

HIV and long lives

New challenges in high-income countries

Health and Care Prevention International Inequalities Life expectancy

Disease and Conditions

Acknowledgements

This project has been made possible with the provision of a financial grant from Gilead Sciences Europe Ltd.



Author: Anna van Renen

Executive summary

Of the seven million people living with HIV in high-income countries, it's estimated that 50% or more are over the age of 50. For those living with HIV, ageing with this disease is now the norm, not the exception. Thanks to antiretroviral therapy, people with HIV are living longer, healthier lives, but the world is unprepared for the future this will bring. In high-income countries with more people living with HIV, such as the UK, Switzerland, Portugal, Spain, Australia, France and the US, over half of those living with HIV are already older than 50. This figure will only grow – by 2030, 70% those living with HIV in the US will be over 50.

At the same time, new infections among older people are rising. 20% of new HIV diagnoses in Europe now occur in people aged 50 or older, with countries like Denmark, Finland, and Italy reporting rates above 25%. Yet healthcare and care systems remain dangerously underprepared for the complex medical, economic and social realities that will be faced by older people with HIV. Facing a range of barriers that include delayed diagnoses, persistent stigma, rising care costs and increasing isolation, the needs of this growing population remain largely unmet.

This report examines the persistent barriers that can make it hard for people to age well with HIV – which remain despite major advances in treatment and preventative care (prevention). It draws on global data, international comparisons, expert insight and patients' experience to explore the health, economic and social challenges faced by older people with HIV. Appendix 1 includes a broader global analysis of demographic trends in the HIV epidemic in the context of healthy ageing data from the ILC *Healthy Ageing and Prevention Index*.

Global trends for HIV and demographic change

These global shifts in HIV survival and ageing are rooted in broader trends that have transformed the epidemic over the last 30 years. By analysing global data on HIV prevalence, treatment outcomes and age distribution, we've found that **life-saving advances in medication have led to an ageing population with HIV:**

- Antiretroviral therapy has helped reduce AIDS-related deaths by over 50% since their peak in 2004; by 2020, this treatment was saving over 1.5 million lives each year
- By 2022, efforts to prevent mother-to-child transmission meant over 217,000 infections in children were averted each year a 75% drop compared to 1999

- The number of people living with HIV has grown from 7.9 million in 1990 to over 40 million in 2021, driven by longer life expectancy.
- New infections have halved since 1997, but this downward trend has plateaued since 2015.

These global trends underscore not only the success of HIV treatment and prevention but also the new and growing complexities of the epidemic. As people with HIV live longer, high-income countries now face a pressing challenge: ensuring that ageing with HIV doesn't mean ageing into poverty, poor health or social exclusion.

Barriers to ageing well with HIV in high-income countries

Despite advances in medication and treatment, many individuals with HIV encounter persistent barriers to ageing well, from fragmented healthcare systems and stigma, to inadequate housing, income insecurity and limited support in later life. We found that:

HIV carries significant economic costs for individuals and society, and issues with long-term care, prevention and financial security persist in high-income countries.

- HIV is an expensive illness, with lifetime treatment costs per person ranging from at least £280,000 in England to over \$420,000 in the USA.
- Older people with HIV face financial insecurity due to out-of-pocket health costs, discrimination or a lack of savings.
- Nearly a third of all people living with HIV are unemployed, with indirect economic costs from lost productivity and caregiving far exceeding direct healthcare expenses.

Older people living with HIV face complex health challenges, including comorbidities, mental health issues and fragmented healthcare services, all of which require tailored approaches to care and prevention.

- Older people with HIV are at increased risk of comorbidities; it's predicted that 80% of people with HIV aged 50 and over will develop at least one age-related comorbidity.
- Depression and anxiety are the third most common comorbidities in the UK for those ageing with HIV, exacerbated by social isolation, stigma and survivor's guilt.

- Healthcare systems are not equipped to address the complexities of ageing with HIV, leading to fragmented care and mismanagement of comorbidities.
- Prevention is vital, but older people are often excluded from sexual health campaigns and prevention initiatives, resulting in late diagnoses and higher health risks.

The social impact of ageing with HIV is profound and has a significant impact on quality of life.

- In the UK, a third of older people with HIV report feeling socially isolated.
- Stigma continues to shape the experiences of those with HIV, with nearly half of the worldwide population holding discriminatory attitudes towards those living with HIV.
- Older people aren't a homogenous group, and still make up key populations that are at a higher risk of contracting HIV, so continue to require access to prevention and care.

What happens next

To improve outcomes for people living with HIV, especially as they age, we need an age-inclusive healthcare system that addresses both HIV and comorbidities, and is integrated to avoid fragmented services that can miss problems with comorbidities, polypharmacy and age-related factors. By coordinating care, modernising prevention initiatives and expanding testing, we can enhance the quality of life for those with HIV as well as improve health outcomes for a broader range of conditions.

We have five key recommendations on how to address the challenges associated with ageing with HIV:

1. What: Implement a national HIV/AIDS action plan with age-related issues at the forefront, to drive integrated, inclusive care.

Why: Older people with HIV often face fragmented, youth-focused healthcare systems. Integrated, inclusive services improve care quality, adherence and outcomes at all ages.

How: Governments must:

• Join up healthcare and care services for HIV, comorbidities and other unrelated illnesses to offer easily accessible, integrated care at a single access point, such as a GP surgery or primary healthcare provider.

- Fully digitise healthcare systems to connect providers across primary, specialist, pharmacy and social care, improving coordination and reducing fragmentation of care.
- Provide mandatory training on HIV/AIDS, including ageing with HIV, for all healthcare professionals, including GPs, pharmacists and care home workers.

2. What: Modernise HIV testing and prevention efforts to reflect changing demographics.

Why: Prevention and testing still overlook older people, despite rising risks and undiagnosed cases. Systems must reflect the realities of ageing, relationships and sexual health throughout our lives.

How: National and local governments must:

- Introduce or expand opt-out testing for HIV to apply to all routine blood tests and health checks.
- Expand access to free HIV testing through community settings, walk-in clinics, rapid result tests and outreach services, such as mobile or street-based testing, with no restrictions on who can use these free tests.
- Launch broader, age-inclusive prevention campaigns that reflect the diversity of older people and their relationships, including older women, single older people, and older people in at-risk populations.

3. What: Build a data-driven HIV response that supports equitable care and tracks progress across all age groups.

Why: Gaps in data hinder effective policy and resource allocations, especially for older people, who are often not counted in national statistics. Responsive and person-centred care depends on better data.

How: Governments and international organisations must:

- Disaggregate HIV data by age and gender to inform policy and resource allocation, across all countries, not just those that have more people living with HIV.
- Use disaggregated data to guide HIV strategy, funding and service improvement for older people.

4. What: Empower the voluntary and community sector to shape and deliver HIV care alongside healthcare and social services.

Why: Distrust of government and healthcare services is especially prevalent among those living with HIV, due to historical discrimination, stigma and fragmented care experiences. Community-led and voluntary organisations offer trusted, tailored support and are vital to improving care.

How: National and local governments must:

- Embed community-led and LGBTQ+ organisations as equal partners in HIV policy, planning and service delivery.
- Expand Integrated Care Partnerships that connect clinical services with community support, including peer networks and social care.

5. What: Decriminalise sex work and drug use and redirect resources to other harm reduction strategies to support inclusive. effective HIV prevention and care.

Why: Criminalisation of sex work and drug use creates barriers to HIV prevention, testing and care. Decriminalisation is a proven harm reduction strategy, as evidenced in examples from Switzerland, Portugal and New Zealand, improving health outcomes and reducing HIV transmission.

How: National governments, with the support of international organisations, must:

- Fully decriminalise sex work and possession of drugs for personal use.
- Redirect funding from punitive enforcement to health-led harm reduction services, including free health checks, the provision of clean needles, and commissions akin to Portugal's dissuasion commissions (see **Box 5**).
- Ensure legal reforms are accompanied by workforce training and accountability across police, healthcare and social services.

Contents

Executive Summary
Introduction
Forty years of the global HIV response12
HIV in a changing demographic landscape15
Barriers to ageing well with HIV in high-income countries19
Recommendations
What happens next?
Appendix 1: An analysis of the global state of the HIV epidemic in the context of the ILC Healthy Ageing and Prevention Index44
Reference

Introduction

The world isn't ready for a future where millions grow old with HIV.

In many countries, ageing with this disease is no longer an exception, but rather the norm for those with HIV. Today, of the seven million people living with HIV in high-income countries, more than half are aged over 50. Yet despite decades of progress, healthcare and care systems remain largely unprepared for the complex realities faced by older people living with HIV. The virus may be treatable, but the policies, services and systems surrounding it haven't caught up.

Once regarded as a death sentence, HIV is now a manageable chronic condition, thanks to groundbreaking advancements in antiretroviral therapy (ART) and comprehensive public health interventions. But as populations age with HIV, they've exposed critical gaps in healthcare systems, magnified economic vulnerabilities and deepened social isolation.

This shift presents both significant opportunities and challenges. While improved treatment outcomes have dramatically reduced the number of HIV-related deaths, they've also given rise to demographic change: an ageing population with HIV that faces a higher burden of economic, medical and social challenges. Studies indicate that older people with HIV are much more likely to develop conditions such as cardiovascular disease, osteoporosis and diabetes at earlier ages than their HIV-negative counterparts.¹ Furthermore, ageing with HIV can mean delayed diagnoses (older people are more likely to be diagnosed with a late-stage HIV infection),² heightened mental health challenges, and increased social isolation.³ Ageist assumptions that older people aren't at risk, and don't engage in sexual activity, inject drugs or work as sex workers, result in fewer testing and prevention efforts that target them.

The economic burden of HIV remains significant. Between 2000 and 2015, global HIV care and treatment costs exceeded \$562.6 billion, with high-income countries funding much of the global response. In England, HIV treatment costs the NHS £800 million each year, while in the USA, lifetime care costs average \$420,285 per person. Beyond healthcare, indirect costs are even higher, including lost productivity and caregiving needs, with productivity losses alone reaching \$29.7 billion in the USA each year. There's an urgent need to invest in prevention, early diagnosis and broader support systems to support those ageing with HIV or at risk of ageing with HIV. In Spain, prevention costs €1,772 per person per year while treatment costs between €7,600 and €9,000.

In parallel, the global policy landscape has evolved. Over the past two decades, international efforts such as the UNAIDS 95-95-95 targets (where 95% of people with HIV know their status, 95% of those who know their status are on ART, and 95% of people on ART are virally suppressed) have driven progress in HIV diagnosis, treatment and viral suppression. The expansion of universal healthcare coverage, increased access to ART and stronger global commitments, including the UN goal to halt new HIV transmissions by 2030, have significantly reduced mortality and transmission rates. But if HIV programmes don't change, UNAIDS predicts that there will be 46 million people with HIV by 2050. Many healthcare systems remain ill equipped to address the broader challenges of ageing with HIV, including the need for integrated care models, social protection and mental health support.

In this report, we:

- Showcase how advances in HIV diagnosis, treatment and 'treatment as prevention' (see **Box 1**) have led to an ageing population with HIV
- Discuss the economic, health and social barriers faced by older people with HIV, and highlight best practices from high-income countries
- Supply a supporting appendix that looks at the global state of HIV/ AIDS in the context of the ILC *Healthy Ageing and Prevention Index*, analysing demographic shifts in the HIV epidemic and how different countries help people age healthily with HIV

It's crucial that HIV care moves beyond simply keeping individuals alive, and develops into a holistic approach that supports individuals in all aspects of their lives as they age. This means not only ensuring access to treatment but also prioritising prevention, enabling people to remain in employment, addressing mental wellbeing, tackling stigma and ensuring social inclusion. By investing in these comprehensive strategies, we can ensure that the successes in HIV treatment translate into sustained improvements in overall health and wellbeing for all, especially those ageing with, or at risk for, HIV.

Box 1: What is HIV?

Human Immunodeficiency Virus (HIV) is a virus transmitted through some bodily fluids. It can be passed on through blood, breast milk, vaginal fluid, rectal fluid and semen, and can also be passed from mother to child in utero.⁴ This means it's most often spread through: unprotected sex; shared needles, syringes or other drug injection equipment; or being passed from mother to child.⁵

How does HIV affect people?

HIV destroys CD4 cells – the white blood cells that are key to fighting viruses, bacteria and other germs that can cause illness.⁶ The lower your CD4 count, the harder it is to fight off even small illnesses like a cold.

Untreated HIV can progress through four stages: seroconversion, asymptomatic, symptomatic and late-stage HIV (also known as AIDS). A late-stage infection is often fatal, due to a weakened immune system and increased risk of opportunistic infections. The term "HIV-related deaths" refers to any death directly or indirectly linked to living with HIV, as well as those that are directly caused complications from late-stage HIV ("AIDS-related deaths").⁷

Can HIV be managed?

