



1985: Forty years ago, the world opened its eyes to AIDS. History of the early years of the HIV epidemic

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Summary

*At the end of 1980, Michael Gottlieb, a researcher at the University of California, was conducting a clinical study on deficiencies of the immune system when he heard of the case of a young man with a rare form of pneumonia due to *Pneumocystis carinii* (now known as *Pneumocystis jirovecii*), a protozoon that usually affects only people with a weakened immune system [1]. In the following months, Gottlieb discovered further cases of patients with *Pneumocystis carinii* pneumonia, oral candidiasis and a very low level of T lymphocytes. All were male and active homosexuals [2].*

In reality the infection had already manifested itself in previous years but had always been mistaken for something else [3]. HIV probably originated from a virus found in chimpanzees and began infecting humans in the first half of the 20th century. It probably emerged when members of the Bantu tribe, who lived in the forests of central Africa, consumed chimpanzee meat infected with a virus called simian immunodeficiency virus (SIV). This may have caused a so-called spillover from chimpanzees to humans [4, 5].

Introduction

The first confirmed case of HIV positivity dates back to 1959; a blood sample taken from a man from Léopoldville (now Kinshasa, in the Democratic Republic of Congo), when analysed 30 years later, was found to contain antibodies to HIV-1 [6]. The virus began to circulate, reaching Haiti in the mid-1960s [7] and arriving in the United States in 1969, about 12 years before the disease was discovered in 1981, as reported by the evolutionary biologist Michael Worobey of the University of Arizona [8].

On June 5, 1981, the Morbidity and Mortality Weekly Report (MMWR), a weekly epidemiological digest for the United States published by the Centers for the Disease Control and Prevention (CDC), reported five unexplained cases of *Pneumocystis carinii* pneumonia in previously healthy individuals at three Los Angeles hospitals.

“The diagnosis of *Pneumocystis* pneumonia was confirmed for all 5 patients antemortem by closed or open lung biopsy. The patients did not know each other and had no known common contacts or knowledge of sexual partners who had had similar illnesses. Two of the 5 reported having frequent homosexual contacts with various partners. All 5 reported using inhalant drugs, and 1 reported parenteral drug abuse. [...] The fact that these patients were all homosexuals suggests an association between some aspect of a homosexual lifestyle or disease acquired through sexual contact and *Pneumocystis* pneumonia in this population.” [9]

In the general public’s view, this connection inextricably linked the contagion to stigmatized, transgressive behavior and the disease immediately became a potentially discriminatory condition [10].

In the following months, a New York dermatologist, Alvin E. Friedman-Kien, reported to the CDC several cases of patients suffering from a rare tumor of the blood vessels, Kaposi’s sarcoma. “Between June 1, 1981, and May 28, 1982, the CDC received reports of 355 cases of Kaposi’s sarcoma (KS) and/or serious opportunistic infections (OI), especially *Pneumocystis carinii* pneumonia (PCP), occurring in previously healthy persons between 15 and 60 years of age. Of the 355, 281 (79%) were homosexual (or bisexual) men, 41 (12%) were heterosexual men, 20 (6%) were men of unknown sexual orientation, and 13 (4%) were heterosexual women.” [11]

The *Centers for Disease Control and Prevention* set up a task force specifically dedicated to research on Kaposi’s sarcoma and other opportunistic infections. The most widely accredited hypothesis was that the disease only affected homosexuals, as the New York Times headlined on July 3, 1981: “Rare cancer seen in 41 homosexuals”. At this point, the term “gay cancer” entered the public lexicon. This led to the categorization of Gay-Related Immune Deficiency – GRID, and the identification of specific risk categories such as homosexuals, heroin users and hemophiliacs [12].

Although the modes of transmission and contagion were unclear, the hypothesis that the disease had a viral origin was beginning to gain sway among researchers. In

August 1982, during a conference sponsored by the Food and Drug Administration (FDA), the term “acquired immunodeficiency syndrome” (AIDS) was coined to describe the terminal clinical stage of HIV infection. This term indicated a syndrome of non-hereditary origin, acquired through a still-unknown transmission mechanism, which resulted in deficiency of the immune system.

However, only when so-called heterosexual people began dying of AIDS did the global perception of the disease begin to change. It also transpired that the initial involvement of the gay community was fortuitous, though society did not change its negative view of those affected by the disease. Indeed, it was difficult, if not impossible, to separate AIDS and homosexuality in the mind of the public at that time.

