

# Donor-Funded HIV Programs in Nigeria: Progress, Systemic Gaps, and Sustainability Pathways from a Health Systems and Financing Perspective (2018–2025)

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## ABSTRACT

Over 40 years after the identification of human immunodeficiency virus (HIV), Nigeria remain one of the highest burdens of HIV infections in the world, accounting for almost 10% of new infections in sub-Saharan Africa. Despite significant investments and technical supports from different foreign donors including the United States President's Emergency Plan for AIDS Relief (PEPFAR), the Global Fund, and bilateral partners. The persistent structural, financial, and programmatic gaps continue to hamper the country's HIV response. This assessment of HIV-related interventions in Nigeria examines what has been achieved, what still need to be done, and how to establish a sustainable and domestically owned HIV care. The review summarizes evidence from peer-reviewed literature (2018–2025) and major institutional reports (UNAIDS, NACA, WHO, PEPFAR) to assess five key domains: coverage and access, funding and sustainability, health system strengthening, monitoring and evaluation, and sociocultural barriers. Evidence shows that while substantial progress has been achieved in testing, antiretroviral therapy (ART) coverage, and community-based care, the HIV response remains heavily donor-dependent, urban-centered, and fragmented across vertical program streams. The review concludes that to achieve long-term epidemic control (EC) and universal health coverage (UHC) in Nigeria's HIV care and programming with there is a need for domestic financing, health system integration, decentralized service delivery, and data-driven accountability frameworks.

**Keywords:** HIV, Nigeria, donor funding, PEPFAR, Global Fund, sustainability, health systems, intervention gaps, policy reform.

## INTRODUCTION

Nigeria is among the most affected countries in the world by the HIV epidemic with approximately 1.8 million people living with HIV in Nigeria, representing a national prevalence of 1.3% among adults aged 15–49 years (NACA, 2024; UNAIDS, 2024). Nigeria accounts for the second-largest HIV burden in the world, following South Africa, contributes significantly to global pediatric HIV infections, largely through mother-to-child transmission (Chizoba et al., 2020; NACA, 2023). The epidemiological profile of HIV in Nigeria reflects a heterogeneous epidemic, with prevalence rates ranging from 0.5% in some northern states to over 5% in parts of the South-Central region, shaped by gender, geography, and socioeconomic factors (Federal Ministry of Health [FMoH], 2021).

Since the early 2000s, Nigeria's HIV response has been heavily funded by international partners. PEPFAR alone has invested over US\$6 billion since 2004, while the Global Fund has contributed more than US\$2.9 billion across four funding cycles (PEPFAR, 2023; The Global Fund, 2024). These investments have associated with measurable progress, in 2023, ART coverage exceeded 90% of diagnosed individuals, and viral suppression rates increased to approximately 86%, aiming at the UNAIDS 95-95 targets (UNAIDS, 2023).

However, despite these achievements, Nigeria's HIV response is still facing systemic and programmatic challenges. The sustainability of interventions remains uncertain due to dependence on donors, underfunding within the country, geographic inequities, and reduced demand for services because of stigma (Adebayo et al., 2022). In addition, fragmented monitoring systems, insufficient data use, and verticalized funding structures limit the effectiveness of program coordination (NACA, 2022; WHO, 2023).

Consequently, as the global HIV response transitions toward long-term sustainability, Nigeria must reposition its strategies to ensure that external investments translate into durable, domestically owned health gains. This review, therefore, examines the gaps in HIV-funded interventions in Nigeria, focusing on their implementation effectiveness, sustainability, and policy implications.

Specifically, the review addresses three guiding questions:

1. What progress has been documented progress through HIV-funded interventions in Nigeria between 2018 and 2025?
2. What are the persistent gaps undermining their efficiency and sustainability?
3. What strategic pathways can strengthen domestic ownership and align Nigeria's HIV response with UHC and global epidemic control targets?

## **METHODS**

### **Study Design**

This review was designed as a narrative synthesis of literature and does not constitute a systematic review. Consequently, PRISMA reporting guidelines were not followed, and formal risk-of-bias assessment or quantitative quality scoring of included studies were not undertaken.

