EQUITY IN THE HIV RESPONSE

Assessing progress and charting a way forward

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Executive Summary

A commitment to equity has been a defining feature of the global HIV response, serving in many ways as a forerunner of the 2030 Agenda for Sustainable Development. However, the commitment to equity has not always been translated into reality, as major disparities in HIV-related vulnerability, service access and outcomes persist. In addition, specific programming addressing equity in the HIV response is still nascent and there is limited analytical work in this area.

As countries transition away from donor assistance and progress towards universal health coverage, there is growing emphasis on the importance of integrating HIV services into national health systems to support sustainability. However, given the equity advantage of the HIV response, there are concerns that many of the equity gains from HIV programmes could be lost in the transition to a more integrated, less disease focused approach unless care is taken to preserve and build on them.

To shed light on how best to close existing HIV-related equity gaps and to preserve important equity gains in the future, the Technical Working Group on Sustaining the Equity Gains of the Global HIV Response analysed existing programme models and data and undertook reviews of peer reviewed and grey literature. The Technical Working Group drew on these analytical exercises to identify options for the HIV response in moving forward.

A threshold principle of the Technical Working Group's effort is that there can be no sustainability in the HIV response without equity, as a failure to meet the needs of the most vulnerable, marginalized, and underserved individuals and communities will inevitably result in preventable new infections and increase the long-term financial burden of responding to HIV.

Equity is a prerequisite for ending AIDS as a public health threat.

The following key findings and themes were identified by the Technical Working Group and are presented in Chapters 2–6.

Equity in the HIV response: A status report

Chapters 2–4 survey available data to identify key inequities in the HIV response. As shown in Chapter 2, in the 15 countries where Population-Based HIV Impact Assessment (PHIA) surveys have been conducted, rural populations have superior outcomes along the 95–95–95 HIV testing and treatment cascade compared to urban dwellers, higher wealth quintile groups often have better outcomes than people in the poorest quintile, females living with HIV better outcomes than their male counterparts, and younger people (under age 25) living with HIV do worse than their older counterparts. Differences in outcomes between males and females are due to a variety of socioeconomic and cultural factors. Encouragingly, in several countries where multiple PHIA surveys have been conducted, progress has been made over time in closing these equity gaps.

Chapter 3 focuses on key populations who, due largely to structural barriers, have been disproportionately affected by HIV and face poorer outcomes. Indeed, while only representing less than 5% of the global population, key populations and their sex partners accounted for 55% of new HIV infections in 2022. Despite this disproportionate impact, however, dedicated programmes for key populations account for a small fraction of HIV spending. Key populations are often discriminated against, criminalized, and under-represented in standard HIV data collection systems, and under-represented in HIV-related decision-making bodies.

As discussed in Chapter 4, persistent disparities are apparent with respect to other populations affected by HIV. More than ten million children have lost one or both parents to AIDS, and children living with HIV are markedly less likely than adults to receive antiretroviral therapy, causing children to comprise a disproportionate share of AIDS-related deaths. Among adolescent girls and young women, 4000 are newly infected each week; in eastern and southern Africa, adolescent girls and young women are three times as likely to be living with HIV as males their own age. Gender inequalities exist—as reflected, for example, in the global epidemic of gender-based violence, which is linked with heightened HIV risk, increases HIV vulnerability and diminishes the effectiveness of prevention, treatment and care services.

Chapters 2–4 not only describe these persistent inequities, but also highlight the substantial evidence regarding effective strategies for closing these gaps and addressing the needs of populations that are being left behind.

Approaching HIV service integration: Key considerations

Analyses by the Technical Working Group highlight the nuances and complexities of different approaches to HIV service integration. As PHIA surveys document a clear equity advantage of HIV programmes over mainstream health services, wholesale absorption of HIV programmes in the broader health system could result in the loss of the many equity gains of the HIV response (Chapter 2).

By contrast, an analysis in Chapter 5 of country-level data from 182 countries finds that integrating HIV services with other health services (such as sexual and reproductive health and tuberculosis services) is positively associated with equity gains across the 95–95–95 cascade. However, the presence of certain factors—discriminatory attitudes towards people living with HIV, gender inequality and homophobia—is associated with diminished equity. Robust civil society engagement helps address these factors and is associated with improved equity across all HIV outcome indicators considered in this study. This analysis suggests that while service integration can enhance equity, social and structural factors, if unaddressed, can impede realization of these potential benefits.

To provide options on moving forward on decisions about how, when and at what pace to integrate HIV services with other health services, the Technical Working Group categorized countries into four quadrants based on HIV burden and overall health system performance and has identified options for moving forward on HIV service integration.

Moving forward: Prioritizing equity in each phase of the HIV response

Achieving equity will require centring equity in each and every phase and aspect of the global HIV response, including resource mobilization, resource allocation, programme implementation and service delivery, and monitoring and evaluation. Key pathways include: incentivizing adequate, sustainable and equitable financing; harnessing innovative partnerships, new technologies and community systems to reach the most vulnerable and hardest to reach; building and leveraging evidence to guide programming for equity; and cultivating leadership and building robust institutions and an enabling environment to promote equity in a sustainable HIV response.

Additional financing will be needed to close equity gaps, but HIV funding has flattened and there is little prospect that international HIV assistance will increase significantly, if at all. Moving forward, there are three options for freeing up the resources that will be needed for an equity-forward approach: first, preserving and strengthening global solidarity in the HIV response; second, further improving the efficiency of HIV programmes; and third, working with low and middle-income countries to find innovative ways to generate and allocate additional domestic financing, including through taxation approaches and debt relief that incentivizes investments in health and human services. This could include working more deliberately with, rather than against, country determined directions and priorities in health financing and service delivery. As opposed to the traditional supply side approach in the HIV response (deciding at the global level which commodities are needed and recommending that these be delivered by public sector channels at low cost to everyone, regardless of their ability to pay), HIV stakeholders should welcome the trend in countries to a more demand driven approach, providing people with a range of service options and delivery platforms and leveraging communities and the private sector.

The pivotal importance of community-based and community-led responses in promoting equity and sustainability has recurred as a theme across the Technical Working Group's work. Sufficiently resourcing community actors and engaging them as partners in decision-making is an evidence-based way to promote equity.

Finally, a well-considered, well-planned stream of analytics and research is needed to provide deeper insights into and to monitor progress towards closing equity gaps and preserving equity gains in future years.

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EQUITY IN THE HIV RESPONSE: ASSESSING THE STATUS AND CHARTING THE WAY FORWARD

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Introduction

A commitment to equity has been a defining feature of the global HIV response, serving in many ways as a forerunner of the 2030 Agenda for Sustainable Development *(1, 2)*. International solidarity and shared responsibility between countries, civil society and donors on HIV have helped ensure that the fruits of biomedical research benefit countries of all income levels *(3, 4)*. Due in part to robust and sustained financing from both domestic and international sources, almost 30 million people were accessing antiretroviral therapy at the end of 2022, reducing AIDS-related deaths by 69% in less than 20 years, with many of the greatest benefits occurring in low-income settings where access to cutting-edge medical technologies is typically limited *(5)*. The collection and strategic use of data have also helped to identify and respond to disparities as they emerge *(6)*. The leadership of people living with HIV and communities most heavily affected by the AIDS pandemic has injected passion and urgency into the HIV response and helped to facilitate reaching those who need services the most *(7)*.

The commitment of the global HIV response to equity, however, has not always been translated into reality, as major disparities in HIV-related vulnerability, service access and outcomes persist *(8)*. In addition, specific programming addressing equity in the HIV response is still nascent and there is limited analytical work in this area. Moreover, there are significant headwinds on the horizon. While UNAIDS estimates that 35 countries are within reach of global targets for HIV viral suppression by 2025, overall, the world is not on track to end AIDS as a public health threat by 2030. Both international and domestic investments in HIV have stagnated at levels that are far short of what is estimated to be needed to end AIDS as a public health threat. A reduced commitment to multilateralism, deteriorating human rights environments in many countries, a public debt crisis, a growing hostility to gender equality and gender diversity and a declining space for civil society in many parts of the world present new challenges for the HIV response *(9)*. Health priorities of countries and some leading HIV donors have begun to diverge, with the former focused on achieving universal health coverage and the latter (notably in the USA, the leading international HIV donor) emphasizing vertical, disease-specific programmes. Moreover, with a growing emphasis on transitioning over time the financing and provision of the HIV response to countries, there are concerns that equity gains achieved to date could be at risk, especially as international donors have to date financed the lion's share of HIV programming for key and vulnerable populations.

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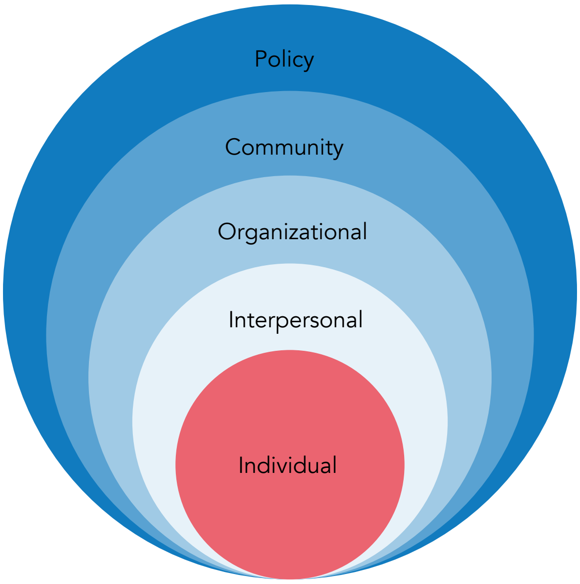
Without addressing and mitigating inequities in the HIV response, however, it will not be possible to end AIDS as a public health threat. Due to both behavioral and structural factors, key populations and their sex partners, who represent under 5% of the global population, accounted for 55% of new HIV infections in 2022 *(10)*. In sub-Saharan Africa, adolescent girls and young women are more than three times more likely than males their own age to be living with HIV *(10)*—only one of many examples of how gender inequalities contribute to HIV-related inequities. Even as numerous countries in eastern and southern Africa are on track to achieve epidemic control, these broad gains mask the fact that some communities in these countries are being left behind, while new HIV infections are flat or on the rise outside sub-Saharan Africa *(10)*. Countries with large income inequalities are associated with more new HIV infections and more AIDS related deaths *(11)*. Closing these equity gaps is a pre-requisite for sustaining the gains from the HIV response—not only to prevent needless human suffering and death, but also to minimize future financial burdens associated with HIV in low and middle-income countries and the broader global community. Leaving behind the communities at greatest risk will result in efforts being well short of goals for ending AIDS and result in new HIV infections and an increased need for HIV treatment services in future years and decades.

The Technical Working Group on Sustaining Equity Gains of the HIV Response has reviewed and synthesized available data and commissioned new analyses to both assess equity in the HIV response to date and identify evidence-based pathways for the future, with a focus on low and middle-income countries. It builds on recent work done by others, including the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund), the World Health Organization (WHO) *(12)*, and UNAIDS *(13)*. Collaboratively convened by the Global Fund, UNAIDS and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the Technical Working Group includes health economists, health policy experts, representatives from both donor agencies and governments of low and middle-income countries, civil society and multilateral agencies.

A threshold question for the Technical Working Group was how to define equity. According to WHO:

> *"[H]ealth equity is the absence of unfair and avoidable or remediable differences in health among population groups defined socially, economically, demographically, geographically, or otherwise. Health equity is intricately linked to both structural and social determinants of health, as these factors influence the distribution of power and resources, as well as health outcomes, experiences, and opportunities within and across populations."*

Figure 1.
Socio-ecological domains that influence health equity



Source: Authors own compilation from *(14)*

Using the WHO definition as a starting point, the Technical Working Group took a holistic approach to its exploration of equity in the context of HIV, examining HIV-related issues of equity with respect to age, gender, geography (urban, rural, peri-urban), income, educational attainment, social marginalization (such as belonging to a stigmatized population), and other measures of social disadvantage (such as migration status, disability status).

Inequities are intrinsically linked with the broader social and structural environment, including but not limited to gender inequality, stigma, discrimination, social exclusion and punitive legal frameworks. Many of these social and structural factors intersect with each other in dynamic, complex ways. Understanding the roots of inequities and developing policy and programmatic strategies to minimize disparities in health access and outcomes includes an assessment of individual-level factors, the social networks in which people live and operate, HIV transmission patterns, community-level factors and the broader societal context (Figure 1).

Key findings of the Technical Working Group

Through its review of data and new analyses, the Technical Working Group identified a number of key findings pertinent to the future of the HIV response—how to close existing inequities, retain equity gains over the long run, and leverage equitable approaches for long-term sustainability:

- ***The HIV response has been found to be more equitable than health-care systems as a whole, although considerable HIV-related gaps and disparities persist. These equity gains are now at potential risk.***

  → Separate analyses by the Technical Working Group—one using results of Population-Based HIV Impact Assessments in 15 low and middle-income countries, and another drawing from country-level data national health databases and global surveillance reports from 182 countries—find that HIV programmes have a distinct equity advantage compared to national health systems. Simply absorbing the HIV response into national health systems would likely result in a loss of at least some of the equity gains derived from the global HIV response. Efforts to achieve universal health coverage and integrate HIV services into primary health care must take care to retain and broaden the comparatively more equitable results of the HIV response. While a siloed response to HIV over the long run also carries risks, caution in moving forward is warranted if the strides made in reducing HIV-related disparities are to be preserved.

- ***The HIV response's success in achieving equity remains imperfect and uneven.***

  → The Technical Working Group also corroborates earlier analysis and presents new data showing that persistent inequities and gaps in the response are slowing progress towards the goal of ending AIDS as a public health threat. Chapters 2–4 describe the magnitude and impact of the considerable, persistent disparities that slow progress in the HIV response. As an example, inequities and inequalities persist with respect to people in the lowest income quintiles, young men and women and key populations. Long-term equity and sustainability of the HIV response will require concerted efforts to close these chronic inequities and also implementation of measures to preserve equity gains across future years and decades.

- ***An emphasis on equity is not an 'initiative', but rather a way of doing business.***

  → The most logical path for ensuring equitable access and outcomes is to focus on equity at each stage of the response—in mobilizing resources, allocating resources, implementing services, devising HIV-related policies, summoning and sustaining political will, and changing social and gender norms. To date, equity initiatives have tended to be one-offs, time limited and nascent programmes.

- ***A focus on equity will require new resources as well as innovative ways of generating the financing required for an equity-forward approach.***

  → Taking the steps needed to reach remote, hard-to-reach or socially vulnerable and marginalized populations, to adapt to changing transmission dynamics and patterns, and to remove barriers to equitable service access may well be more costly than programmes for the general population. Investments in services for these populations will also need to be complemented by sustained investments to promote gender equality and human rights. As a result, the pathways to epidemic control will inevitably be longer for those who are now being left behind than for those who do not experience these access barriers. Taking into account the decline in HIV international assistance, the Technical Working Group identified two primary ways to mobilize the resources needed for an equity-forward approach for HIV—by optimizing the efficiency of HIV programmes, and by supporting low and middle-income countries to devise innovative ways to mobilize essential resources for HIV. At the same time, the ongoing engagement of donors will be critical for working with countries to end AIDS as a public health threat and, as described below, in some cases and for some populations, ongoing donor investments will likely be needed for the foreseeable future.

- ***Long-term sustainability of the equity gains from the HIV response will be enhanced by reducing the divergence between donor and country priorities.***

  → Identifying new domestic resources for equity-focused HIV programmes will require that the global HIV response align its work with trends and policy choices that countries have determined are essential to improve health service access and outcomes. In their pursuit of universal health coverage, countries are building on improved public financial management; social and private health insurance schemes and explicitly leveraging the private sector in the financing and provision of health services, ensuring that those who can afford to pay for health care do so and targeting scarce public resources on the poor and needy. The HIV response, on the other hand, has largely focused on providing free services for everyone, funded primarily through either donor or public financing. This divergence in approach has increased over time. As donor and public resources become scarcer for the HIV response, there is a danger that HIV services for the poor or for marginalized communities will wither while those for the middle-income and rich continue and grow, exacerbating inequities in ways that affect most the populations that are most vulnerable.

- ***Changes in how resources are allocated can help to address and mitigate disparities.***

  → The Technical Working Group's analyses highlighted areas where under-investment (from all sources) is contributing to inequities in health access and outcomes. In particular, programmes to address the HIV-related needs of key populations and of adolescent girls and young women have yet to attract the level of resources warranted by these groups' disproportionate HIV burden. As a category of services, HIV prevention programmes are consistently under-funded, especially in countries that are not on track to achieve epidemic control. Interventions aimed at preventing new HIV infections and improving access and quality of services for key and vulnerable populations warrant further prioritization and investment.

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- ***Innovative methods will be important for incentivizing country investments in equitable approaches.***

    → Although international HIV assistance continues to play an essential role in financing national HIV responses in low and middle-income countries, current donor approaches have disincentivized domestic HIV investments. From the standpoint of a national finance minister in a country with limited resources but expansive domestic needs, it may make little sense to allocate scarce domestic funding for HIV programmes when international donors are prepared to finance them. These disincentives are especially pronounced for programmes for key populations, which are overwhelmingly donor-financed and have received limited attention in many countries and are often socially or politically disfavoured. Focused efforts to alter these incentives could include building equity into co-financing requirements by donors, the use of blended finance platforms focused on equitable results, equity and health-focused debt relief, or conditioning non-health assistance on equity-focused domestic health investments.

- ***The way in which programming and services are designed can help to promote equitable access and outcomes.***

    → Equity should be the first consideration in designing and implementing HIV services, in line with the principle of first reaching those who are furthest behind. Further efforts to scale up differentiated approaches to HIV service delivery, which are especially important for preserving and extending access for marginalized populations that may distrust or not be well served by mainstream health delivery systems, can also facilitate equitable access and outcomes. Although assessment of its impact on HIV incidence remains a work in progress, the PEPFAR-funded DREAMS model provides an example of an equity-focused service design, with health services packaged within a broader array of tailored services to reduce the vulnerability of adolescent girls and young women and to promote their long-term health and well-being.

- ***Strengthening community-led responses can promote both equity and sustainability.***

    → Although communities play a unique role in addressing inequalities and inequities, HIV funding through civil society channels peaked in 2012 and has since declined *(15)*. In addition to community-led service delivery, bolstering community-led monitoring, which has only gained attention and dedicated financing in recent years, can help to identify and address disparities in HIV service access. Programmes that are led by people living with HIV, key populations, women, girls and gender diverse people are often best positioned to address the intersecting barriers that slow uptake of essential services for those most heavily affected by HIV. Funding is also critical for community-led advocacy for more effective, equitable approaches.