Meanwhile, from a research perspective, in May 1983 the French virologist Luc Montagnier (1932-2022) and Françoise Barré Sinoussi (b. 1947) (Fig. 1-2) at the Pasteur Institute in Paris isolated a new virus that was suspected of being the agent responsible for the transmission of the disease. Having been sent to the CDC in Atlanta, the virus was analyzed and named LAV (Lymphadenopathy-Associated Virus) [13] but was renamed HIV (human immunodeficiency virus) three years later. Luc Montagnier and the Françoise Barré Sinoussi therefore announced in the scientific journal “Science” their discovery of the virus that causes AIDS (acquired immunodeficiency syndrome). It was a retrovirus, a type of virus with RNA as genetic material, rather than the usual DNA [14].

A year later, on April 22, 1984, the CDC publicly stated that the French LAV virus had been definitively identified as the cause of AIDS by researchers at the Pasteur Institute.

The following day, however, Health and Human Services announced that Robert Gallo (b. 1937) (Fig. 3), the director of the *National Cancer Institute’s Laboratory of Tumor Cell Biology*, had isolated from AIDS patients a virus that was a candidate for causing the disease, calling it HTLV-III (Human T-cell leukemia virus type III) [15,16,17,18], the first human retrovirus ever discovered.

Thus began a scientific and legal battle between the

Fig. 1. Luc Montagnier (1932-2022) - (Public Domain - Wikipedia commons).

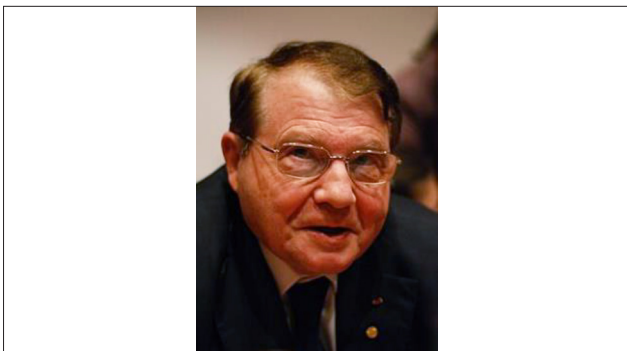
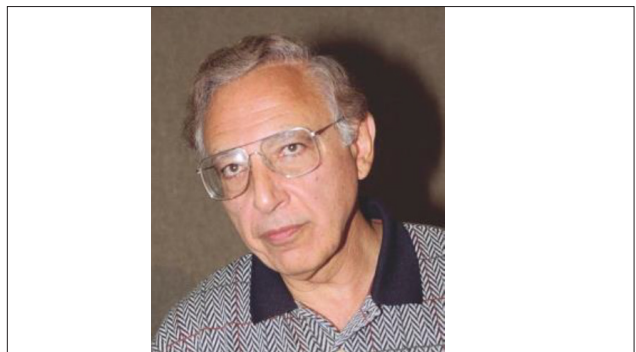


Fig. 2. Françoise Barré-Sinoussi (born in 1947) - (Public Domain - Wikipedia commons).



Fig. 3. Robert Gallo (b. 1937) - (Public Domain - Wikipedia commons).



two prestigious research institutes, both of which claimed credit for the discovery. Finally, in 2008, Luc Montagnier and Françoise Barré-Sinoussi, researchers at the Pasteur Institute in Paris, were awarded the Nobel Prize for Medicine “for their discovery of human immunodeficiency virus” [19].

Stigmatization of people with HIV: from the ignorance of the 1980s to today’s U=U equation

In 1985, exactly 40 years ago, public awareness began to change, as it emerged that a disease which for some years had afflicted subjects who engaged in risky behaviors linked to the sexual sphere and the use of drugs also affected other categories.

On July 25, 1985, the American actor Rock Hudson (1925-1990) was hospitalized after collapsing in Paris, where he had gone for experimental treatment at the American Hospital and the Pasteur Institute. He instructed his staff to issue a press release officially announcing that he had AIDS, a diagnosis that he had received a year earlier, on June 5, 1984.