### **Literature Search Strategy**

A comprehensive literature search was conducted to identify peer-reviewed articles, policy reports, and program evaluations relevant to HIV-funded interventions in Nigeria between 2018 and 2025. Electronic databases, including PubMed, Web of Science, Scopus, and Google Scholar, were searched alongside institutional repositories from UNAIDS, the National Agency for the Control of AIDS (NACA), the World Health Organization, the Global Fund, and PEPFAR. Search terms combined keywords and Boolean operators related to HIV financing, donor-funded programs, antiretroviral therapy coverage, service integration, sustainability, and health-system performance in Nigeria. Search results were screened at the title and abstract level for relevance to the study objectives, and sources that met the inclusion criteria were retained for full-text review; consistent with the narrative review design of this study, PRISMA reporting guidelines and a formal PRISMA flow diagram were not applied.

### **Data Extraction and Synthesis**

Data extraction focused on three core domains: funding source and program scope, including major donors, funding magnitude, and the primary focus of supported interventions; program outcomes, such as antiretroviral therapy coverage, viral suppression, prevention service coverage, and maternal-child health outcomes; and implementation challenges, encompassing gaps related to service accessibility, funding sustainability, health system integration, and data availability or use. Thematic synthesis was conducted through a four-stage process

comprising initial familiarization with the extracted data, identification of recurrent patterns across studies, systematic coding into five thematic domains of gaps coverage, funding, system integration, monitoring, and stigma and a narrative synthesis that linked funding inputs to observed implementation outcomes.

### Quality Assurance and Credibility

To ensure rigor, the review cross-validated quantitative estimates against multiple data sources particularly UNAIDS, NACA, and WHO dashboards. Only studies using clearly described methodologies or nationally recognized data sources (e.g., NAIIS, Demographic

Health Survey, or PEPFAR evaluation reports) were included. Institutional and peer-reviewed data were triangulated to enhance credibility.

### Data Overview

Table 1 Summary of major HIV funding sources estimated financial contributions, programmatic focus, and implementation characteristics in Nigeria (2018–2025).

| Funding Source       | Period of Support | Total Estimated Investment (US\$) | Programmatic Focus Areas                                                             | Key Achievements                                             | Source                   |
|----------------------|-------------------|-----------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------|
| PEPFAR(U.S.)         | 2004 - 2025       | >6.0 billion                      | ART scale-up, PMTCT, laboratory strengthening, key population programs, surveillance | Over 1.5M PLHIV on ART; 86% viral suppression (2023)         | PEPFAR, 2024             |
| The Global Fund      | 2003 - 2025       | >2.9 billion                      | HIV prevention, procurement, supply chain management, community systems              | Strengthened national ART logistics and supply chain systems | Global fund, 2024        |
| UNAIDS & WHO         | Ongoing           | Technical support                 | Policy coordination, epidemic modeling, 95-95-95 monitoring                          | Standardized national indicators and treatment cascade       | UNAIDS, 2023<br>WHO,2023 |
| UNICEF               | 2015–2025         | ~200 million                      | PMTCT, pediatric ART, adolescent health                                              | Improved early infant diagnosis and child ART coverage       | UNICEF, 2023             |
| Domestic (NACA/FMoH) | National funding  | Variable(~10–15% of total)        | Coordination, surveillance,                                                          | Strengthened strategic frameworks but                        | NACA, 2024               |

|  |  |  |                         |                            |               |
|--|--|--|-------------------------|----------------------------|---------------|
|  |  |  | domestic<br>procurement | limited fiscal<br>autonomy | FMoH,<br>2024 |
|--|--|--|-------------------------|----------------------------|---------------|