- ***Strategic consideration will need to be given to whether, when and how to integrate HIV services into broader health services.***

    → To close persistent gaps and sustain equity gains, it would be wise for the HIV response to take a strategic approach to adapting to inevitable changes in national health systems. The push to achieve universal health coverage prioritizes service integration under the umbrella of primary health care. In the case of the HIV response, service integration offers both advantages and disadvantages, and no one size fits all model exists with respect to integration of HIV services in broader health systems. Analyses by the Technical Working Group indicate that the national HIV burden and degree of health coverage can serve as useful metrics for deciding when and how to integrate HIV in broader health systems.

- ***The supply-side approach of the HIV response will need to become more demand driven.***

    → There are other ways that the HIV response will need to adapt to country determined approaches for expanding access to health services. For example, even with enhanced community engagement, the HIV response has been largely top–down in its approach to deciding which services should be delivered and how best to deliver them, whereas many countries are now working to decentralize health service delivery. In pursuing the top–down approach, the HIV response has prioritized public sector service delivery channels and has not typically encouraged the involvement of private sector actors. Especially as the spectrum of HIV prevention and treatment tools continues to expand, the HIV response should aim to provide as broad an array of service options as possible, with the aim of enabling people to select the service combinations and service delivery approaches that meet their needs. As countries increasingly adopt an 'all of domestic and all of market' approach for the financing and delivery of health services, it is neither feasible nor wise for HIV programmes to ignore or oppose leveraging the private sector to support key elements of the response. While working to preserve the essential attributes of HIV service delivery, including the commitment to equitable approaches, the HIV response should strategically leverage the growing role of the private sector, in part to reduce burdens on HIV donors and national HIV programmes and focus finite resources on those who lack the ability to pay for private-sector services. A more diversified approach to HIV service delivery also takes account of the variations in health-seeking behaviours across different socioeconomic and gender groups and encourages innovation in reaching young people in the digital world.

- ***As key populations are typically the furthest behind, they will have a longer 'glide path' for epidemic control compared to national populations at large. As a result, programmes for key populations will need to continue to largely rely on external donor support for the foreseeable future.***

  → Even as HIV programmes are increasingly integrated in primary care systems, donors will need to prioritize service approaches and platforms for populations that are often not well served by mainstream service systems. Among others, diplomacy, advocacy, capacity-building support, legal and policy reform (where indicated) and, strengthening key population-friendly services will be needed to prepare health systems to provide good quality, non-discriminatory care to all populations.

- ***Approaches are merited to generate in a cost-effective manner the data that will be required to guide equity-focused decision-making.***

  → Those responsible for the HIV response can be rightfully proud of its exceptionally comprehensive and nimble systems for collecting, reporting and using data to inform policy and strategy. However, existing HIV-related data systems and approaches have not been specifically designed to monitor equity across all aspects of the response. The HIV response should strategically build on existing efforts to generate more equity-focused studies, such as Population-Based HIV Impact Assessments, ongoing work to develop less costly models for key population size estimations, new approaches to measures the percentage of HIV services that are effectively integrated, and discussions aiming to develop feasible metrics for measuring the percentage of HIV services that are community led. New cost-effective tools and approaches will be required to close important equity related evidence gaps, including assessments of gender inequalities and human rights barriers, HIV-related vulnerabilities, service access, service outcomes and impact for the most HIV-vulnerable people who belong to priority populations, such as migrants, people with disabilities and people living in fragile states.

- ***A focus on equity might be more costly in the short run, but it has the potential to generate much larger long-term dividends.***

  → A failure to ensure that HIV programmes reach all populations in need will merely extend and amplify the financial demands that the AIDS pandemic will make in future decades. For example, without measures to ensure equitable access to HIV-related health technologies, including but not limited to regional/local manufacturing and South to South cooperation for technology transfer, the long-term costs of responding to HIV will mount, as preventable new infections persist and as people living with HIV develop advanced disease that requires costly acute care. There is a need for further research and analysis to strengthen the economic argument for focusing on equity.

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- ***There are important efficiency enhancing opportunities in the HIV response that can free up funds needed to underwrite an equity-focused approach.***

    → The HIV response has a long record of doing more with less, and there is evidence that the technical efficiency of HIV programmes has increased over time *(16)*. Moreover, recent studies have shown that investing in HIV has positive spillover effects on: all-cause mortality *(17)*; maternal and child health outcomes *(18)*; education of young girls and boys and on macroeconomic growth *(19)*. However, in an era where funding is likely to be limited for a broad array of health and social service priorities in low and middle-income countries, finding additional ways to optimize efficiency will be needed to free up resources for equity-forward programmes. As a growing number of countries advance towards epidemic control, rationalizing, harmonizing and streamlining data gathering and reporting, simplifying supervision and management structures and finding more cost-effective ways for training and supervision may be warranted. This is likely to generate savings that can be reallocated to efforts to close chronic inequities and gaps in coverage. In addition, while national HIV responses will still be needed even after a country achieves epidemic control, a degree of downsizing in investments in certain HIV programmes may be justified at that point, freeing resources for equity-focused efforts. Further opportunities for efficiency gains are also possible through: deploying the right intervention mix at the right places for the right population groups; getting the right prices for key inputs (e.g. test kits, medicines, equipment or labour); adopting cost-effective service delivery modalities; and harnessing integrated health and community system investment across health and development programmes and funders.

- ***The equity and sustainability of the HIV response will require the application of an equity lens across not only implementation but also monitoring, evaluation and research efforts.***

    → Balancing the need to reduce donor required reporting, HIV programmes should consider reporting disaggregated data on age, gender, geography, income, education, social marginalization, and other social disadvantage measures. In addition, consideration should be given to developing context specific tools to measure social vulnerability, given the strong correlation between social vulnerability and adverse health outcomes *(20)*. The application of tools like Lorenz curves, as highlighted in Chapter 2, can also help track progress in closing equity gaps. Routine monitoring of performance and outcomes gaps is warranted, as well as optimal use of resource allocating tools that quantify trade-offs between efficiency and equity. Participatory, community-engaged implementation science can aid planning and programme implementation in addressing contextually specific barriers or the appropriate targeting of interventions. Equity should be prioritized within the sustainability planning process, including ongoing research efforts to support the sustainability of equity-focused interventions.

How the report is organized

The bulk of this report is devoted to the Technical Working Group's analysis of different equity dimensions of the HIV response. In what follows, recognizing the enormous contributions to our understanding of the impact of HIV and HIV spending on inequality and inequity by Markus Haacker, a forever-valued member of the Equity Technical Working Group who passed on as this report was being conceived, Charles Birungi and Michael A. Obst provide a very brief synthesis of some of his notable works.

In Chapter 2, Gary Gaumer and colleagues analyse results from Population-Based HIV Impact Assessments in 15 high-burden countries to identify, quantify and discuss disparities in HIV service access and outcomes based on demographic factors such as geography, age, sex and educational attainment.

In Chapter 3, Jennifer Kates and colleagues explore the epidemic's disproportionate impact on key populations, including primary sources of vulnerability for these populations and barriers to service access.

In Chapter 4, Annaliese M. Limb and colleagues examine HIV-related disparities experienced by children and adolescent girls and young women, as well as the contribution of gender-based violence to HIV vulnerability among women and girls.

In Chapter 5, Erik Lamontagne and colleagues draw on country reported data to examine the issues associated with the integration of HIV services in broader health systems. This chapter uses available data to explore when and where service integration is advantageous for people living with HIV as well as circumstances in which rapid service integration may not be advisable.

In Chapter 6, Shufang Zhang and colleagues summarize key findings and conclusions from the Technical Working Group's work. It offers a framework for decision-making to close HIV-related equity gaps and to preserve equity gains over the long run. In particular, the chapter identifies options for embedding a focus on equity into decisions regarding resource mobilization, resource pooling, resource allocation, resource utilization, improving governance, forging strategic partnerships and leveraging evidence for impact in the context of health systems, social and gender norms and policy institutions.

This report underscores the complexity and context specific considerations involved in prioritizing equity and sustainability in the HIV response. It aims to advance progress towards ensuring that the HIV response works for all people and communities in all settings—not only in the immediate future but across the many years and decades that will be needed to address the needs of the nearly 40 million people who are living with HIV.

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Markus Haacker

Bringing a ‘soul’ to the study of the AIDS pandemic to advance health equity

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In August 2023, macroeconomist Markus Haacker died unexpectedly at the age of 53. The recipient of a PhD in economics from the London School of Economics and Political Science, Haacker devoted his professional life to the study of AIDS and its economic and social impacts in low and middle-income countries.

As his colleagues, just like many others all over the world, the Technical Working Group valued his original, independent and critical way of thinking. Those who had the opportunity to get to know Haacker on a more personal level discovered a dedicated father and connoisseur of the arts, especially literature, music and theatre.

Haacker brought a ‘soul’ to his study of the AIDS pandemic—a feature frequently lacking in economic analyses. Social justice considerations, including questions of health inequalities and inequities, shaped Haacker’s work as they have shaped the global response to HIV as a whole, with changing focus as the HIV epidemic changed over time.

Haacker made critical contributions to the still-evolving understanding of the macroeconomic impact of the AIDS pandemic, refining our understanding of AIDS as an exceptional development challenge. From 1998 to 2008, Haacker worked in the African Department of the International Monetary Fund, also editing the IMF publication *The Macroeconomics of HIV/AIDS* in 2004 *(1)*. While documenting the considerable global, regional and in-country inequalities and inequities with respect to the HIV burden, Haacker was skeptical of claims of the profound macroeconomic effects of AIDS, finding the evidence unconvincing. While Haacker’s critical analysis highlighted the shortcomings of certain types of economic analysis in the context of HIV/AIDS, his expectation that AIDS would have limited macroeconomic effects has been supported subsequent, compelling evidence regarding the impact of HIV programmes on all-cause mortality *(2)*, economic growth and educational attainment *(3)*.

Beginning in 2008, Haacker increasingly focused on strategies to optimize HIV spending, undertaking economic evaluations of HIV interventions, national HIV programmes and the global HIV response. Specifically, Haacker used cost-effectiveness analysis to assess specific HIV interventions and to inform decisions regarding the allocation of finite HIV resources. Haacker also helped expand knowledge regarding the impact of AIDS on government finances and public services. This line of work culminated in his 2016 book, *The Economics of the Global Response to HIV/AIDS (4)*.

As in the case of Haacker’s early work on the AIDS pandemic’s macroeconomic effects, subsequent research has built on Haacker’s early cost-effectiveness work to focus on behavioural issues that complement a purely economic analysis as the foundation for the design of effective interventions. Haacker anticipated as much, advising that cost-effectiveness analysis should be accompanied by multi-criteria decision analysis.

Haacker engaged in the growing reliance on ‘cascades of care’ (such as the 90–90–90 and 95–95–95 HIV targets) in the global HIV response. In an analysis in 2020, Haacker found that the use of a cross-sectional snapshot of outcomes to map improvements across each step in the cascade might obscure a deterioration in the odds of progression along the cascade.

In 2023, Haacker, as co-leader of the Economic Impact of HIV project, summarized the evolution of knowledge about the AIDS pandemic’s economic effect in *The Economic Impact of HIV: A Summary of the Evidence (5)*. As he did across all of his work, Haacker emphasized the human dimensions of the global HIV response, reminding readers that, regardless of the pandemic's precise macroeconomic effects, the global HIV response prevented a much more severe and catastrophic loss of life, as experts had projected in 2000 that AIDS would claim the lives of up to half of all young people in several high-burden countries.

In recent years, Haacker's work became even more forward-looking, pondering how AIDS might further evolve and what the most important priorities would be for the future of the global HIV response. For example, Haacker joined with colleagues to expand the knowledge base on the steady 'greying of AIDS', undertaking an evidence-based modeling of the future of Botswana's HIV epidemic. While HIV prevalence in Botswana is likely to decline in future years as a result of reduced HIV incidence, Haacker and colleagues found that health-care needs for people living with HIV will increase and become more complex as they age and that HIV is likely to emerge as a "key factor complicating the management of the growing burden" of noncommunicable diseases in Botswana *(6)*.

Haacker continued grappling with the best ways to use economic analysis to guide sound public health decision-making and to assess the impact of global health initiatives. With an eye towards optimizing equity in the HIV response, Haacker took note that common metrics like life years gained, deaths or infections avoided, or health gains calculated relative to GDP per capita are blind about where the gains arise and whether the gains contribute to improving health equality across countries. In lieu of these metrics, Haacker used the Gini-Index (of the distribution of life expectancies across countries) as a measure of health inequality and a concentration index ranking countries by GDP per capita in 2002 as a measure of health inequity. Haacker found that health inequality decreased significantly between 2002 and 2019, with HIV, tuberculosis and malaria contributing about half of this change. Relative to population, the most effective contributions to the decline in global inequality came from a group of countries in sub-Saharan Africa (Botswana, Burundi, Central African Republic, Côte d'Ivoire, Democratic Republic of Congo, Eswatini, Ethiopia, Malawi, Namibia, Rwanda, South Africa, United Republic of Tanzania, Uganda, Zambia and Zimbabwe), which started out with very low life expectancy and have experienced large gains in life expectancy dominated by HIV, tuberculosis and malaria. Similarly, the largest decline in health inequity came from a group of countries which started out at relatively low levels of GDP per capita: Fifteen countries (Burundi, Democratic Republic of the Congo, Ethiopia, Guinea-Bissau, Kenya, Laos, Liberia, Malawi, Myanmar, Niger, Rwanda, Sierra Leone, United Republic of Tanzania, Uganda and Zambia), representing 5% of the global population, accounted for more than half of the global decline in health inequity.

Haacker's work deepened our understanding of the role of the HIV response in narrowing health inequalities and inequities, but his untimely death means that he could not tackle his long-term intention to broaden this approach to non-HIV-related health issues. He improved the methodology of HIV policy evaluations and stressed the importance of social justice issues in economic analysis. His persistent re-examination of conventional notions cautioned against adopting convenient, but perhaps oversimplified, solutions. His legacy is the call to continue the important work in reducing health disparities around the world.

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02

EQUITY ANALYSIS OF HIV AND DOMESTIC HEALTH SYSTEM SERVICE-RELATED OUTCOMES BY WEALTH, URBAN OR RURAL RESIDENCE, SEX AND AGE

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Key messages

- Population-based HIV Impact Assessment (PHIA) studies in 15 countries provide insight regarding disparities in HIV-related outcomes, including where the HIV response has narrowed inequities as well as where inequities persist.
- Populations in the lowest income quintiles tend to do worse as compared with those in the highest income quintile.
- In addition, across all 15 countries, outcomes on the HIV treatment cascade (awareness of HIV status, receipt of HIV treatment and HIV viral suppression) are poorer among males and people under age 25 compared to their female and over-25 counterparts, respectively.
- In the six countries where two rounds of PHIA surveys have been completed, substantial improvement has been made in outcomes along the HIV treatment cascade.
- An analysis of health outcomes in 13 countries finds greater health equity in the HIV response across wealth quintiles and between urban and rural dwellers compared to the general health system. Additional research is warranted to improve our understanding of how and why these differences between HIV programmes and broader health systems have occurred.

Introduction

The fight against AIDS is widely viewed as one of the more successful global health initiatives, with nearly US$ 200 billion in cumulative investments and many countries at or near epidemic control. With flat or declining budgets, a push by donors for sustainability and a desire by countries to integrate HIV services into the general health system, there is the concern that equity could be compromised. Understanding who has access to and benefits from these services is imperative to understanding the strengths and limitations of service provision.

In 2021, the World Health Organization (WHO) and the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) found a high level of inequalities with respect to HIV, tuberculosis and malaria among subgroups that were the poorest, living in rural areas, or least educated *(1)*. The analysis by WHO and the Global Fund found evidence of progress towards reducing inequalities and emphasized the need to continuously monitor and develop stronger strategies to mitigate inequities.

This analysis, undertaken on behalf of the Technical Working Group, aims to build on this 2021 report by analysing the equity of the HIV response in 15 low and middle-income countries. By analysing survey data from the Population-based HIV Impact Assessment (PHIA) Project, researchers seek to assess how equitable the HIV response is by comparing HIV health services outcomes by urban or rural residence, wealth, sex, and age among people living with HIV in a subset of low and middle-income countries. The exercise also compares equity in the HIV response to equity in the overall country health system.

The analysis examines four related questions using publicly available household survey data from 15 countries:

1. Are there disparities in HIV outcomes among people living with HIV from lower-wealth quintiles and from rural areas, relative to their counterparts?
2. Are there disparities in clinical HIV outcomes by sex or age group?
3. To the extent that such disparities are identified, have there been improvements over time and have these improvements differed between groups or countries?

4. How do disparities in HIV clinical outcomes compare to disparities in broader, country health system outcomes?

How this analysis was undertaken

Survey data on HIV were obtained from the PHIA Project. PHIA data include cross-sectional, nationally representative household surveys that have been introduced in 17 countries, starting in 2015, to examine the status of the HIV epidemic and the effectiveness of national programmes in reaching HIV epidemic control. The surveys include a biometric component based on a blood test for respondents, which allows measurement of HIV status, viral load, and other outcomes. The PHIA surveys used in the present analysis were funded through PEPFAR and led by the Ministry of Health in participating countries with support from the U.S. Centers for Disease Control and Prevention, in partnership with ICAP at Columbia University. At least one round of PHIA survey data are now available for 15 countries (2), including Botswana, Cameroon, Côte d'Ivoire, Eswatini, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, United Republic of Tanzania, Uganda, Zambia, and Zimbabwe. Six countries have two rounds of PHIA data available, allowing for analysis over time, including: Eswatini, Lesotho, Malawi, Uganda, Zambia and Zimbabwe.

The analysis uses the following PHIA indicators to compare outcomes across groups:

- The percentage of people living with HIV who are aware of their status.
- The percentage of people living with HIV who are on treatment.
- The percentage of people living with HIV who are virally suppressed.

Survey data on country health systems were obtained from the Demographic and Health Surveys (DHS) from 2006 to 2022. These data are used to analyse disparities in general health system outcomes, as compared to HIV service-related outcomes. DHS provides information on a wide array of health-related indicators. The present analysis uses the percentage of births with some antenatal care and under-five mortality rates to assess general health system equity. These indicators were the most consistently available across all countries and were deemed by the research team to be the best comparison points to equity within the HIV response.