Hudson had never revealed his homosexuality, which was known to only a few. Even when the signs of AIDS began to show, he denied his illness for more than a year, claiming variously to be suffering from anemia, anorexia nervosa and liver cancer. Indeed, Hollywood’s

Fig. 4. Rock Hudson, pictured with Elizabeth Taylor in *Giant*, 1956 (Public Domain - Wikipedia commons).



film industry would never have allowed the news to come out, as it would have destroyed the virile image with which the public, especially women, identified the actor (Fig. 4).

Hudson's revelation of his illness, and subsequently of his homosexuality, marked a turning point in the public's perception of the AIDS epidemic. The case became a worldwide media sensation and had an immediate impact on the visibility of AIDS, while a wave of panic spread everywhere. The hospital where the actor was hospitalized immediately emptied, owing to fear of contagion. Moreover, when Hudson wanted to return to the United States, no airline would accept him as a passenger; indeed, his entourage was forced to book an entire flight just for him.

With the panic surrounding a disease that was little known and incurable at the time, prejudice against HIV-infected subjects was rife, a prejudice that was to last for years. Even the widespread media campaigns of the 1980s and 1990s failed to eliminate the stigma attached to AIDS patients, though they did increase public awareness of risky behaviors.

Today, the main problem is no longer the virus itself, but the people around HIV sufferers, who often have narrow-minded and judgemental attitudes. Over the last 40 years, science has made enormous progress, and AIDS can now be considered a chronic disease. Indeed, specific antiretroviral therapies (ART) are able to reduce the viral load to undetectable levels (plasma HIV-RNA < 200 copies/mL).

Thus, the risk that an HIV-positive subject on antiretroviral therapy with stably suppressed viremia can transmit the virus through unprotected sexual intercourse is zero, as stated by the World Health Organization: "People living with HIV who are taking ART and have an undetectable viral load will not transmit HIV to their sexual partners" [20].

Society's acceptance of the equation $U=U$ ("undetectable=untransmittable") could be an important factor in reducing the stigma that has plagued HIV carriers for decades. It could also put an end to the internalization of the social stigma that has often caused these people to consider themselves potential spreaders of the virus. On November 12, 2019, the "Italian Consensus Conference

on *UequalsU*" was held at the Ministry of Health in Rome, marking a historic step for Italy too. The leading Italian scientific communities involved in research into HIV, together with other associations and communities, officially recognized the validity of the $U=U$ principle. Despite that, "a new global study presented this week at the 13th IAS Conference on HIV Science in Kigali (IAS 2025) has revealed that 50 countries around the world continue to enforce HIV-related travel and residence restrictions, in clear violation of international human rights principles. The data, shared by the HIV Justice Network through its new platform *Positive Destinations*, highlights the persistence of discriminatory laws and policies that prevent people living with HIV from freely travelling, working, studying, or settling in many parts of the world" [21, 22].

"These restrictions, rooted in stigma and outdated public health thinking, obstruct access to healthcare, employment, education, and family unity - said Edwin J Bernard, HIV Justice Network's Executive Director." [22]

The epidemic spreads among heterosexuals, drug users and hemophiliacs

In 1985, the epidemic entered its "third phase". After the first, "hidden", phase in the 1960s and 1970s, and the second phase in the early 1980s, when the disease spread almost exclusively among homosexuals, the epidemic exploded in the mid-1980s among drug addicts in central and southern Europe, the United States, India and many other regions of Asia and Africa. Indeed, while most AIDS cases were reported among homosexual and bisexual men, the infection was beginning to spread to heterosexuals and intravenous drug users.

That same year, the World Health Organization began collecting systematic data on AIDS cases, recording 5,967 cases of AIDS, the final stage of the disease when the immune system is severely compromised. However, this figure represents only diagnosed and reported cases; realistically, the actual number of people infected with HIV was much higher.

Again in 1985, epidemiologists began to hypothesize that the disease could also be spread through blood products, with serious implications for hemophiliacs, who periodically received concentrates produced from large batches (pools) of plasma, much of which had been collected in the late 1970s and early 1980s, before the first cases of AIDS had even been detected.

An emblematic case was that of Ryan White (1971-1990), a boy from Indiana who contracted HIV following a blood transfusion [23].

Ryan suffered from hemophilia A, a condition that prevents blood from clotting and is characterized by frequent bleeding. For this reason, he regularly underwent blood transfusions. In 1984, when he was only 13 years old, he was hospitalized with pneumonia. During routine tests, he was found to be HIV-positive.