HIV and AIDS are not curable illnesses, but today HIV is easily manageable. Antiretroviral drugs can lower the level of HIV in the blood and allow those infected to live a normal life. If taken as prescribed, these drugs can suppress your viral load, meaning the virus has very little impact on your body and, if the load is low enough, can't be transmitted to other people.⁸ HIV is best managed with a combination of drugs; some countries offer these combinations in a single pill.⁹ This combination of drugs is known as antiretroviral treatment (ART).

Can HIV be prevented?

HIV is preventable by avoiding the risk of the swapping of bodily fluids; for example, using a condom during sexual intercourse and using clean needles for injecting drugs. Additionally, there are preventative medications for those who don't have HIV, called Pre-Exposure Prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP). Both are forms of ART and known as Treatment as Prevention; they work by stopping HIV from entering your body.¹⁰

Who can get HIV?

HIV can affect anyone regardless of age, gender, sexuality, race or ethnicity.¹¹ There are key populations who are more at risk, which include: men who have sex with men, transgender and genderdiverse people, sex workers, people who inject or use drugs, and people in prisons and other closed settings.¹² Outside of sub-Saharan Africa, these key populations and their sex partners make up 80% of the HIV-positive population.¹³

	Forty years of the global HIV response
1981	The US Centre for Disease Control (CDC) reports a rare lung infection in five previously healthy, young gay men in Los Angeles.
	More people – mostly gay men – present with similar lung infections and a rare cancer called Kaposi's Sarcoma, seemingly linked to suppressed immune systems.
	In the US, these illnesses are said to disproportionately affect four so-called 'risk groups', coined the 4Hs: homosexuals, haemophiliacs, heroin users and Haitians. The inclusion of Haitians was based on stigma and misinformation, not scientific evidence.
	By the end of the year, there are 337 reported cases of severe immune deficiency, and 130 deaths.
1982	The <i>New York Times</i> publishes an article calling the illness Gay-Related Immune Deficiency, or GRID. The initial notion that HIV/AIDS mostly affected gay men and Black migrants stalls policy responses worldwide.
	A few months later, the CDC coins the term AIDS.
	US Congress denies a resolution for funding AIDS research and treatment.
1983	US Congress passes the first bill that includes funding targeted for AIDS research and treatment.

1983	The CDC determines that AIDS is caused by an infectious agent transmitted sexually or through contaminated needles and blood.
1984	HIV is discovered by a French virologist and a US physician.
1996	The UN launches its Joint Programme on HIV/AIDS (UNAIDS) to coordinate the worldwide effort to tackle HIV/ AIDS.
	Antiretroviral therapy is approved to treat HIV.
	AIDS becomes the biggest killer in Africa, and the fourth biggest worldwide.
2000	The UN Millennium Development Goals (MDGs) are established. They include ambitious targets to halt, and begin the reversal of, the spread of HIV/AIDS by 2015, and to achieve global access to treatment for HIV/AIDS for those who need it by 2010.
2010	A study supported by the US National Institute of Health across Brazil, Ecuador, Peru, Thailand, South Africa and the US finds that a daily dose of HIV treatment to HIV-negative people decreases their risk of contracting the virus. This comes to be known as PrEP.
2012	The US is the first country to approve PrEP as a preventative medication for HIV.
2013	A review of the UN MDGs shows that from 2001 to 2013, new infections dropped by 38%, AIDS-related deaths declined by 35% and ART access expanded from 1 million to 15 million people, preventing 7.6 million premature deaths.
	UNAIDS establishes the 90-90-90 targets, where by 2020, 90% of people living with HIV will know their status, 90% of people who know their status will be on treatment, and 90% of those on treatment will be virally suppressed.

2015	The UN establishes its Sustainable Development Goals, in which HIV/AIDS is framed as a critical issue intersecting with poverty, gender equality and economic development.
	Multiple countries, mainly low- and middle-income, approve PrEP as a preventative medication. France is the first European country to do so.
2021	UN member states adopt the 95-95-95 goals, where 95% of people living with HIV will know their status, 95% of people who know their status will be on treatment, and 95% of those treated will be virally suppressed.
	The first long-acting injectable form of PrEP is approved by the FDA.
2025	152 countries offer PrEP, and 12 offer the long-acting injectable form.
	More people with HIV are living longer, creating new challenges as they age. Many now face early-onset age- related illnesses, mental health issues, social isolation, and economic insecurity; healthcare systems are often unprepared for these new challenges.
	Significant cuts in globally funded provision threaten to reverse the progress made, particularly in lower-income countries.
	Sources: <u>HIV.gov. 2024. HIV and AIDS timeline;</u> <u>UNAIDS. 2025. About; MDG</u> Monitor. 2015. MDG 6: Combat HIV/AIDS, Malaria and other major diseases; <u>UN.</u> 2016. The 17 Goals; <u>World Health Organization. 2024. Global PrEP Network.</u>

The global HIV response has made extraordinary progress, transforming a once-fatal diagnosis into a manageable chronic condition. Yet this success story has also brought new and complex challenges. As more people live longer with HIV, the demographics of the epidemic are changing. With this comes changes to the demands on healthcare systems, policy frameworks and support structures. To understand where we are today and what comes next, we must explore how HIV trends have evolved, and how demographic shifts (particularly population ageing) are reshaping the nature of the epidemic and our response to it.

HIV in a changing demographic landscape

Treatment advances mean populations with HIV are ageing

Between 1980 and the mid-2000s, HIV/AIDS deaths surged dramatically, rising from relatively low levels to over 2 million, at their peak in 2004. By 1998, HIV/AIDS was killing more people than diseases like dementia, diabetes and malaria.¹⁴ However, the trend began to reverse in 2009, as ART became more widely available, helping reduce the number of AIDS-related deaths significantly.



Figure 1: AIDS-related deaths and deaths averted by antiretrovirals

Source: Joint United Nations Programme on HIV/AIDS. 2024. Global Data.

The number of deaths averted by ART is significant, especially from the mid-2000s onward, as the number of people receiving treatment increased and the global death toll started to fall. By 2020, the number of deaths averted by ART had surpassed 1.5 million per year. Despite this, HIV/AIDS remains one of the top 20 causes of death worldwide.

The falling share of deaths caused by HIV coincided with a number of key developments, including wider access to antiretrovirals through initiatives like the US President's Emergency Plan for AIDS Relief¹⁵ and the Global Fund to Fight AIDS, Tuberculosis and Malaria.¹⁶ Medical advancements also meant that a single-pill treatment option became available, which is likely to have improved medication adherence.

Additionally, advances in the prevention of mother-to-child transmission meant that the number of infants born with HIV was significantly reduced.



Figure 2: The impact of antiretrovirals in preventing mother-to-child transmission

Source: Joint United Nations Programme on HIV/AIDS. 2024. Global Data.

At the height of the HIV epidemic, new infections in children were very high, peaking at over 536,000 in 1999. In the early-to-mid 1990s, research showed that taking ART during pregnancy could prevent in-utero transmission of HIV,¹⁷ and by 2004 this practice was rolled out globally.¹⁸ From then onwards, the number of mother-to-child infections averted began to climb significantly, while new infections in children began to decline. By 2014, the world was seeing more infections averted in children than new infections. Infections averted surged from 1,036 in 1999 to over 217,000 in 2022. Over the same period, the number of new HIV infections in children had declined by more than 75%, dropping to 132,831.

With fewer AIDS-related deaths, declining mother-to-child transmission, and a growing number of lives saved by ART, the demographics of people living with HIV are shifting. Fewer young people are contracting HIV, and more people are living longer, leading to an ageing population with HIV.





Source: Institute for Health Metrics and Evaluation (IHME). 2024. Global Burden of Disease.

The global trajectory of the HIV epidemic over the past three decades highlights both the progress made in treatment and prevention, and the ongoing challenges of tackling new infections. Since 1990, the number of people living with HIV has steadily increased from 7.9 million in 1990 to over 40 million in 2021. Meanwhile, HIV-related deaths peaked in 2004 at approximately 1.6 million per year but have since declined by over 50%, reaching 718,000 in 2021.

This sharp decline in mortality is directly linked to the widespread availability of ART, which has transformed HIV from a fatal illness into a manageable chronic condition. The upward trend of people living with HIV and the declining number of HIV/AIDS-related deaths reflects both the continued transmission of the virus and the effectiveness of ART in extending lives.

New infections, however, tell a more complex story. These have been declining since their peak in 1997, when they reached just over 3 million new cases each year. By 2021, this had dropped to 1.6 million, a reduction of nearly 50%. But progress has slowed in recent years; since 2015 the decline in new infections has plateaued. This stagnation highlights the need for targeted prevention efforts to drive new infections even lower, such as expanding PrEP access, addressing disparities in at-risk populations, and tackling structural barriers like stigma and healthcare access. Recent cuts to global HIV funding risk progress stalling further, particularly in low- and middle-income countries (LMICs) where treatment, care and prevention depend on global funding.

All countries will need to integrate their policies on ageing and HIV, as in the future this challenge will become reality for all, but right now the need is most immediate in high-income countries, as they have a higher proportion of older people. Healthcare systems must adapt to the dual challenge of ageing and HIV, ensuring that older people receive timely diagnosis, appropriate treatment, targeted prevention and integrated care that addresses comorbidities.

Barriers to ageing well with HIV in high-income countries

As people with HIV live longer, high-income countries are facing a new set of challenges. This section of our report explores what it means to age well with HIV in these settings, and why that goal remains out of reach for many. We begin by looking at how the epidemic response is evolving in high-income countries, before focusing on three of the most pressing barriers to ageing well: economic impacts, health impacts, and social challenges. We identified these as having the greatest impact on quality of life and the greatest potential for change through a review of the evidence and expert insight.

High-income countries are falling behind on their HIV response

HIV infection rates in high-income countries remain lower than in LMICs, in part due to better sexual health infrastructure, greater condom use, widespread sex education and general access to healthcare.¹⁹ But these countries face distinct and growing challenges related to ageing with HIV. Effective ARTs mean that many people diagnosed in the 1980s and 1990s are now ageing with HIV.²⁰

The percentage of new HIV cases that arise in people aged 50 or older increased globally from 3.9% in 2009 to 7.5% in 2019. Across continental Europe, one in five new HIV diagnoses now occur in people aged 50 or older, with countries such as Denmark, Finland, and Italy seeing proportions above one in four. In Spain, the percentage of people with HIV engaged in clinical care who were aged 50 or older rose dramatically from 12% in 2004 to 55% by 2019.²¹ And by 2030, it's expected that 70% of people living with HIV in the US will be over 50.²² These figures demonstrate that older populations are not only ageing with HIV but are also continuing to contract the virus at higher rates.

At the same time, general population ageing means that healthcare systems are contending with a rising burden of non-communicable diseases (NCDs) – conditions that disproportionately affect older people with HIV. Previous ILC research has found that in high-income countries, the readiness of healthcare systems to manage NCDs has improved over the last twenty years, but at a slower rate than in LMICs.²³

Additionally, older people diagnosed with HIV in high-income countries are far more likely to be diagnosed with a late-stage HIV infection (AIDS).²⁴ Around 50% of these cases are diagnosed at a late stage (with women disproportionately affected)²⁵ suggesting that existing testing and prevention strategies are failing to reach older people. The consequences of delayed diagnosis include worse health outcomes and higher treatment costs for those individuals, as well as increased strain on already stretched healthcare and social care systems as people with HIV contend with both HIV-related and age-related conditions.

Beyond the healthcare system, older people with HIV often face economic insecurity, social isolation and stigma. A lack of coordinated policies to address these interconnected issues reflects a broader systemic failure by government and healthcare systems to support those ageing with HIV. As the number of older people living with HIV grows, so too does the urgency of rethinking the design of healthcare, care and support systems.

Economic impact

The HIV burden is an enormous global expense

HIV care and treatment represents a significant financial burden; between 2000 and 2015, the world spent \$562.6 billion on this issue.²⁶ High-income countries tend to be responsible for a higher proportion of the global HIV response, though much of this is channelled through donor funding to reach LMICs, and not directed internally.²⁷

HIV treatment and care costs in England came to £800 million each year in 2016, which equates to about £280,000 to £360,000 (\$374,000 to \$482,000) per individual over their lifetime. However, this average varies between different high-income countries.²⁸ In the USA, lifetime costs for an individual with HIV are on average \$420,285,²⁹ while in Australia, it costs about \$181,050.³⁰ A recent systematic review found that the median cost for lifetime HIV care in high-income countries is \$377,820, though some countries have costs as high as \$968,025.³¹ The cost variations between countries reflect differences in calculations as well as differences in healthcare systems and the cost of ART.

HIV-related spending mainly focuses on treatment and care; for example, in 2015, only 19% of global funding went towards prevention. Yet a 2011 study by Public Health England showed that if all new HIV infections that year had been prevented, it would have saved £1.9 million in treatment and care costs.³² Previous ILC research has shown that increasing preventative health spending by 0.1% could unlock an additional 9% of spending every year by people aged 60 and over, and an extra 10 hours of volunteering by each person aged 65 and over.³³ There's a clear economic case for investing in preventative methods as well as treatment and care, especially now that preventative treatments like PrEP and PEP are widely available.

