

Throughout history, mankind has suffered from a variety of infectious diseases, such as cholera, yellow fever, influenza, considered to have unique characteristics related to unpredictability, epidemic global outbreak, invading pathogens, transmissibility, and preventive measures (Fauci and Morens, 2012). Timmreck (1994) defines communicable disease as “an abnormal state” in which the body is unable to properly react to the invasion of external factors, such as microorganisms called pathogens, following its structure and function disorder. This essay will explore the dynamics of a notorious disease, whose major infectious rate and death toll reported across many geographical areas has developed myths and misconceptions that hinder the implementation of its prophylaxis programs.

Nowadays, the Human Immunodeficiency Virus (HIV) is considered one of the most problematic worldwide health issue, involving a harmful biological agent that targets the T lymphocytes (white blood cells), especially the CD4⁺ receptors, also called CD4 cells or T-helper cells, mainly spread through unprotected sexual intercourse (vaginal secretions and semen), blood (transfusions and products), and breast milk from infected mothers to infants' postpartum period, neonatal period, or post-birth (Webber, 2009). According to Hernandez-Vargas and Middleton (2013), the virus progressively generates a major disruption of the body's defence system, making it unable to act against infections and even illnesses, in three stages: acute, chronic, and acquired immunodeficiency syndrome (AIDS). In the initial phase, most patients experience flu-like symptoms for several weeks, like heat, sore throat, headache, sore throat, and fatigue, but many people might not even show any signs of illness at all so that in the last phase, the symptoms been more serious as weight loss, severe diarrhea, persistent cough, memory loss (U.S. Department of Health & Human Services, 2022). After contracting the virus, a person becomes very infectious, carrying high viral loads within body fluids that could be easily transmitted from one to another; so, it is essential to start the treatment that virally suppresses the virus's transmission. Under medical supervision, infected people benefit from antiretroviral therapy (ART), which currently

does not cure HIV, just reduces the risk of serious illness, cuts off the multiplication of the HIV in the body fluids, lowers transmission, prevents drug resistance and even death. A personal treatment regimen of combined drugs is immediately prescribed, following two essential tests: HIV RNA (viral load) and CD4+ cell count (Webber, 2009).

According to World Health Organisation's (WHO) Global progress report on HIV in 2020, an estimated 37,7 million people were living with HIV, 1.5 million acquired HIV infection, and 680.000 people died of AIDS (WHO, 2021). As reported by UK Health Security Agency's (2021) annual national HIV surveillance report, 95% of 106,900 people living with HIV are diagnosed and receiving treatment with good results of 92% cases virally suppressed. In Wales, the trend in reported HIV cases has been on the substantial decline since a peak in 2015; dropping off by 63% in the last five years and registering a very low level of AIDS (5 persons) and AIDS-related deaths (11 persons). Out of the 75 new infections in 2020, 74% were men and 26% female mostly aged 25 to 49 years old (50 persons), and slightly affected persons under 15 years old (5) and aged 50 and over (15). The most common mode of transmission accounting for 96%, remains sexual contact with an ample proportion of new cases of sex between men of white ethnicity (30), followed by heterosexual sex (18). Delpech (2022) appreciates the UK's governmental agencies and health services in implementing national policies and programs that have sustained HIV control and prevention interventions, such as early self-testing, immediate and free accessing care, use of condoms, and ART for pre-exposure prophylaxis (PrEP), counselling and risk reduction programs, which have led to the great decline in new cases of HIV and AIDS. Moreover, Elliot et al (2019) emphasize the need for a clear diagnosis through accurate HIV testing prior ART and once every three months during treatment, in prescribing and adjusting the correct medications in the context of PrEP or post expose prophylaxis (PEP), to suppress the viral load transmission. Even though the benefits of these approaches are considerable for the health of patients, Elliot et al (2019)

remarks that the worldwide implementation of additional tests may not be affordable and sustainable.

Despite thirty years of basic and advanced clinical research, HIV continues to be a real health threat, and as an effective procedure to its control and eradication, the following challenges are identified: increase HIV *testing* and immediate availability for ART, a *cure* development for HIV infection to alleviate the need for lifelong treatment and *adequate prevention* strategies, updated today (Dieffenbach and Fauci, 2011). As Granich et al. (2017b) and Karatzas et al. (2019) agreed that a necessary solution to end the pandemic was – the Fast-Track Cities (FTC) Initiative (2014) developed under the umbrella of four core partners -the Joint United Nations Programme on HIV/AIDS (UNAIDS), the International Association of Providers of AIDS Care (IAPAC), the United Nations Human Settlements Programme (Un-Habitat), the City of Paris -desired as a global coalition committed to adopt the bold challenges of UNAIDS 90-90-90 targets: testing, therapy and viral suppression. The representative city partner for Wales has been named Fast Track Cardiff and Vale (2019) engaged to work towards these global targets in close collaboration with Welsh Government and National Welsh Health Services, as proved in the successful control of virus transmission by the great decline of new HIV cases, AIDS-related deaths. Although Karatzas et al. (2019) acknowledges that the Fast-Track approach is a winning prevention strategy for some high-income countries, like Sweden, Singapore, Denmark, and the United Kingdom that have almost achieved the 90-90-90 target, Granich et al. (2017a) and Bekker et al. (2018) argue that in many low-income countries the strategy has limitations in terms of affordability, time and resources, and unprepared health systems that strive to deliver primary health services.

Considering up-to-date scientific evidence presented in this essay, the new truths reveal that have been made impressive changes in the control and fight the epidemic. Colvin (2011) agrees the most noteworthy progress is the advent of improved and more accessible antiretroviral therapy, which has altered from “near death” to “new life” for AIDS patients. However,

Eisinger and Fauci (2018) conclude that the target of stopping HIV worldwide can be seen from two points of view namely as theoretically -seen as achieved if further and constant funds continue to be accessible for extant scientific advancements in the community at regional and international level, and in practical terms – is a massive challenge to closely maintain existing medication and prophylaxis strategies with the unrolling of a reasonable pragmatic HIV vaccine.

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