Fig. 5. President Barack Obama signs the Ryan White HIV/AIDS Treatment Extension Act of 2009. (Public Domain - Wikipedia commons).



Ryan had been infected during one of the many blood transfusions he was forced to undergo in order to survive. On July 27, 1985, he was denied entry to school. His family's legal battle to protect his right to attend school brought the issue of AIDS into the national spotlight. The boy fought this stigma with uncommon courage. He chose to speak out publicly about the need for AIDS education, becoming a veritable living emblem of the fight against the disease and the stigma associated with it.

Despite the fact that doctors had given Ryan only six months to live, he survived until 1990, participating in numerous fundraising events for AIDS research, supported by various music and entertainment celebrities, including Elton John and Michael Jackson. His testimony was crucial to making people understand that AIDS was not a disease that affected only homosexuals.

In 1990, shortly after Ryan's death, the U.S. Congress passed the Ryan White Care Act to support care for people with AIDS who do not have adequate health insurance or other resources (Fig. 5).

In March 1985, perhaps also in the wake of the Ryan White case, the US Food and Drug Administration authorized the first blood test, the Enzyme-Linked Immunosorbent Assay (ELISA), which indicates the presence of specific antibodies that the immune system creates after contact with the HIV virus. American blood banks then began to test the batches of blood in their possession.

In the same year, Europe also adopted these control practices, introducing specific HIV tests and improving transfusion safety. Unfortunately, however, effective tests for detecting HIV in blood did not immediately become available in all European countries. In Italy, on 17 July 1985, the General Directorate of the Public Health Service issued a circular urging that every unit of donated blood be tested for the presence of anti-LAV/HTLV-III antibodies, in the same way as the HIV viruses had initially been identified [24]. Nevertheless, determination of the presence of the HIV virus in the blood units collected became mandatory only through Law no. 531 of 29 December 1987 [25].

The First International Conference on AIDS

In 1985, the first International Conference on Acquired Immunodeficiency Syndrome (AIDS) was also held; from April 15 to 17, over 3,000 participants from 50 countries gathered in Atlanta. This provided an opportunity to discuss the clinical progression of the disease, the modes of virus transmission, epidemiological trends, and HIV testing. The conference was followed by a meeting organized by the World Health Organization on April 18 and 19, during which participants reviewed the information presented at the conference and assessed its international health implications. Evidence of this work can be found in its *Memorandum* [26]. This document initially provides a significant overview of the situation of the syndrome since its recognition in 1981.

“Since the first recognition of the acquired immunodeficiency syndrome (AIDS) in 1981, nearly 11,000 cases have been reported, mainly from the industrial countries. More than 80% of cases recorded to date have been reported from the USA. AIDS presents a major health problem in Haiti, and the reported incidence of the disease is increasing in Brazil and Canada. While six countries in Europe (Denmark, France, Federal Republic of Germany, Netherlands, Switzerland and the United Kingdom) have reported increasing numbers of cases since 1981, there have been relatively few cases from countries in Asia and the Western Pacific region (except Australia). Recent information indicates that AIDS may be a serious public health problem in tropical Africa; estimated incidence rates in some central African cities are comparable to those in New York or San Francisco, and cases have been identified in residents or migrants from over a dozen African countries.” [26]

The passage regarding the social groups affected by the disease is interesting: “In North America, Europe, and Australia, homosexual men account for at least 70% of the total of detected AIDS cases. The disease has also been noted in intravenous drug abusers, hemophiliacs, recipients of blood transfusion, and the heterosexual partners or infants of patients or members of groups at increased risk of infection. Studies undertaken in Haiti and central Africa and among emigrants from these countries show that the disease is occurring mainly in the heterosexual population. Heterosexual contact in these populations is a major risk factor for transmission of infection.” [26]

But the most important part is certainly the passage concerning recommendations, information, and health education, which are considered essential to stemming the ever-increasing spread of the virus.

“Control measures for AIDS will differ from country to country, but the most promising means of limiting the spread of LAV/HTLV-III infection is through education aimed at altering the behavior and practices of certain individuals. Information about the disease, probable routes of transmission, and ways to reduce the risk of infection should be widely disseminated in the

community and to groups at increased risk of infection. This information should be presented so that it can be easily understood. The public should be informed that there is no evidence of spread by the airborne route, by casual social contacts with infected persons (even within households), and by food, or to health care workers who are not in the high-risk group.” [26]

While the various groups at high risk of infection are still mentioned, the document stresses that although “the highest prevalence of infection and disease in some countries is among homosexual or bisexual men, in others heterosexual transmission is equally or more important” [26].