"The issue is fundamentally about the economic capacity of the entire population. While HIV is no longer the devastating humanitarian crisis it once was, it still has a significant impact."

Baroness Elizabeth Barker, Liberal Democrat Peer

But it's not just healthcare and care that costs money. The economic impact of HIV stretches beyond direct treatment and care costs. Indirect costs come to far more, through work and productivity loss, subsequent benefit costs, the loss of economic contribution and the cost of caregiving from family or friends. For instance, productivity losses in the US amount to around \$29.7 billion.³⁴

Individuals may face financial insecurity

"There just isn't enough support available. Social care is inadequate, housing options are poor, and disability support is absolutely terrible, and likely to get worse unless there's adequate investment and focus."

Darren Knight, George House Trust

For older people living with HIV, the cost of healthcare extends beyond ART. Many face significant out-of-pocket healthcare expenses related to managing multiple chronic conditions, including cardiovascular disease, osteoporosis and diabetes, which are more common in people ageing with HIV. While many countries provide ART free of charge or subsidise the treatment, other essential healthcare services mean additional costs, especially in countries with less developed public healthcare systems like the US.³⁵

When preventative methods require out-of-pocket spending, it can affect adherence. Recent research from the US shows that as out-of-pocket costs rise, people are more likely to abandon their PrEP prescription or delay refilling it. A study on PrEP adherence found that when out-of-pocket costs rose above \$500, prescription abandonment rates increased from 5.5% to 42.6%. And those who do abandon their prescription are up to three times more likely to contract HIV.³⁶

Insurance barriers further compound these financial challenges. In some countries, healthcare and life insurance providers charge those with HIV higher premiums.³⁷ People who don't have HIV but use PrEP have faced similar discrimination: a 2019 investigation by the California State Department of Insurance found that some insurers denied coverage or charged higher rates to HIV-negative individuals taking PrEP, despite its effectiveness in preventing infection.³⁸ A related case saw Mutual of Omaha reach a settlement after being accused of refusing life and long-term care insurance to PrEP users. These behaviours not only create financial strain but also disincentivise preventive healthcare.³⁹

People living with HIV who have better access to healthcare and lower out-of-pocket costs are more likely to be virally suppressed, and unable to spread the virus.⁴⁰ In the US, Medicaid – the largest insurer of adults with HIV – covers 40% of this population, ensuring stable access to antiretroviral therapy, which is crucial for maintaining viral suppression.⁴¹ In contrast, those without Medicaid or similar coverage often face higher healthcare costs and are more likely to experience treatment disruptions.

"For some, quality of life might mean being able to go on holiday or access a gym. But for others, it's much more fundamental: having three meals a day, a roof that doesn't leak, or simply knowing their finances are stable."

Juddy Otti, Africa Advocacy Foundation

Separately from insurance costs, general financial insecurity can be a barrier to healthy ageing. Different definitions of quality of life highlight how material circumstances shape what ageing well looks like. For many older people living with HIV, daily financial insecurity adds a layer of stress that can undermine long-term health. Limited savings, rising costs and insecure housing make it harder to manage chronic conditions or engage with support services.⁴² The legacy of the early stage of the HIV epidemic also plays a role: financial decisions made in the context of low life expectancy have left many older people with HIV facing retirement without adequate resources or long-term plans.

"Poverty is a significant factor in HIV and ageing. It creates additional barriers to accessing healthcare, social care, and overall well-being. If we don't acknowledge and address this, we're missing a crucial part of the conversation."

Darren Knight, George House Trust

In the 1980s and 1990s, when HIV was still considered a terminal disease, those diagnosed with HIV often spent their savings and cashed in pensions to enjoy their "final" years.⁴³ But as ART has helped to improve survival rates, many are now living longer and find themselves unprepared for retirement. In the UK, 32% of those over the age of 50 with HIV are completely reliant on benefits, with an additional 5% who rely on benefits as their main source of income.⁴⁴

Nearly a third of all people living with HIV are unemployed

Around the world, people with HIV face challenges with employment.



Figure 4: Employment status of people with HIV

Source: Global Network of People Living with HIV, 2023. Stigma Index.

Living with HIV can significantly affect one's ability to find and maintain employment. Various factors contribute to this. Studies in the US have shown that mental and physical health issues associated with HIV can create barriers to both finding and keeping a job.⁴⁵ These may include physical symptoms or side effects from medications, such as chronic fatigue and nausea.⁴⁶

Actual and perceived stigma surrounding HIV can lead to discrimination, further compounding employment challenges. Fear of discrimination, not only because of HIV status but also due to racism, ageism and homophobia, creates a hostile work environment for many with HIV. A study in France revealed that 70% of employees with HIV didn't disclose their status at work for fear of discrimination.⁴⁷

Furthermore, people with HIV can face additional difficulties in securing employment because of long absences due to health issues, perceptions about the unsuitability of certain jobs, and a general lack of flexible job opportunities that could accommodate their health needs.⁴⁸ Unemployment among people living with HIV has been associated with higher mortality rates compared to those who are employed, highlighting the wider health impacts of unemployment.⁴⁹

As those with HIV grow older, they face even greater barriers to employment. Ageing with HIV can result in a faster decline of physical health than ageing without HIV.⁵⁰ Workplace ageism adds another layer of difficulty. Persistent negative stereotypes about older workers being less adaptable, less productive or more prone to health issues can result in older people with HIV being overlooked or discriminated against.⁵¹ This age-related bias, when combined with HIV stigma, creates a dual disadvantage for older people living with HIV.

These barriers contribute to a broader economic impact. In the US, collective productivity losses to individuals, resulting from illness, disability or premature death relating to HIV, is estimated to reach \$29.7 billion in indirect costs,⁵² with people from minority racial and ethnic groups bearing the brunt.⁵³ These losses are much greater than direct medical costs.

But it's not just a moral imperative to address these challenges – it could lead to cost savings for healthcare and social systems. A collaborative effort between the public and private sectors, including measures such as providing HIV treatment at work, has been shown to save costs for companies while improving the health and wellbeing of employees.⁵⁴ Some people living with HIV have also expressed a desire for training and support on addressing gaps in their resumes, suggesting that tailored assistance could enhance their employment prospects.⁵⁵

Box 2: Helping people with HIV find and remain in work

The Employment ACTion (EACT) programme was a targeted employment support service for people living with HIV in Ontario, Canada. It helped individuals find and maintain work by offering personalised, skills-based support that recognised the unique barriers this population faces.⁵⁶

Using a client-centred approach focused on building confidence, developing job search skills, and connecting people to opportunities, the programme covered a wide range of services, including:⁵⁷

- Job search assistance, including help writing CVs and cover letters, interview preparation, and networking
- Access to job fairs and education opportunities, especially for participants with limited Canadian work experience
- One-to-one support from caseworkers, helping participants manage mental health challenges and boost self-esteem
- Links to wider support, such as housing advice and referrals to training or education

The programme aimed to empower participants rather than doing their job searches for them, helping build long-term skills and independence.

38% of participants were able to maintain employment for at least six weeks within a year of joining the programme. This is significantly higher than employment duration figures among income support recipients with disabilities.⁵⁸

Many participants spoke highly of the programme's personalised support, practical tools and encouragement. They found the approach empowering and confidence-boosting. While some challenges remained, such as employer stigma, the overall experience helped participants feel more prepared, motivated, and hopeful about finding work.⁵⁹

Impact on health and care

Older people with HIV face unique and complex health challenges that go beyond managing the virus itself. While advancements in ART have dramatically improved life expectancy, the ageing process introduces new health concerns, comorbidities and care complexities.

Older people with HIV are at higher risk for comorbidities

As people with HIV age, they are at a higher risk of developing multiple chronic illnesses compared to their HIV-negative counterparts. Cardiovascular disease, diabetes, osteoporosis, frailty, chronic kidney disease and neurocognitive disorders are all more common among older people with HIV.⁶⁰ In the US, it's predicted that nearly 50% of people with HIV will have multiple comorbidities by 2030, with significant increases expected in chronic kidney disease, diabetes and myocardial infarction.⁶¹ Additionally, 80% of those aged over 50 with HIV will develop at least one age-related comorbidity, and one-third will develop three or more.⁶² In contrast the prevalence of age-related comorbidity is 30% for those without HIV, aged 65 to 74 and living with one long-term health condition.⁶³

These conditions can arise due to a combination of long-term ART use, chronic immune activation and HIV-related inflammation, all of which can accelerate the ageing process.⁶⁴ Some ARTs have been linked to an increased risk of bone density loss, metabolic disorders and renal complications,⁶⁵ requiring careful monitoring and adjustments to treatment plans. People with HIV have a risk of osteoporosis that is 3.68 times greater than the general population,⁶⁶ with the increased risk presenting far earlier as well, at around 30 years old for men and 40 years old for women.⁶⁷ For most HIV-negative people, the risk of osteoporosis only starts over the age of 50.⁶⁸

Cardiovascular disease is a particularly pronounced risk for women with HIV, who have nearly double the risk of cardiovascular events compared to men with HIV.⁶⁹ Generally, with each decade of increased age, the risk of heart attacks rises by 30% for people living with HIV, and if a person's CD4 count is particularly low, the risk is increased by a further 40%.⁷⁰

Managing multiple health conditions often leads to polypharmacy, where individuals take multiple medications to treat different illnesses. This presents a significant healthcare challenge, as the risk of drug interactions, adherence difficulties and medication side effects increases with the number of prescribed drugs.⁷¹ Approximately two in five people with HIV across Europe, Asia and the Americas report taking multiple medications, though in some countries this is higher.⁷² Polypharmacy has been strongly linked to poorer health-related quality of life outcomes.

"A fragmented approach to medication management in later life is something we see far too often."

Juddy Otti, Africa Advocacy Foundation

Polypharmacy and poorer quality of life is observed regardless of whether individuals have existing comorbidities, though people who aren't virally suppressed tend to report worse outcomes. Overall, 68% of people with HIV worldwide are worried about the long-term impact of HIV medicines, and 57% are concerned about the number of medications they'll need as they age. The majority of those with HIV would be willing to switch to regimens with fewer medications.⁷³

Mental health is a major concern

Nearly one-quarter (23%) of people with HIV aged 50 and older report suboptimal health across all domains: physical, mental, sexual and overall wellbeing.⁷⁴ Globally, 72% of people who experience side effects from their HIV medication self-report that these effects have a significant impact on their daily lives.⁷⁵ In fact, in the UK, mental health challenges are the third most common comorbidity for people ageing with HIV.⁷⁶

Depression, anxiety, cognitive impairments and neurocognitive disorders are significantly more prevalent in older people with HIV.⁷⁷ Studies have shown that they're more likely to experience social isolation and loneliness, which contribute to poor mental health outcomes.⁷⁸ This is often due to weaker social support networks, loss of friends and partners, and stigma associated with both HIV and ageing.⁷⁹ Many older people with HIV also report feelings of survivor's guilt, having outlived peers who passed away during earlier stages of HIV epidemic when treatment options were limited.⁸⁰

Poor mental health can also reduce treatment adherence. Feelings of depression and being overwhelmed are among the top reasons given for missing ART doses, with 7% of people with HIV worldwide reporting they had skipped treatment at least five times for this reason. Other stated reasons include not being in a situation where they felt comfortable taking their pills, or a desire to forget about having HIV.⁸¹

The intersection of HIV stigma and ageism can make it difficult for

older people to seek and access mental health services. Many fear discrimination from healthcare providers or internalise stigma, leading to a reluctance to discuss their struggles.⁸² Previous ILC research has shown that people with HIV face discrimination and misinformation from healthcare professionals, with one HIV-positive man revealing that his GP suggested he stop working at Tesco since he shouldn't handle food.⁸³ Tailored mental health services, including peer support programmes, counselling and community-based interventions, are essential to address these needs.⁸⁴

Healthcare services have significant gaps regarding ageing with HIV

Healthcare systems aren't often prepared to address the specific needs of older people with HIV. Many HIV services remain focused on younger populations or newly diagnosed individuals, failing to integrate geriatric care principles.⁸⁵ Older people may find their care fragmented, requiring them to navigate between HIV specialists, primary care providers, and other medical professionals who may not always communicate effectively. The lack of integration in treatment approaches can make it difficult to manage multiple comorbidities, increasing the risk of misdiagnosed symptoms or uncoordinated treatment plans.

"It's crucial that the system is easy to understand and nondiscriminatory, but it also needs to function in a way that allows people to access services without unnecessary barriers."

Garry Brough, advocate/activist

Additionally, lack of training among healthcare providers can contribute to suboptimal care for older people with HIV. Some professionals may not be familiar with the complexities of HIV and ageing, leading to mismanagement of symptoms or failure to recognise drug interactions.⁸⁶ This is particularly concerning given that, worldwide, almost a third (30%) of people with HIV aged 50 and older report feeling uncomfortable discussing concerns about drug interactions with their healthcare provider. And 27% also feel uneasy bringing up medication side effects, despite their potential impact on daily life.