Researchers measured equity by: *(1)* comparing mean HIV outcome levels by subpopulation and determining if indicators showed statistically significant differences between each population group; *(2)* analysing progress on each indicator and reduction of disparities over time and comparing concentration indices and Lorenz curves on outcomes across population segments *(3)* and; *(3)* comparing equity in HIV service-related outcomes with equity in domestic health systems through an analysis of percentage of births which receive some antenatal care and under-five mortality rates.

To understand the statistical significance of differences between subpopulations and across time (i.e. PHIA 1 versus PHIA 2), researchers performed Chi-squared and Fisher's exact test, with the threshold for significance set at 0.05. As general health system statistics from DHS data come from approved authorities, one can assume that observed differences are significant and based on statistically powered sample sizes. Subpopulation classification within PHIA and DHS data, such as rural versus urban subpopulations, are based on country-specific definitions.

Research findings

Equity in HIV service uptake and outcomes for rural and low-wealth populations

Among the 15 countries, only Kenya shows no significant difference between urban and rural resident with respect to awareness of HIV status (see Table 1). Seven countries have higher rates of awareness among people living with HIV who reside in rural areas, including Botswana, Eswatini, Lesotho, Malawi, Namibia, Zambia and Zimbabwe. Six countries showed lower rates of awareness among people living in rural areas, including Cameroon, Côte d'Ivoire, Mozambique, Rwanda, United Republic of Tanzania, and Uganda. The Ethiopia survey did not contain data on rural populations. Certain countries, such as Botswana, had minor differences (1%) in rates of awareness between rural and urban populations (95.4% and 94.5%, respectively), although the difference remained significant ($p<0.001$) due to the large sample size (n=312 018). (Results in the tables in this chapter are rounded to the nearest whole number for space, with significance indicated.)

Two countries, Kenya and Rwanda, showed no significant differences in the percentage of rural-dwelling people living with HIV versus their urban dwelling counterparts who were on treatment. Seven countries showed higher share of people on treatment among people living in rural areas, including Botswana, Eswatini, Lesotho, Malawi, Namibia, Zambia and Zimbabwe. Five countries had lower shares on treatment among people living in rural areas, including Cameroon, Côte d'Ivoire, Mozambique, United Republic of Tanzania and Uganda.

Among the 15 countries, three countries (Côte d'Ivoire, Kenya and Rwanda) show no significant differences in viral load suppression between rural and urban dwelling people living with HIV. Seven countries, including Botswana, Cameroon, Eswatini, Malawi, Namibia, Zambia and Zimbabwe, show superior outcomes among rural populations. Four countries show worse viral load suppression outcomes among rural populations, including Lesotho, Mozambique, United Republic of Tanzania and Uganda. Certain countries, such as Botswana, had minor outcome disparities but overall high viral load suppression rates for both urban and rural populations (91% and 92%, respectively). Conversely, Côte d'Ivoire showed significant disparities between groups, although the overall viral suppression rates remain low, at only 34% (Table 1).

Two countries—Kenya and Rwanda—showed no significant differences in awareness of HIV status, share on treatment, and viral load suppression outcomes between low and high-wealth populations (Table 2). Eight countries, including Cameroon, Ethiopia, Lesotho, Malawi, Mozambique, United Republic of Tanzania, Uganda and Zambia, had significantly poorer outcomes for people living with HIV in the lowest wealth quintile when compared to those in the highest wealth quintile. Five countries, including Botswana, Côte d'Ivoire,

Table 1.
HIV service access and outcomes by Urban/Rural Status

Country (Year)	Awareness of HIV Status				Percent on Treatment				Percent Virally Suppressed			
	Urban	Rural	diff	Sig.	Urban	Rural	diff	Sig.	Urban	Rural	diff	Sig.
Botswana (2021)	95%	95%	1%	***	93%	94%	1%	***	91%	92%	1%	***
Cameroon (2017)	56%	55%	-1%	***	52%	51%	-1%	***	41%	42%	1%	***
Côte d'Ivoire (2017)	52%	46%	-6%	***	47%	44%	-3%	***	34%	34%	0%	NS
Eswatini (2021)	92%	94%	2%	***	90%	91%	1%	***	85%	88%	3%	***
Ethiopia (2017)	-	-	-	-	-	-	-	-	-	-	-	-
Kenya (2018)	79%	79%	-0%	NS	76%	76%	0%	NS	70%	69%	-1%	NS
Lesotho (2020)	90%	90%	1%	***	87%	88%	1%	***	80%	79%	-1%	***
Malawi (2020)	87%	89%	2%	***	84%	87%	3%	***	79%	85%	6%	***
Mozambique (2021)	75%	68%	-7%	***	73%	66%	-7%	***	66%	58%	-8%	***
Namibia (2017)	83%	89%	6%	***	80%	86%	6%	***	73%	78%	5%	***
Rwanda (2018)	87%	82%	-5%	*	85%	80%	-5%	NS	77%	72%	-5%	NS
Tanzania (2016)	63%	56%	-7%	***	59%	52%	-7%	***	51%	46%	-5%	***
Uganda (2020)	84%	79%	-5%	***	81%	75%	-6%	***	75%	69%	-6%	***
Zambia (2021)	89%	89%	-0%	***	87%	87%	1%	***	83%	85%	2%	***
Zimbabwe (2020)	85%	88%	3%	***	81%	86%	5%	***	73%	78%	5%	***

* p<0.05, ** p<0.01, ***p<0.001, NS= Not significant based on Chi squared test or Fisher's exact test

Diff. represents the percentage point difference between the two groups

Note: Results were rounded to the closest complete number due to space. As such, certain countries with minor differences appear to have the same percentage result. However, due to the large sample size these results remain statistically significant outcome differences (i.e. Botswana and Kenya).

Note: Results are based on the most recent PHIA survey for each country. Ethiopia PHIA doesn't include data on Urban/Rural residence

Table 2.
HIV service access and outcomes by Wealth Quintile

Country (Year)	Awareness of HIV status				Percent on Treatment				Percent Virally Suppressed			
	Lowest Wealth Quintile	Highest Wealth Quintile	diff	Sig.	Lowest Wealth Quintile	Highest Wealth Quintile	diff	Sig.	Lowest Wealth Quintile	Highest Wealth Quintile	diff	Sig.
Botswana (2021)	96%	95%	-0.4%	**	94%	92%	-2%	***	92%	91%	-1%	***
Cameroon (2017)	40%	55%	15%	***	37%	51%	14%	***	26%	41%	15%	***
Côte d’Ivoire (2017)	58%	30%	-28%	***	51%	29%	-22%	***	40%	16%	-24%	***
Eswatini (2021)	94%	92%	-2%	***	93%	90%	-3%	***	88%	87%	-1%	***
Ethiopia (2017)	74%	76%	2%	***	71%	72%	1%	***	57%	68%	11%	***
Kenya (2018)	79%	77%	-2%	NS	75%	75%	0%	NS	66%	71%	5%	NS
Lesotho (2020)	89%	91%	2%	***	87%	88%	1%	***	79%	81%	2%	***
Malawi (2020)	87%	88%	1%	***	83%	86%	3%	***	80%	83%	3%	***
Mozambique (2021)	59%	78%	19%	***	55%	76%	21%	***	49%	70%	21%	***
Namibia (2017)	88%	75%	-13%	***	86%	71%	-15%	***	78%	58%	-20%	***
Rwanda (2018)	82%	84%	2%	NS	81%	81%	0%	NS	73%	72%	-1%	NS
Tanzania (2016)	49%	63%	14%	***	46%	60%	14%	***	39%	51%	12%	***
Uganda (2020)	76%	85%	9%	***	71%	82%	11%	***	60%	79%	19%	***
Zambia (2021)	83%	90%	7%	***	81%	89%	8%	***	77%	85%	8%	***
Zimbabwe (2020)	89%	84%	-5%	***	86%	80%	-6%	***	77%	72%	-5%	***

* $p<0.05$, ** $p<0.01$, ***$p<0.001$, NS= Not significant based on Chi squared test or Fisher’s exact test

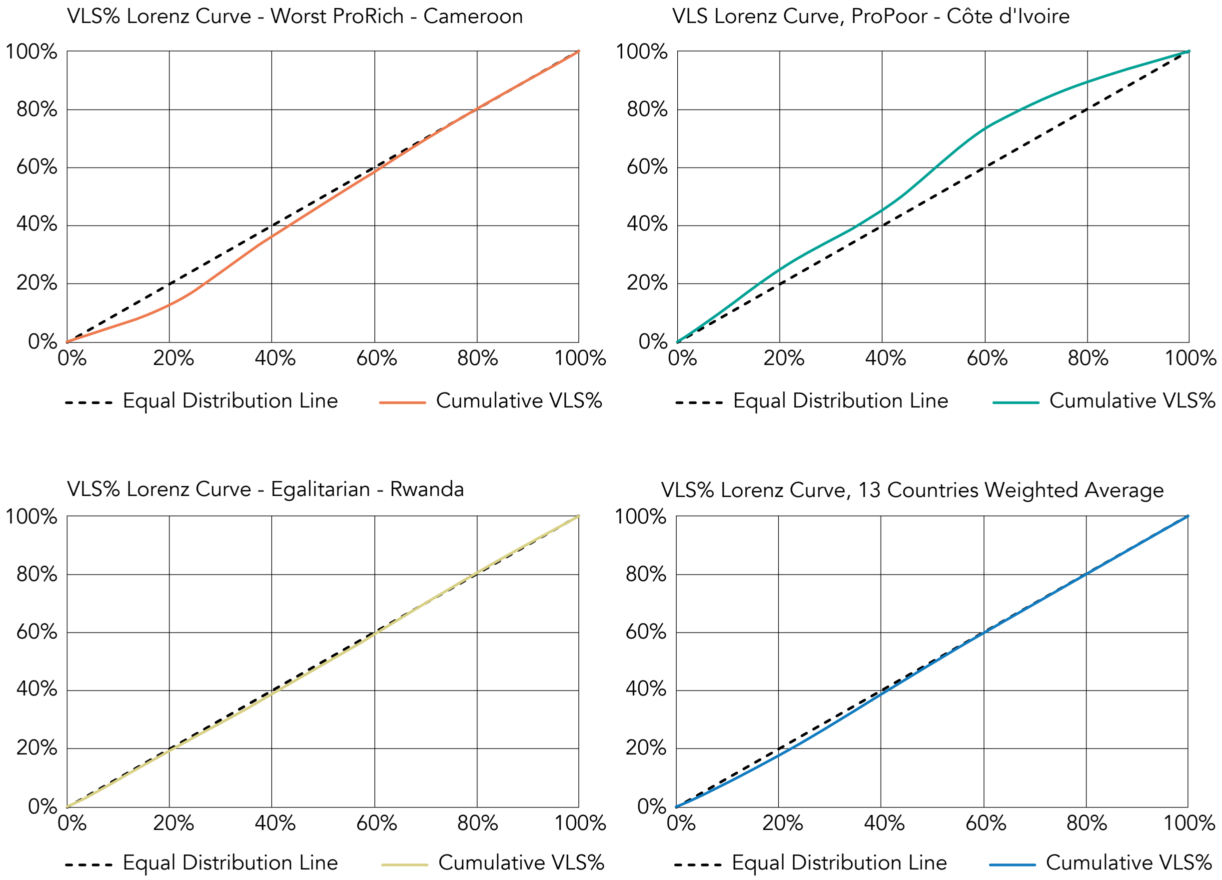
Note: Results are based on the most recent PHIA survey for each country.

Diff. represents the percentage point difference between the two groups

Eswatini, Namibia, and Zimbabwe, showed higher outcomes among the lowest wealth quintile when compared to the highest wealth quintile. As in the case of disparities between urban and rural populations, certain countries displayed minor inequities between population groups but had high overall outcomes. Botswana, for example, achieved 92% viral load suppression in the lowest-wealth quintile and 91% in the highest-wealth quintile; while statistically significant, these are positive overall results across wealth quintiles. In comparison, Rwanda showed significant disparities between low and high-wealth populations, although there is greater room for improvement, with viral suppression coverage of only 73% and 72%, respectively, as of the most recent PHIA surveys.

Figure 1 displays outcomes by wealth quintile using a Lorenz curve. These figures show the actual distribution of viral load suppression outcomes across wealth quintiles, as compared to the goal of equal distribution (as indicated by the dotted line). Viral load suppression outcomes showed three distinct patterns across countries: (1) countries which displayed better outcomes for people with more wealth (e.g. Cameroon); (2) countries which displayed better outcomes for people with less wealth (e.g. Côte d’Ivoire); and (3) those which displayed similar outcomes across wealth quintiles (e.g. Rwanda). The weighted average across 13 countries shows no significant disparity.

Figure 1.
Equity in viral load suppression outcomes by wealth quintile



Notes: X axis is the cumulative households by wealth distribution; Y axis is the cumulative percentage of viral load suppression.

Differences in HIV service uptake and outcomes by sex and age

PHIA surveys also allowed an analysis of HIV service outcomes by sex and age. As shown in Table 3, females are significantly more likely to be aware of their HIV status, be on treatment, and reach viral load suppression than males across all 15 countries.

By age, as shown in Table 4, people living with HIV who are under age 25 have significantly lower rates of awareness of their HIV status, share on treatment and viral load suppression across all 15 countries.

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Table 3.
HIV service access and outcomes by Sex

Country	Awareness of HIV status				Percent on Treatment				Percent Virally Suppressed			
	Male	Female	diff	Sig.	Male	Female	diff	Sig.	Male	Female	diff	Sig.
Botswana (2021)	93%	96%	3%	***	90%	95%	5%	***	87%	93%	6%	***
Cameroon (2017)	51%	57%	6%	***	48%	53%	5%	***	39%	42%	3%	***
Côte d'Ivoire (2017)	40%	54%	14%	***	34%	51%	17%	***	22%	39%	17%	***
Eswatini (2021)	91%	94%	3%	***	88%	93%	5%	***	85%	89%	4%	***
Ethiopia (2017)	70%	82%	12%	***	69%	80%	11%	***	63%	68%	5%	***
Kenya (2018)	72%	83%	11%	***	68%	80%	12%	***	62%	72%	10%	***
Lesotho (2020)	88%	91%	3%	***	84%	89%	5%	***	76%	82%	6%	***
Malawi (2020)	85%	90%	5%	***	83%	89%	6%	***	80%	86%	6%	***
Mozambique (2021)	68%	73%	5%	***	65%	71%	6%	***	57%	64%	7%	***
Namibia (2017)	80%	89%	9%	***	75%	87%	12%	***	67%	80%	13%	***
Rwanda (2018)	80%	86%	6%	*	78%	84%	6%	*	67%	77%	10%	***
Tanzania (2016)	51%	63%	12%	***	46%	60%	14%	***	38%	53%	15%	***
Uganda (2020)	76%	83%	7%	***	72%	81%	9%	***	66%	75%	9%	***
Zambia (2021)	87%	90%	3%	***	85%	88%	3%	***	83%	84%	1%	***
Zimbabwe (2020)	84%	88%	4%	***	81%	86%	5%	***	72%	79%	7%	***

* p<0.05, ** p<0.01, ***p<0.001, NS= Not significant based on Chi squared test or Fisher's exact test
Note: Results are based on the most recent PHIA survey for each country.
Diff. represents the percentage point difference between the two groups

Table 4.
HIV Service Access and outcomes by Age

Country	Awareness of HIV status				Percent on Treatment				Percent Virally Suppressed			
	Age < 25	Age >=25	diff	Sig.	Age < 25	Age >=25	diff	Sig.	Age < 25	Age >=25	diff	Sig.
Botswana (2021)	84%	95%	11%	***	83%	93%	10%	***	76%	92%	16%	***
Cameroon (2017)	21%	60%	39%	***	19%	56%	37%	***	14%	45%	31%	***
Côte d'Ivoire (2017)	33%	51%	18%	***	32%	47%	15%	***	18%	35%	17%	***
Eswatini (2021)	85%	95%	10%	***	82%	92%	10%	***	73%	89%	16%	***
Ethiopia (2017)	63%	80%	17%	***	63%	77%	14%	***	47%	68%	21%	***
Kenya (2018)	70%	80%	10%	*	65%	77%	12%	*	52%	71%	19%	***
Lesotho (2020)	82%	91%	9%	***	78%	88%	10%	***	64%	81%	17%	***
Malawi (2020)	76%	89%	13%	***	73%	88%	15%	***	66%	85%	19%	***
Mozambique (2021)	54%	75%	21%	***	52%	72%	20%	***	41%	65%	24%	***
Namibia (2017)	71%	88%	17%	***	70%	84%	14%	***	60%	77%	17%	***
Rwanda (2018)	69%	85%	16%	***	66%	83%	17%	***	56%	75%	19%	***
Tanzania (2016)	49%	60%	11%	***	45%	56%	11%	***	38%	49%	11%	***
Uganda (2020)	60%	84%	24%	***	57%	81%	24%	***	49%	75%	26%	***
Zambia (2021)	73%	90%	17%	***	72%	89%	17%	***	67%	86%	19%	***
Zimbabwe (2020)	75%	88%	13%	***	72%	86%	14%	***	58%	78%	20%	***

* p<0.05, ** p<0.01, ***p<0.001, NS= Not significant based on Chi squared test or Fisher's exact test
Note: Results are based on the most recent PHIA survey for each country.
Diff. represents the percentage point difference between the two groups

HIV outcomes and progress towards equity over time

Six of the 15 countries (Eswatini (2016, 2021), Lesotho (2016, 2021), Malawi (2015, 2020), Uganda (2016, 2020), Zambia (2016, 2021) and Zimbabwe (2015, 2020)) have completed two PHIA surveys, with four to five years between the first and second surveys. These multiple surveys allow an analysis of progress on each HIV-related health services indicator and assess equity trends for each of these countries.

As shown in Table 5, cumulative awareness of HIV status, share on treatment and viral load suppression coverage improved in all six countries with multiple PHIA surveys. (See Appendix A for country-specific improvement rates.) Both urban and rural populations were significantly below the 95% viral load suppression goal in PHIA 1 (58% and 59%, respectively), but made significant progress on this indicator by the second round of PHIA surveys (78% and 79%, respectively). Similar improvements were seen in awareness of HIV status between PHIA 1 and 2 for urban (75% to 87%) and rural populations (75% to 86%), along with HIV treatment coverage among urban (66% to 84%) and rural populations (68% to 84%).

