Fiscal Year 2026 NIH HIV/AIDS Professional Judgment Budget

Enhancing Equity and Maintaining Momentum

NIH National Institutes of Health
Office of AIDS Research

Cover photos (clockwise, starting from the top left):

HIV-1 immature CTD-SP1 hexamer in complex with IP6. Credit: RCSB Protein Data Bank.

U = U (Undetectable = Untransmittable). Credit: NIH

An older man sits on an exam table during a routine check-up and reviews recent test results with his doctor. Credit: FatCamera/iStockphoto.com

Transmission electron micrograph of HIV-1 virus particles (red) budding and replicating from a segment of a chronically infected H9 cell (blue). Image captured at the NIAID Integrated Research Facility (IRF) in Fort Detrick, Maryland. Credit: NIAID

A group of young people stacking their hands outdoors. Credit: Tint Media/Shutterstock

A gloved hand pipettes a blood sample in a laboratory. Credit: Salov Evgeniy/Shutterstock

Contents

Director's Message **3**

Introduction **3**

Public Health Impact of HIV in the United States **5**

Budget, Funding, and Resources Needed **6**

Highlighted Scientific Opportunities **7**

Fundamental Research to Promote Discovery and Advance HIV Science **8**

Advance Understanding of HIV Pathobiology, Immunology, and Virology to Address HIV and Its Complications 8

Spur Discovery of New Therapeutic or Vaccine Targets and Development of Innovative Products and Delivery Systems for Prevention and Treatment of HIV and HIV-Associated Comorbidities 8

Develop Innovative Methods to Detect, Target, and Destroy Viral Reservoirs in Pursuit of a Cure for HIV 9

Development and Assessment of Novel Interventions for the Prevention and Treatment of HIV and Co-occurring Conditions within the Context of Intersectional Social and Structural Factors **10**

Accelerate the Translation of Promising Vaccine and Antibody-Mediated Protection and Cure Strategies Into Clinical Trials 10

Accelerate the Development of Novel Drug Combinations, Formulations, Dosing Regimens, and Delivery Methods for Treatment, Prevention, and Cure Modalities 11

Develop and Evaluate Treatment Strategies and Integrated Care Models for the Management of HIV and Co-occurring Conditions 11

Advance Multidisciplinary Research to Develop Interventions to Effectively Prevent and Treat HIV and Address Co-occurring Conditions of Long-Term HIV and Its Treatment Across the Life Span 12

Accelerate BSSR to Investigate How Social Determinants of Health Contribute to HIV Outcomes 12

Dissemination and Implementation of HIV Research Discoveries to Optimize Public Health Impact 13

Expand Implementation Research to Enhance the Uptake of Evidence-Based, Person-Centered HIV Interventions and Delivery Approaches 13

Support Research on Effective, Person-Centered, and Community-Driven Models of HIV-Related Science and Public Health Communications That Address Intersectional Stigma and Discrimination 14

Workforce Development and Infrastructure to Enhance Capacity and Increase Diversity 14

Develop and Retain a Skilled and Diverse HIV Research Workforce 15

Increase Investment in Facilities and Resources to Enhance Research Capacity in Diverse Settings and in Institutions with Historically Limited Resources 15

Strengthen Data Infrastructure to Enable Effective Data Management, Accessibility, and Analysis 16

Conclusion 16

Acronyms and Abbreviations 17

Director's Message

Diana Finzi, Ph.D., M.P.H.
NIH Acting Associate Director for AIDS Research and Acting Director, Office of AIDS Research

The National Institutes of Health (NIH) Office of AIDS Research (OAR) was established by Congress in 1988 to coordinate human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) research across NIH. Over the last four decades, sustained investment in HIV research at NIH has enabled progressive scientific advances that have transformed HIV infection—once a fatal diagnosis—into a chronic condition. Antiretroviral therapy (ART) has evolved from limited, complicated, and poorly tolerated regimens to once-daily fixed-dose combination drugs that suppress HIV to undetectable levels. Multiple highly effective biomedical HIV prevention methods now offer people choices that best suit their needs. Long-acting antiretroviral drugs for prevention and treatment are newly available, and ART for the prevention of perinatal HIV transmission has been widely adopted, substantially reducing the number of infants born with HIV.

Millions of lives have been saved by the drugs that control HIV. In addition, many discoveries in HIV research have contributed directly to important advances in the fields of immunology, virology, and cancer. For example, the rapid development of COVID-19 vaccines reflects an unprecedented achievement built upon decades of HIV research that also resulted in a 2023 Nobel Prize in medicine.[1] Moreover, widespread uptake of the COVID-19 vaccine was informed by HIV research on acceptability and use of effective interventions by diverse communities. HIV research also provided the foundation for T cell therapies that are highly effective in the treatment of certain types of cancer. Beyond the basic science across immunology, virology, and cancer, HIV research has helped emphasize the critical importance of scientific communication, especially with regards to acceptability and uptake of effective interventions. Although progress is evident, steadfast support is critical to maintain current gains and continue to save lives globally. Ongoing investment across the continuum of HIV research is vital to achieve our goals of eliminating HIV transmission and revolutionizing the care of people with HIV—including finding a safe and scalable cure from lifelong infection. With sustained commitment and collaboration among the federal government, researchers, industry, health care providers, and community, we can continue to make significant progress toward ending the HIV pandemic.