The most noteworthy recommendations are:

- the use of condoms, although the document states that “The use of condoms may prevent the spread of infection”, but adds that “this has not yet been documented”;
- advice to infected women not to become pregnant “because this may exacerbate the disease, and infection may spread to the fetus or infant” [26].

In this regard, on December 6 CDC published a Morbidity and Mortality Weekly Report with recommendations on preventing mother-to-child transmission of HIV. They include: delaying pregnancy until more is known about the risks of transmission and avoiding breastfeeding [27]. At the international level, the *Memorandum* of the meeting organized by the World Health Organization on 18 and 19 April 1985 highlights some interventions to be undertaken worldwide: “establish a network of collaborating centers with special expertise in the field; coordinate global surveillance of AIDS; assist in the development of an effective vaccine; encourage and assist in periodic serological studies in countries where AIDS has yet to be recognized, and ensure the collection of comparable data and representative selections of sera” [26].

In addition, each country was urged to carry out specific interventions, the first and most fundamental being that of providing information: “inform the public that LAV/HTLV-III infection is acquired through heterosexual and homosexual intercourse, sharing of needles by intravenous drug abusers, transfusion of contaminated blood and blood products, transmission from mothers to their babies, and probably through repeated use of needles and other non-sterile instruments that pierce the skin or mucous membranes. Information should be provided about the risk of LAV/HTLV-III infection and AIDS, especially to those men and women who may be at increased risk because of multiple sexual partners”. And again, “ensure that health care workers are informed about AIDS and LAV/HTLV-II infection, the modes of transmission and clinical spectrum, the available programs of management, including psychosocial support, and the methods for prevention and control” [26].

Each country was also to assess the risk that AIDS constitutes for its population, establish specific diagnostic methods, screen potential blood and plasma donors for the presence of antibodies against the virus,

and provide potential donors of organs, blood, sperm or other human material with precise information on AIDS. Finally, it was deemed essential for each country to refer HIV-positive individuals for medical evaluation: “[...] develops guidelines for the total care of AIDS patients and for handling specimens from them in hospital and other settings. These guidelines should be similar to those which are in use for the care of patients with hepatitis B. And lastly, develops codes of good laboratory practice to protect staff against the risk of infection” [26].

The 1985 AIDS Conference in Atlanta therefore marked a turning point in the global approach to preventing and managing the epidemic. It constituted a crucial step in the fight against the disease, highlighted the importance of information and education, helped to raise public awareness of AIDS, and sought to reduce the stigma and promote solidarity with those affected by the disease.

In the same year, on August 31, the Pentagon announced that, starting on October 1, all new military recruits would be tested for the infection. On September 17, the U.S. President Ronald Reagan (1911-2004) publicly mentioned AIDS for the first time, calling it “a top priority” [28].

And on October 2, the U.S. Congress allocated nearly \$190 million to AIDS research.

Nevertheless, the public’s attitude towards AIDS patients did not change. Indeed, on October 25, the New York State Board of Public Health authorized local health officials to close “gay bathhouses, bars, clubs, and other places where “high-risk sexual activity takes place.” Moreover, 1985 ended with a Los Angeles Times poll on December 19, which revealed that a majority of Americans favored quarantine for people with AIDS [28].