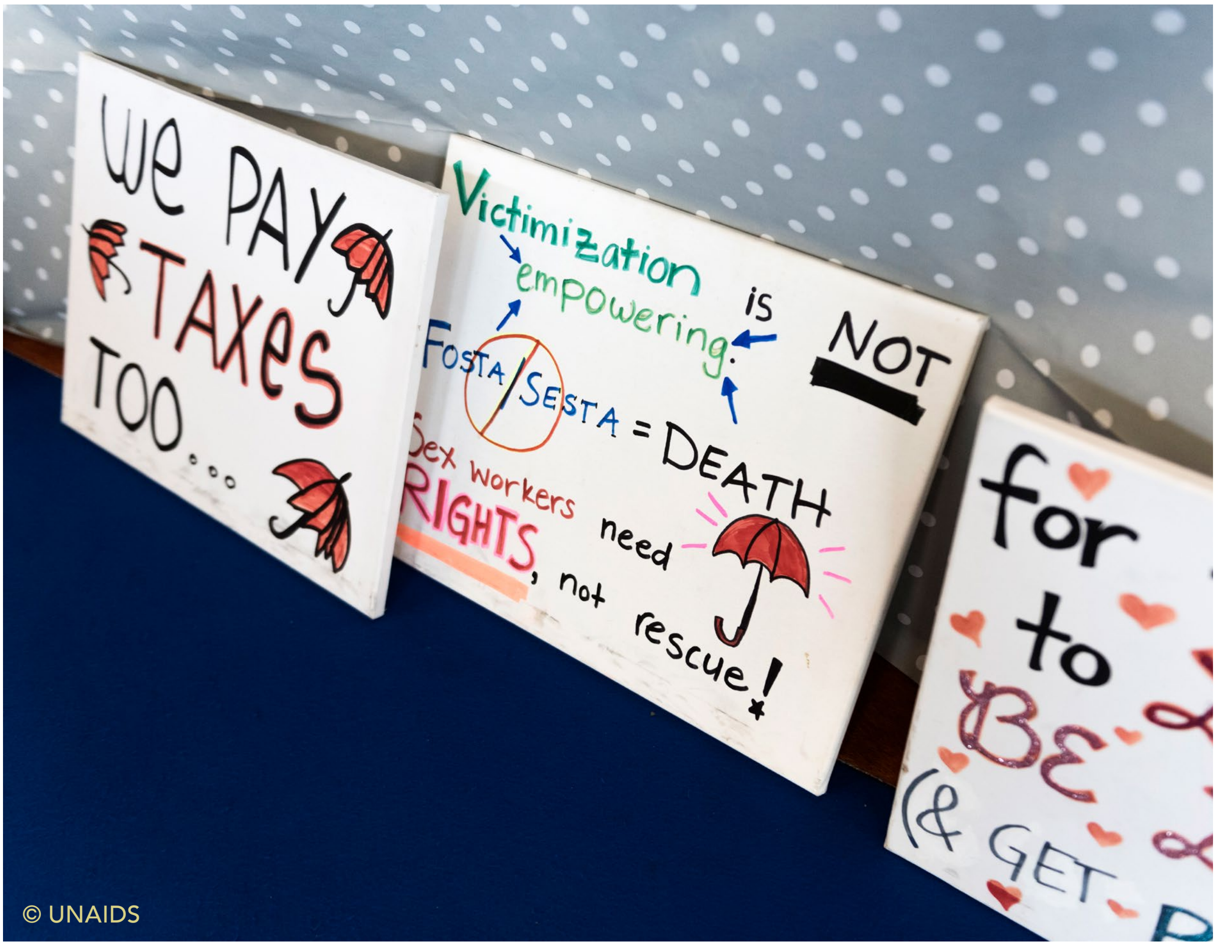
In addition, both low and high-wealth quintiles achieved improved awareness, treatment and viral load suppression outcomes. Viral load suppression for the lowest wealth quintile during PHIA 1 (about 56%) was slightly below the highest wealth quintile (61%) and improved to 74% and 80%, respectively. Overall, viral load suppression rates improved across all wealth groups by between 30% and 40% by PHIA 2. Similar improvements were seen in awareness of HIV status among people living with HIV in the lowest wealth quintile (75% to 84%) and highest wealth quintile (76% to 87%). The percentage of people living with HIV on treatment also improved across wealth quintiles, including the lowest wealth (66% to 81%) and the highest wealth quintile (68% to 85%).

Females had higher rates of awareness, treatment and viral load suppression when compared to males in both PHIA 1 and PHIA 2, but the gap closed modestly for all three indicators. Viral load suppression outcomes improved at a faster rate for males, with an improvement of 53% to 75%, when

Table 5.
Changes in HIV Service and Outcomes Over Time*

Population sub-group	Awareness of HIV status				Percent on Treatment				Percent Virally Suppressed			
	PHIA1	PHIA2	diff	Sig.	PHIA1	PHIA2	diff	Sig.	PHIA1	PHIA2	dif	Sig.
	75.5	85.5			66.5	83			57.4	78.0		
Wealth Quintile												
1-Lowest	75%	84%	9%	***	66%	81%	15%	***	56%	74%	18%	***
2-Second	76%	87%	11%	***	69%	85%	16%	***	60%	80%	20%	***
3-Middle	73%	87%	14%	***	65%	85%	20%	***	57%	81%	24%	***
4-Fourth	75%	86%	11%	***	68%	83%	15%	***	59%	78%	19%	***
5-Highest	76%	87%	11%	***	68%	85%	17%	***	61%	80%	19%	***
Sex												
1-Male	71%	83%	12%	***	63%	80%	17%	***	53%	75%	22%	***
2-Female	78%	88%	10%	***	70%	86%	16%	***	62%	81%	19%	***
Urban/Rural												
1-Urban	75%	87%	12%	***	66%	84%	18%	***	58%	78%	20%	***
2-Rural	75%	86%	11%	***	68%	84%	16%	***	59%	79%	20%	***
Adult Age												
Age <25	53%	71%	18%	***	47%	68%	21%	***	36%	59%	23%	***
Age >=25	78%	88%	10%	***	70%	86%	16%	***	62%	81%	19%	***

*Weighted average across the 6 countries using total population as a weight.
* p<0.05, ** p<0.01, ***p<0.001, NS= Not significant based on Chi squared test or Fisher's exact test
Diff. represents the percentage point difference between the two groups



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compared to females, which experienced improved viral load suppression coverage from 62% to 81%. Males also improved rates of awareness of HIV status (71% to 83%) and share on treatment (63% to 80%) at faster rates than females (78% to 88% for awareness of status; 70% to 86% for being on treatment).

Table 5 also shows that in these six countries, taken together, there has been a significant improvement in HIV service utilization for the under-25 adult population for all three indicators. Individuals under age 25 experienced a roughly 18% increase in awareness of one's HIV positive status between PHIA 1 and PHIA 2, a 21% improvement in treatment rates, and a 23% increase in viral load suppression. These improvements constitute an increase almost twice as large as the improvements in the older population segment. With respect to viral load suppression, people living with HIV under age 25 experienced an increase from 36% to 59%, while the over 25 age group improved from 62% to 81%.

Along with cumulative progress towards epidemic control, many individual countries showed progress in reducing equity gaps. Zambia, for example, started with lower baseline results during PHIA 1 and achieved the most significant improvement across all three clinical outcomes while simultaneously reducing disparities between subpopulations.

Data from the first round of PHIA in Zambia showed significant inequities for rural and low-wealth populations. Based on analysis of Zambia's progress between the two surveys, there were substantial improvements in all three HIV indicators for all subpopulations (see Table 6). Segments of the population which showed poorer outcomes than their counterparts during PHIA 1 (i.e. rural, low wealth, males, and individuals under age 25) achieved higher improvement rates than their PHIA 2 counterparts. This trend contributed to lower disparities across groups. Large outcome improvements for rural populations led to them exceeding viral load suppression rates for their urban counterparts by 2021. There are still outcome disparities for the low wealth, males, and young adult segments in Zambia, but they are more modest than in 2016.

Viral load suppression rates improved significantly in Zambia, reaching high levels for most population

Table 6.
Zambia PHIA Data

	Awareness of HIV status				Percent on Treatment				Percent Virally Suppressed			
	PHIA 1	PHIA 2	diff	Sig.	PHIA 1	PHIA 2	diff	Sig.	PHIA 1	PHIA 2	diff	Sig.
Wealth												
Lowest	64%	83%	19%	***	51%	80%	29%	***	43%	77%	34%	***
Second	64%	88%	24%	***	54%	87%	33%	***	48%	84%	36%	***
Middle	69%	89%	20%	***	60%	87%	27%	***	55%	84%	29%	***
Fourth	70%	91%	21%	***	59%	89%	30%	***	52%	85%	33%	***
Highest	79%	90%	11%	***	71%	89%	18%	***	64%	85%	21%	***
Sex												
Male	69%	87%	18%	***	61%	85%	24%	***	54%	83%	29%	***
Female	72%	90%	18%	***	62%	88%	26%	***	56%	84%	28%	***
Location												
Urban	74%	89%	15%	***	65%	87%	22%	***	59%	83%	24%	***
Rural	66%	89%	23%	***	56%	87%	31%	***	51%	85%	34%	***
Age												
Age <25	46%	73%	27%	***	38%	72%	34%	***	28%	67%	39%	***
Age >= 25	75%	90%	15%	***	65%	89%	24%	***	60%	86%	26%	***

* p<0.05, ** p<0.01, ***p<0.001, NS= Not significant based on Chi squared test or Fisher's exact test
Diff. represents the percentage point difference between the two groups

segments. As shown in Figure 2, Zambia had high baseline viral load inequities for rural and low wealth population segments in PHIA 1, but showed marked improvement in these disparities by PHIA 2. In Figure 2, green bars indicate PHIA 1 results while red bars indicate PHIA 2 results. The purple line highlights the percentage improvement across each subgroup. In Zambia, the lowest two wealth quintiles increased viral load suppression outcomes by 34% and 36%, respectively. Viral load suppression outcomes for rural residents increased by 34% while outcomes for those under age 25 increased by 39%. Note that in Zambia the purple line (showing the percentage improvement for the subpopulation segment) indicates that the improvements in viral load suppression are largest for the lowest wealth quintile groups, the rural population, males, and adults under age 25—suggesting improvements in equity.

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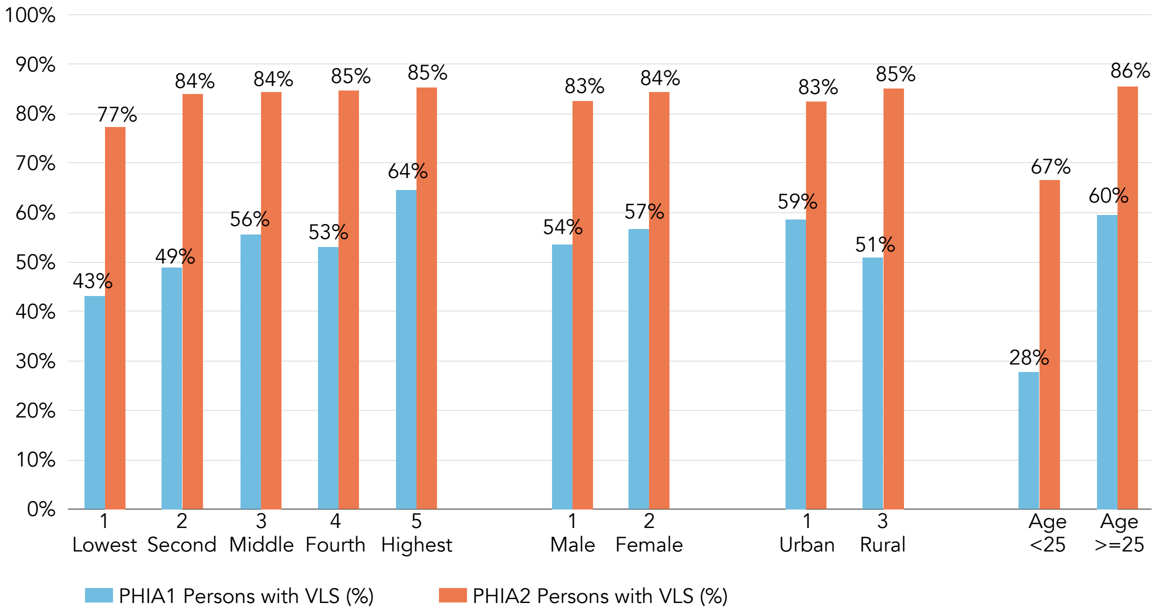
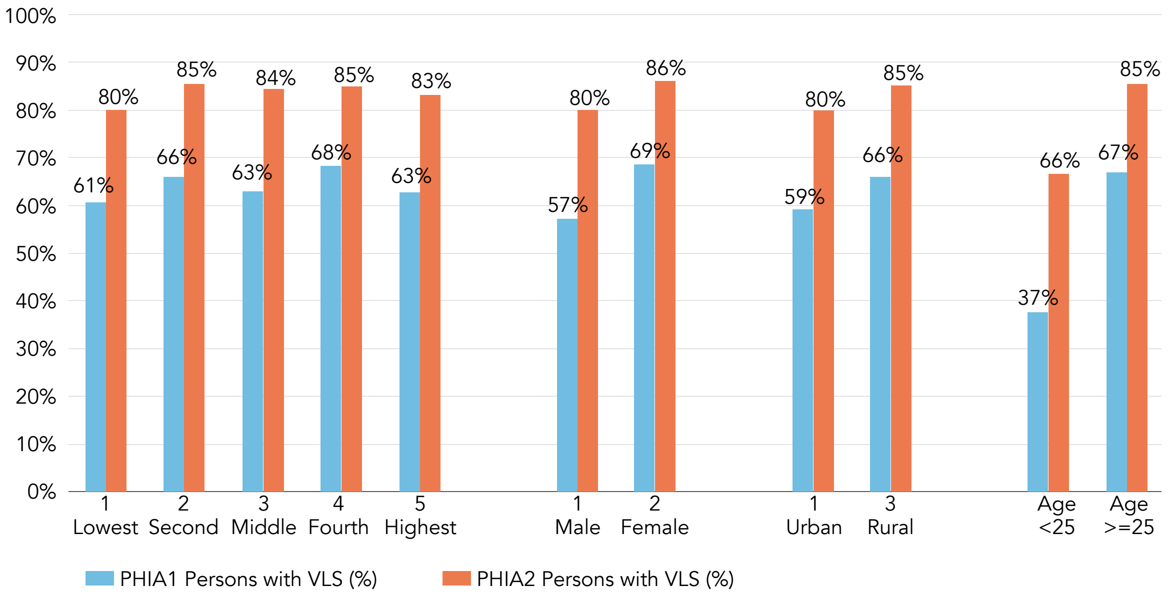
Figure 2.
Zambia: Improvements in viral load suppression outcomes across wealth, sex, location and age



VLS=viral load suppression.

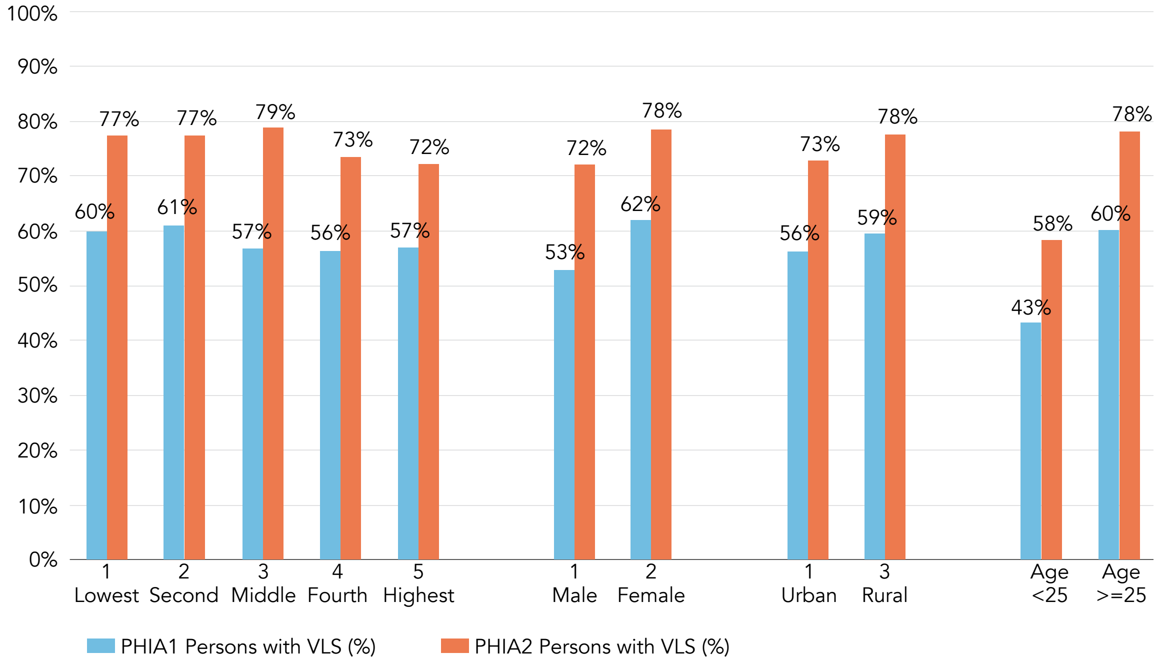
Malawi also showed large improvements in viral load suppression across all population segments, and certain notable improvements in equity, although equity improvements were not seen for the low wealth and rural populations (see Figure 3). Improvements in viral load suppression are comparable across the wealth quintiles (the lowest and highest wealth quintiles increased by 20% and 21%, respectively), while urban populations increased viral load suppression coverage at a higher rate than the rural population segment. Viral load outcome disparities along the lines of sex and age decreased, as the rate of improvement in viral load suppression was higher for males and the under age 25 population segments than for their respective counterparts.