Introduction

Despite global decreases in HIV acquisition and AIDS-related deaths over the past two decades, the HIV pandemic continues. An estimated 39 million people were living with HIV in 2022. More than half of this population consisted of women and girls.[2] Slightly more than half a million people died of AIDS-related illnesses in 2022, and another 1.3 million newly acquired HIV. As AIDS-related mortality has declined, cancer, cardiovascular disease, and coinfections, such as tuberculosis (TB), are now leading causes of death for people with HIV. Much work remains to attain the United Nations' Sustainable Development Goal to end AIDS as a public health threat by 2030.

1 https://www.nobelprize.org/prizes/medicine/2023/press-release
2 https://www.unaids.org/en/resources/fact-sheet

In the United States, an estimated 1.2 million people are living with HIV, including more than 37,000 people newly diagnosed in 2022.[3,4] Notably, more than half of people with HIV in the United States are age 50 or older—a percentage projected to climb above 70 percent by 2030.[5] Although HIV incidence has decreased, the reduction is not sufficient to meet the target of 90 percent fewer new infections by 2030 outlined in the *National HIV/AIDS Strategy for the United States 2022-2025* (NHAS). Furthermore, U.S. HIV incidence data reveal substantial disparities by socioeconomic position, gender identity, sexual orientation, and race and ethnicity. Gay men, bisexual men, and other men who have sex with men are the most affected group in the United States. Black or African American and Hispanic or Latino people are disproportionately affected by HIV, accounting for 38 percent and 32 percent of new diagnoses, respectively. Patterns of HIV care and viral suppression data reflect similar disparities.[6] Similarly, Black or African American women (particularly those in inequitable risk environments) account for most new HIV diagnoses among women in the United States. Geographic disparities persist; people living in the U.S. South accounted for more than half of new HIV diagnoses in 2022.

HIV research must address health disparities to ensure all communities have equitable access to effective, evidence-based HIV testing, prevention, treatment, and care services. Persistent inequities point to the need for expanded access and user choice among existing prevention, testing, and treatment methods and underscore the need for more varied, durable, and accessible treatment and prevention options, as well as an HIV vaccine and a scalable HIV cure. Research and implementation strategies are essential to address the intersectional nature of health disparities, including structural and social determinants of health.

NIH research activities contribute to other federal HIV initiatives, including NHAS, the corresponding *NHAS Federal Implementation Plan*, and the *Ending the HIV Epidemic in the U.S.* (EHE) initiative. These complementary frameworks guide biomedical, behavioral, clinical, and social sciences research priorities, as well as the implementation of evidence-based interventions and programs. Funds requested in the *Fiscal Year (FY) 2026 NIH HIV/AIDS Professional Judgment Budget* will accelerate progress in key research goals identified in the *NIH Strategic Plan for HIV and HIV-Related Research* (NIH HIV Strategic Plan), NHAS and corresponding *Federal Implementation Plan*, and EHE initiative.

Advances in HIV Research

- An NIH-funded clinical trial demonstrated that, in adults with HIV and low-to-moderate risk of cardiovascular disease, daily statin medication was linked to a 35 percent reduction in adverse cardiovascular events, results that led to new clinical guidelines to prevent heart disease in people with HIV.
- Ongoing NIH research is investigating the impact of early ART in newborns with HIV. Recent results have indicated that neonatal ART initiation can reduce the size of the viral reservoir and lead to drug-free remission in some children. These results represent encouraging progress in the pursuit of ART-free HIV remission for infants born with HIV.
- NIH researchers recently conducted a study to investigate why T cell–based strategies for developing an HIV vaccine have failed to show efficacy in clinical trials. Insights from their research suggest that future T cell–based vaccine candidates may be more successful with additional doses or longer-lasting delivery methods to stimulate the immune system more robustly.

3 https://www.cdc.gov/hiv-data/nhss/estimated-hiv-incidence-and-prevalence.html
4 https://www.cdc.gov/hiv-data/nhss/hiv-diagnoses-deaths-prevalence.html
5 https://pubmed.ncbi.nlm.nih.gov/26070969
6 https://www.cdc.gov/hiv/data-research/facts-stats/race-ethnicity.html

Public Health Impact of HIV in the United States

Figure 1. HIV diagnosis and treatment gaps, 2022†

Among the estimated 1.2 million people living with HIV in the United States:

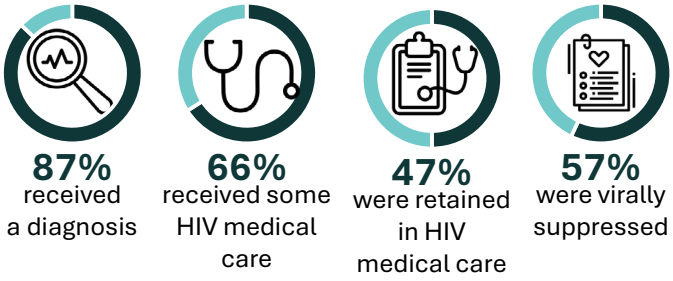
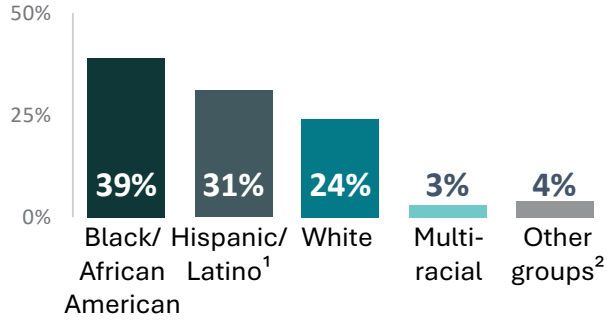