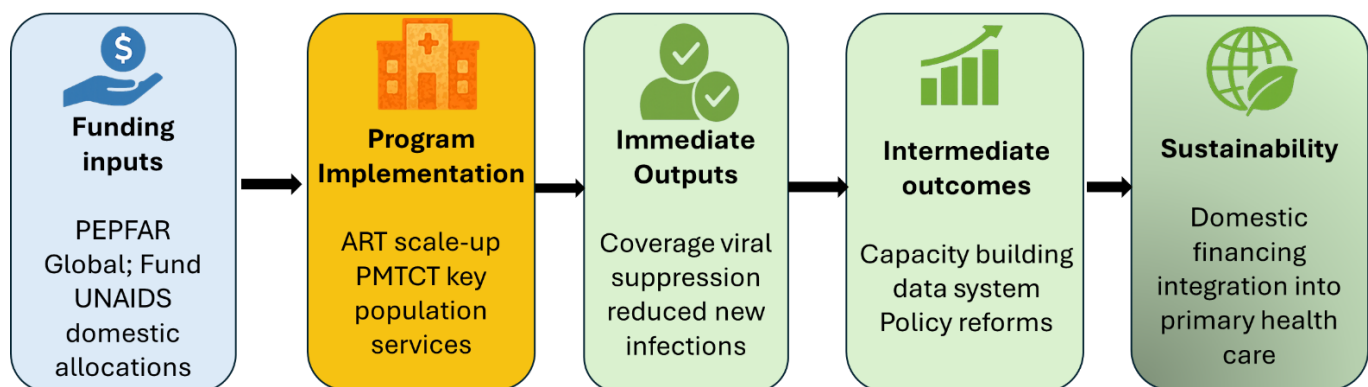
**Note:** Funding figures represent approximate cumulative disbursements or commitments reported in publicly available donor and national documents for the period 2018–2025. Estimates were synthesized from annual reports and country investment profiles and may vary slightly across sources due to differences in reporting cycles, currency conversion, and classification of expenditures. Figures are intended to provide indicative magnitude rather than audited totals.

## Overview of HIV-Funded Interventions in Nigeria

### Evolution and Structure of HIV Financing

Nigeria’s HIV response has evolved through multiple funding streams that reflect the country’s dependency on international partners. Following the 2003 emergency response, the United States President’s Emergency Plan for AIDS Relief (PEPFAR) became the principal donor, focusing on prevention of mother-to-child transmission (PMTCT), ART scale-up, and laboratory strengthening (PEPFAR, 2023). The Global Fund to Fight AIDS, Tuberculosis and Malaria has complemented these efforts by investing in procurement, supply-chain logistics, and community-based prevention programs (Global Fund, 2024). Other multilateral actors such as UNAIDS, UNICEF, WHO, and the World Bank provide technical assistance, while national coordination lies with the National Agency for the Control of AIDS (NACA) and the Federal Ministry of Health (FMoH) (NACA, 2023).

**Figure 1. Conceptual Model Linking HIV Funding Inputs to Implementation Outcomes and Sustainability**



### Programmatic Achievements (2018 – 2025)

Table 2. Nigeria achieved substantial progress across key HIV program indicators between 2018 and 2025.

| Indicator                            | 2018        | 2020        | 2023        | 2025          | Sources      |
|--------------------------------------|-------------|-------------|-------------|---------------|--------------|
| People living with HIV (PLHIV)       | 1.9 million | 1.8 million | 1.8 million | < 1.7 million | UNAIDS, 2024 |
| Adult prevalence (15-49 yrs)         | 1.4 %       | 1.3 %       | 1.3 %       | ≤ 1.1 %       | NACA, 2023   |
| People on ART (% of PLHIV)           | 67 %        | 80%         | 90%         | 95%           | PEPFAR, 2023 |
| Viral suppression (% of ART clients) | 59%         | 76%         | 86%         | 95%           | UNAIDS, 2023 |

|                                           |     |     |     |        |              |
|-------------------------------------------|-----|-----|-----|--------|--------------|
| PMTCT coverage (% of HIV+ pregnant women) | 47% | 62% | 78% | ≥ 90 % | UNICEF, 2024 |
| HIV testing coverage (15–49 yrs)          | 48% | 63% | 71% | ≥ 90 % | FMoH, 2023   |

These results reflect the positive impact of donor-funded initiatives, yet they face underlying inequities and sustainability constraints, particularly in rural and conflict-affected areas.

### Identified Gaps in HIV-Funded Interventions

Despite remarkable progress, persistent gaps continue to affect Nigeria’s path to epidemic control. This part synthesizes evidence under five thematic domains derived from literature and institutional assessments.

#### Coverage and Accessibility Gaps

Although PEPFAR and Global Fund programs expanded testing and treatment, coverage disparities remain pronounced. ART centers are concentrated in urban areas and tertiary facilities, leaving rural and northern populations underserved (Adebayo et al., 2022). Key populations such as men who have sex with men (MSM), people who inject drugs (PWID), and female sex workers are facing structural and legal barriers that limit access to prevention and care (Emmanuel et al., 2025). In 2023, key population ART coverage was estimated at 60–65 %, far below the national average (UNAIDS, 2024). Mobile outreach and community-based ART models have improved testing uptake but remain small-scale due to limited domestic co-funding. Cultural stigma, gender inequality, and insecurity in North-East Nigeria further constrain service expansion (WHO, 2023).