Figure 3.
Malawi: Improvements in viral load suppression outcomes across wealth, sex, location, and age



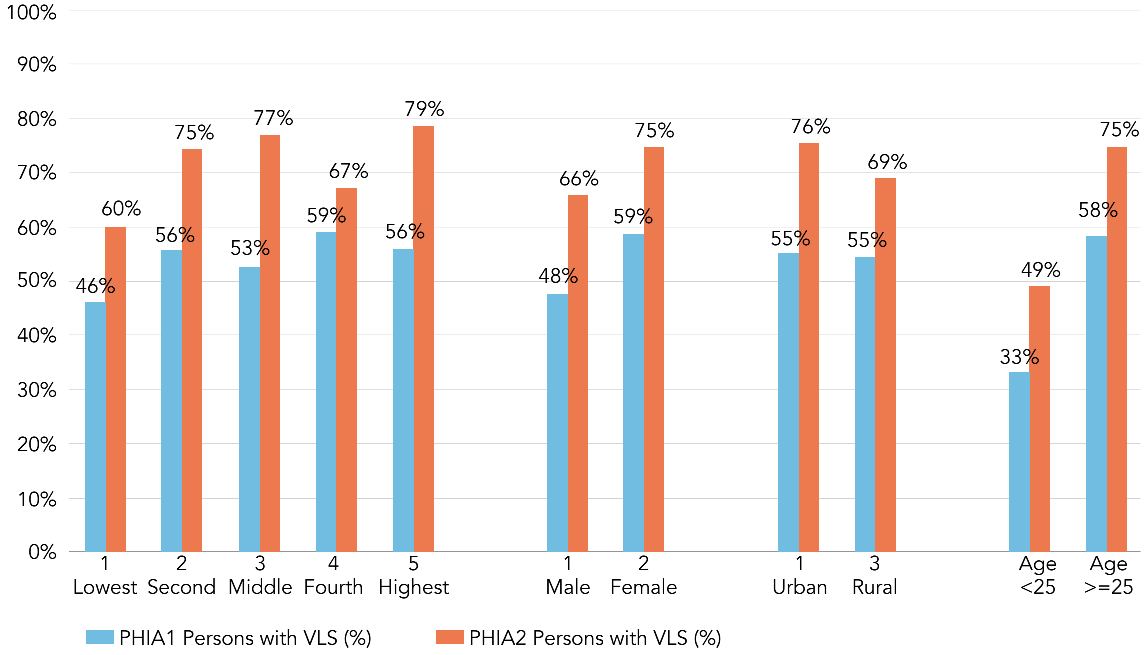
VLS=viral load suppression.

Figure 4.
Zimbabwe: Improvements in viral load suppression outcomes across wealth, sex, location and age



Both Zimbabwe and Uganda showed marked improvement in viral load suppression between PHIA 1 and PHIA 2 (Figures 4 and 5). Each country made progress in reducing disparities, however gaps remain. In Zimbabwe, people living with HIV in the lowest wealth quintiles and those living in rural areas had comparable or higher viral load suppression than counterparts in the most recent PHIA survey. Similarly, disparities for males and young adults both improved in the most recent data.

Figure 5.
Uganda: Improvements in viral load suppression outcomes across wealth, sex, location, and age



Uganda (Figure 5) had lower overall viral load suppression outcomes in both PHIA 1 and PHIA 2 than the other five countries with multiple PHIA surveys. Although rates of viral load suppression improved for every segment of the population of people living with HIV, significant disparities still exist. Outcomes for low wealth segments, the rural population, and males still lag behind their counterparts. Those in the lowest wealth quintile have coverage of 60%, significantly lower than the highest quintile at 79%. Disparities in viral load suppression also exist between males (66%) and females (75%) and among those living in rural (69%) versus urban areas (76%). The most significant disparity is along age lines, with only 49% of people under age 25 who are living with HIV achieving viral load suppression compared to 75% of people above age 25.

In both Eswatini and Lesotho, viral load suppression coverage in PHIA 1 was already quite high. PHIA 2 shows that both countries have made significant progress in reducing viral load suppression outcome disparities as of the most recent PHIA survey.

In Eswatini, individuals in the lowest and highest-wealth quintile showed 88% and 87% viral load suppression in PHIA 2 (see Figure 6). People living in rural and urban areas have similar results of 88% and 85%. While a minor gap exists, viral load suppression rates have improved since the early survey among both males (85%) and females (89%). The largest equity gap remains for people living with HIV under age 25, with a viral load suppression rate of 73% compared to 89% for individuals over age 25.

In Lesotho (Figure 7), similar rates of viral load suppression were found among the lowest wealth quintile (79%) and the highest (81%), and for those in urban (80%), peri-urban (83%), and rural areas (79%). Sex and age disparities remain a concern in Lesotho, with males having only 76% viral load suppression compared to 82% for females. Even more significant is the age disparity, with those under age 25 at only 64% viral load suppression compared to 81% for those over age 25.

Figure 6.
Eswatini: Improvements in viral load suppression outcomes across wealth, sex, location, and age

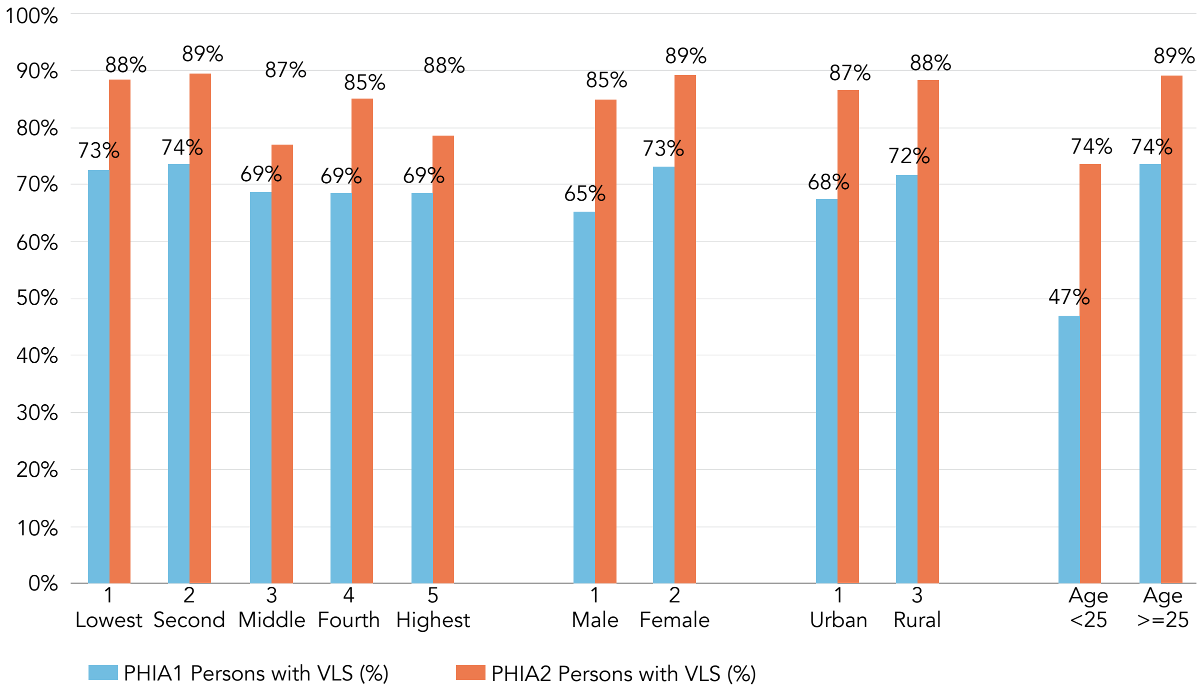
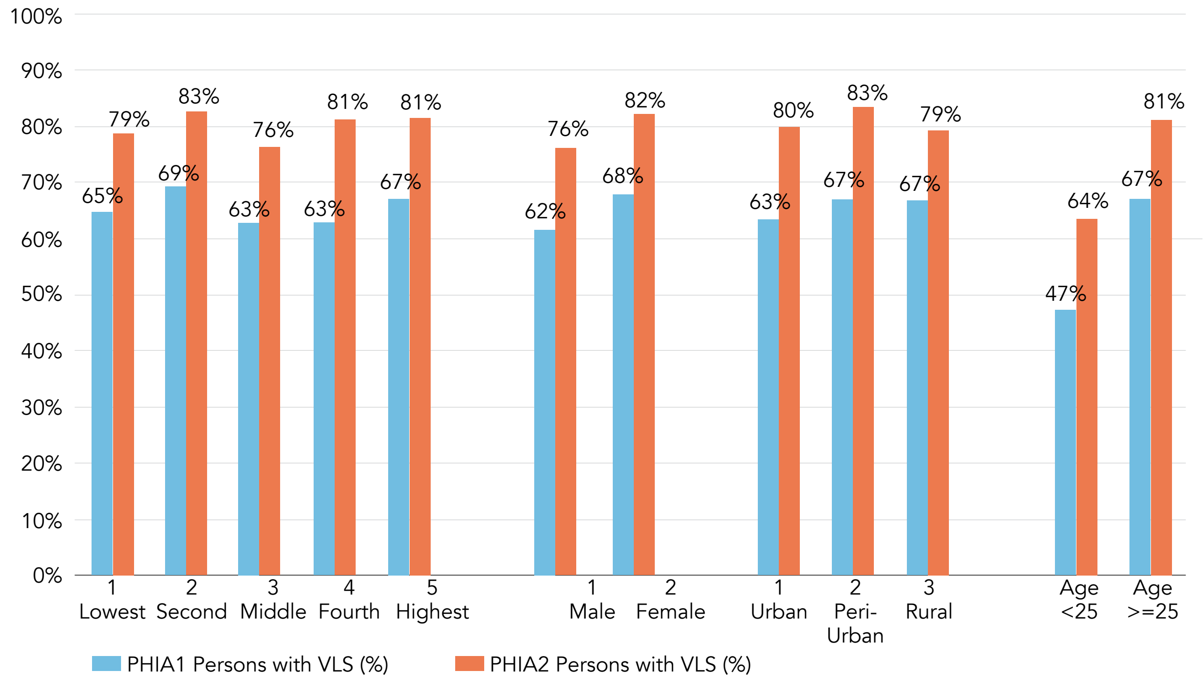


Figure 7.
Lesotho: Improvements in viral load suppression outcomes across wealth, sex, location, and age



Comparing equity in HIV services to country health system equity in 13 countries

Using the most recent PHIA data and DHS data for 13 countries, we compared equity between HIV service-related outcomes to domestic health system service-related outcomes for the low wealth quintile of population (as compared to the average of other quintiles) and the rural population (as compared to urban residents). As domestic health system outcomes are already specific to sex and age group, this section of the chapter does not analyse equity based on age and sex. HIV outcomes are represented by viral load suppression rates among people living with HIV using the most recent PHIA data from each country (2015–2021). Health system outcomes are represented by two indicators for each of the population segments: *(1)* under-five child mortality rates, and *(2)* percentage of births with some antenatal care. These health system outcome data come from DHS surveys published between 2006 and 2022. Table 7 displays data on general health system outcome indicators and viral load suppression coverage for each of the 13 countries.

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Table 7.
Health System & HIV Service Equity in 13 countries

Country	Outcome Measure	Wealth Quintiles					Urban/Rural	
		1-Lowest	2-Second	3-Middle	4-Fourth	5-High	Urban	Rural
Cameroon	HIV VLS (%)	26%	47%	44%	41%	42%	41%	42%
	no antenatal data							
	<5 Mortality/1000 Live Birth	111	111	85	74	49	70	105
Côte Ivoire	HIV VLS (%)	40%	32%	44%	25%	16%	34%	34%
	no antenatal data							
	<5 Mortality/1000 Live Birth	121	108	102	85	73	82	113
Eswatini	HIV VLS (%)	88%	89%	87%	85%	88%	87%	88%
	% Births w Antenatal Care	89%	90%	92%	94%	92%	98%	97%
	<5 Mortality/1000 Live Birth	103	87	66	91	51	79	80
Ethiopia	HIV VLS (%)	57%	71%	73%	65%	68%	67%	no data
	% Births w Antenatal Care	89%	90%	92%	94%	94%	90%	58%
	<5 Mortality/1000 Live Birth	77	73	72	62	46	47	74
Kenya	HIV VLS (%)	66%	74%	68%	65%	72%	70%	69%
	% Births w Antenatal Care	89%	90%	92%	94%	94%	99%	97%
	<5 Mortality/1000 Live Birth	57	63	54	58	47	57	56
Lesotho	HIV VLS (%)	79%	83%	76%	81%	81%	80%	79%
	% Births w Antenatal Care	89%	90%	92%	94%	94%	98%	94%
	<5 Mortality/1000 Live Birth	83	84	91	93	80	100	77
Malawi	HIV VLS (%)	80%	85%	84%	85%	83%	80%	85%
	% Births w Antenatal Care	89%	90%	92%	94%	89%	94%	94%
	<5 Mortality/1000 Live Birth	69	60	62	54	41	44	61
Namibia	HIV VLS (%)	78%	77%	77%	74%	59%	73%	79%
	% Births w Antenatal Care	89%	90%	92%	94%	94%	95%	82%
	<5 Mortality/1000 Live Birth	67	68	66	56	31	54	64
Rwanda	HIV VLS (%)	73%	71%	74%	77%	72%	77%	72%
	% Births w Antenatal Care	89%	90%	92%	94%	94%	98%	98%
	<5 Mortality/1000 Live Birth	72	57	43	40	30	35	53
Tanzania	HIV VLS (%)	41%	49%	53%	50%	53%	53%	47%
	% Births w Antenatal Care	89%	90%	92%	94%	94%	92%	89%
	<5 Mortality/1000 Live Birth	78	86	73	78	73	86	75
Uganda	HIV VLS (%)	60%	75%	77%	67%	79%	76%	69%
	% Births w Antenatal Care	89%	90%	92%	94%	94%	98%	97%
	<5 Mortality/1000 Live Birth	88	79	73	69	53	62	76
Zambia	HIV VLS (%)	77%	84%	84%	85%	85%	83%	85%
	% Births w Antenatal Care	89%	90%	92%	94%	94%	99%	96%
	<5 Mortality/1000 Live Birth	67	67	53	76	57	68	62
Zimbabwe	HIV VLS (%)	77%	77%	79%	73%	72%	73%	78%
	% Births w Antenatal Care	89%	90%	92%	94%	94%	96%	92%
	<5 Mortality/1000 Live Birth	91	74	71	71	51	62	78

Based on the two DHS indicators, none of the 13 countries showed consistent equity in domestic health system outcomes for the low wealth populations. Indeed, seven of the 13 countries had consistently inequitable outcomes for the low wealth quintiles across both DHS indicators (i.e. Ethiopia, Namibia, Rwanda, United Republic of Tanzania, Uganda, Zambia and Zimbabwe). Two countries with data only for under-5 mortality showed inequity for low wealth population segments. Four countries showed mixed evidence of inequities for the low wealth individuals across the two DHS indicators (i.e. Eswatini, Kenya, Lesotho and Malawi). In contrast, Table 7 shows that viral load suppression outcomes were either equal or better for low wealth populations in five countries (i.e. Botswana, Côte d'Ivoire, Eswatini, Kenya, Namibia, Rwanda and Zimbabwe). These data suggest that delivery of HIV services in these 13 countries is more equitable across wealth quintiles than the country's domestic health system.

The domestic health system shows overall smaller equity gaps when looking at rural versus urban populations than it does across wealth quintiles. Eswatini is the only country to show a consistent pattern of equitable outcomes across the two domestic health system indicators for rural populations. Five countries showed inequity in the health system for rural residents (i.e. Cameroon, Côte d'Ivoire, Namibia, United Republic of Tanzania and Zimbabwe) and six countries show a mixed pattern (i.e. Kenya, Malawi, Lesotho, Rwanda, Uganda and Zambia). Ethiopia had no data on rural populations.

Similar to low wealth subpopulations, the HIV system (as measured by viral load suppression rates) shows more equitable outcomes than the domestic health system. Nine of 12 countries with rural HIV service data show equal or better outcomes for rural residents (i.e. Botswana, Cameroon, Côte d'Ivoire, Eswatini, Kenya, Malawi, Namibia, Zambia and Zimbabwe). The most recent PHIA data show significantly lower viral load suppression rates for rural populations in five countries (i.e. Lesotho, Mozambique, Rwanda, United Republic of Tanzania, Uganda).

Discussion: What these findings mean

Monitoring progress on the percentage of people living with HIV know their status, are on treatment, and are virally suppressed is vital to understanding progress towards HIV epidemic control. Understanding how these outcomes might vary across subpopulations is important for assessing equity and working to ensure that services meet the needs of all those at risk for and living with HIV.

The present analysis shows that HIV outcomes are equal or better for low wealth and rural populations when compared to the highest wealth quintile in about half the included countries. Similarly, outcomes for the lowest wealth quintile are equal to or better than the highest wealth quintile in roughly half of the countries studied. Certain countries, such as Kenya and Rwanda, exhibit no significant differences in HIV outcomes between rural and urban populations, yet remain further from epidemic control than countries like Botswana or Eswatini, which have viral load suppression between 85% to 92% yet show minor disparities by wealth and location.

Outcomes for males have improved across all countries and all three indicators. While this report focuses on equity, it is important to note that males typically face fewer systemic barriers to care than females, yet in many cases exhibit worse health seeking behaviour than female counterparts. Improved outcomes among males are likely attributed to increased focus on reaching men through expanding testing options, multi-month dispensing, supporting male-friendly sites and service delivery through extended clinic hours and other approaches *(4)*. However, significant progress is still needed as males, across all 15 countries have lower rates of awareness of their status, lower treatment rates and lower viral suppression rates than female counterparts. Similarly, people living with HIV under 25 have significantly poorer outcomes across the clinical cascade compared to counterparts over 25. Results from the present analysis are based on the more recent available PHIA data, meaning that some countries may have made further progress towards epidemic control and in reducing disparities since these results were released.

While existing disparities remain a concern, all six countries with two rounds of PHIA data show significant progress across rates of awareness, shares of people on treatment, and viral load suppression. Each shows progress towards achieving HIV outcome targets and in reducing outcome disparities between groups. However, the rate of improvement and progress towards more equitable outcomes varies widely by country. Further research may examine the success of countries such as Zambia, which made significant progress on all three clinical indicators and reduced disparities by urban/rural, wealth, sex, and age, to inform efforts in other countries.

Furthermore, the analysis also finds that HIV outcomes exhibit lower equity gaps across wealth quintiles and between urban and rural populations when compared to domestic health services. While progress towards equitable outcomes in the HIV response can be celebrated, there is a strong need to understand root causes of inequities, along with best practices to mitigate the health outcome disparities that persist. These findings will play a crucial role in reducing inequities in overall health outcomes and play a key role in future conversations surrounding sustainability and transitioning responsibilities of the HIV response to country governments. Understanding these disparities, along with effective strategies to achieve more equitable service provision, is vital for achieving epidemic control. Country health facilities are often under resourced when compared to donor-supported HIV services. This in many cases can lead to fewer medical providers, longer waiting times, and increased distance from the nearest facility. More research is needed to understand optimization of resources and equity-focused interventions in resource limited settings *(5, 6)*. Chapter 6 provides key insights on the root causes and drivers of inequities along with strategies to mitigate inequities in health service provision.