Figure 2. Disparities in New Infections, 2022‡

Breakdown of diagnoses by race and ethnicity

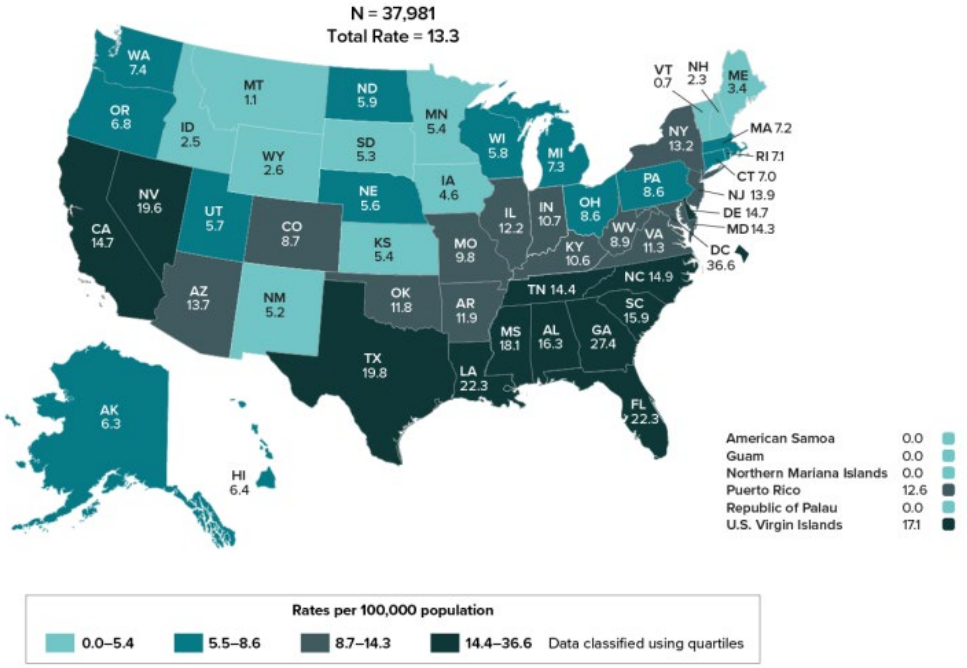


[1]*Any race;* [2] *ludes Asian, American Indian/Alaska Native, and Native Hawaiian/other Pacific Islander populations*

HIV/AIDS Public Health Milestones

1981	*First report of the disease that will be named AIDS*
1987	*AZT is the first drug approved by the FDA for treatment of people with HIV*
1988	*Congress establishes OAR to coordinate HIV/AIDS research across NIH*
1996	*Combinations of antiretroviral therapy become widely available.*
1997	*CDC reports 47% decline in AIDS-related deaths in the U.S.*
2003	*U.S. government launches President's Emergency Plan for AIDS Relief (PEPFAR)*
2012	*FDA approves pre-exposure prophylaxis (PrEP) that prevents HIV transmission*
2017	*U = U (Undetectable = Untransmittable) Low viral levels not detectable on tests = no risk of transmitting HIV*
2021	*FDA approves first long-acting HIV treatment and prevention options*

Figure 3. Rates of U.S. diagnoses of HIV infection, 2022‡



†Data source: https://www.cdc.gov/nchhstp/director-letters/cdc-publishes-new-hiv-surveillance-reports.html
‡Data source: https://stacks.cdc.gov/view/cdc/156509

Budget, Funding, and Resources Needed

OAR coordinates the scientific, budgetary, legislative, and policy elements of the NIH HIV research program. In this role, OAR continues to enhance HIV research collaborations, minimize duplication, and ensure that NIH research funds are invested effectively and efficiently across the institutes, centers, and offices (ICOs) conducting HIV research.

The annual NIH HIV/AIDS Professional Judgment Budget builds on the justification to Congress for the President's Budget, providing estimates of the funding needed to fully pursue highlighted scientific opportunities *"without regard to the probability that such amounts will be appropriated."*[7]

In FY 2024, the congressional appropriation to NIH provided $3.294 billion for NIH HIV/AIDS research, no change from the FY 2023 budget. As shown in Table 1, the proposed FY 2026 NIH HIV/AIDS Professional Judgment Budget requests a $659 million increase, for a total proposed budget of $3.953 billion for FY 2026. This amount reflects an increase of 20 percent over the FY 2024 enacted budget.

Table 1: FY 2025 NIH HIV/AIDS Professional Judgment Budget (Dollars in Millions)

FY 2024 Enacted Budget	**$3,294**	
FY 2026 Proposed Increase by Strategic Plan Goal[8]	**$659**	$245 Fundamental Research $302 Preclinical and Intervention Research $19 Dissemination and Implementation Research $93 Workforce and Infrastructure Development
FY 2026 Total Proposed Budget	**$3,953**	

In recent years, the spending capacity of the HIV allocation has decreased when adjusted for inflation. Additional funding is needed to continue advancing research to end the HIV pandemic. This budget highlights key scientific opportunities across the research continuum, in alignment with goals outlined in the NIH HIV Strategic Plan, and estimates the funding needed to accelerate progress in cutting-edge science, strengthen research capacity, and sustain the research workforce.