Beyond medical management, doctor-patient communication gaps present a barrier to effective care. Many people living with HIV report feeling unheard in clinical settings, with 77% stating they have at least one issue they feel uncomfortable discussing with their healthcare provider. Additionally, 65% of people living with HIV express a desire to be more involved in decisions about their treatment.⁸⁷ As HIV care shifts towards an ageing population, healthcare systems must prioritise patient-centred approaches that empower older people to take an active role in their care.

Box 3: The impact of improved healthcare training on HIV care and prevention

In France, HIV and PrEP information and treatment was previously limited to infectious disease specialists. In 2021, GPs were given the power to prescribe PrEP without involving further specialists.⁸⁸

Along with these powers, the country launched FormaPREP – an online certification that aimed to improve healthcare practitioners' knowledge of HIV and prevention. The course is made up of four modules: HIV epidemiology and the rationale behind PrEP, prevention of HIV and STIs, PrEP in practice, and sexual health. Participants learn not just about the complex science behind HIV and PrEP, but also best practices for consultations, assessments and follow-ups with patients who are interested in PrEP, or at higher risk of HIV.⁸⁹

Within the first year, 3,000 practitioners completed the training, 80,000 prescriptions for PrEP were initiated or renewed, and countrywide uptake of PrEP increased by 39%.⁹⁰

Prevention is lacking for older people

Prevention remains crucial to tackling the epidemic among older people. Despite older people remaining sexually active, targeted prevention strategies for older populations are often lacking.⁹¹ Many public health campaigns and prevention initiatives continue to focus on younger people, overlooking the fact that risky sexual behaviours and new infections also occur among people over 50.

Sexual health campaigns, PrEP programmes and routine HIV testing initiatives are less likely to include older people.⁹² PrEP uptake among older people tends to be lower than for younger ones, despite evidence that it's safe and effective for individuals of all ages. Multiple studies have shown that older people don't perceive themselves to be at risk for HIV.⁹³ Older people are also less likely to discuss their sexual health with healthcare providers or to be offered HIV testing as part of routine care.

These attitudes, as well as similar attitudes and perceptions from healthcare professionals, contribute to late diagnoses, which can

result in worse health outcomes. Older people are far more likely to be diagnosed at a later stage of infection (AIDS), leading to higher rates of opportunistic infection and increased mortality risk.⁹⁴ In the UK, six in ten people aged over 50 are diagnosed with a late-stage infection,⁹⁵ compared to four in ten for people of all ages.⁹⁶

There are behavioural factors to consider as well. Older people are less likely to use condoms, often due to a lack of concern about pregnancy or limited access to updated sexual health information. For older women, vaginal dryness can lead to micro-tears, increasing the risk of contracting HIV and other STIs or blood-borne viruses.⁹⁷ A study in Brazil found that 39% of older people with HIV didn't use condoms consistently, underscoring the need to challenge assumptions about risk and to adapt prevention messaging accordingly.⁹⁸ Moreover, older people who engage in sexual activity rarely acknowledge their susceptibility to HIV and other STIs, further limiting uptake of prevention measures.⁹⁹

As they're less likely to use condoms and more likely to experience micro-tears, older people could benefit from targeted prevention campaigns.¹⁰⁰ A multi-faceted approach to HIV/STD prevention is vital.



Figure 5: Prevention methods specifically targeted at older people

Source: Crenitte, M.R.F, et al. 2021. Safer sex in older age: putting combination HIV prevention strategies into practice.

"There is an overwhelming focus on the prevention agenda in HIV policy. Prevention is, of course, massively important, but too often, living well with HIV gets sidelined."

Darren Knight, George House Trust

While prevention must remain a key pillar of the HIV response, it can't come at the expense of broader efforts to support those currently living and ageing with HIV. Policy that focuses only on transmission rates, treating the day-to-day realities of living well with HIV as secondary, neglects a population who have lived through decades of the epidemic and now face new challenges related to ageing, long-term health, financial stability and social inclusion.

A comprehensive approach is vital – one that prevents new infections and equally ensures those living with HIV lead healthy and fulfilling lives as they age.

Box 3: The value of opt-out testing

In the UK, everyone who comes into the A&E in certain hospitals is tested for blood-borne viruses, including HIV, Hepatitis B and Hepatitis C, unless they explicitly opt out. The programme is currently available in 89 hospitals and is likely to be expanded.¹⁰¹

Since its inception in late 2023, the programme has carried out over seven million tests and diagnosed over 7,000 new cases of bloodborne viruses. This includes over 1,000 new HIV cases.

Additionally, the testing caught 500 cases of HIV that were previously diagnosed but not receiving treatment, and signposted these individuals back to the care system.¹⁰²

Opt-out testing has proven to be a highly effective strategy for identifying undiagnosed cases and re-engaging individuals with care. By expanding this programme to more hospitals, the UK can further reduce transmission rates, ensure earlier treatment, and improve long-term health outcomes for those living with blood-borne viruses.

Social impact

The social impact of living with HIV as an older person is profound, affecting relationships, social inclusion and overall quality of life. Stigma, isolation, loneliness and difficulties in maintaining relationships remain significant barriers to wellbeing. Age-related stereotypes lead to neglect in public health messaging and prevention strategies, making it harder for older people with HIV to access sexual health services or receive support tailored to their needs.

Older people with HIV are more likely to be socially isolated

"Stigma and isolation are two of the biggest issues... they have a significant impact on people's well-being."

Garry Brough, advocate/activist

Many older people with HIV live alone and lack traditional family support networks, particularly those who have lost partners, have strained relationships with family members, or have chosen to keep their HIV status private.¹⁰³ In the UK, a third of all people with HIV over the age of 50 are socially isolated, and 82% experience moderate to high levels of loneliness.¹⁰⁴ Meanwhile in the US, 58% of older people with HIV report loneliness, with those reporting higher levels of loneliness being more likely to feel depressed, be a current smoker, display risky or problematic drinking behaviours and/or use drugs. Those who report loneliness also have less access to social support services.¹⁰⁵

Migrant populations with HIV may feel even higher levels of isolation due to language barriers, immigration status or limited access to healthcare and social services. These factors can also increase the risk of contracting HIV in the first place. In France, 62% of migrant gay men, and other men who have sex with men, who had HIV contract it after arriving in the country, with 13% contracting the virus within their first year of residence.¹⁰⁶

Community programmes can play a key role in reducing social isolation for people living with HIV.

"We've been able to mitigate social isolation through simple interventions, like volunteer drivers picking people up and bringing them to our centre."

Darren Knight, George House Trust

Box 4: Peer support for migrants in the Netherlands

The Dutch HIV association, Hiv Vereniging, has long championed peer support as a cornerstone of HIV care. One of the organisation's key programmes is Buddyzorg, where trained volunteers are matched with individuals with HIV.¹⁰⁷

The programme focuses on building trusted, one-to-one relationships to support emotional wellbeing, combat isolation and help people stay engaged with life as they age.¹⁰⁸

Activities include:109

- Regular visits or calls from trained buddies to offer conversation, companionship and emotional encouragement
- Help navigating care services or appointments, especially for people with declining health or cognitive issues
- Workshops and events through Hiv Vereniging on ageing, sex and intimacy, legal rights and preparing for later life
- Tailored support for older migrants and LGBTQ+ communities, recognising their specific experiences and needs

Stigma continues to shape the experiences of older people with HIV

"Even those recently diagnosed still carry fear of historical discrimination."

Adam Preston, LGBT Foundation

Almost half (47%) of the worldwide population holds discriminatory attitudes towards people living with HIV, while nearly a quarter of people living with HIV report experiencing stigma when seeking non-HIV-related healthcare. These experiences can be life-threatening: over a third of those who encountered stigma in HIV-related care reported interrupting or stopping their treatment.¹¹⁰

Stigma is particularly acute for certain populations. In the USA, Black women are disproportionately affected by HIV, with rates of new infections 10 times higher than white women and four times higher than Latina women.¹¹¹ LGBTQ+ individuals, sex workers and people who use drugs also face systemic discrimination, with many countries maintaining punitive laws that criminalise their existence. In fact, people who use drugs and have HIV are the most likely to report experiencing stigma or discrimination if they are aged over 50. In Western and Central Europe, 34 out of 40 countries have laws that criminalise some aspect of sex work, while at least 26 countries criminalise possession of small amounts of drugs – this is despite the UN Human Rights Council resolution on drug policy, which called for the decriminalisation of people who use drugs.¹¹²

Figure 6: Experiences of stigma or discrimination faced by key populations in 2023 (solid) and ever (tinted), by age group



Source: Global Network of People Living with HIV, 2023. Stigma Index.

These legal and societal barriers contribute to ongoing fear and avoidance of healthcare services. A survey across Europe and Central Asia found that one in five people living with HIV avoided healthcare services for fear of having their status disclosed, while 16% avoided them altogether due to fear of mistreatment.¹¹³

"This is something we also see with older LGBTQ+ people who have experienced conversion therapy, such as electric shock treatment. Many of them feel much more comfortable seeking support from community-led organisations rather than mainstream healthcare or government services, because they still expect discrimination."

Adam Preston, LGBT Foundation

These fears are rooted in lived experience. Many older LGBTQ+ people came of age at a time when their identities were criminalised, pathologised or met with violence, not only by society as a whole but also by medical institutions. That legacy of trauma continues to shape how and where they feel safe seeking care, even decades later. Additionally, stigma can come from within the HIV community itself. Ageism within LGBTQ+ spaces or social groups primarily composed of younger people with HIV can make it difficult for older people to feel a sense of belonging.¹¹⁴ Stigma may also arise based on sexual orientation, gender or perceived risk behaviours, creating additional barriers to forming supportive relationships.

Older people are assumed not to be at risk, despite still making up key populations

"We can't just group all these people together as '50+.' There are vastly different experiences across those age groups."

Darren Knight

One of the reasons HIV in older people is overlooked is the widespread assumption that they're at lower risk and not part of the key populations at risk of HIV. This misconception extends beyond sexual activity to other transmission routes, such as injectable drug use. Older people who use recreational or prescription drugs may not be perceived as high-risk individuals, which means harm reduction interventions may target them less.

Key populations, including people who inject drugs, face additional barriers as they age with HIV. Prevention efforts in high-income countries have stalled, even though these populations and their partners account for the majority of new HIV infections. For example, only 39% of people who inject drugs had received at least two relevant prevention services in the past three months in 2024, despite clear evidence that harm reduction significantly reduces HIV transmission.¹¹⁵

Box 5: Reducing HIV rates in drug users: examples from Europe

In 1986, Switzerland had the highest rates of HIV in Western Europe, with over half of all transmissions linked to injectable drugs. In response, the country made a radical shift in its approach to drug policy, moving away from punishment and towards public health and harm reduction. This transformation played a crucial role in significantly reducing HIV transmission among one of its most stigmatised populations.¹¹⁶

In 1991, Switzerland introduced a national strategy built around four pillars: prevention, treatment, harm reduction and targeted law enforcement. This included rolling out needle and syringe exchange programmes, opening supervised drug consumption rooms in cities like Zurich and Geneva, and introducing heroin-assisted treatment for individuals with long-term dependency who hadn't responded to other therapies. These services were designed to be accessible, non-judgemental and rooted in evidence.¹¹⁷

Within a decade, HIV infections among people who use drugs fell by over 65%. Overdose deaths declined, public injecting became less common, and drug-related crime dropped. Today, Switzerland continues to see low rates of new HIV infections among people who use drugs.

Portugal took a different but complementary approach. In 2001, it decriminalised the possession and use of all drugs for personal use, treating drug use as a public health issue rather than a criminal one.¹¹⁸ Under this model, individuals found with small quantities of drugs are referred to health-led dissuasion commissions, where instead of facing criminal charges they're assessed by a panel of health and social care professionals and offered treatment, support or harm reduction services.¹¹⁹ This shift was combined with substantial investment in harm reduction services such as needle exchanges, opioid substitution therapy and community outreach.¹²⁰

Since decriminalisation, Portugal has seen dramatic improvements. In 2001, Portugal had over 50% of all new HIV diagnoses from injectable drug use in the EU, despite only making up 2% of the EU's population. In 2019, it saw just 16 new diagnoses of HIV in people who inject drugs – less than 2% of the EU total. Drug-related deaths have also dropped far below the EU average.¹²¹

The experiences of Switzerland and Portugal show that moving away from criminalisation and investing in harm reduction saves lives, improves health outcomes, and reduces the burden of HIV.

"The challenge with HIV is that it sits at the intersection of multiple layers of stigma, whether related to gender, gender identity, sexuality, ethnicity, migration status, sex work or drug use."

Garry Brough, advocate/activist

Other key populations at risk for HIV include sex workers, men who have sex with men, and transgender people, all of whom face additional barriers as they age with HIV. Many are affected by intersecting forms of discrimination, including ageism, homophobia, transphobia and criminalisation. Prevention efforts aren't effectively reaching these groups either: among transgender people, HIV screening and prevention services remain severely limited, with a median of only 17% receiving STI screenings in recent months.¹²²

As individuals from these key populations age, they continue to face systemic barriers to healthcare and HIV prevention. Older sex workers, in particular, often experience compounded stigma related to age, gender and occupation, limiting their access to support services.

