wiedeman, D., Baxi, S., & Padian, N. (2018). Global mortality and morbidity of HIV/AIDS. *Disease Control Priorities, Third Edition (Volume 6): Major Infectious Diseases*, 29-44. [https://doi.org/10.1596/978-1-4648-0524-0\\_ch2](https://doi.org/10.1596/978-1-4648-0524-0_ch2)
- Deeks, S. G., Lewin, S. R., Ross, A. L., Ananworanich, J., Benkirane, M., Cannon, P., ... & Zack, J. (2016). International AIDS Society global scientific strategy: towards an HIV cure 2016. *Nature medicine*, 22(8), 839-850. <https://doi.org/10.1038/nm.4108>
- Magnan, S. (2017). Social determinants of health 101 for health care: five plus five. *NAM Perspectives*. <https://doi.org/10.31478/201710c>
- REDFIELD, R. R., & BURKE, D. S. (1987). Shadow on the land: The epidemiology of HIV infection. *Viral Immunology*, 1(1), 69-81. <https://doi.org/10.1089/vim.1987.1.69>