7 www.congress.gov/bill/103rd-congress/senate-bill/1/text

8 Goals reflect the FY 2026-2030 NIH Strategic Plan for HIV and HIV-Related Research, in development

Highlighted Scientific Opportunities

The FY 2026 NIH HIV/AIDS Professional Judgment Budget supports the NIH strategy to advance HIV science in prevention, treatment, and cure across the research continuum: from basic foundational research to dissemination and implementation.

The FY 2026 NIH HIV/AIDS Professional Judgment Budget highlights key scientific investment opportunities across four areas:

› Fundamental research to promote discovery and advance HIV science

- Advance the understanding of HIV pathobiology, immunology, and virology to address HIV and its complications.
- Spur discovery of new therapeutic targets and development of innovative products and delivery systems for prevention and treatment of HIV and HIV-associated comorbidities.
- Develop innovative methods to detect, target, and destroy viral reservoirs in pursuit of a cure for HIV.

› Development and assessment of novel interventions for the prevention and treatment of HIV and co-occurring conditions within the context of intersectional social and structural factors

- Accelerate translation of promising vaccine and antibody-mediated protection strategies into clinical trials.
- Accelerate the development of novel drug combinations, formulations, dosing regimens, and delivery methods for treatment, prevention, and cure modalities.
- Develop and evaluate treatment strategies and integrated care models for management of HIV and co-occurring conditions.
- Advance multidisciplinary research to develop interventions to effectively prevent and treat HIV and address co-occurring conditions of long-term HIV and its treatment across the life span.
- Accelerate behavioral and social sciences research (BSSR) to investigate how social determinants of health contribute to HIV outcomes.

› Dissemination and implementation of HIV research discoveries to optimize public health impact

- Expand implementation research to enhance the uptake of evidence-based, person-centered, and sustainable HIV interventions and delivery approaches.
- Support research on effective, person-centered, and community-driven models of HIV-related science and public health communications that address intersectional stigma and discrimination.

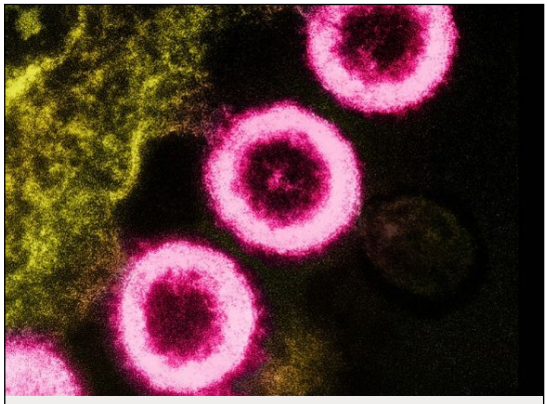
› Workforce development and infrastructure to enhance capacity and increase diversity

- Develop and retain a skilled and diverse HIV research workforce.
- Increase investment in facilities and resources to enhance research capacity in diverse settings and in institutions with historically limited resources.
- Strengthen data infrastructure to enable effective data management, accessibility, and analysis.

Fundamental Research to Promote Discovery and Advance HIV Science

For decades, NIH has supported basic fundamental research to drive the discovery and development of novel HIV prevention and treatment strategies. Additional investment in basic research will support the continued development of safe, effective, and desirable tools to prevent, treat, and ultimately cure HIV, as well as reduce the risk of comorbid conditions and co-occurring infections.

Advance Understanding of HIV Pathobiology, Immunology, and Virology to Address HIV and Its Complications



Additional research is necessary to understand the unusual complexity of HIV pathobiology.

Credit: NIAID

HIV infects CD4 T cells, which coordinate the immune response against infection and disease. Although ART prevents HIV from replicating, a silent form of the virus persists in a small fraction of CD4 T cells, forming a reservoir in blood and tissues throughout the body. The inaccessibility of these cells with latent virus, coupled with the high mutation rate of the virus, allows the virus to evade the immune system and presents a great challenge toward complete viral elimination. Additional research is necessary to understand the unusual complexity of HIV pathobiology, which to date has thwarted efforts to develop an effective HIV vaccine and a permanent cure.

People with HIV are more likely to experience co-occurring conditions—including diabetes, cardiovascular diseases, kidney disease, frailty and muscle loss, psychiatric disorders, neurocognitive decline, and immune-mediated disorders—earlier and more often than people without HIV. Some of these conditions appear to be linked to chronic inflammation affecting vital organs and systems throughout the body. For example, inflammatory and neurodegenerative processes may contribute to the onset and progression of Alzheimer's disease (AD) and AD-related dementias in people with HIV. Infection in the brain can cause HIV-induced central nervous system (CNS) dysfunction—including mild to moderate CNS impairments, as well as dementia—regardless of systemic viral suppression with ART. Further funding is necessary to stimulate interdisciplinary research that explores the effects of HIV on mechanisms driving inflammation at the cellular and molecular level, and to understand the spectrum of comorbidities and conditions that affect people living and aging with HIV. People with HIV are also at greater risk of life-threatening coinfections, such as hepatitis and TB, as well as certain malignancies. A deeper understanding of how viruses and pathogens take advantage of a weakened immune system will continue to provide insights in immunology for both existing and new pathogens.