Limitations of this analysis

Although these findings signify great progress towards HIV outcome targets, there are several important limitations to note for future analyses. First, the present study does not cover HIV service equity for many country subpopulations that face systemic barriers to access for HIV services. Future analyses may include regional subpopulations, ethnic or linguistic minorities, those with lower educational attainment, recent immigrants and noncitizens, and key populations. (Key populations are covered in Chapter 3.) Additionally, this report does not provide an intersectional analysis for those who hold multiple marginalized identities or characteristics. Future studies may also include intersectional analysis to understand disparities, for example, among people living in rural areas by wealth quintile or to understand disparities in people under age 25 by sex. Nations with available PHIA data may consider follow-up studies using these indicators to understand country-specific disparities among these subpopulations. Donors may also consider collecting comprehensive metrics for ongoing analysis of the drivers of intersectional inequities.

A second limitation is that, while this analysis shows major progress towards epidemic control and in reducing disparities, a third round of PHIA surveys is needed to confirm that this is an ongoing trend. Since there were five to six years between each PHIA survey, the observed progress remains promising. As all results in the present analysis are based on the most recent PHIA survey, many countries have since achieved further progress towards epidemic control.

A third consideration is the inherent limitations of general population surveys. Most DHS surveys do not include comprehensive information on HIV treatment and care, nor biomarker measures which increase survey reliability, and are less consistent than PHIA surveys. PHIA surveys have been conducted in only 17 countries (along with a Uganda refugee population), and data are currently available for only 15 of these countries *(2)*. At present, detailed equity analyses of all PHIA countries and comparisons across these countries could be made available to programme officials and other interested parties to monitor the progress and guide programme decision-making. Beyond this, PHIA and DHS are household surveys, which may not effectively capture data on populations that are harder to reach such as those experiencing houselessness, migrants, along with certain key population groups.

A fourth limitation is the lack of an available knowledge base or studies on 'best practices' to guide policy-makers in reducing disparities at the country level. (This fact is highlighted in Chapter 6.) While the current knowledge base suggests there are variations in equity and progress in removing inequities across countries, there have been limited studies on why these variations exist or how significant progress has been achieved. For example, we do not currently understand the factors which led to the Zambia success story in terms of improving equity to the poor and rural populations between PHIA 1 and PHIA 2. Future case study research may focus on key policies, practices and country context that contributed to positive outcomes or analyse best practices. While Chapter 6 provides insights on understanding the drivers of these inequities, along with best practices for reducing disparities in HIV service-related outcomes, further research is warranted.

A fifth limitation is that, when comparing HIV services to the general health system, the present analysis included only two equity measures for general health services, which both largely reflect women's service-seeking behaviors. The data showed larger inequities in the percentage of births which receive antenatal care and in under-five mortality per 1000 live births when compared to viral load suppression outcomes. However, it is possible that other general health system measures might show more equitable results and may be considered for future comparative analyses. Future studies may delve into other measures for assessing differences between the general health system and donor-funded health outcome measures to understand the extent of disparities between donor-funded services and general health systems. Similarly, future studies may incorporate universal health coverage service index scores, GINI coefficients, donor investment, or domestic health spending to understand the impact of health system investments and how these affect disparities among different population groups.

Finally, donor funding for HIV prevention, testing, and treatment services has declined in recent years *(7, 8)*. In light of higher disparities in local health systems, more research is needed to understand the impacts of flat or declining budgets, the increasing emphasis on sustainability, and efforts to integrate HIV into the general health system. There is a need for greater understanding of equity-focused service provision, the longer term strategy for sustainability, and how donors and governments should move forward to improve equity across all elements of the health system.

Conclusions

This analysis shows overall progress towards HIV outcome targets, and reduction in disparities in HIV outcomes in subpopulations. The study also shows that HIV services are more equitable than domestic health systems, although more research is needed to understand why this is the case, including what broader characteristics may impact equity, effective strategies for decreasing disparities, and clarify the role of health system investments on these outcome disparities. Subsequent chapters in this report provide a starting point, but further research and conversation are needed to understand these findings in the context of decreasing donor funding to ensure that recent progress can be sustained both in the HIV response and country health systems as a whole (Appendix A).

Appendix A.
Improvements in awareness of HIV status, treatment, and VLS across all countries

		Awareness of HIV status				Percent on Treatment				Percent Virally Supressed			
		PHIA 1	PHIA 2	% Change	Sig.	PHIA 1	PHIA 2	% Change	Sig.	PHIA 1	PHIA 2	% Change	Sig.
Eswatini (2016, 2021)	Wealth												
	Lowest	90%	95%	5%	***	81%	93%	12%	***	73%	89%	16%	***
	Second	87%	94%	7%	***	79%	92%	13%	***	74%	90%	16%	***
	Middle	86%	95%	9%	***	75%	91%	16%	***	69%	87%	18%	***
	Fourth	86%	91%	5%	***	75%	87%	12%	***	69%	85%	17%	***
	Highest	85%	92%	7%	***	74%	91%	17%	***	69%	88%	19%	***
	Sex												
	Male	80%	91%	11%	***	72%	88%	16%	***	65%	85%	20%	***
	Female	91%	94%	3%	***	80%	93%	13%	***	73%	89%	16%	***
	Location												
	Urban	83%	92%	9%	***	73%	90%	17%	***	68%	85%	18%	***
	Rural	89%	94%	5%	***	79%	92%	12%	***	72%	88%	16%	***
	Age												
	Age <25	72%	85%	13%	***	61%	82%	21%	***	47%	74%	27%	***
	Age >= 25	89%	95%	6%	***	79%	92%	13%	***	75%	89%	14%	***

		Awareness of HIV status				Percent on Treatment				Percent Virally Supressed			
		PHIA 1	PHIA 2	% Change	Sig.	PHIA 1	PHIA 2	% Change	Sig.	PHIA 1	PHIA 2	% Change	Sig.
Lesotho (2016, 2021)	Wealth												
	Lowest	80%	89%	9%	***	74%	87%	13%	***	65%	79%	14%	***
	Second	84%	92%	8%	***	78%	90%	12%	***	69%	82%	13%	***
	Middle	79%	88%	9%	***	73%	85%	12%	***	63%	76%	13%	***
	Fourth	79%	90%	11%	***	71%	86%	15%	***	63%	81%	18%	***
	Highest	84%	91%	7%	***	76%	88%	12%	***	67%	81%	14%	***
	Sex												
	Male	77%	88%	11%	***	70%	84%	14%	***	61%	76%	15%	***
	Female	84%	91%	7%	***	77%	89%	12%	***	68%	82%	14%	***
	Location												
	Urban	81%	90%	9%	***	73%	86%	13%	***	63%	80%	16%	***
	Peri-Urban	79%	92%	13%	***	75%	90%	15%	***	67%	83%	16%	***
	Rural	81%	90%	9%	***	75%	88%	13%	***	67%	79%	13%	***
	Age												
	Age <25	68%	82%	14%	***	61%	78%	17%	***	47%	64%	16%	***
	Age >= 25	82%	90%	8%	***	76%	88%	12%	***	67%	81%	14%	***
Malawi (2015, 2020)	Wealth												
	Lowest	73%	87%	14%	***	65%	84%	19%	***	60%	80%	20%	***
	Second	79%	89%	10%	***	71%	87%	16%	***	66%	85%	19%	***
	Middle	77%	88%	11%	***	70%	86%	16%	***	63%	84%	21%	***
	Fourth	81%	89%	8%	***	77%	88%	11%	***	68%	85%	17%	***
	Highest	74%	88%	14%	***	68%	86%	18%	***	62%	83%	21%	***
	Sex												
	Male	72%	85%	13%	***	63%	83%	20%	***	57%	80%	23%	***
	Female	80%	90%	10%	***	74%	89%	15%	***	68%	86%	18%	***
	Location												
	Urban	73%	87%	14%	***	66%	84%	18%	***	59%	80%	21%	***
	Rural	78%	89%	11%	***	72%	87%	15%	***	66%	85%	19%	***
	Age												
	Age <25	54%	76%	22%	***	46%	73%	27%	***	37%	66%	29%	***
	Age >= 25	79%	89%	10%	***	72%	88%	16%	***	67%	85%	18%	***
Uganda (2016, 2020)	Wealth												
	Lowest	71%	76%	5%	***	60%	71%	11%	***	46%	60%	14%	***
	Second	76%	81%	5%	***	70%	80%	10%	***	56%	75%	19%	***
	Middle	68%	85%	17%	***	60%	82%	22%	***	53%	77%	24%	***
	Fourth	76%	78%	2%	***	70%	73%	2%	***	59%	67%	8%	***
	Highest	72%	85%	13%	***	65%	82%	17%	***	56%	79%	23%	***
	Sex												
	Male	67%	76%	9%	***	59%	72%	14%	***	48%	66%	18%	***
	Female	75%	83%	8%	***	69%	81%	11%	***	59%	75%	16%	***
	Location												
	Urban	72%	84%	12%	***	65%	81%	16%	***	55%	76%	20%	***
	Rural	73%	79%	6%	***	66%	75%	9%	***	55%	69%	14%	***
	Age												
	Age <25	48%	60%	12%	***	44%	57%	13%	***	33%	49%	16%	***
	Age >= 25	77%	84%	7%	***	69%	81%	12%	***	58%	75%	16%	***

		Awareness of HIV status				Percent on Treatment				Percent Virally Supressed			
		PHIA 1	PHIA 2	% Change	Sig.	PHIA 1	PHIA 2	% Change	Sig.	PHIA 1	PHIA 2	% Change	Sig.
Zambia (2016, 2021)	Wealth												
	Lowest	64%	83%	19%	***	51%	80%	29%	***	43%	77%	34%	***
	Second	64%	88%	24%	***	54%	87%	33%	***	48%	84%	36%	***
	Middle	69%	89%	20%	***	60%	87%	27%	***	55%	84%	29%	***
	Fourth	70%	91%	21%	***	59%	89%	30%	***	52%	85%	33%	***
	Highest	79%	90%	11%	***	71%	89%	18%	***	64%	85%	21%	***
	Sex												
	Male	69%	87%	18%	***	61%	85%	24%	***	54%	83%	29%	***
	Female	72%	90%	18%	***	62%	88%	26%	***	56%	84%	28%	***
	Location												
	Urban	74%	89%	15%	***	65%	87%	22%	***	59%	83%	24%	***
	Rural	66%	89%	23%	***	56%	87%	31%	***	51%	85%	34%	***
	Age												
	Age <25	46%	73%	27%	***	38%	72%	34%	***	28%	67%	39%	***
	Age >= 25	75%	90%	15%	***	65%	89%	24%	***	60%	86%	26%	***
Zimbabwe (2015, 2020)	Wealth												
	Lowest	79%	89%	9%	***	71%	86%	15%	***	60%	77%	17%	***
	Second	77%	88%	10%	***	70%	85%	15%	***	61%	77%	16%	***
	Middle	77%	88%	11%	***	68%	85%	18%	***	57%	79%	22%	***
	Fourth	75%	86%	11%	***	66%	83%	17%	***	56%	73%	17%	***
	Highest	76%	84%	8%	***	66%	80%	15%	***	57%	72%	15%	***
	Sex												
	Male	72%	84%	12%	***	64%	81%	17%	***	53%	72%	19%	***
	Female	80%	88%	8%	***	71%	86%	15%	***	62%	78%	17%	***
	Location												
	Urban	75%	85%	10%	***	66%	81%	15%	***	56%	73%	16%	***
	Rural	78%	88%	10%	***	70%	86%	16%	***	59%	78%	18%	***
	Age												
	Age <25	60%	75%	15%	***	52%	72%	19%	***	43%	58%	15%	***
	Age >= 25	79%	88%	9%	***	70%	86%	15%	***	60%	78%	18%	***

* p<0.05, ** p<0.01, ***p<0.001, NS= Not significant based on Chi squared test or Fisher's exact test
Diff. represents the percentage point difference between the two groups

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EQUALIZE
HUMAN RIGHTS → FOR ALL!
SCHOOL FOR EVERY GIRL AND BOY
LET OMMUNITIES LEAD
PEOPLE BEFOR PROFITS: SHARE MEDICAL TECH

03

KEY POPULATIONS, EQUITY AND THE UNFINISHED HIV AGENDA

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Key messages

- Key populations continue to be disproportionately impacted by HIV, with HIV prevalence and incidence several times greater than the population overall. Despite representing less than 5% of the global population, key populations and their sex partners account for the majority of new HIV infections.

- This disparity is due to a complex set of interrelated factors, including both structural and individual, which combine to create a 'cycle of inequity', compounding vulnerability to HIV and compromising health outcomes. Substantial numbers of women, girls and gender-diverse people are members of many key populations and often have worse HIV outcomes than their male counterparts.

- Structural barriers include stigma, discrimination, violence and criminalization. As a result, key populations face substantial access barriers to HIV prevention, care and treatment services.

- Although attention to the challenges faced by key populations has increased over time, targeted programming and investments continue to represent relatively small shares of the HIV response.

- Key populations are also frequently under-represented in HIV-related data, on HIV-related decision-making bodies, and in planning, programmatic, and monitoring processes.

- Because key populations often face stigma, discrimination, and criminalization by their own country governments and health systems, most funding to address their needs is provided by external donors, particularly PEPFAR and the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund). However, with flat budgets and donors increasingly looking to transition the HIV response to country governments, concerns have been raised about whether this could leave key populations even further behind and at greater risk.

- Despite these challenges, numerous evidence-based interventions have been shown to help achieve greater equity, and ultimately better health outcomes, for key populations. These include: addressing criminalization, stigma, discrimination and violence through policies and programmes; promoting community empowerment and leadership; providing person-centred care; enhancing data collection, monitoring and research efforts; providing dedicated funding and budget allocations; and addressing the risks of donor transitions and service integration. There may also be a need to identify new and innovative solutions.

- Ultimately, addressing the disproportionate impact of HIV on key populations will be fundamental to minimizing HIV-related morbidity and mortality and to the success of the broader HIV response.

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Key populations—gay, bisexual and gay men and other men who have sex with men, people who are transgender, sex workers, and people who inject drugs—continue to be disproportionately impacted by HIV. Despite accounting for less than 5% of the global population, key populations and their sex partners are estimated to comprise the majority of new HIV infections (55%), a share that has risen over time *(1, 2)*. This disparity is due to a complex set of interrelated factors, including both structural and individual, which combine to create barriers to HIV prevention, testing and treatment and increase risk. Structural factors include: stigma, discrimination, violence, and criminalization; access to care restrictions and barriers; a dearth of dedicated funding and programming; significant gaps in the availability of HIV prevention programmes and services; limited clinical and provider knowledge; and a lack of data documenting impact and needs *(3, 4)*. Furthermore, there is evidence that some of these barriers are worsening. As recently noted by the International AIDS Society-Lancet Commission on Health and Human Rights, the global commitment to human rights has declined in recent years, "with serious and increasingly damaging effects on health", including for key populations *(5)*. Structural barriers in turn contribute to higher HIV risk behaviours among key populations—for example, restrictions on access to harm reduction services may increase the sharing of needles among people who inject drugs *(4)*. Altogether, these factors combine to create a 'cycle of inequity', compounding vulnerability to HIV among key populations and compromising health outcomes. Because of these challenges, global guidelines on HIV prevention, treatment, and care for key populations highlight the importance of addressing structural barriers, including: working to remove punitive laws, policies and practices; reduce stigma and discrimination; address and mitigate violence; and empower communities as essential agents for impact *(4)*. In addition, global HIV targets—the "10–10–10 targets"—signed onto by all countries, specifically address the challenges faced by key populations (see Table 1) *(6)*.

Although attention to the challenges faced by key populations has increased over time, targeted programming and investments continue to represent relatively small shares of the HIV response. In addition, because key populations often face stigma, discrimination and criminalization by their own country governments and health systems, most funding to address their needs is provided by external donors, particularly PEPFAR (the United States President's Emergency Plan for AIDS Relief) and the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund). However, with flat or declining budgets *(8)* for HIV and an increasing desire by both PEPFAR and the Global Fund to promote sustainability and country ownership, including by potentially transitioning HIV service delivery to country governments, concerns have been raised about whether this could leave key populations even further behind and at greater risk. There is already evidence that the transition in some settings away from donor financing for key population programming has had this effect *(8–13)*.

To better understand these issues, this chapter summarizes the latest data on what is known about the impact of HIV among key populations, using an equity lens. Specifically, it seeks to describe the factors that affect the ability of key populations to obtain equitable access to HIV services and, ultimately, to achieve equitable health outcomes. This includes an assessment of the differential impacts of HIV on key populations compared to the population overall, and, to the extent that data are available, inequities between different key population subgroups and within subgroups themselves. Finally, it seeks to identify potential pathways to achieving greater equity in the HIV response for key populations. Given that most new HIV infections are among key populations and their partners, addressing the disproportionate impact of HIV on this group and understanding the cycles of inequity that drive this impact have a fundamental bearing on the success of the broader HIV response.

Table 1. 2025 Global HIV 10-10-10 targets for social enablers

Less than 10% of countries have legal and policy frameworks that lead to the denial or limitation of access to HIV-related services.
Less than 10% of people living with HIV and key populations experience stigma and discrimination.
Less than 10% of women, girls, people living with HIV and key populations experience gender inequality and violence.

Source: UNAIDS Global AIDS Strategy 2021–-2026 (7).

Overview of the impact of HIV on key populations

Key populations and their sex partners are estimated to account for a majority of new HIV infections, even though they comprise a small fraction of the global population. The share of new infections in 2022 among key populations was highest for gay men and other men who have sex with men (20%), followed by people who inject drugs (8%), sex workers (7.7%) and transgender women (1.1%). Clients of female sex workers and other partners of key populations accounted for 18.2% of new infections. (see Table 2).

The prominence of key populations among new HIV infections varies by region. For example, the share of new HIV infections in this group ranges from 23% in eastern/southern Africa to 94% in eastern europe/central Asia. By subpopulation, people who inject drugs accounted for the greatest share of new infections in the Eastern European/Central Asian region, while gay men and other men who have sex with men accounted for the largest shares in the Asia–Pacific, Latin American and the Middle East/ North Africa regions.

The relative risk of acquiring HIV is significantly higher among key populations compared to the population overall. For example, it was 23 times higher for gay men and other men who have sex with men and 20 times higher for transgender women in 2022 compared to all adults (see Table 2). Finally, while the number of new HIV infections has fallen globally over the past decade, the decline has not been as rapid for key populations and has even risen or remained flat for some of these groups, including gay men and other men who have sex with men and transgender women. As a result, the proportion of new infections among key populations increased over the period (rising from 44% in 2012 to 55% in 2022).[1]

Estimated HIV prevalence is also much higher among key populations than the population overall, including 7.5% for gay men and other men who have sex with men and 8.3% for transgender women, compared to 0.7% of adults overall (see Figure 1) *(1, 14)*. These disparities are even more pronounced among individuals with multiple marginalized identities. For example, HIV prevalence is 20 times higher among transgender sex workers versus cisgender sex workers *(15)*. Within key population groups, HIV vulnerability may also vary; for example, evidence indicates that women who inject drugs are more likely to be living with HIV than men who inject drugs *(16)*.