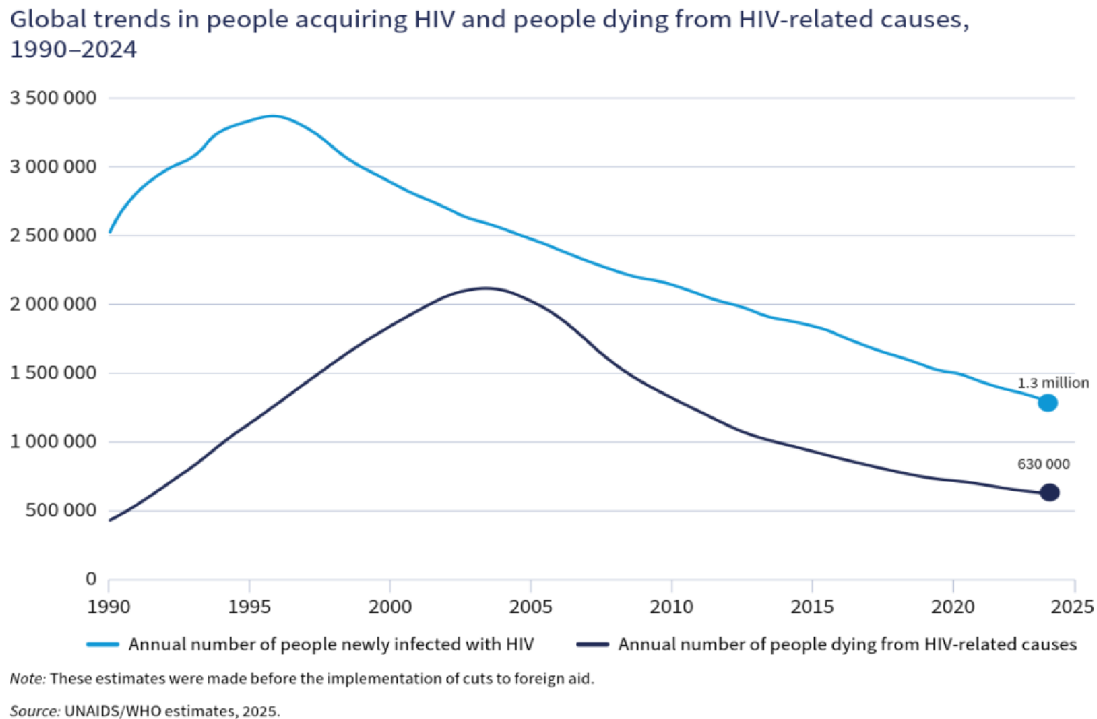
Stigma has accompanied AIDS since its first manifestations [29] and absurdly, “ending the AIDS epidemic by 2030 will require addressing stigma more systematically and on a larger scale than current efforts” [30].

“The problem of human immunodeficiency virus (HIV) /acquired immunodeficiency syndrome (AIDS) is increasingly complex, including not only health-related concerns but also rampant stigma and discrimination, further exacerbating the health and social conditions of the affected individuals” [31].

A look at current data and the possibilities of new drugs

We can conclude this article by highlighting some significant data on the disease and its spread in the 40 years since 1985, which, as mentioned above, was a fundamental turning point in the history of AIDS.

Since the epidemic started, 91.4 million [73.4 million–116.4 million] people have been infected with HIV, and 44.1 million [37.6 million–53.4 million] have died from AIDS-related illnesses [32]. Approximately 40.8 million [37.0–45.6 million] people were living with HIV at the end of 2024; of these, 1.4 million were children under the age of 15 years. In 2024, 1.3

Fig. 6. Global trends in people acquiring HIV and people dying from HIV-related causes, 1990–2024 (source: UNAIDS/WHO estimates, 2025).

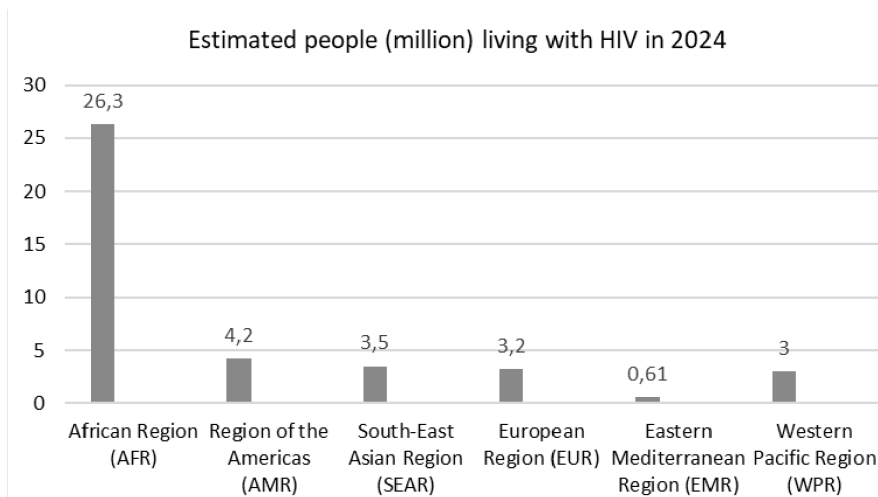
million [1.0–1.7 million] people acquired HIV and 630,000 [490,000–820,000] died from HIV-related causes globally; of these, 75,000 were children under the age of 15 years [33]. Since 2010, the number of people acquiring HIV has declined by 40%, from 2.2 million [1.7–2.8 million] [32] (Fig. 6).