Spur Discovery of New Therapeutic or Vaccine Targets and Development of Innovative Products and Delivery Systems for Prevention and Treatment of HIV and HIV-Associated Comorbidities

ART was developed to treat HIV but subsequently was shown to prevent HIV acquisition when taken as pre-exposure prophylaxis (PrEP) or post-exposure prophylaxis (PEP). The success of treatment as prevention through the Undetectable = Untransmittable (U=U) campaign has transformed the social, sexual, and reproductive lives of people with HIV and holds promise for reducing HIV-related intersectional stigma and discrimination. However, significant barriers—including intersectional social-structural factors, such as lack of

access to quality health care along with the burden of daily pill-taking—make sustained use of daily oral PrEP more challenging for some people. Fundamental BSSR exploring factors associated with health-related decision making in varying social and structural contexts is needed to inform intervention development and implementation, and ultimately to increase equitable access and improve population health.

Long-acting injectable antiretroviral treatment and prevention products aim to reduce the burden of daily pill-taking for people with and affected by HIV. In 2021, the U.S. Food and Drug Administration (FDA) approved the use of injectable long-acting ART regimens for treatment (cabotegravir and rilpivirine) and prevention (cabotegravir). These regimens offer convenience, privacy, and easier medication management, improving a person's experience and facilitating sustained use. Research continues to demonstrate the benefits of new long-acting antiretroviral formulations, including injectables and implants, as effective alternatives to daily oral medications that could address adherence challenges and improve treatment outcomes for many different populations. Despite advances, critical issues remain as access to treatment options and monitoring of viral load remain a challenge in many settings. Additional funding to support development of highly sensitive HIV testing and viral load monitoring products at the point of care and for self-administration can improve safe implementation of long-acting injectable HIV treatment and prevention options. For example, injectable cabotegravir for HIV prevention comes with important implications for developing ART resistance. If acute HIV acquisition is missed when the drug is still residually in a person's system, future treatment options are limited for that individual.

Additional funding to support development of highly sensitive HIV testing and viral load monitoring products can improve safe implementation of long-acting injectable HIV treatment and prevention options.

Credit: Shutterstock.com

Further research is needed to develop alternative strategies to prevent transmission or sustain viral suppression in the absence of ART. Some options include therapeutic and preventive vaccines designed to induce the generation of antibodies—called broadly neutralizing antibodies (bNAbs)—that protect against a broad range of HIV variants. Although some vaccines have shown promise, triggering precursors of bNAb-producing cells, further work is needed to achieve sustained, effective production of bNAbs after vaccination. Additional investment can support research investigating the induction of sustained immune responses that eliminate HIV-infected cells and can enhance existing immunity.

Develop Innovative Methods to Detect, Target, and Destroy Viral Reservoirs in Pursuit of a Cure for HIV

The introduction of highly effective, long-acting ART formulations is a significant step forward for people with HIV to remain healthy and prevent onward transmission. However, ART does not eliminate HIV and requires lifelong medication adherence to avoid viral rebound. The unique ability of HIV to evade the immune system and ART and persist in certain cell types has posed challenges for the development of a safe, effective, and scalable cure for HIV.

Progress toward an HIV cure will require the development of innovative methods to detect, target, and destroy HIV reservoirs. Gene editing technologies, such as CRISPR-Cas, represent a promising strategy for targeting and disrupting the HIV viral reservoir, raising hopes for eradication of the latent virus. However, more research is needed to identify and address potential challenges associated with this approach.

In the absence of an HIV cure (i.e., complete viral eradication), therapies that aim to stimulate durable immune activation and enhance HIV-specific immune responses can potentially achieve long-term drug-free viral remission—known as a functional cure. Increased funding is needed to support the development and improvement of novel immune-based therapies, including therapeutic vaccines and immune modulators designed to enhance the body's natural immune response against HIV.

Basic, fundamental research continues to investigate the mechanisms underlying the persistence of latent reservoirs, including how they are established and maintained in protected sites. Inclusion of groups that historically have been excluded or understudied in HIV cure research—such as women, and racial and ethnic minoritized populations—could lead to new insights. For example, increased support to expand cure research in women could reveal key sex differences in characteristics of the HIV reservoir. Further research is needed to understand the interacting effects of sex, gender, age, and environmental factors on the HIV reservoir. Development of novel tools, such as noninvasive, high-resolution multimodal imaging techniques, could identify HIV reservoirs in protected sites, such as the CNS, and other tissues, stimulating further study.

Additional investment in fundamental research will advance efforts to overcome the challenges that have impeded development of a vaccine or cure and to address the complex interactions between the biological, behavioral, and social factors that affect HIV outcomes.

Development and Assessment of Novel Interventions for the Prevention and Treatment of HIV and Co-occurring Conditions within the Context of Intersectional Social and Structural Factors

Following the basic discovery phase of research, the most promising biomedical products or tools and complementary social and behavioral strategies for prevention and treatment of HIV and management of its complications move into research trials. Rigorous randomized control trials test biological outcomes (e.g., viral load) and/or behavioral outcomes (e.g., adherence) of novel interventions. Other studies may measure an intervention's acceptability and feasibility, including assessment of potential facilitators and barriers to its implementation and sustainability.