Sexism also permeates into the experience of ageing with HIV. Research suggests that older women are more likely than older men to be diagnosed with a late-stage infection (AIDS), as they are less frequently targeted for HIV testing and may not perceive themselves to be at risk due to a lack of public health messaging aimed at them.¹²³ Healthcare providers may also be less likely to discuss sexual health with older women, based on the misconception that they're no longer sexually active. In addition, menopausal changes, such as vaginal dryness, increase susceptibility to HIV transmission, yet prevention messaging rarely addresses such factors.

Box 6: Legalising sex work to improve health and HIV outcomes

In 2003, New Zealand became the first country to fully decriminalise sex work with the Prostitution Reform Act. The law removed criminal penalties for consensual adult sex work, allowing sex workers to operate legally and access the same health, safety and employment protections as other workers.¹²⁴

The reform had a major public health impact. Sex workers gained greater access to healthcare services, were empowered to negotiate safer sex practices, and reported feeling more able to refuse clients who insisted on unprotected sex.¹²⁵ Sample studies of sex workers across New Zealand have found zero cases of HIV.¹²⁶ Meanwhile, the global median of HIV among sex workers is 3%,¹²⁷ but other high-income countries like Canada have a prevalence of up to 20% in urban areas.¹²⁸

Decriminalisation also helped reduce stigma and barriers to healthcare, creating a safer environment for both sex workers and the broader community. Worldwide, sex workers are at nine times more risk of acquiring HIV than the general population, but this risk decreases in countries that have decriminalised sex work.¹²⁹ Wider research has indicated that legalising sex work could halve the incidence of HIV among sex workers and their clients.¹³⁰

While research regarding older sex workers remains limited, New Zealand's experience demonstrates that a rights-based, health-centred approach can strengthen HIV prevention efforts across all age groups.

Incarceration is another overlooked risk factor, with people in prison also facing a 3% prevalence rate.¹³¹ Sexual violence, lack of prevention services and disruptions to HIV treatment contribute to poor health outcomes.¹³² As people living with HIV grow older, those who experience social and economic marginalisation, including migrants, homeless individuals, prisoners and ex-prisoners, are at even greater risk of falling out of care.

"Ultimately, quality of life should be defined by the individual's needs and circumstances... ensuring that people have not just the essentials, but also the ability to engage with life in ways that are meaningful to them."

Juddy Otti, Africa Advocacy Foundation

Ending stigma and discrimination, and increasing support for key populations, is essential to achieving not just longer lives for people ageing with HIV, but better, more fulfilling ones.

Recommendations

To address the complex needs of people living with HIV, particularly as they age, we must create a healthcare system that's age-inclusive and responsive to the unique challenges faced by this group, as well as integrated to avoid fragmented services. Many older people with HIV navigate fragmented, youth-focused systems that fail to account for comorbidities, polypharmacy and age-related factors that can have significant impacts on their health.

By adopting a more cohesive and personalised approach to healthcare, we can not only improve outcomes for people living with HIV but also drive broader improvements in care for other conditions. Integrating care, modernising prevention and testing systems, and ensuring better coordination between healthcare providers will also help tackle other health and social challenges. For example, South Africa's experience of infectious diseases like HIV and tuberculosis allowed the country to better prepare for, and respond to, the COVID-19 pandemic. Addressing the challenges associated with HIV and ageing will not only allow governments to better support older people with HIV but will also strengthen infectious disease and NCD management across the board.

We've outlined five key recommendations for governments to put in place:

1. What: Implement a national HIV/AIDS action plan which includes ageing at the forefront, to drive integrated, inclusive care.

Why: Older people with HIV often face fragmented, youth-focused healthcare systems. Integrated and inclusive services improve care quality, adherence, and outcomes at all ages.

How: Governments must:

- Join up healthcare and care services for HIV, comorbidities and other unrelated illnesses to offer easily accessible, integrated care at a single access point, such as a GP surgery or primary healthcare provider.
- Fully digitise healthcare systems to connect providers across primary, specialist, pharmacy and social care, improving coordination and reducing fragmentation of care.
- Provide mandatory training on HIV/AIDS, including ageing with HIV, for all healthcare professionals, including GPs, pharmacists and care home workers.

2. What: Modernise HIV testing and prevention efforts to reflect changing demographics.

Why: Prevention and testing still overlook older people, despite rising risks and undiagnosed cases. Systems must reflect the realities of ageing, relationships, and sexual health throughout our lives.

How: National and local governments must:

- Introduce or expand opt-out testing for HIV to apply to all routine blood tests and health checks.
- Expand access to free HIV testing through community settings, walk-in clinics, rapid result tests and outreach services, such as mobile or street-based testing, with no restrictions on who can use these free tests.
- Launch broader, age-inclusive prevention campaigns that reflect the diversity of older people and their relationships, including older women, single older people, and older people in at-risk populations.

3. What: Build a data-driven HIV response that supports equitable care and tracks progress across all age groups

Why: Gaps in data hinder effective policy and resource allocations, especially for older people who are often not counted in national statistics. Responsive and person-centred care depends on better data.

How: Governments and international organisations must:

- Disaggregate HIV data by age and gender to inform policy and resource allocation, across all countries, not just those that have more people living with HIV.
- Use disaggregated data to guide HIV strategy, funding, and service improvement for older people.

4. What: Empower the voluntary and community sector to shape and deliver HIV care alongside health and social services.

Why: Distrust of government and health services is especially prevalent in those living with HIV, due to historical discrimination, stigma and fragmented care experiences. Community-led and voluntary organisations offer trusted, tailored support and are vital to improving care.

How: National and local governments must:

- Embed community-led and LGBTQ+ organisations as equal partners in HIV policy, planning and service delivery.
- Expand Integrated Care Partnerships that connect clinical services with community support, including peer networks and social care.

5. What: Decriminalise sex work and drug use and redirect resources to other harm reduction strategies to support inclusive, effective HIV prevention and care.

Why: Criminalisation of sex work and drug use creates barriers to HIV prevention, testing and care. Decriminalisation is a proven harm reduction strategy, as evidenced in examples from Switzerland, Portugal and New Zealand, improving health outcomes and reducing HIV transmission.

How: National governments, with the support of international organisations, must:

- Fully decriminalise sex work and possession of drugs for personal use.
- Redirect funding from punitive enforcement to health-led harm reduction services, including free health checks, the provision of clean needles, and commissions akin to Portugal's dissuasion commissions (see **Box 5**).
- Ensure legal reforms are accompanied by workforce training and accountability across police, healthcare and social services.

What happens next?

As advances in treatment allow people with HIV to live longer, ageing with HIV is no longer the exception for them: it's the reality. This demographic shift demands urgent attention.

Global HIV responses have achieved remarkable progress in prevention, treatment and care. But they remain largely focused on younger populations. Older people with HIV face distinct challenges, including a higher burden of comorbidities, economic insecurity, social isolation and persistent stigma. If these issues aren't addressed, millions of people will struggle to age with dignity and good health.

Investing in comprehensive care for older people with HIV has significant health, economic and societal benefits. However, the gaps in healthcare systems and support remain clear. Many older people face barriers to accessing care due to affordability, insurance exclusions or healthcare systems that aren't designed to manage the complexities of HIV and ageing. Furthermore, misconceptions about HIV risk in older populations contribute to gaps in prevention efforts, leaving many without access to PrEP, PEP or routine testing.

With the deadline approaching for the 2030 UNAIDS targets and global commitments to ending AIDS as a public health crisis, policymakers must take bold action. This includes ensuring that HIV strategies take account of ageing populations with HIV, expanding social and economic protections, strengthening healthcare systems to meet the needs of older people, and tackling the intersectional stigma that leaves many without adequate support.

As recent global cuts to aid funding threaten to undermine even existing efforts, it's now even more critical for governments to prioritise long-term healthcare system planning and secure resources for HIV and ageing care.

Longevity with HIV should be met with policies that support health, security and inclusion, not barriers that compound the challenges of ageing. The progress made in HIV treatment should be matched by progress in ensuring that everyone at any age can live well with HIV.

Appendix 1: An analysis of the global state of the HIV epidemic in the context of the ILC *Healthy Ageing and Prevention Index*

This appendix presents a deeper analysis of global HIV trends using the ILC *Healthy Ageing and Prevention Index*. This ranks 153 countries on six healthy ageing metrics: lifespan, health span, work span, income, environmental performance and happiness. For ease of comparison, we've grouped countries into bands based on their Index ranking, with each band covering 30 rankings (e.g. ranks 1–30, 31–60, 61–90, etc.). These bands reflect broad differences in how countries perform across healthy ageing indicators.

This analysis supports the findings in the main report by illustrating how countries at different stages of healthy ageing are experiencing the epidemic, to better understand how different approaches to healthy ageing help people age healthily with HIV, and where targeted responses may be most needed.

Summary

We've used figures from our Index, along with global figures on HIV from the UN Joint Programmes on HIV/AIDS and the Institute for Health Metrics and Evaluation, to help us understand how well countries are responding to the HIV epidemic. We have found that:

HIV prevalence is rising in all countries, with the largest increases in countries ranked lower on the Index

- Countries near the bottom of the Index (ranked 91-120) have seen the largest, fastest increase in the number people living with HIV, largely driven by South Africa, where total cases have risen to above 9 million.
- High- and upper-middle income countries (ranked 31–60 on the Index), such as the US and Brazil, host large HIV-positive populations but are seeing a slower rate of increase.
- The highest-ranked countries (1–30), including France, Spain and the UK, have relatively low HIV prevalence but still face substantial public health challenges.

New infections have declined globally since the early 2000s, but progress is now stalling, and in some regions, reversing. The recent abrupt scaling back in aid funding will also have a damaging effect on progress made.

- Countries in the bands 91–120 and 121–153 saw dramatic increases in new infections in the 1990s, followed by sharp declines after 2000. But some countries in this band, including Nigeria and Pakistan, continue to see a steep rise in new infections.
- Band 61-90 is the only group where new infections have consistently risen since 1990, largely driven by Russia and the Philippines.
- Middle- and upper-middle income countries (band 31–60) initially saw a decline in figures, but are now seeing new infections rise, with the exception of Portugal.
- The highest-ranked countries (1–30) report low overall new infections, but progress in reducing new infections any further has been minimal.

Health span correlates to both the HIV burden and the number of new infections.

- The highest band, 1–30, has a higher average health span (71.4 years), much lower HIV prevalence and fewer new infections.
- The lowest band, 121–153, has the shortest health span (54.9 years) and the highest HIV burden, along with the highest absolute number of new infections.

The number of people living with HIV is rising, and the burden is growing everywhere

The demographics of the HIV epidemic are shifting. Thanks to ART, people with HIV are living longer, HIV-related deaths are decreasing, and new infections are being prevented. But these changes present new challenges: an ageing population of people with HIV, with unique health and social needs that are not yet fully addressed.

To better understand these demographic shifts, we've also analysed these HIV trends in relation to the Index.



Figure 1: People living with HIV by ILC Index rank, over time

Source: IHME. 2024. Global Burden of Disease.

At every level of the Index, the average number of people living with HIV has significantly increased, but that number is growing disproportionately in countries ranked lower on the Index. The largest increase is in the 91 to 120 band, which has seen an increase of 618,965 between 1990 and 2021. This group includes South Africa (ranked 120), the country with the largest absolute number of people with HIV. In 2021, 9,124,286 people in South Africa were living with HIV – an increase of over 9 million from 1990.

Looking beyond averages, the 121-153 band includes India (ranked 136), which has Asia's highest number of people living with HIV: nearly 2 million. The impact on sub-Saharan Africa is also evident: Nigeria (ranked 142) has seen an increase that's more than eightfold, from 264,626 in 1990 to 2,239,347 in 2021, while Zambia (ranked 135) saw a nearly fourfold increase, from 364,325 to 1,369,537.

Russia (ranked 75), a high-income country, falls into the 61 to 90 band, and has seen a 25-times increase, from 44,414 in 1990 to over a million in 2021. However, overall, this band has comparatively low levels of people living with HIV. Most countries have seen increases, but from an extremely low starting point, as countries like Albania, Bosnia and Mongolia (ranked 61, 69 and 90) were relatively isolated during the early periods of the HIV/AIDS epidemic. In fact, in 2021, North Macedonia (ranked 74) only had 73 people living with HIV. On the other hand, countries like North Korea (ranked 104) and Brunei (ranked 64) may be underreporting their HIV figures, skewing this band's data. The 31 to 60 band comprises mainly high- and upper-middle income countries across Europe and the Americas. Here, the US (ranked 31) has the highest number: over 1.7 million in 2021. There have also been significant increases in Central and South American countries between 1990 and 2021: Brazil (ranked 52) has seen a fourfold increase, from 161,486 to 696,498, and Colombia (ranked 56) has seen an increase from 8,025 to 148,668. This group also contains Portugal (ranked 34), which has one of the highest HIV burdens of all high-income countries. However, after a sharp increase between 1990 and 2000 (5,499 to 34,572), growth has slowed dramatically, with 44,413 people living with HIV in 2021.