It should be pointed out that, thanks to information campaigns and the introduction of specific drugs, in particular antiretroviral drugs in 1997, “since 2010, the number of people acquiring HIV has been reduced by 40%, from 2.2 million [1.7–2.8 million] and HIV-related

deaths have been reduced by 54%, from 1.4 million [1.1 million–1.8 million]” [32]. The figure below shows the estimated number of HIV-positive subjects in 2024 in the various WHO Regions (Fig. 7).

Although the trend observed offers hope for a solution to the HIV epidemic, the numbers of new diagnoses oblige us to remain vigilant.

The UnAIDS Global AIDS Report 2024, “The Urgency of Now: AIDS at a Crossroads”, highlights significant progress in some regions, especially sub-Saharan Africa, where new HIV infections have decreased by 56 percent

Fig. 7. Estimated people (million) living with HIV in 2024 (source: UNAIDS/WHO estimates, 2025).

since 2010, thanks to effective prevention, education, and treatment programs.

However, “three regions are experiencing rising numbers of new HIV infections: eastern Europe and central Asia, Latin America, and the Middle East and North Africa. For the first time in the history of the HIV pandemic, more new infections are occurring outside sub-Saharan Africa than in sub-Saharan Africa” [34]. In this regard last August 26th the Centre for Health Protection (CHP) of the Department of Health (DH) announced that a total of 180 new cases of Human Immunodeficiency Virus (HIV) infection and 47 new cases of Acquired Immunodeficiency Syndrome (AIDS) were reported in the first half of 2025 in Hong Kong [35].

The occurrence of such situations highlights the lack of adequate prevention in these regions and underscores the importance of a global, coordinated response tailored to specific local situations.

Careful vigilance is also needed to address an international funding crisis for HIV research, communication, and prevention efforts. “Discontinuation of international financial support for HIV has potential to jeopardise decades of steady year-on-year progress in reducing new HIV infections and deaths, especially in sub-Saharan Africa. Even under optimal mitigation scenarios, stopping large-scale funding could unravel 10–15 years of progress within a few years [...]. In the worst-case scenario, if PEPFAR funding were ceased entirely and no equivalent mechanism replaced it, surges in HIV incidence could potentially undo nearly all progress achieved since 2000” [36].

Further hope is engendered by a drug that was presented only a few months ago, and which offers a promising option for pre-exposure prophylaxis (PrEP). Indeed, on June 18, 2025, the Food and Drug Administration approved a twice-yearly injection that provided a near-perfect shield against HIV infection in clinical trials [37].

The new drug, based on the molecule Lenacapavir, seems to be able to effectively contribute to putting an end to the epidemic on a global scale: a possibility that comes at a time when sexually transmitted diseases such as AIDS are increasing dangerously among young people. “This milestone follows promising 2024 results from the PURPOSE 1 and PURPOSE 2 trials, which demonstrated the safety and efficacy of lenacapavir across diverse populations and settings. Administered just twice a year, lenacapavir offers sustained protection and adds to the growing range of HIV prevention options”. [37]

In the introduction to the guidelines for injectable lenacapavir, which the World Health Organization published last July 14, there is a passage that concludes this article well: “To end HIV as an epidemic, focus is needed on a comprehensive approach that includes combination HIV prevention. This includes biomedical options such as HIV testing, preexposure prophylaxis (PrEP), post-exposure prophylaxis (PEP), voluntary medical male circumcision and condom promotion.

Rapid, wider access to PrEP and its effective use could significantly reduce the number of new HIV infections, especially among key populations and people in areas where HIV incidence is high” [38].

For this to happen, what is needed is significant funding, clear decisions by governments, and a further concerted effort by all to fight HIV alongside those affected by it.

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Informed consent statement

Not applicable.

Conflicts of interest statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Authors' contributions

DO: conceived the study; DO & MM: designed the study; drafted the manuscript; performed a search of the literature; revised the manuscript; conceptualization and methodology; investigation and data curation; original draft preparation; review; editing. All authors have read and approved the latest version of the paper for publication.

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