Accelerate the Translation of Promising Vaccine and Antibody-Mediated Protection and Cure Strategies Into Clinical Trials

The development of a safe and effective HIV vaccine has proven to be challenging due to the high rate of viral mutation and variability. Current vaccine candidates aim to induce bNAbs, which could prevent infection by a wide range of HIV strains. Recent results have shown that injections or intravenous infusions of bNAbs can protect a person from acquiring HIV or suppress the virus in someone with HIV. Expanded efforts to discover, improve, and develop new bNAbs are needed. New efforts could leverage high-throughput technology for antibody discovery and existing collaborative research networks to capitalize on samples from large cohorts of appropriate donors.

Another current area of investigation in vaccine research involves delivery of T cell–based candidates using vectors that may promote sustained immunity compared to more short-lived vaccine vectors. A new clinical trial

is exploring this approach.[9] Additional investment can accelerate the investigation of novel vaccine candidates in clinical trials.

Viral remission (a state in which the virus is suppressed without ART), also known as a functional cure, may represent the first step toward developing a cure that eradicates the virus entirely. Increased funding is needed to develop and evaluate strategies to control viral replication in the absence of ART using longer-acting biologicals or approaches that increase the strength of the immune system.

Accelerate the Development of Novel Drug Combinations, Formulations, Dosing Regimens, and Delivery Methods for Treatment, Prevention, and Cure Modalities

The FDA's approval of the long-acting injectable drugs for treatment and prevention has opened new avenues to treat, prevent, and possibly cure HIV. Vaginal rings and topical agents containing antiretrovirals have also been shown to enable convenient, behaviorally congruent, and discreet prevention options. Importantly, deeper investment is needed to develop effective combination products, such as multipurpose prevention technologies that prevent HIV and other conditions (e.g., other sexually transmitted infections [STIs] and pregnancy). Additional support for developing novel HIV prevention and treatment products and delivery platforms can facilitate expanded use in specific populations, such as children, adolescents, and pregnant and postpartum people. Consideration of social determinants—such as access to health care, housing stability, and transportation—during product development research will ensure the integration of end-user preferences that are critical to sustained adherence. Additional funding is required to ensure improvements in long-acting modalities, including alternatives to injection (e.g., refillable implants), longer durations between dosing, and development of behaviorally congruent products.

Develop and Evaluate Treatment Strategies and Integrated Care Models for the Management of HIV and Co-occurring Conditions

Additional research is needed to address the challenge of integrating the management of HIV with other health services.

Credit: NIAID

HIV prevention and treatment interventions often are delivered in specialized settings, an approach that often leads to fragmented care and contributes to suboptimal health outcomes. Additional research is needed to address the challenge of integrating the management of HIV with other health services, including treatment for mental health conditions; alcohol and substance use disorders; oral health conditions; and HIV-associated coinfections, such as STIs and hepatitis. Integrated service delivery research is essential to addressing a known HIV complication, polypharmacy, an especially prevalent issue among people with long-duration HIV.

Developing better treatment strategies for people with HIV and comorbidities, coinfections, and complications remains a key priority for NIH HIV research. For example, more research is needed to assess the safety and effectiveness of immunologic therapies for cancer in people with HIV, and of screening and brief interventions for individuals with mental health conditions, such as depression and anxiety. Additional funding can support the discovery of biomarkers and novel assays to detect coinfections among people with HIV and the development of strategies to improve treatment and prevention outcomes for coinfections that heavily impact people with HIV, such as TB, Hepatitis B and C, and human papillomavirus.

[9] https://www.nih.gov/news-events/news-releases/clinical-trial-hiv-vaccine-begins-united-states-south-africa

Differentiated care models are particularly important to reach populations disproportionately affected by HIV. Racial, ethnic, and sexual and gender minoritized groups face not only increased risk of HIV acquisition but also worse outcomes and greater complications. Research is needed to develop and assess novel, multilevel strategies to improve diagnosis, adherence, and retention in HIV care among minoritized populations.

Advance Multidisciplinary Research to Develop Interventions to Effectively Prevent and Treat HIV and Address Co-occurring Conditions of Long-Term HIV and Its Treatment Across the Life Span

Interventions for HIV and HIV-associated comorbidities must be developed to meet the unique needs and preferences of individuals at different times in their lives and at different stages of infection. HIV interventions are far from a one-size-fits-most model; intervention research must consider the social, cultural, and physical environments that help or hinder access. For example, an adolescent with perinatally acquired HIV may have very different medical and mental health needs than an adolescent who acquired HIV through sexual contact or injection drug use. Older people with HIV face numerous HIV- and aging-related complications, including premature aging.

HIV intervention research must consider the social, cultural, and physical environments that help or hinder access.

Credit: NIAID

People with HIV experience accelerated aging, altered metabolism, and chronic immune activation that can contribute to the development of comorbidities. Comorbid conditions that disproportionately affect people with HIV include cardiovascular disease, chronic kidney disease, liver disease, frailty and reduced bone density, issues with oral and dental diseases, and some non-AIDS cancers. Neuropsychiatric conditions, such as depression and neurocognitive disorders, are also more prevalent among people with HIV than those without HIV, as are social isolation and substance use. Additional investment is needed to support multidisciplinary research to better understand and identify areas for intervention that mitigate HIV-associated comorbidities, coinfections, and other complications of HIV and/or ART for people at differing life stages in differing environments.