Countries in the 1 to 30 band had both the lowest numbers and the smallest increases between 1990 and 2021. However, several countries retain a substantial burden, with over 100,000 people living with HIV. In 2021, France, Spain and the UK (ranked 23, 27 and 14) had this band's highest numbers, at 248,162, 198,629 and 141,295 respectively. Meanwhile, some countries have low absolute numbers, but saw huge relative increases across the last three decades. Estonia (ranked 25), for example, went from 16 people in 1990 to 4,702 in 2021 – an increase of well over 29,000%.

At all levels of Index ranking, health span scores appear to be related to the number of people living with HIV. The 1 to 30 band comprises countries with the highest health span (71.4 years); these see consistently lower average numbers of people living with HIV, rising from 14,768 in 1990 to 37,969 in 2021. Conversely, band 121 to 153 has the lowest health span (54.87 years) and a much larger HIV burden, with cases increasing nearly 4.5 times, from 62,794 in 1990 to 277,371 in 2021.

This pattern suggests that countries with longer, healthier lives tend to have better HIV prevention, treatment and healthcare infrastructure, limiting the overall number of people living with the virus. Meanwhile, lower-ranked countries, where health span is significantly shorter, face persistent and escalating HIV burdens, likely due to weaker healthcare systems and broader socioeconomic challenges. The middle-tier countries (bands 61-90) present an interesting trend: while their HIV burden has surged dramatically (from 3,765 in 1990 to 78,283 in 2021), their health span of 63.99 years remains relatively closer to higher ranked, higher income nations, so while healthcare improvements have extended healthy lifespans, HIV transmission remains a growing challenge.

Reductions in new HIV infections are slowing in most countries



Figure 2: New HIV infections by ILC Index rank, over time

Source: IHME. 2024. Global Burden of Disease.

Following the introduction of preventative medication (alongside improved understanding of HIV transmission and increased promotion of protective measures such as condom use and access to clean needles), new infections worldwide have dropped since the early 2000s. But this varies from country to country. Countries ranked lower on our Index have more people living with HIV and saw very high new infection rates between 1990 and 2000. Countries in the 91 to 120 band saw an average new infection increase of nearly 16,000, while the 121 to 153 band saw an increase of nearly 8,000. Since 2000, however, these are the only groups to see dramatic decreases. The 1 to 30 band has seen minimal decreases, the 31-60 band saw a small decrease between 1990 and 2000 but slow increases since then, and band 61 to 90 has seen a dramatic rise in new infections since 1990.

Again, certain countries within these bands have a disproportionate effect on these trends. In the lowest-ranked group, dramatic decreases from countries like Burundi and Ivory Coast (ranked 121 and 123) make up much of the post-2000 dip: Burundi went from 35,083 new infections in 1990 to just 752 in 2021, and Ivory Coast dropped from 99,933 to 12,766. Meanwhile, certain countries are still seeing increases in new infections. Nigeria, for example, saw some fluctuation between 2000 and 2021, but generally has seen an increase from 94,446 in 1990 to 140,777 in 2021. Pakistan (ranked 139) has seen an exponential increase, from 4 new infections in 1990 to 24,818 in 2021. Band 91 to 120 – which includes countries with the highest HIV burden worldwide – has seen the largest decreases in new infections. For example, Zimbabwe (ranked 118) dropped from 220,611 in 1990 to 20,305 in 2021, while South Africa saw a peak of 600,376 new infections in 2000, which decreased to 233,514 in 2021. Although these numbers are still relatively high, the proportional decrease is enormous. Countries in sub-Saharan Africa have the highest burden of HIV, but they also have largescale HIV strategies and policies and receive an enormous amount of global funding to help manage HIV.

The 61 to 90 band is the only one to see a consistent increase in new infections across the last three decades; between 1990 and 2021, this was 549.5%. While growth is slowing slightly, it has been consistent across every decade on average. Countries in sub-Saharan Africa and Central and South America (such as Botswana and Bolivia) have seen consistent decreases in new infections. But countries like Russia and the Philippines have seen the largest rise. In 1990, Russia had 6,336, rising to 98,872 in 2021. Meanwhile, countries in Eastern Europe and Asia are seeing relatively low absolute numbers but larger increases – Indonesia had 1,159 new infections in 1990, which rose to 10,190 in 2021.

The 31 to 60 band, which comprises high- and upper-middle income countries, saw infections decrease during the 1900s but steadily increase since 2000. This is mainly due to high-burden countries like Brazil, where new infections have consistently climbed from 31,711 in 2000 to 52,609 in 2021. The US has also seen consistent increases, though at a slower rate, from 44,994 in 2000 to 58,484 in 2021. Portugal, however, has seen a significant decrease, from 2,868 in 2000 to 732 in 2021.

Finally, the 1 to 30 band has the lowest level of new infections. along with minimal declines over the last 30 years. But several countries are showing upward trends and fluctuations. In the UK, for example, new infections saw a big increase between 1990 and 2000 (2,965 to 7,885), followed by a decrease from 2000 to 2010 (5,387), then another increase from 2010 to 2021 (5,874). Canada and Japan also saw increases between 2010 and 2021. On the other hand, Spain has seen the largest decrease, from 17,168 in 2020 to 3,472 new infections in 2021.

Across high-income, high-ranked countries, health span closely aligns with the number of new infections – the 1 to 30 band has the highest health span (an average of 71.4 years) and consistently low new HIV infections. Those ranked lower on our Index have a far lower health span, and while they have seen enormous decreases in the number of new infections, the absolute numbers are still extremely large. But the reduction of HIV/AIDS in lower- and middle-income countries seems directly connected to improved life and health span. 2023 saw more new infections outside of sub-Saharan Africa than inside for the first time in history. Interestingly, the 31–60 band has a higher average health span (67 years) than the 61–90 band (64 years), yet they record more new infections. This suggests that better healthcare access, testing and urbanisation may contribute to relatively higher recorded case numbers. Additionally, the 61 to 90 band previously experienced rapid increases in infections, but many now benefit from stronger prevention efforts.

Without sustained investment in ageing-focused HIV care, middleincome countries with strong health outcomes risk an increasing burden of older people with HIV with complex needs, widening the gap between lifespan and health span.

Yet while high-income, high-ranked countries have a lower absolute level of people living with HIV, their overall progress in reducing new infections has plateaued. Countries like Spain and Portugal are anomalies, not the pattern. This could be explained by the fact that traditional HIV prevention has primarily focused on younger, at-risk populations. Despite making up a growing proportion of the population with HIV, order people with HIV are often overlooked in prevention, diagnosis and treatment. There must be a critical shift in the HIV response: healthcare systems must adapt to meet the needs of older people ageing with, or at risk of HIV, and include older people in treatment and prevention efforts.

Fewer people are dying young from HIV





Source: IHME. 2024. Global Burden of Disease.





Source: IHME. 2024. Global Burden of Disease.

Over the past three decades, HIV/AIDS-related mortality has undergone a dramatic shift. Deaths peaked in the early 2000s (seen mainly in the 15 to 49 age group), before declining significantly due to the widespread rollout of ART and prevention efforts. The sharp reduction in under-five mortality highlights the success of programmes such as the prevention of mother-to-child transmission. However, while overall deaths have fallen, the share of HIV-related mortality among older people (50 to 69 and 70+) has remained stable or even increased slightly in recent years.





Source: IHME. 2024. Global Burden of Disease.

People aged over 50 account for an increasingly high proportion of HIV/AIDS-related deaths across all income groups, but most notably in high-income countries. In the early 1990s, HIV-related deaths in this age group were relatively low regardless of gender, ethnicity or sexuality, reflecting the epidemic's younger demographic at the time. However, from the late 1990s onwards, high-income countries saw a steep and continuous rise in the age of people dying from HIV/AIDS. Those aged over 50 now account for nearly half of all HIV/AIDS-related deaths. LMICs have followed a similar but slower trajectory, with the proportion of HIV-related deaths in older age groups rising steadily.

Most high-income countries rank in the top 50 of our Index – except for Oman, Russia, Brunei, Bulgaria and Romania. These countries have a higher proportion of HIV-related deaths in older people. This suggests that longer, healthier lives don't necessarily equate to lower HIV mortality among older populations – the majority of people are dying between the ages of 50 and 69 – but rather a shift in the epidemic's burden. In the US, for example, HIV-related deaths among those aged 50 to 69 have remained high over the past three decades, while deaths in younger age groups have decreased. In 1990, 15 to 49-year-olds accounted for 23,441 deaths, but by 2021, this had fallen to 2,525, while deaths among those aged 50 to 69 remained at over 3,300. This mirrors trends in other high-income countries like France and Germany (though their absolute numbers are lower than the US), both of which rank highly on our Index with health spans of over 70 years. While these countries have extended life expectancy and health span, the growing burden of HIV mortality in older people suggests that healthcare systems must adapt.

There's a clear and complex relationship between healthy ageing and the dynamics of the HIV epidemic. While many countries ranked lower on our Index have made good progress in reducing new infections, higher-ranked, higher-income countries are not exempt from concern. New infections are rising in some, and the growing number of older people living with HIV poses challenges for prevention, care, and healthy ageing. Sustaining progress will require renewed focus, not just on treatment, but on ensuring longer, healthier lives for those ageing with HIV.

References

¹Millar, B.M., Starks, T.J, Gurung, S. & Parsons, J.T. 2018. *The Impact of Comorbidities, Depression, and Substance Use Problems on Quality of Life Among Older Adults Living With HIV*. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC5423848/</u> ²HIV.gov. 2024. *Aging with HIV*. Available: <u>https://www.hiv.gov/hiv-basics/living-well-with-hiv/taking-care-of-yourself/aging-with-hiv</u>

³Quinn, K.G., Murphy, M.K., Nigogosyan, Z. & Petroll, A.E. 2024. *Stigma, isolation, and depression among older adults living with HIV in rural areas.* Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC11101162/</u>

⁴World Health Organization. 2024. *HIV and AIDS*. Available: <u>https://www.who.int/</u>news-room/fact-sheets/detail/hiv-aids

⁵Center for Disease Control. 2024. *How HIV Spreads*. Available: <u>https://www.cdc.</u> gov/hiv/causes/index.html

⁶Medline Plus. 2022. *CD4 Lymphocyte Count*. Available: <u>https://medlineplus.gov/</u>lab-tests/cd4-lymphocyte-count/

⁷NHS. 2021. *HIV and AIDS*. Available: <u>https://www.nhs.uk/conditions/hiv-and-aids/</u>

⁸Clinical Info, HIV.gov. n.d. *Viral suppression.* Available: <u>https://clinicalinfo.hiv.gov/</u>en/glossary/viral-suppression

PAIDS Map. 2023. One-pill-a-day treatments. Available: https://www.aidsmap.com/about-hiv/one-pill-a-day treatments

¹⁰NHS. 2023. *About Pre-Exposure Prophylaxis (PrEP).* Available: <u>https://www.nhs.</u> <u>uk/medicines/pre-exposure-prophylaxis-prep/about-pre-exposure-prophylax-</u> is-prep/

"HIV.gov. 2025. *Who is at risk for HIV?* Available: <u>https://www.hiv.gov/hiv-basics/overview/about-hiv-and-aids/who-is-at-risk-for-hiv</u>

¹²The Global Fund. 2020. *Key populations*. Available: <u>https://www.theglobalfund</u>. org/en/key-populations/

¹³UNAIDS. 2024. UNAIDS Data 2024. Available: <u>https://www.unaids.org/en/re-sources/documents/2024/2024_unaids_data</u>

¹⁴Institute for Health Metrics and Evaluation. 2024. *Global Burden of Disease.* Available: <u>https://www.healthdata.org/research-analysis/gbd-data</u>

¹⁵Health Resources & Services Administration. 2023. *About the President's Emergency Plan for AIDS Relief (PEPFAR).* Available: <u>https://www.hrsa.gov/office-glob-</u> <u>al-health/global-hivaids-program/about-pepfar</u>

¹⁶The Global Fund. 2014. *Introduction to the Global Fund.* Available: <u>https://www.</u> <u>theglobalfund.org/media/3233/lfa_manual03sectiona_manual_en.pdf</u>

¹⁷HIV.gov. 2024. *A timeline of HIV and AIDS*. Available: <u>https://www.hiv.gov/hiv-</u>basics/overview/history/hiv-and-aids-timeline#year-1994

¹⁸AIDS Map. 2005. *Does mother's ART during pregnancy impede uninfected children's growth?* Available: <u>https://www.aidsmap.com/news/nov-2005/does-moth-</u><u>ers-art-during-pregnancy-impede-uninfected-childrens-growth</u>

¹⁹Vermund, S.H. & Leigh-Brown, A.J. 2012. *The HIV Epidemic: High-Income Countries.* Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC3331688/</u>

²⁰Mbalinda, S.N., Lusato, D.A., Muddu, M. & Nyashanu, M. 2024. Ageing with HIV: challenges and coping mechanisms of older adults 50 years and above living with HIV in Uganda. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC10809588/</u>