#### Funding and Sustainability Gaps

Nigeria’s HIV response remains heavily donor-dependent, with external funding accounting for approximately 75% of total program expenditure (National Agency for the Control of AIDS [NACA], 2023). Domestic budgetary contributions fluctuate annually and frequently fall below pledged commitments. When donor disbursements decline or are re-allocated, program continuity is threatened, resulting in stock-outs of antiretroviral medicines or diagnostic commodities (Nigeria Health Watch, 2024). Limited private-sector engagement and weak state-level fiscal capacity further exacerbate this fragility. Moreover, donor priorities may shape program design in ways that promote vertical, disease-specific interventions that are not fully aligned with national health-system strengthening agendas (U.S. President’s Emergency Plan for AIDS Relief [PEPFAR], 2023).

#### Service Integration and Health System Gaps

Many HIV interventions in Nigeria operate as isolated programs with minimal integration into primary health care. For instance, ART delivery is often separated from maternal and child health (MCH) or tuberculosis (TB) services, increasing operational inefficiency (Goldstein et al., 2023; Umar, 2021). Although PEPFAR introduced differentiated service-delivery (DSD) models, scale-up within PHC facilities has been inconsistent. Supply-chain and laboratory capacity also remain weak. Periodic shortages of rapid test kits and viral-load reagents have been reported in over one-third of states (FMoH, 2023). Staffing limitations, particularly the shortage of trained medical laboratory scientists and data officers, undermine service quality and continuity.

#### Monitoring, Evaluation, and Data Gaps

Robust data systems are vital for program accountability. Yet Nigeria’s HIV monitoring relies on fragmented reporting frameworks: PEPFAR’s MER system, Global Fund grant dashboards, and the national DHIS2 database often operate in parallel, limiting interoperability (CDC Nigeria, 2022). Real-time data for identifying retention drop-offs and viral-suppression gaps remain insufficient. Subnational disaggregation by gender, age, or key

population is incomplete, constraining precision targeting. Furthermore, local research and implementation-science capacity are underdeveloped, resulting in heavy reliance on external evaluators.

### Stigma, Discrimination, and Sociocultural Barriers

Social stigma continues to impede prevention and treatment uptake. Studies across Lagos, Kano, and Rivers States Nigeria show that over 30% of PLHIV experience workplace or community discrimination (Odimegwu et al., 2017; Ali et al., 2025). Criminalization of same-sex relationships and drug use deters key populations from accessing services, creating hidden epidemics (Emmanuel et al., 2025). Provider bias and inadequate confidentiality practices reinforce distrust in health facilities, while gender-based violence and harmful norms reduce women’s ability to negotiate safer sex or access ART. These sociocultural factors highlight that biomedical interventions alone are insufficient without broader legal and societal reforms.

### Summary of Identified Gaps

**Table 3. Summary of Persistent Gaps in HIV-Funded Interventions in Nigeria (2018–2025)**

| Gap Domain               | Underlying Factors                                                                              | Data Source                         | Implications for Sustainability                    |
|--------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------|
| Coverage & Accessibility | Urban concentration of facilities; legal barriers for key populations; insecurity in North-East | UNAIDS (2024); Adebayo et al., 2022 | Unequal epidemic control; regional resurgence risk |
| Funding & Sustainability | ≥ 75 % donor funding; weak domestic support; volatile budget lines                              | NACA, 2023<br>PEPFAR, 2023          | High dependency; program disruption risk           |
| Service Integration      | Vertical programs; limited PHC linkages; supply-chain bottlenecks                               | FMoH, 2023; Emmanuel et al., 2025   | Inefficiency; limited system resilience            |
| Monitoring & Data        | Fragmented systems (MER, DHIS2); low subnational granularity                                    | CDC Nigeria, 2022; WHO, 2023        | Weak accountability and decision support           |
| Stigma & Socio-cultural  | Criminalization, gender inequality, provider bias                                               | UNAIDS, 2023; Ali et al., 2025      | Reduced service uptake and retention               |

Overall, Nigeria’s HIV response illustrates a paradox of high donor investment yet modest systemic transformation. Donor-funded programs have improved treatment access but have not fully built self-sustaining national structures. Persistent inequities, limited domestic financing, and weak governance continue to impede long-term epidemic control.