Accelerate BSSR to Investigate How Social Determinants of Health Contribute to HIV Outcomes

HIV research must address the multifactorial nature of health outcomes. Accelerating BSSR is essential to clarify how social determinants of health,[10] syndemics (i.e., synergistic epidemic), mental health conditions, and substance use disorders contribute to HIV health disparities. Opportunities exist for supporting multilevel research at the individual, interpersonal, community, and structural level, on such topics as the impact of comorbidities among people with HIV with intersecting racial, ethnic, and sexual orientation and gender identities.

Identifying the behavioral and social factors that affect choice architecture is necessary to understand the decision-making processes that influence the selection and use of HIV prevention and treatment options. Additional research is needed to address the role of stigma and discrimination as barriers to intervention

[10] See NIH SDOH conceptualization: https://www.ninr.nih.gov/research/nih-sdohrcc#tabs2.

adherence. Further research is needed to elucidate behavioral and social factors that impede or facilitate improved biological outcomes (e.g., viral suppression) in the context of HIV and ART.

Notably, research is necessary to better understand the interplay between HIV, alcohol, substance use, and mental health conditions—such as depression—in people with HIV and the degree to which these issues lead to risk behaviors and sexual violence that increase the likelihood of HIV transmission. Addressing social and behavioral factors is key to strengthening HIV risk reduction strategies and achieving the EHE goals.

Increased funding is needed to support research to develop and evaluate biomedical and sociobehavioral interventions tailored to meet the needs of all individuals with HIV across the life span with varying co-occurring conditions.

Dissemination and Implementation of HIV Research Discoveries to Optimize Public Health Impact

Translation of efficacious HIV prevention, treatment, and cure interventions to inform practice remains essential to address health disparities and maximize the global public health impact of HIV research. BSSR investigates the individual, interpersonal, community, societal, and structural determinants that influence access to and engagement with HIV prevention, treatment, and care. Dissemination and implementation research can integrate and build on this research, identifying how best to facilitate effective adaptation, uptake, integration, scale-up, and sustainability of evidence-based HIV interventions in the real world.

Expand Implementation Research to Enhance the Uptake of Evidence-Based, Person-Centered HIV Interventions and Delivery Approaches

Additional investment will enable NIH to support critical interdisciplinary HIV research to better understand the connections between social conditions and health.

Credit: Shutterstock.com

Dissemination and effective implementation of HIV research discoveries are vital for public health impact. Coupled with effective biomedical interventions and insights from BSSR, community partnerships can inform the implementation of evidence-based treatment and prevention strategies. Considering the syndemic conditions—including structural and social determinants of health, mental health, substance use, violence, stigma, and many other interacting factors—that contribute to HIV health disparities will be essential to sustaining progress in addressing the HIV pandemic. People with HIV, including women and sexual and gender minority populations, are more likely than their counterparts to experience mental health conditions and engage in substance use. These issues affect not only the well-being and quality of life for people with HIV but have implications for sustainable HIV management and prevention efforts. Additional investment will enable NIH to support critical interdisciplinary HIV research and data science to better understand the connections between social conditions and health in pursuit of effective implementation strategies to address them.

Developing effective models of evidence-based, community-driven HIV prevention and treatment strategies will help ensure that interventions reach all key populations across the life span, including youth and adolescents, pregnant and lactating people, infants exposed to HIV perinatally and through breast milk, sexual

and gender minority populations, and people who use drugs. Social equity and cultural humility emphasize the critical importance of community-centric approaches to improve the public health impact of evidence-based interventions. Further investment can integrate community partnership into research across the continuum, from identifying research questions and designing trials to communicating results and optimizing implementation of evidence-based strategies. The integration of community input into the development and implementation of any new intervention can help reduce barriers to access, ensuring that the benefits of research are shared by all. Additional research may also identify the geographic, economic, structural, and cultural factors that impede or facilitate community engagement in diverse settings. The increasingly frequent natural disasters may compound economic and infrastructure issues that affect health care services for people with HIV and other health concerns. NIH launched the Climate Change and Health Initiative with extensive engagement of scientific, advocacy, and local communities. Further efforts are necessary to plan for the evolving impact of climate change on access to HIV care services.

Support Research on Effective, Person-Centered, and Community-Driven Models of HIV-Related Science and Public Health Communications That Address Intersectional Stigma and Discrimination

Stigma and discrimination limit the access to and engagement with HIV prevention, treatment, and care of people from marginalized groups, such as people of color, people with substance use disorders, those involved in the justice system, or living in rural areas. Information sharing through community partnerships, research collaborations, and dissemination activities can amplify the impact of HIV research and promote health equity. Additional research can inform the development of effective, culturally appropriate communication strategies. Ongoing efforts have explored information and care delivery through nontraditional venues, ranging from barbershops to commercial pharmacies to mobile units. Further research is needed to develop persuasive messaging and reduce intersectional stigma to improve prevention and treatment engagement across diverse populations.

Further research is needed to reduce intersectional stigma.

Credit: istockphoto.com

Expanded investment is needed to support community-based partnerships and facilitate the dissemination and implementation of evidence-based interventions for HIV prevention and treatment, thereby increasing engagement and promoting optimal public health outcomes.

Workforce Development and Infrastructure to Enhance Capacity and Increase Diversity

Continued progress in HIV science across the continuum will require robust investment in the research and health care workforce. Support is needed for research tools, instrumentation, data and physical infrastructure, and computational resources—particularly in institutions that assist medically underserved groups or populations affected by HIV or that historically have been underfunded in the United States and globally. These enhanced capacity-strengthening efforts will promote diversity and representation in the HIV research and health care workforce, leading to better science and health outcomes for people around the world.