²¹Hsieh, E., Polo, R., Qian, H., Fuster-Ruizde-Apodaca, M.J. & del Amo, J. 2022. *Inter*sectionality of stigmas and health-related quality of life in people ageing with HIV in *China, Europe, and Latin America*. Available: <u>https://www.sciencedirect.com/sci-</u> ence/article/pii/S2666756822000034

²²Wing, J.E. 2017. *The Aging Population with HIV Infection.* Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC5525433/</u>

²³International Longevity Centre UK. 2025. *Achieving Universal Health Coverage in Low- and Middle-Income Countries*. Available: <u>https://ilcuk.org.uk/uhc-in-lmics-report/</u>

²⁴Justice, A.C., et al. 2022. *Delayed presentation of HIV among older individuals: a growing problem.* Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC9128643/</u>

²⁵European Centre for Disease Control. 2024. *HIV/AIDS Surveillance in Europe: 2023.* Available: <u>https://www.ecdc.europa.eu/en/publications-data/hiv-aids-surveil-</u> lance-europe-2024-2023-data

²⁶University of Leeds. 2024. *The Cost of Pandemic Preparedness*. Available: <u>https://</u>essl.leeds.ac.uk/download/downloads/id/958/the-cost-of-pandemic-preparedness-an-examination-of-costings-and-the-financial-requests-in-support-of-thepandemic-prevention-preparedness-and-response-agenda.pdf

²⁷Global Burden of Disease Health Financing Collaborator Network. 2018. *Spending* on health and HIV/AIDS: domestic health spending and development assistance in 188 countries, 1995–2015. Available: <u>https://www.thelancet.com/journals/lancet/</u>article/PIIS0140-6736(18)30698-6/fulltext

²⁸National Institute for Health and Care Excellence. 2016. *HIV testing: Increasing uptake among people who may have undiagnosed HIV.* Available: <u>https://www.nice.org.uk/guidance/ng60/documents/economic-report</u>

²⁹Ehlers, L.H., et al. 2022. *Cost of non-communicable diseases in people living with HIV in the Central Denmark Region.* Available: <u>https://onlinelibrary.wiley.com/</u> <u>doi/10.1111/hiv.13414</u>

³⁰Lim, M., et al. 2022. *Lifetime cost of HIV management in Australia: an economic model*. Available: <u>https://www.publish.csiro.au/sh/SH21250</u>

³¹Huynh, T., et al. 2022. *Global estimates for the lifetime cost of managing HIV*. Available: <u>https://journals.lww.com/aidsonline/abstract/2021/07010/global_</u> estimates_for_the_lifetime_cost_of_managing.13.aspx

³²National Institute for Health and Care Excellence. 2016. *HIV testing: Increasing up-take among people who may have undiagnosed HIV.* Available: <u>https://www.nice.org.uk/guidance/ng60/documents/economic-report</u>

³³International Longevity Centre UK. 2021. *Countries need to up spending commitments on health promotion, urge think tanks.* Available: <u>https://ilcuk.org.uk/countries-need-to-up-spending-commitments-on-health-promotion-urge-think-tanks/</u>

³⁴Ritchwood, T.D., Bishu, K.G. & Egede, L.E. 2017. *Trends in healthcare expenditure among people living with HIV/AIDS in the United States: evidence from 10 Years of nationally representative data*. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/</u>PMC5658908/

³⁵International Longevity Centre UK. 2025. *Achieving Universal Health Coverage in Low- and Middle-Income Countries*. Available: <u>https://ilcuk.org.uk/uhc-in-lmics-report/</u>

³⁶Penn Medicine. 2024. *Out-of-pocket increase could put HIV prevention medications out of reach*. Available: <u>https://www.pennmedicine.org/news/news-releas-</u> es/2024/january/out-of-pocket-cost-increase-could-put-hiv-prevention-medications-out-of-reach

³⁷Association of British Insurers. 2016. *HIV and Life Insurance*. Available: <u>https://www.abi.org.uk/globalassets/sitecore/files/documents/publications/public/2016/hiv-and-insurance/hiv-and-insurance-guide.pdf</u>

³⁸California Department of Insurance. 2019. *Department warns insurers against discriminating over HIV prevention medication*. Available: <u>https://www.insurance.ca.gov/0400-news/0100-press-releases/2019/release050-19.cfm?utm</u>

³⁹The American Journal of Managed Care. 2019. *Following Discrimination Allegations, Insurer Will Stop Denying Coverage Based on PrEP Usage.* Available: <u>https://www.ajmc.com/view/following-discrimination-allegations-insurer-will-</u> stop-denying-coverage-based-on-prep-usage?utm

⁴⁰Dawson, L. & Kates, J. 2018. *Insurance Coverage and Viral Suppression Among People with HIV*. Available: <u>https://www.kff.org/hivaids/issue-brief/insur-ance-coverage-and-viral-suppression-among-people-with-hiv-2018/</u>

⁴¹Dawson, L., Kates, J., Roberts, J. & Chidambaram, P. 2023. *Medicaid and people with HIV*. Available: <u>https://www.kff.org/hivaids/issue-brief/medicaid-and-people-with-hiv/</u>

⁴²National AIDS Trust. 2009. *Housing and HIV.* Available: <u>https://www.taipawb.org/</u> wp-content/uploads/2018/07/NAT_Report_-_Housing_and_HIV.pdf

⁴³healthtalk.org. 2017. *HIV, money and other problems*. Available: <u>https://healthtalk.org/experiences/hiv/hiv-money-other-problems/</u>

⁴⁴Terrence Higgins Trust. 2017. *HIV, sexual health and ageing*. Available: <u>https://www.tht.org.uk/about-us/what-we-do/our-campaigns/past-campaigns/hiv-sexual-health-and-ageing</u>

⁴⁵Global Network of People Living with HIV. 2023. *Hear Us Out: Community Measuring HIV-Related Stigma and Discrimination*. Available: <u>https://www.stigmaindex.org/wp-content/uploads/2023/11/PLHIV-Stigma-Index-Global-Report-2023-3.pdf</u>

⁴⁶National Institute of Health. 2024. *HIV Medicines and Side Effects*. Available: <u>https://hivinfo.nih.gov/understanding-hiv/fact-sheets/hiv-medicines-and-side-effects</u>

⁴⁷Maulsby, C.H., Ratnayake, A., Hesson, D., Mugavero, M.J. & Latkin, C.A. 2020. *A scoping review of HIV and employment*. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC7716244/</u>

⁴⁸Rajabuin, S., et al. 2023. *"It Comes in Steps and Stages": Experiences of People Living with HIV in Achieving Employment*. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC10531408/</u>

⁴⁹Global Network of People Living with HIV. 2023. *Hear Us Out: Community Measuring HIV-Related Stigma and Discrimination*. Available: <u>https://www.stig-maindex.org/wp-content/uploads/2023/11/PLHIV-Stigma-Index-Global-Report-2023-3.pdf</u>

⁵⁰AIDS Map. 2023. *HIV and the ageing process.* Available: <u>https://www.aidsmap.</u> com/about-hiv/hiv-and-ageing-process

⁵¹American Psychological Association. 2017. *Older Adults with HIV: An overlooked population?* Available: <u>https://www.apa.org/news/press/releases/2017/08/old-er-adults-hiv</u>

⁵²Ritchwood, T.D., Bishu, K.G. & Egede, L.E. 2017. *Trends in healthcare expenditure among people living with HIV/AIDS in the United States: evidence from 10 Years of nationally representative data*. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/</u>PMC5658908/

⁵³Hutchinson, A.B., et al. 2006. *The economic burden of HIV in the United States in the era of highly active antiretroviral therapy: evidence of continuing racial and ethnic differences*. Available: <u>https://pubmed.ncbi.nlm.nih.gov/16980906/</u>

⁵⁴London School of Hygiene & Tropical Medicine. 2015. *Providing HIV treatment at work found to be cost-saving for companies*. Available: <u>https://lshtm.ac.uk/new-sevents/news/2015/providing_hiv_treatment_at_work_cost_saving_for_companies.html</u>

⁵⁵Maulsby, C.H., Ratnayake, A., Hesson, D., Mugavero, M.J. & Latkin, C.A. 2020. *A scoping review of HIV and employment*. Available: <u>https://pmc.ncbi.nlm.nih.gov/</u> articles/PMC7716244/

⁵⁶ACT Toronto. 2025. *Employment Action*. Available: <u>https://www.actoronto.org/</u>programs-services/employment-action/

⁵⁷Perri, M., et al. 2024. An evaluation of an employment assistance program focused on people living with HIV in Toronto, Canada. Available: <u>https://pubmed.ncbi.nlm.</u> <u>nih.gov/37756653/</u>

⁵⁸Perri, M., et al. 2024. An evaluation of an employment assistance program focused on people living with HIV in Toronto, Canada. Available: <u>https://pubmed.ncbi.nlm.</u> <u>nih.gov/37756653/</u>

⁵⁹Perri, M., et al. 2024. An evaluation of an employment assistance program focused on people living with HIV in Toronto, Canada. Available: <u>https://pubmed.ncbi.nlm.</u>

nih.gov/37756653/

⁶⁰Wing, J.E. 2017. *The Aging Population with HIV Infection.* Available: <u>https://pmc.</u>ncbi.nlm.nih.gov/articles/PMC5525433/

⁶¹McCutcheon, K., et al. 2024. *Cardiac and Renal Comorbidities in Aging People with Living with HIV.* Available: <u>https://www.ahajournals.org/doi/10.1161/CIRCRESA-HA.124.323948</u>

⁶²ViiV Healthcare. 2020. *Meeting the evolving needs of people living with HIV.* Available: <u>https://www.nature.com/articles/d42473-021-00048-z</u>

⁶³Age UK. 2023. *The State of Health and Care of Older People*. Available: <u>https://</u>www.ageuk.org.uk/siteassets/documents/reports-and-publications/reports-and-briefings/health--wellbeing/age-uk-briefing-state-of-health-andcare-july-2023-abridged-version.pdf

⁶⁴Deeks, S.G., Tracy, R. & Douek, D.C. 2014. *Systemic Effects of Inflammation on Health during Chronic HIV Infection*. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC4012895/</u>

⁶⁵Matza, L.S., et al. 2017. *Risks associated with antiretroviral treatment for human immunodeficiency virus (HIV): qualitative analysis of social media data and health state utility valuation.* Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC5486893/</u>

⁶⁶Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine. 2024. *Osteoporosis*. Available: <u>https://hiv.guidelines.org.au/management/bone-disease-in-patients-with-hiv-infection/osteoporosis/</u>

⁶⁷Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine. 2024. *Osteoporosis*. Available: <u>https://hiv.guidelines.org.au/management/bone-dis-</u>ease-in-patients-with-hiv-infection/osteoporosis/

⁶⁸St John's Health. 2022. *What age does osteoporosis start?* Available: <u>https://www.stjohns.health/blog/2022/september/what-age-does-osteoporosis-start-/</u>

⁶⁹Collins, L.F., et al. 2023. *Aging-Related Comorbidity Burden Among Women and Men With or At-Risk for HIV in the US, 2008-2019.* Available: <u>https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2807962</u>

⁷⁰Lang, R., et al. 2022. Evaluating the Cardiovascular Risk in an Aging Population of People With HIV: The Impact of Hepatitis C Virus Coinfection. Available: <u>https://</u> www.natap.org/2022/HIV/092222_01.htm

⁷¹Edelman, E.J., Rentsch, C.T. & Justice, A.C. 2021. *Polypharmacy in HIV: Recent Insights and Future Directions.* Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/</u><u>PMC7543953/</u>

⁷²Okoli, C., et al. 2020. *Relationship Between Polypharmacy and Quality of Life Among People in 24 Countries Living With HIV.* Available: <u>https://www.cdc.gov/pcd/issues/2020/19_0359.htm</u>

⁷³ViiV Healthcare. 2024. *Polypharmacy & Treatment Challenges*. Available: <u>https://</u>viivhealthcare.com/en-au/ending-hiv/thriving-quality-of-life/polypharmacy-and-treatment/

⁷⁴Catalan, J., Ridge, D., Hedge, B. & Cheshire, A. 2024. *Changing and unfinished narratives of the mental health impact of HIV in the UK*. Available: <u>https://www.sciencedirect.com/science/article/pii/S2667321523001701</u>

⁷⁵ViiV Healthcare. 2024. *Polypharmacy & Treatment Challenges*. Available: <u>https://</u>viivhealthcare.com/en-au/ending-hiv/thriving-quality-of-life/polypharmacy-and-treatment/

⁷⁶Catalan, J., Ridge, D., Hedge, B. & Cheshire, A. 2024. *Changing and unfinished narratives of the mental health impact of HIV in the UK*. Available: <u>https://www.sciencedirect.com/science/article/pii/S2667321523001701</u>

⁷⁷Rubin, L.H. & Maki, P.M. 2019. *HIV, depression, and cognitive impairment in the era of effective antiretroviral therapy*. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/</u><u>PMC6420829/</u>