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## **Programmatic Successes and Innovations**

Despite persistent gaps, Nigeria's HIV response between 2018 and 2025 demonstrated measurable successes that reveal documented improvements associated with coordinated donor and national efforts.

### **Community-Based Service Delivery**

One of the most significant innovations was the shift toward community-based antiretroviral therapy (CBART) and differentiated service delivery (DSD) models. PEPFAR-supported community ART programs extended medication refills to community pharmacies and outreach centers, reducing clinic congestion and improving retention (PEPFAR, 2023). Studies in Lagos and Benue States of Nigeria reported retention rates above 90% after 12 months in CBART cohorts, compared with 78% in facility-based models (NACA, 2023; Ibiloye, 2024). Community-based HIV self-testing and index partner testing increased case identification, particularly among men and adolescents who historically had low facility attendance (UNAIDS, 2024; Mwango et al., 2020). These approaches exemplify how decentralized delivery can strengthen equity and cost-effectiveness when adequately funded.

### **PMTCT and Pediatric HIV Control**

Progress in prevention of mother-to-child transmission (PMTCT) has been one of Nigeria's strongest achievements. UNICEF-supported programs integrated HIV testing into antenatal and immunization clinics, increasing PMTCT coverage from 47% (2018) to 78% (2023) (UNICEF, 2024). Early infant diagnosis turnaround times declined through the expansion of dried-blood-spot transport networks, while point-of-care testing shortened result delivery. Pediatric ART coverage, historically below 30%, improved substantially following the introduction of child-friendly dolutegravir formulations and multi-month dispensing (FMoH, 2023). These interventions highlight how donor support can catalyze innovation when linked with national policy adoption.

### **Laboratory and Supply-Chain Strengthening**

Global Fund grants under the *Resilient and Sustainable Systems for Health (RSSH)* initiative enhanced Nigeria's laboratory network and supply-chain efficiency. Automated viral-load testing platforms and the creation of zonal sample-referral systems improved national testing capacity (Global Fund, 2024). Integration of the Logistics Management Information System (LMIS) within NACA's DHIS2 framework enabled near real-time commodity tracking, reducing stock-out frequency from 32 % (2019) to 11 % (2023).

### **Digital Health and Data Innovation**

Donor-driven investments accelerated digital transformation. The Nigeria HIV Data Repository (NHDR) a joint NACA/CDC platform harmonized multiple reporting streams and allowed analytics for treatment-cascade monitoring (CDC Nigeria, 2022). Mobile-based adherence applications ("e-Tracker" and "CliniPAK") piloted under PEPFAR improved follow-up reminders and data completeness. These digital tools strengthened program transparency and accountability, laying a foundation for evidence-based planning.

### **Sustainability and Transition Challenges**

While donor programs have produced measurable outcomes, long-term sustainability remains precarious as global priorities shift and funding plateaus.

### **Fiscal Dependence and Limited Domestic Investment**

Nigeria's fiscal reliance on external donors persists domestic contributions cover less than 20 % of total HIV expenditure (NACA, 2023). When Global Fund and PEPFAR disbursements were temporarily delayed in 2020 and 2025 respectively, several state programs reported ARV shortages and interrupted services delivery underscoring the fragility of continuity (Nigeria Health Watch, 2025). Establishing predictable domestic

financing streams through earmarked health taxes or inclusion within the National Health Insurance Authority (NHIA) remains critical.

### **Institutional and Governance Weaknesses**

Weak inter-ministerial coordination and overlapping donor reporting frameworks create inefficiency. State-level HIV agencies often lack legal autonomy and budgetary authority to implement sustainable programs. Furthermore, donor-driven priorities sometimes overshadow local epidemiological realities, resulting in short-term output targets rather than systemic capacity building (PEPFAR, 2023).

### **Human Resource Constraints**

A high turnover of among skilled health workers and limited incentives for rural deployment undermine program continuity. Donor-funded training often benefits temporary staff without retention strategies, leading to a revolving-door workforce (WHO, 2023). Integrating HIV services into general-health workforce plans and task-shifting policies can strengthen resilience.