Develop and Retain a Skilled and Diverse HIV Research Workforce

A sustained, diverse HIV research workforce is essential to ending the HIV pandemic. Across NIH, policies that prioritize funding for early stage investigators—defined by NIH as scientists within ten years of their terminal degree who have not yet successfully competed for an independent grant—resulted in a steady increase in the number of NIH-supported early stage investigators since 2017; however, the number of early stage investigators in HIV research has not increased to the same extent. OAR has collaborated with NIH ICOs to provide resources to support early career investigators (ECIs), including both early stage investigators and grantees within two years of their first award. OAR's ECI workshops provide mentorship, networking opportunities, and information about HIV research funding opportunities and the NIH grant application process. These workshops have engaged hundreds of ECI participants from under-represented or under-resourced domestic and international groups and gathered feedback to plan future professional enrichment activities.

Further investment is needed to better support researchers starting independent research careers and to promote the growth, stability, and diversity of the HIV scientific workforce. Women, people of color, and LGBTQI+ investigators experience unique challenges and barriers that limit career advancement. In addition to clear equity factors, focused and sustained support for women's entry and re-entry in HIV research careers is critical to addressing the health of all persons with or at risk for HIV acquisition. OAR continues to work collaboratively with the NIH ICOs toward realizing a diverse HIV workforce by supporting programs that specifically address the challenges and barriers experienced by women, people of color, and LGBTQI+ investigators.

Advances in HIV research and treatment have led to people with HIV enjoying longer and healthier lives. However, with these accomplishments come new hurdles, such as understanding the multifactorial implications of aging with HIV. Additional funding and resources are needed to support the next generation of scientists committed to research in emerging and multidisciplinary areas of medicine, including HIV treatment in geriatric populations.

Increase Investment in Facilities and Resources to Enhance Research Capacity in Diverse Settings and in Institutions with Historically Limited Resources

HIV research requires specialized equipment, modern physical infrastructure (such as laboratories and shared core research facilities), and clinical research networks that are accessible to all. NIH supports HIV research facilities in institutions that serve communities that have been medically underserved or are in locations with historically low levels of NIH funding. NIH also supports capacity building in low- and middle-income countries highly affected by HIV. Increased funding will maintain and strengthen infrastructure while promoting equity in training, capacity building, and public-private partnerships to advance the mission of HIV research throughout the world. Additional investment can also ensure continued support for development of animal models, a critical resource for translational HIV research (e.g., vaccine development).

Increased funding will maintain and strengthen infrastructure while promoting equity in training, capacity building, and public-private partnerships to advance the mission of HIV research throughout the world.

Credit: shutterstock.com

Strengthen Data Infrastructure to Enable Effective Data Management, Accessibility, and Analysis

Investment is needed for NIH to keep pace with evolving scientific and technological advances in generating, storing, sharing, and combining large data sets—such as genomics data, clinical data, and electronic health records—to maximize data utility. Modern data management and sharing infrastructure, such as cloud-based solutions to manage HIV-related data, has many benefits, including enabling the widespread reuse of data, accelerating the pace of HIV research, enabling the validation of research results, and providing equitable access to these high-value data sets. Central to sharing scientific data is the recognized need to make data both secure and available, ensuring that the privacy and autonomy of research participants are protected, in alignment with NIH's data management and sharing policy.

Additional funding for multidisciplinary training, resource development, and infrastructure in diverse settings will enhance the capacity to meet the evolving needs of HIV research.

Conclusion

Despite significant achievements in the field of HIV research, pursuit of a safe and effective vaccine and research toward a cure, as well as healthy aging with HIV, continue. In addition, persistent health disparities reflect gaps in connecting people with prevention and treatment options that are effective, acceptable, and easily accessible.

The additional resources estimated in the FY 2026 NIH HIV/AIDS Professional Judgment Budget would enable NIH to capitalize on scientific opportunities in pursuit of ending the HIV pandemic as we—

- **Encourage fundamental research to promote discovery and advance HIV science.**
- **Develop and assess novel interventions for prevention and treatment of HIV and co-occurring conditions.**
- **Develop strategies to disseminate and implement HIV research discoveries to optimize public health impact.**
- **Invest in infrastructure and workforce development to enhance capacity and increase diversity.**

With increased investment, NIH will be able to maintain its current research momentum while enhancing equity to improve the lives of all individuals, communities, and populations affected by HIV.

Acronyms and Abbreviations

AIDS	acquired immunodeficiency syndrome
AD	Alzheimer's disease
ART	antiretroviral therapy
bNAbs	broadly neutralizing antibodies
BSSR	behavioral and social sciences research
CNS	central nervous system
ECI	early career investigator
EHE	Ending the HIV Epidemic in the U.S. initiative
FDA	U.S. Food and Drug Administration
FY	fiscal year
HIV	human immunodeficiency virus
ICOs	NIH Institutes, Centers, and Offices
NHAS	National HIV/AIDS Strategy for the United States
NIH	National Institutes of Health
OAR	Office of AIDS Research
PEP	post-exposure prophylaxis
PEPFAR	President's Emergency Plan for AIDS Relief
PrEP	pre-exposure prophylaxis
STI	sexually transmitted infection
TB	tuberculosis
U = U	Undetectable = Untransmittable

National Institutes of Health
Office of AIDS Research