⁷⁸Pollak, C., Cotton, K., Winter, J. & Blumen, H. 2024. *Health Outcomes Associated with Loneliness and Social Isolation in Older Adults Living with HIV: A Systematic Review*. Available: <u>https://link.springer.com/article/10.1007/s10461-024-04471-3</u>

⁷⁹Quinn, K.G., Murphy, M.K., Nigogosyan, Z. & Petroll, A.E. 2024. *Stigma, isolation, and depression among older adults living with HIV in rural areas.* Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC11101162/</u>

⁸⁰The Well Project. 2025. *Long-term survivors of HIV*. Available: <u>https://www.</u> thewellproject.org/hiv-information/long-term-survivors-hiv

⁸¹ViiV Healthcare. 2024. *Polypharmacy & Treatment Challenges*. Available: <u>https://viivhealthcare.com/en-au/ending-hiv/thriving-quality-of-life/polypharma-cy-and-treatment/</u>

⁸²Brennan-Ing, M. 2018. *Diversity, stigma, and social integration among older adults with HIV*. Available: <u>https://link.springer.com/article/10.1007/s41999-018-0142-3</u>

⁸³International Longevity Centre UK. 2021. *Reducing the risk: Improving vaccine uptake across at-risk groups in the UK*. Available: <u>https://ilcuk.org.uk/reduc-ing-the-risk-report/</u>

⁸⁴Remien, R.H., et al. 2019. *Mental health and HIV/AIDS: the need for an integrated response*. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC6635049/</u>

⁸⁵Kokorelias, K.M., Grosse, A., Zhabokritsky, A. & Sirisegaram, L. 2023. Understanding geriatric models of care for older adults living with HIV: a scoping review and qualitative analysis. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/</u> PMC10329351/

⁸⁶Sarma, P., Cassidy, R., Corlett, S. & Katusiime, B. 2023. *Ageing with HIV: Medicine Optimisation Challenges and Support Needs for Older People Living with HIV: A Systematic Review.* Available: https://pmc.ncbi.nlm.nih.gov/articles/PMC9857901/

⁸⁷Viiv Healthcare. 2021. *Positive Perspectives study, wave 2 results report*. Available: <u>https://viivhealthcare.com/content/dam/cf-viiv/viivhealthcare/en_GB/files/</u> <u>pp2-global-report-2021-update-031221.pdf</u>

⁸⁸Hader, S., et al. 2024. *Going the extra mile to end the HIV epidemic*. Available: <u>https://www.gileadhivtogether.com/files/going-the-extra-mile-to-end-the-HIV-epidemic.pdf</u>

⁸⁹Hader, S., et al. 2024. *Going the extra mile to end the HIV epidemic*. Available: <u>https://www.gileadhivtogether.com/files/going-the-extra-mile-to-end-the-HIV-epidemic.pdf</u>

⁹⁰Hader, S., et al. 2024. *Going the extra mile to end the HIV epidemic*. Available https://www.gileadhivtogether.com/files/going-the-extra-mile-to-end-the-HIVepidemic.pdf

⁹¹Brown, M.J. & Adeagbo, O. 2021. *HIV and aging: Double stigma.* Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC7952834/</u>

⁹²Brown, M.J. & Adeagbo, O. 2021. *HIV and aging: Double stigma.* Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC7952834/</u>

⁹³Youssef, E., et al. 2018. *Factors associated with testing for HIV in people aged* ≥50 *years: A qualitative study*. Available: <u>https://researchportal.ukhsa.gov.uk/en/publi</u>cations/factors-associated-with-testing-for-hiv-in-people-aged-50-years-a

⁹⁴Gebo, K.A. & Justice, A. 2011. *HIV infection in the elderly.* Available: <u>https://pmc.</u> ncbi.nlm.nih.gov/articles/PMC3129647/

⁹⁵Stonehouse, R. 2020. *HIV in older people: 'I thought it was a young person's illness'.* Available: <u>https://www.bbc.co.uk/news/health-51416570</u>

⁹⁶Terrence Higgins Trust. 2024. *HIV statistics*. Available: <u>https://www.tht.org.uk/</u> <u>hiv/about-hiv/hiv-statistics</u>

⁹⁷Cherpes, T.L. 2024. *Menopause increases risk of sexually transmitted infections*. Available: <u>https://www.clinicaladvisor.com/features/menopause-increas-</u> es-risk-of-sexually-transmitted-infections/

⁹⁸ Cherpes, T.L. 2024. *Menopause increases risk of sexually transmitted infections*. Available: <u>https://www.clinicaladvisor.com/features/menopause-increas-</u> es-risk-of-sexually-transmitted-infections/

⁹⁹ Cherpes, T.L. 2024. *Menopause increases risk of sexually transmitted infections*. Available: <u>https://www.clinicaladvisor.com/features/menopause-increas-</u> es-risk-of-sexually-transmitted-infections/

¹⁰⁰SASH London. 2024. *Why people over the age of 50 should access HIV tests.* Available: https://www.sashlondon.org/insights-and-stories/post/hiv-in-over-50s

¹⁰¹NHS. 2025. *NHS expands HIV opt-out testing to 30 more A&Es.* Available: <u>https://</u>www.england.nhs.uk/2025/02/nhs-expands-hiv-opt-out-testing/

¹⁰²Fenwick, J. 2025. *NHS to expand opt-out HIV and hepatitis testing*. Available: https://www.bbc.co.uk/news/articles/ckgyee03ezwo_

¹⁰³Emlet, C. 2007. *Experiences of Stigma in Older Adults Living With HIV/AIDS: A Mixed-Methods Analysis*. Available: <u>https://digitalcommons.tacoma.uw.edu/cgi/viewcontent.cgi?article=1000&context=socialwork_pub</u>

¹⁰⁴Terrence Higgins Trust. 2017. *HIV, sexual health and ageing.* Available: <u>https://</u>www.tht.org.uk/about-us/what-we-do/our-campaigns/past-campaigns/hiv-sexual-health-and-ageing

¹⁰⁵Greene, M., et al. 2018. *Loneliness in older adults living with HIV.* Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC6756479/</u>

¹⁰⁶Palich, R., et al. 2024. *High proportion of post-migration HIV acquisition in migrant men who have sex with men receiving HIV care in the Paris region, and associations with social disadvantage and sexual behaviours: results of the ANRS-MIE GANYME-DE study, France, 2021 to 2022.* Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/</u> <u>PMC10941311/</u>

¹⁰⁷Hiv vereniging. 2017. *Buddyzorg.* Available: <u>https://www.hivvereniging.nl/colour-ful/223-buddyzorg-positivo</u>

¹⁰⁸Hiv vereniging. 2017. *Buddyzorg.* Available: <u>https://www.hivvereniging.nl/colour-ful/223-buddyzorg-positivo</u>

¹⁰⁹Hiv vereniging. 2017. *Buddyzorg.* Available: <u>https://www.hivvereniging.nl/colour-ful/223-buddyzorg-positivo</u>

¹¹⁰Global Network of People Living with HIV. 2023. *Hear Us Out: Community Measuring HIV-Related Stigma and Discrimination*. Available: <u>https://www.stig-maindex.org/wp-content/uploads/2023/11/PLHIV-Stigma-Index-Global-Report-2023-3.pdf</u>

¹¹¹Tillerson, K. 2009. *Explaining racial disparities in HIV/AIDS incidence among women in the U.S.: A systematic review.* <u>Available: https://pmc.ncbi.nlm.nih.gov/articles/</u> PMC2684462/

¹¹²UNAIDS. 2024. 2024 global AIDS report. Available: <u>https://www.unaids.org/en/</u>resources/documents/2024/global-aids-update-2024

¹¹³European Centre for Disease Control. 2022. *Stigma: survey of people living with HIV - Monitoring implementation of the Dublin Declaration on partnership to fight HIV/AIDS in Europe and Central Asia: 2022 progress report.* Available: <u>https://www.</u> <u>ecdc.europa.eu/en/publications-data/hiv-stigma-survey</u>

¹¹⁴Hoy-Ellis, C.P., Ator, M., Kerr, C. & Milford, J. 2017. *Innovative Approaches Address Aging and Mental Health Needs in LGBTQ Communities*. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC5375170/</u>

¹¹⁵https://www.unaids.org/sites/default/files/media_asset/2024-unaids-globalaids-update-people-who-inject-drugs_en.pdf

¹¹⁶Transform Drug Policy. 2018. *Heroin-assisted treatment in Switzerland*. Available: <u>https://transformdrugs.org/blog/heroin-assisted-treatment-in-switzerland-suc-</u> cessfully-regulating-the-supply-and-use-of-a-high-risk-injectable-drug

¹¹⁷Federal Office of Public Health. 2024. *The four-pillar policy*. Available: <u>https://</u>www.bag.admin.ch/bag/en/home/strategie-und-politik/politische-auftraege-und-aktionsplaene/drogenpolitik/vier-saeulen-politik.html

¹¹⁸Transform Drug Policy. 2021. *Drug decriminalisation in Portugal: setting the record straight*. Available: <u>https://transformdrugs.org/blog/drug-decriminalisa-tion-in-portugal-setting-the-record-straight</u>

¹¹⁹Rego, Z., Oliveira, M.J. Lameira, C. & Cruz, O.S. 2021. 20 years of Portuguese drug policy - developments, challenges and the quest for human rights. Available: <u>https://substanceabusepolicy.biomedcentral.com/articles/10.1186/s13011-021-00394-7</u>

¹²⁰Pires, C.V, et al. 2025. *City-level drug policies in Portugal: the COVID-19 pandemic as an analyzer of harm reduction responsiveness in Porto and Lisbon*. Available: https://pmc.ncbi.nlm.nih.gov/articles/PMC11900517/

¹²¹Transform Drug Policy. 2021. *Drug decriminalisation in Portugal: setting the record straight*. Available: <u>https://transformdrugs.org/blog/drug-decriminalisa-tion-in-portugal-setting-the-record-straight</u>

¹²²UNAIDS. 2024. *HIV and transgender people*. Available: <u>https://www.unaids.org/</u> <u>sites/default/files/media_asset/2024-unaids-global-aids-update-transgen-</u> <u>der-people_en.pdf</u>

¹²³Mugavero, M.J., Castellan, C., Edelman, D. & Hicks, C. 2011. *Late Diagnosis of HIV Infection: The Role of Age and Gender*. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC3184035/</u>

¹²⁴New Zealand Parliament. 2012. *Prostitution law reform in New Zealand.* Available: <u>https://www.parliament.nz/mi/pb/research-papers/</u> document/00plsocrp12051/prostitution-law-reform-in-new-zealand/

¹²⁵McGregor, E. 2024. *Two decades after decriminalisation, NZ's sex workers still need protection from discrimination*. Available: <u>https://theconversation.com/two-decades-after-decriminalisation-nzs-sex-workers-still-need-protection-from-discrimination-240787</u>

¹²⁶McAllister, S.M., et al. 2008. *Unlinked anonymous HIV prevalence among New Zealand sexual health clinic attenders: 2005–2006*. Available: <u>https://journals.sage-pub.com/doi/abs/10.1258/ijsa.2008.008153</u>

¹²⁷UNAIDS. 2024. *HIV and sex work*. Available: <u>https://www.unaids.org/sites/de-fault/files/media_asset/2024-unaids-global-aids-update-sex-workers_en.pdf</u>

¹²⁸Shannon, K., et al. 2016. *Global epidemiology of hiv among female sex workers: influence of structural determinants*. Available: <u>https://pmc.ncbi.nlm.nih.gov/articles/PMC4297548/</u>

¹²⁹UNAIDS. 2024. *HIV and sex work.* Available: <u>https://www.unaids.org/sites/de-fault/files/media_asset/2024-unaids-global-aids-update-sex-workers_en.pdf</u>

¹³⁰Platt, L., et al. 2018. Associations between sex work laws and sex workers' health: A systematic review and meta-analysis of quantitative and qualitative studies. Available: https://pmc.ncbi.nlm.nih.gov/articles/PMC6289426/

¹³¹World Health Organization. 2024. *People in prisons and other closed settings*. Available: <u>https://www.who.int/teams/global-hiv-hepatitis-and-stis-pro-</u>grammes/populations/people-in-prisons

¹³²Schwitters, A. 2016. Consolidated Guidelines on HIV Prevention, Diagnosis, Treatment and Care for Key Populations. Available: <u>https://www.ncbi.nlm.nih.gov/</u> books/NBK379683/

About ILC

ILC is the UK's leading authority on the impact of longevity on society. We combine evidence, solutions and networks to make change happen.

We help governments, policy makers, businesses and employers develop and implement solutions to ensure we all live happier, healthier and more fulfilling lives. We want a society where tomorrow is better than today and where future generations are better off.

ILC wants to help forge a new vision for the 100-year life, where everyone has the opportunity to learn throughout life, and where new technology helps us contribute more to society.

ilc...

International Longevity Centre UK

The Foundry 17 Oval Way London SE11 5RR Tel : +44 (0) 203 752 5794

www.ilcuk.org.uk

Published in 2025 © ILC-UK 2025 Registered Charity Number: 1080496.