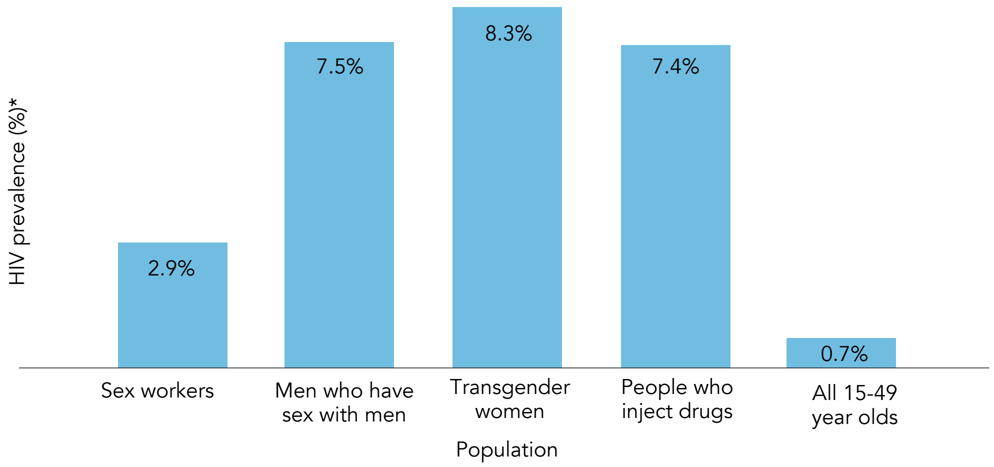
Although epidemiological categories focus on group characteristics, vulnerabilities and trends, in the real world key population groups are broadly diverse, including considerable diversity based on age, gender, geography, socioeconomic status and other characteristics. For example, the many young people who belong to key populations confront particular vulnerabilities and service access challenges *(17)* and key population groups include many women, girls and gender-diverse individuals. Women who inject drugs are more likely to be living with HIV than men who inject drugs and HIV prevalence among women in prisons is markedly higher than among men in prison *(18, 19)*.

Table 2.
Share of new infections (%) and relative risk by population

Population	Share of new HIV infections (%)*	Relative risk of HIV (IRR)**
Sex workers	7.7	8.9
Gay men and other men who sex with men	20.0	23.0
Transgender women	1.1	20.0
People who inject drugs	8.0	14.0
Clients of female sex workers	10.0	0.59
Non-client partners of key populations	8.2	
Total key populations	55	
Remaining population	45	
All 15–49 year olds	100	

*Estimated share of new infections among all 15–49 year olds.
**Estimated relative risk. compared to the adult population overall.
Sources: Journal of Acquired Immune Deficiency Syndromes, including supplement, and UNAIDS global HIV data.

Figure 1.
HIV prevalence by population (MSM: gay men and other men who have sex with men; PWID: people who inject drugs; SW: sex workers; TGW: transgender women)



Stigma, discrimination, violence, and criminalization

Stigma, discrimination, violence, and criminalization are among the structural factors that contribute to HIV risk and create barriers to access for key populations. Stigma is a perceived difference associated with a negative stereotype or connotation, which can lead to discrimination or unfair treatment *(4)*. In many countries, discrimination against key populations is codified in laws, including those that criminalize characteristics or actions of some of these groups, such as laws prohibiting same-sex sex or partnerships, sex work, drug use, or 'cross-dressing' *(4)*. In 2023, for example, more than 60 countries criminalized same-sex behaviour *(20)* and there is evidence that the environment is worsening in some places *(5, 21)*. Laws criminalizing some aspect of sex work were in place in 168 countries, 20 countries criminalized transgender people, and countries commonly criminalized purchase or possession of drugs for personal use *(8)*. Beyond this, key populations are at higher risk of experiencing physical, sexual and psychological violence, and face barriers to reporting violence due to discrimination and criminalization laws. Violence may further increase barriers to service access and augment HIV risk along with adverse physical and mental health outcomes which, in turn, may also drive risk behaviours *(4)*. The women and girls who belong to or are partners of key populations are affected by gender inequalities and inequitable gender norms.

Research consistently shows that these experiences lead to poorer HIV prevention, testing and treatment outcomes across key population groups *(22)*. Past experiences of discrimination, stigma, criminalization and structural inequity can lead to increased institutional distrust—defined as the skepticism towards the motives of institutions and their actors—which may impact patients' willingness to engage in prevention and treatment programmes *(23)*. Indeed, recent survey data from UNAIDS suggest that over one-third of countries report that more than 10% of key populations avoid medical attention due to stigma and discrimination, which may drive higher HIV rates among this population group *(22)*. In countries that criminalize sex work in sub-Saharan Africa, sex workers are more than seven times more likely to be living with HIV than sex workers in countries that partially legalize this work. They are also at higher risk of physical or sexual assault. Criminal laws that penalize the clients of sex workers are linked to lower condom use and higher rates of violence perpetrated against sex workers *(24)*.

Similarly, laws that criminalize same sex behaviour or partnerships are linked to negative HIV prevention, testing and treatment outcomes for gay men and other men who have sex with men. Analysis of data from ten sub-Saharan countries found that HIV prevalence was five times higher among gay men and other men who have sex with men living in criminalized settings, 12 times higher among these men in settings with recent prosecutions and ten times higher in settings with barriers that legally prevented registration or operation of sexual orientation related civil society organizations, compared to gay men and other men who have sex with men living in settings without these barriers *(22)*. A study of arrests related to drug use found that they are linked to higher rates of HIV infection among people who inject drugs *(25)*.

Even stigmatizing discourse and/or perceptions about laws and policies can have adverse effects. A recent study from Uganda, for example, found that the discourse surrounding Uganda's Anti-Homosexuality Act was associated with reduced HIV clinic visits among key populations even before the law was enacted *(26)*. Finally, as mentioned above, key populations also face higher rates of violence, which are linked to increased risk of HIV infection, along with increased drug use and harm, lower sexual and reproductive health service utilization, and adverse mental health outcomes such as depression.

The compounding factors of stigma, discrimination, violence, and criminalization among key populations groups make them disproportionately vulnerable to HIV and complicate their access when HIV services are needed. Adding to this vulnerability is the declining space for civil society in many countries, which has had a particularly severe impact on key population-led services and advocacy *(27, 28)*.

The impact on the lives of key populations of the confluence of health, law and policy issues has inspired some governments to prioritize issues of non-discrimination, social inclusion and equity in their foreign diplomacy. As one example, the US government in 2022 released its first interagency report detailing the efforts of the various diplomatic arms of US foreign policy to implement President Biden's 2021 directive on advancing LGBTQI+ rights across the world *(29)*.

Service availability and access challenges

Research shows that key populations experience substantial access barriers, driven by many of the structural barriers described above as well as by insufficient resources for key population-dedicated programmes, at key steps of the HIV care continuum—testing, linkage to care, and receipt of treatment/services. For example, the share of key populations who know their HIV status is below the global average *(30)*. In addition, antiretroviral treatment coverage among people living with HIV is lower for those who are transgender people, sex workers and people who inject drugs, compared to people living with HIV overall *(31–33)*. Low prevention, testing and treatment coverage for key populations was also observed by the Global Fund's Office of the Inspector General in its review of grants in several countries *(21)*, and also documented in scorecards maintained by the Global HIV Prevention Coalition *(34)*.

In some cases, low coverage of HIV services may be related to concerns about discrimination and criminalization. Recent evidence, for example, indicates that sex workers, gay men and other men who have sex with men, people who are transgender and people who inject drugs. *(30)* are hesitant to obtain HIV testing, especially given the potential consequences of a positive result (e.g. concerns of being 'outed'; loss of clients and income; criminalization) in settings with punitive legal and policy frameworks *(15, 35)*. Hesitancy extends beyond HIV testing to prevention and treatment services as well. Globally, policing practices, parent or partner consent obligations, as well as the criminalization of same sex acts and drug use have been correlated with reduced pre-exposure antiretroviral prophylaxis (PrEP) initiation, lower viral suppression, or the avoidance of care altogether *(25, 36–38)*. For example, studies have found that female sex workers may be reluctant to accept free condoms as many are afraid of prosecution from law enforcement agencies that use condom possession as evidence of criminalized activity *(37)*. Research has also found that sex workers, as a hard-to-reach, sometimes migratory community, may have restricted access to essential HIV resources for prolonged periods, which may translate to delays in HIV diagnosis *(39, 40)*. Additionally, studies have also found that some key populations have stopped attending follow-up appointments either intermittently or completely, often citing negative previous interactions with staff *(41–44)*. Other barriers include long waiting times and safety fears at HIV clinics, most of which have limited hours of operation outside of work *(35, 45)*. Having to travel long distances and incur high commuting costs, especially combined with existing financial pressures, are also cited as barriers *(35, 45)*. When supported and made available, mobile sites, drop-in locations, and peer-led models can improve proximity, quality, and key population satisfaction with services, but access to these services remains sub-optimal *(41, 46)*.

There are also supply-side challenges. Facilities may have few health-care providers trained to provide appropriate care to key populations and/or confront shortages or stock-outs. For example, a recent study found that 58% of facility managers in South Africa reported that they did not have any specific services for key populations with only 3–4% offering hormone therapy for transgender people or on-site initiation and maintenance treatment for drug dependence (e.g. methadone) for people who inject drugs *(41)*. Indeed, key populations have routinely reported difficulties obtaining PrEP, post-exposure prophylaxis (PEP), lubricant, as well as contraceptives and screening for STIs beyond HIV *(40, 47)*. Even formalistic legal support services can be differentially experienced. Again, in South Africa, recent data showed that 34% of gay men and other men who have sex with men, 53% of sex workers and 54% of transgender people attempting to access post-violence care services at a health facility were not able to access forms to open a case *(48)*.

Additionally, the majority of providers lack knowledge about key populations and there have been minimal investments in education and sensitivity training, contributing to marginalization and discrimination *(49)*. Physicians and allied professionals do not usually receive in-depth education on inclusive care for lesbian, gay, bisexual, transgender, or queer (LGBTQ) clients *(50, 51)*. Indeed, medical graduates from across the globe report that they do not feel prepared to see patients who identify as sexual or gender minorities, especially transgender people *(52–54)*. A recent study, for example, found that only 50% of service providers are trained in key population-friendly services in the United Republic of Tanzania, with similar percentages recorded in Cameroon and the surrounding countries *(55)*. There are also documented cases where clinicians have denied key populations services, based on the belief that they are 'too dirty', further evidence of stigma embedded in many medical systems *(47, 51)*. In South Africa, findings from community-led monitoring revealed that only 35% of gay men and other men who have sex with men believed that the staff were equipped to treat those with a history of sexual violence *(47)*. Key populations are also victims of verbal abuse from unfriendly staff members who do not respect their privacy and confidentiality *(47)*. More generally, evidence shows that people living with HIV who perceive greater amounts of HIV-related stigma from doctors are more than twice as likely to delay seeking care until they are very sick *(56)*.

In addition to the need for provider education and training, studies also show that wrap around health and social support services, centred on key population needs, reduce systemic barriers to care *(57, 58)*. These include legal aid, educational opportunities, housing, and employment which can help to combat historical inequities, and improve the overall health of historically marginalized communities *(59)*.

Additionally, evidence shows that empowering key population communities and fostering meaningful participation can help to improve the health outcomes of these groups. As such, WHO guidelines recommend that key population-led groups be included as partners in all aspects of programme design, delivery and evaluation *(4)*. However, key population and other community-led programmes remain under-funded, as the share of HIV resources provided to community channels declined from 31% in 2012 to 20% in 2021 *(8)*.

Differentiated service delivery models have emerged as a key strategy that expands the reach and impact of HIV services while also decongesting overburdened public sector clinics. For key populations who may fear accessing facility-based services, differentiated service delivery enables them to receive services and support from their peers in community-based settings. During COVID-19, key population-led differentiated service delivery played a critical role in preserving service access for these populations in diverse settings *(27)*.

Under-representation in the data

Developing key population size estimates has been seen as essential to planning, implementing and evaluating HIV programming, as they provide denominators used to estimate disease burden and programmatic reach and impact. However, there remain ongoing barriers to developing these strategically valuable estimates. This is in part due to the relatively low population size of key populations, which may require enhanced or modified methodological approaches to develop accurate estimates, but also to criminalization and stigmatization, which may discourage participation in public health studies for fear of being identified *(35, 60)*. Further, in criminalized contexts, countries may use the lack of data as a reason not to provide services to key populations even as criminalization makes most data collection efforts impossible or even illegal, perpetuating a cycle of invisibility for key populations *(61)*.

WHO, UNAIDS, PEPFAR and the Global Fund have each published recommendations encouraging governments to invest in key population size estimation studies and utilize findings in national HIV strategies *(4, 61–63)*. UNAIDS and WHO also recommended methodologies for developing these size estimations for these populations *(62)*. However, there are still important gaps in the availability of key population size estimations. A 2023 UNAIDS report identified very few such size estimations in the Middle East and North Africa, with a notable worldwide gap in estimates for people who inject drugs and transgender women *(8)*. A 2020 study found that less than half of African countries published a key population size estimate, and none published a population size estimate for transgender people *(64)*. Moreover, the key population size estimates used by country governments and local programmes are often inaccurate and/or outdated. A recent study found that nearly a third of low and middle-income countries published key population size estimates that were untimely or calculated through non-scientific methods, while 30 countries published local key population estimates as national estimates, without documenting extrapolation methods *(65)*. Countries that criminalize homosexuality were more likely to publish implausibly low population size estimates for gay men and other men who have sex with men *(60)*.

Missing, inaccurate, or outdated size estimates can lead to inaccurate reporting of HIV prevalence for populations at highest risk of HIV infection, given that UNAIDS relies on data from countries to develop global HIV surveillance estimates.[1] Because of data limitations, for example, UNAIDS does not report HIV prevalence estimates for transgender men, and does not disaggregate HIV prevalence by gender for sex workers *(1, 19)*. The first global systematic review of HIV incidence among people who inject drugs found that only 47 countries reported HIV for this group *(66, 67)*. In their 2024 study, a UNAIDS research team found numerous issues with country surveillance methodology, including: inconsistent key population definition; estimates using models with imperfect assumptions; lack of key population engagement in study design; and inadequate key population size estimations *(66)*. Of the countries that reported HIV prevalence among people who inject drugs, for example, 64% used data from a single city and only eight studies were published after 2015 *(66)*. Lack of key population-specific data and the considerable diversity in methods also prevent temporal analysis of HIV incidence, precluding analysis of country progress toward international targets, or potential opportunities for improved HIV interventions *(66)*.

These data challenges also occur across the care continuum. HIV clinical cascades, used to understand and measure progress in the HIV response, leverage HIV surveillance and population size estimations to measure the proportion of people living with HIV who know their HIV status, are linked to care, are retained in care, and have reached viral suppression. Clinical cascades are often based on a combination of data from general population surveys, centralized HIV reporting systems and health-care programmes. Unfortunately, each data source brings limitations that affect the quality of estimates for key populations. General population surveys and programmatic data often do not include indicators measuring key population practices or identities, and those that do often produce results that are biased toward the subset of key populations who would willingly self-identify *(44)*. Even where countries have key population-specific programming, data reported by facilities only capture the subset of key populations who are willing and able to access such services, which is only a minority of these groups *(48)*. Additionally, without proper key population size estimations, programmatic data cannot accurately estimate the proportion of patients that never access HIV testing services or are lost to follow-up *(44)*.

As a result of these challenges, national clinical cascades often exclude certain key populations, conflate these groups, report implausible estimates, or overlook entire groups of key populations *(47)*. Transgender women, for example, are often included in the gay men and other men who have sex with men category instead of being researched as a separate population *(68–70)*, despite evidence that their experience of HIV risk and engagement with health systems are different than that of gay men and other men who have sex with men *(68, 70)*. Additionally, where research on HIV among transgender people has been conducted, it has largely focused on transgender women, not transgender men *(68–70)*. Similarly, research on sex workers often only includes cisgender women, without considering other people participating in sex work who are also vulnerable to HIV, such as trans feminine sex workers (TFSW); most TFSW-specific studies include small sample sizes, which impacts the quality of their findings *(69)*.

PEPFAR's Population-based HIV Impact Assessment (PHIA) Project, an important effort which uses ongoing nationally representative surveys to assess the status of the HIV epidemic and measure progress towards global HIV targets in the most affected countries, does not include key population-specific data *(2, 60)*.

Inconsistency in and challenges of key population size estimations also affect their utility in decision-making about where limited resources for these groups should be allocated and programmed. Size estimations for key populations are generally not conducted in ways that show the necessary geographical discrepancies or gaps in programming that can robustly inform policymakers and programme managers on the specific geographical locations where more investment and deployment is necessary subnationally. The Global Fund's Technical Review Panel, for example, found that data for key populations were often absent or underutilized in programming decisions provided in grant applications. In addition, it found that data gaps and low size estimates resulted in low investment planning and delays in programming, and noted a lack of attention to subgroups of key populations, as well as intersectionality between different groups *(71)*. These challenges were also noted in a report from the US Government Accountability Office regarding US efforts to advance equity globally and mitigate challenges faced by marginalized groups *(72)*. Ultimately, the lack of key population size estimations further entrenches missing and inaccurate data for these groups and leads to underestimating the need for services at each point along the HIV care continuum, despite these groups' disproportionate risk of HIV acquisition and poorer treatment outcomes. This in turn leads to under-representation in decision-making spaces and under-investment in key population-specific HIV services, a topic further explored below. WHO guidelines recommend that even when data are lacking, efforts to improve the health of key populations should be pursued.

Under-representation in decision-making

The HIV response has long acknowledged the benefit of elevating community voices, including those of key populations, in the design of policies and programmes. Indeed, critical funders like the Global Fund and PEPFAR have worked substantively to open planning and decision-making processes *(73, 74)*. Such involvement is recommended by WHO in its consolidated guidelines on HIV, viral hepatitis and STI prevention, diagnosis, treatment and care for key populations *(4)*.