### **Transition Risks**

Experiences from Ghana, Kenya, and Botswana indicate that abrupt funding transitions can reduce service quality unless preceded by phased domestic absorption (UNAIDS, 2023; Part, 2025). Nigeria faces similar risk unless explicit transition frameworks are institutionalized. Sustainable financing requires co-financing models, public-private partnerships, and performance-based grants tied to outcome indicators.

### **Policy and Strategic Recommendations**

Drawing from the synthesis of gaps and successes, the following recommendations provide a roadmap toward a more resilient, domestically owned HIV response in Nigeria.

### **Strengthening Domestic Health Financing**

To enhance the sustainability of Nigeria's HIV response, domestic health financing must be substantially strengthened (Olakunde & Ndukwe, 2015; Ogbuabor et al., 2023). This requires increasing federal and state budgetary allocations dedicated to HIV programs and formally integrating HIV services within National Health Insurance Authority (NHIA) benefit packages. The introduction of earmarked levies such as taxes on telecommunications services or alcohol consumption could provide stable, locally generated revenue streams to supplement existing funding. In addition, institutionalizing Medium-Term Expenditure Frameworks (MTEFs) would support predictable, multi-year financial planning and reduce vulnerability to abrupt donor funding fluctuations.

### **Integration of HIV Services into Primary Health Care**

Integrating HIV services into the primary health care (PHC) system is essential for improving access, efficiency, and equity (Goldstein et al., 2023; Dzinamarira et al., 2025). HIV testing, antiretroviral therapy, tuberculosis services, and reproductive-health interventions should be embedded within the Basic Health Care Provision Fund (BHC PF) platform to ensure nationwide coverage. Expanding differentiated service-delivery models across all PHC facilities would enhance client-centered care and decongest tertiary facilities. Furthermore, strengthening supply-chain integration through unified procurement and distribution under the Central Medical Stores would reduce fragmentation and minimize commodity stock-outs.

### **Enhancing Data Systems and Implementation Science**

Robust data systems are critical for evidence-based decision-making and program optimization (Njoka, 2015; Ogundeko-Olugbami et al., 2025). Donor-supported and national monitoring frameworks should be harmonized into a single, interoperable DHIS2-based platform to improve data completeness and reduce reporting burdens.

Investment in implementation science is also needed, including support for local universities and research institutions to conduct operational research and real-time program evaluations. The use of geo-spatial analytics can further strengthen targeting of under-served populations and enable more efficient allocation of limited resources.

### **Addressing Stigma and Legal Barriers**

Persistent stigma and restrictive legal frameworks continue to undermine equitable access to HIV services (Stangl et al., 2022; Boakye et al., 2024). Legal reforms aimed at amending laws that criminalize same-sex relationships and hinder key-population programming are necessary to improve service uptake and trust in the health system. Anti-stigma training should be institutionalized for healthcare providers, alongside enforcement of workplace policies that protect the rights of people living with HIV. Expanding community-led advocacy initiatives and peer-navigation networks would further support demand creation and retention in care among marginalized populations.

### **Building Multi-Sectoral Partnerships**

A resilient HIV response requires coordinated engagement beyond the health sector. Private-sector corporate social responsibility (CSR) initiatives can be leveraged to support procurement of HIV commodities and community education programs (Makwara et al., 2024; Marqusee et al., 2024; Elendu et al., 2025). Collaboration with ministries responsible for education, youth, and labor is also essential for implementing workplace-based testing, prevention initiatives, and adolescent-focused interventions. Finally, donor investments should be deliberately aligned with national health-system strengthening priorities to avoid parallel structures and promote long-term sustainability.

## **CONCLUSION**

Nigeria's HIV response stands at a pivotal moment showing a remarkable epidemiological progress threatening with structural fragility. Donor funding primarily from PEPFAR and the Global Fund has been instrumental in scaling ART coverage and modernizing service delivery. Yet sustainability is undermined by financial dependency, fragmented governance, and persistent inequities. Bridging these gaps requires transitioning from donor-driven, vertical programs to integrated, and domestically financed systems anchored in primary health care. Emphasizing community-based service delivery, robust data systems, and legal reforms will help secure equitable epidemic control. Aligning Nigeria's HIV strategy with the Sustainable Development Goals and universal health-coverage agenda will not only preserve donor gains but also embed the response within a stronger national health architecture capable of confronting future epidemics.

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