Still, key population groups face barriers to meaningful inclusion and representation in decision-making spaces and often face stigma and discrimination once there *(75–77)*. For example, a recent survey across 84 countries examining participation in Global Fund Country Coordinating Mechanisms (CCMs), the country-level committees that plan and provide oversight to Global Fund grants, found that key population CCM representatives experienced significantly more discrimination and intimidation than non-key population CCM members, with 50% of key population CCM members reporting that they sometimes or always experienced discrimination in their CCM role compared to 41% of non-key population community CCM representatives *(76)*. Investments have been made to strengthen formal avenues of accountability and transparency within CCMs, such as the Global Fund's CCM Evolution, although informal and more subtle exclusionary practices may persist *(78)*, such as being included on CCMs but not on decision-making committees or in meetings where decisions were made *(79)*. Such spaces sometimes include just a single key population representative who is meant to speak on behalf of a diversity of key populations with a multitude of priorities.

Particular key population groups may be entirely excluded from national strategic plans (NSPs), critical documents which represent a country's national level plan for the HIV response and which often drive funding decisions by ministries of health, multilateral and bilateral funders. A 2018 review of NSPs in Africa found that while sex workers and people who are in prisons were included, fewer NSPs mentioned people who inject drugs, and only 10 of 45 mentioned transgender people *(80)*. A 2021 review of NSPs in 60 high HIV prevalence countries found that 60% mentioned transgender people but only 8% included these people in each of the core components of an NSP: narrative; epidemiological data; indicators or targets; planned programming; and budgeting *(81)*. Where included, NSPs frequently discussed transgender people only in broader discussions of LGBTI people, often incorrectly grouping gay men and other men who have sex with men and transgender individuals *(81)*. The lack of inclusion is also sometimes a function of the data challenges described earlier. Where data on HIV incidence, prevalence and service gaps and needs are absent or incomplete for key populations, it may lead to a lack of inclusion of these groups in decision-making and other key arenas.

These challenges underscore the importance of additional and ongoing efforts to ensure meaningful participation of key populations in planning and decision-making. As WHO has advised, "community empowerment is needed to both increase access and coverage and to support necessary structural changes" *(4)*.

Underfunding of the HIV response for key populations

UNAIDS estimates that of the $6.2 billion needed for prevention for key populations by 2025, there remains a 90% funding gap *(8, 82)*. The biggest funding gaps for key population prevention programming were found in western and central Africa and in the Middle East and North Africa. Several studies that examined funding for key populations found relatively small or inadequate shares going directly to these populations. For example, an analysis of HIV funding from international donors, national governments and private philanthropy found that between 2016 and 2018, only 2% of HIV funding in low and middle-income countries went to services for key populations *(83)*.Less than 1% was spent on gay men and other men who have sex with men and just 0.03% on transgender people. For spending on HIV prevention specifically, people who inject drugs received 2.1% and sex workers 3% *(83)*.

Analysis of expenditure data from PEPFAR, the largest funder of HIV services in low and middle-income countries, finds that only 6.6% of total expenditures were directed toward specific programming for key populations *(84)*. In addition, data are not available to assess how expenditures are distributed among the different groups of key populations, and more than 75% of expenditures are not identifiably directed toward a specific subpopulation. Of the minority of funding that is directed to specific key populations, 41% is for programming for sex workers, 31% for gay men and other men who have sex with men, 15% for people who inject drugs, and 1.6% for transgender people *(85, 86)*. Analysis of data from the Global Fund, the second largest funder of HIV services, indicates that from 2019 to 2020, just 3% of total Global Fund grant resources were directed toward key population-focused prevention programming *(85)*. The Global Fund's Technical Review Panel has also observed that, while there were some improvements, attention to and funding for HIV services for key populations in grant applications were still insufficient *(71)*.

This underfunding of key population-specific services relates closely to under-representation in data and decision-making processes. PEPFAR, for example, uses population size estimates to set targets in the country and regional operational plans, which guide budget allocations *(64, 87–88)* the absence of reliable size estimates for key populations affects the degree to which programming for these groups is included in these operational plans. In addition, targets do not always align with expenditures. One analysis found that while key population-specific targets increased in PEPFAR country plans between 2020 and 2023, expenditures remained flat overall, and even decreased in some countries *(89)*. As noted above, key population size estimations are often missing, implausibly low, or conflate different key population groups *(47)*. Inadequate size estimations may lead to low key population-specific targets, which limit programme ability to sufficiently build up the scale or sustainability of initiatives as implementing partners and monitoring efforts prioritize larger targets *(89)*.

Despite the disproportionate impact of HIV on key populations, many global funders may not sufficiently prioritize specific or targeted expenditures on HIV services for key populations as vital to broader efforts to address HIV *(90)*. This is reflected in the different mechanisms that have been developed for funding key population-focused programming. Within PEPFAR, there has historically not been a long-term, centrally coordinated fund to focus global programming on closing the gaps in prevention and treatment outcomes for key populations. Instead, key population-focused programming has been primarily resourced out of country-level funding envelopes or through short-term, centrally-funded initiatives. This differs from the decade-long or open-ended central strategies for programme implementation around interventions like voluntary medical male circumcision, programming for adolescent girls and young women through the DREAMS initiative, or cervical cancer interventions, all of which compel greater attention to these critical programmes and populations at the country level. Notably, in an effort to address the funding gap for key population-focused programming, PEPFAR in July

2024 announced a new Action Plan requiring that at least 7% of regional and country operating plans is allocated to activities for key populations, and will provide additional matching funds if countries and regional programmes invest beyond this 7%. PEPFAR also announced that it will provide support for a new multi-country, key populations-focused civil society network (see Table 3) *(91)*.

Beyond barriers in allocation and strategic planning processes, many key population-led organizations face significant operational barriers, a precursor to receiving funding. For example, despite research showing that key population-led, community-based organizations are often best suited to deliver specific outreach and programming, they may be prevented from legally registering their organizations in criminalized contexts, leaving them ineligible for funding and thus excluded from participating in service-delivery and outreach programming *(77)*. Indeed, PEPFAR's key population-specific funding is often allocated to large implementing partners rather than key population -led organizations *(89)*. Research shows that nearly half of community-based organizations—which are often ideally positioned to meet key population needs—surveyed in eastern and southern Africa reported decreased funding between 2015 and 2020 *(83)*.

Unfortunately, lack of publicly available data on investments, budgeting and expenditures limit in-depth analyses of HIV funding in relation to key population programming *(83)*. While reporting on key population-specific programmes is limited by valid security concerns, increased transparency from key funders, like PEPFAR and the Global Fund, as well as implementing partners and country governments, is important for evaluating resource allocation for key populations *(83, 89)*. Moreover, underfunding key population interventions will affect the global community's ability to achieve global HIV targets *(92)*.

Risks of donor transitions and integration of HIV services into country health systems

Because key population groups consistently experience stigma, discrimination and criminalization from their own country governments and health systems, most funding to address their needs is provided by external donors, particularly PEPFAR and the Global Fund.

However, with flat or declining budgets for HIV and an increasing desire by both PEPFAR and the Global Fund to promote sustainability and country ownership, including by potentially transitioning HIV service delivery to country governments, along with a broader trend to integrate HIV services into general health systems, concerns have been raised about whether this could leave key populations even further behind and at greater risk *(92, 93)*.

Chapter 5 explores what is known from the analysis of data from 182 countries regarding the benefits and risk of integrating HIV in broader health systems. Chapter 6 provides a possible framework for decision-making on whether, how and how quickly integration should happen in different country contexts.

Several studies have found that key populations are particularly vulnerable when donors transition financing, services, or other aspects of the HIV response, and suggest the importance of providing ongoing and targeted donor support for HIV services for key populations in these circumstances *(9, 12, 13, 94)*. For example, case studies in several countries that have undergone transitions from donor support found significant risks to key populations as a result, including: services not being picked up by country governments, leading to increased HIV rates; a lack of support for key population civil society organizations, resulting in their inability to provide services; and persistent legal barriers that prevented key populations from receiving services *(10–12, 95)*. Indeed, some governments have argued that they cannot provide services to key populations if they are criminalized in their country *(12)*. More broadly, as shown in Chapter 2, the HIV response, largely funded by external donors and with focused services, has achieved greater equity than the general health system in many countries, further suggesting that moving HIV services into the general health system could have adverse effects on equity more generally *(9–12)*.

Because of these risks, research points to the need for continued monitoring and support for HIV, sexual health and harm reduction programming for key populations, even in cases where domestic health systems can afford the financing *(96)*. In addition, understanding local country readiness to fully cover key population service provision is an important part of transition planning and may include an analysis of government, civil society organizations, domestic health-care systems, financing, and monitoring and

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evaluation. The PEPFAR- and USAID-funded Health Policy Lab Project provides a readiness assessment to evaluate country readiness for supporting HIV programming for key populations *(97)*. Among other things, the assessment allows for analysis of whether key populations are officially recognized groups; laws and policies pertinent to key populations; structural barriers experienced by key populations, and available key population-related data *(97)*. More broadly, PEPFAR has increasingly supported capacity building of key population organizations to assist them to obtain and manage funding (including through domestic sources or by raising their own revenue through social enterprise approaches) and implement effective programme interventions *(98)*. PEPFAR's recently announced new key population initiative is intended to provide new and ongoing funding to key-population organizations. The Global Fund's Guidance on Sustainability, Transition and Co-financing to countries specifically identifies human rights barriers as factors that negatively impact sustainability and recommend that national planning assess these barriers, especially for key and other vulnerable populations. To aid in this planning, the Global Fund provides a tool to assist countries in assessing the ability of civil society organizations to register, receive government funding, and use those funds for advocacy or service delivery for key populations, among other areas *(99)*. In addition, while the Global Fund's eligibility policy for HIV requires upper middle income countries to be on the OECD DAC list of ODA recipients, an exception can be made for countries with high disease burden and demonstrated barriers to funding key population interventions; in these cases, funding may be allocated to directly finance NGO and civil society organizations *(100)*.

More generally, studies have identified the following components that can help to reduce risk to key populations in advance of and during donor transitions: advanced planning and direct political engagement and health diplomacy with country governments on key population needs; engaging them in transition planning; creating and supporting opportunities for social contracting with key population organizations; increasing the capacity of key population civil society organizations; and pursuing budget lines for key populations, where possible *(9–12, 94,96,99)*.

As donors seek to shift management, implementation, and financing of HIV programming to local governments, amidst a general move toward integration of HIV services into domestic health-care systems, it is critical to proactively assess the landscape for key population programming and create continuous support and monitoring plans. In some cases, ongoing and targeted funding and support by donors for key populations, and potentially intensified programming at least for a period of time, may be warranted (Table 3) *(9, 90)*.

Table 3. Overview of PEPFAR and Global Fund key population initiatives/approaches

The U.S. President’s Emergency Plan for AIDS Relief (PEPFAR)

- **Strategy:** PEPFAR’s current Five Year Strategy includes the goal of closing equity gaps for key and other priority populations and focuses on the importance of key population leadership in service delivery *(74).*

- **Guidance:** PEPFAR emphasizes the importance of addressing inequities for key populations in both its Country and Regional Operational Plan (COP/ROP) Guidance and accompanying Technical Considerations *(74, 98, 100, 101).*These documents are used for annual programme planning, and highlight requirements for country and regional programmes. PEPFAR introduced minimum requirements for key populations in its last COP/ROP period. These include the need for countries to: document key populations budget and expenditures; demonstrate greater commitment to developing and using key population size estimates; ensure that community led monitoring efforts include key populations; develop risk mitigation and safety plans for key populations; and detail how countries will ensure key populations will receive comprehensive, integrated service packages for each group, guided by WHO guidelines.

- **Key Population Implementation Science (KPIS) awards:** KPIS was a US$ 15 million investment from 2013 to 2015 to fund implementation science research focused on improving the uptake and effectiveness of evidence-based HIV services for key populations. Recipient country programmes were Brazil, Ghana, Guatemala, Kenya, Kyrgyzstan, South Africa, Thailand, United Republic of Tanzania and Ukraine.

- **Key Populations Challenge Fund (KPCF) grants:** Through the US$ 20 million KPCF (2013–2015), PEPFAR supported projects that contributed to an evidence-based, sustainable HIV response for key populations. These projects were designed to advance an enabling environment for key populations and improve implementation and scale-up of a high-impact, comprehensive package of services *(102).*

- **LIFT UP Initiative:** In March 2023, PEPFAR announced a one-year $40 million initiative (103)103 to address equity gaps for key populations and adolescent girls and young women. LIFT includes efforts to expand people-centred service delivery models (101).

- **Key Populations Investment Fund (KPIF):** KPIF was a two-year (2019–2021) $100 million investment to expand access to and retention in HIV prevention and treatment services for key populations. It included programming targets specific to sex workers, gay men and other men who have sex with men, transgender people and people who inject drugs. Resources supported “community-based KP-led, KP-trusted, and KP-competent organizations” *(85, 89, 104).*

- **Key Populations Bio-behavioural Survey (BBS) initiative:** Key population BBSs have been funded through COP/ROP for over a decade. As part of COP/ROP 23, PEPFAR allocated additional funding for BBS among key populations in 15 countries (105). The surveys include female sex workers, gay men and other men who have sex with men transgender people, people who inject drugs and children of female sex workers, depending on the country context in select geographical areas. The primary outcomes available from all surveys include: progress towards the UNAIDS 95–95–95 testing, treatment and viral suppression targets for each key population group; the status of the UNAIDS 10–10–10 goals related to stigma; discrimination and violence; population size estimates; HIV prevalence; HIV incidence; the PrEP cascade; and access and uptake of other biomedical prevention interventions.

- **Action Plan to Address HIV-Service Equity Gaps Among Key Populations:** In July 2024, PEPFAR unveiled an action plan to close equity gaps for key populations. Key elements include a new requirement that at least 7% of PEPFAR country and regional operating plans are allocated toward activities supporting key populations, a matching fund for countries and regional programmes that invest above this amount, support for a new multicountry key population-focused civil society network, and additional funding to strengthen key-population focused civil society organizations in Uganda *(91).*

The Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund)

- **Strategy:** The Global Fund has increasingly centred equity issues in its grant-making for HIV programming. Its current strategy, for 2023–2028, places greater emphasis on centring impacted communities in country-level initiatives and addressing structural inequities *(106)*.
- **Country allocations:** The Global Fund's 2023–2025 funding allocation methodology includes an adjustment for HIV allocations to account for the needs of HIV key populations in countries with concentrated or mixed HIV epidemics. Accordingly, key populations are served by the Global Fund through its extensive grant-making to countries. Its accompanying Technical Brief on HIV Programming at Scale for and with Key Populations for the 2023–25 Allocation Period details key population-specific programme essentials and prioritized interventions for country funding requests *(107)*. The key populations listed in these documents transgender people, sex workers, gay men and other men who have sex with men, people who inject drugs and prisoners and people in closed settings. The Global Fund also supports key population stewardship by requiring key population representation on CCMs.
- **Catalytic investments:** In addition to country allocations, the Global Fund has set aside US $30 million in catalytic funding for the 2023–2025 period to support multicountry efforts that bolster the sustainability and impact of key population-specific HIV programming *(108)*.
- **Matching funds:** The Global Fund incentivizes country-level investments in certain priority areas by offering matching funds. The 2023–2025 Allocation Period includes matching funds for HIV prevention among key populations *(109)*.

Pathways to achieving greater equity for key populations

Despite the many challenges identified above, there are numerous evidence-based interventions that have been shown to help achieve greater equity, and ultimately better health outcomes, for key populations. The WHO's 2022 Consolidated guidelines on HIV, viral hepatitis and STI prevention, diagnosis, treatment and care for key populations, as well as its 2021 Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: recommendations for a public health approach, provide global guidance for such interventions and are used by both PEPFAR and the Global Fund in their own guidance, and in some cases, requirements, for country recipients. In addition to HIV prevention, testing, and treatment services, critical enablers and interventions that facilitate access and reduce barriers for key populations highlighted in the literature and guidance are as follows (Tables 4).

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Table 4.
Addressing criminalization, stigma, discrimination and violence

Given the data demonstrating that structural barriers, particularly laws and policies that criminalize and penalize key populations identities and behaviours, increase HIV risk and impede access, working to remove or lessen the impact of these laws is identified as an essential intervention for improving the health of key populations *(4)*.[4] Among the specific recommendations from WHO and others are: pursuing legal reforms, including decriminalizing drug use or possession, sex work and same sex relationships; legal recognition of transgender or gender diverse status; and lowering the age of consent for accessing health services; developing policies and procedures allowing for ky populations to report rights violations and violence; offering comprehensive health services, including support services, for those who have been subject to violence in particular; monitoring and documenting violence; and working to sensitize and engage law enforcement in preventing and responding to violence against key populations *(4, 95)*. For stigma and discrimination, interventions include: awareness raising about health-related stigma; sensitivity training for health-care workers, law enforcement officers and others; and providing counseling and other supportive services to key populations.

Promoting community empowerment and leadership in key populations

Research has shown that community empowerment and placing key populations at the centre of programme design, delivery and evaluation, are important enablers of better health outcomes. Key population-centred programming, such as key population-specific services, peer support groups, community mobilization, and community-based testing modalities, are shown to be more effective in reaching different key population groups with HIV services than general approaches, and studies have found that such programming is associated with higher rates of uptake for prevention, testing, and treatment services, and higher treatment adherence among key populations living with HIV *(12, 96, 98, 101)*. Key population-led services play a unique role in reaching those groups who are deterred by stigma, discrimination and other barriers from accessing services in mainstream health delivery channels *(27)*. WHO recommends community engagement and empowerment for key populations in HIV programming, including by involving them in designing, planning, implementing and evaluating health services *(4)*.

Providing person-centred care/differentiated service delivery

Differentiated service delivery (DSD) is a client-centered approach that adapts services to reflect the needs and preferences of clients *(4, 106, 107)*. Evidence supports DSD for key populations as a way to improve health outcomes and build capacity for key population organizations through support of community-based service delivery *(4, 110)*. DSD includes a range of interventions such as same-day enrollment in services, peer-led interventions, targeted prevention and treatment case management, venue, mobile, and HIV self testing, drop-in centres, and commodity pick-up points as appropriate for the context and preferences of key populations *(110–112)*.

Enhancing data collection, monitoring and research efforts

Given the data challenges, WHO guidelines include a range of recommendations regarding data collection, including data elements needed and sources, and how to address data limitations. The guidelines also state that the lack of data should not be used to stop or prevent the implementation of efforts to improve the health of key populations *(4)*. In addition, particular attention needs to be paid to ensuring the safety of key populations during data collection and privacy of data after collection. Other challenges to be addressed include the need to safely collect key population data in challenging contexts, data disaggregation across and within key population groups, and engagement of these communities in data collection efforts.

Providing dedicated funding and budget allocations

Given the disproportionate impact of HIV on key populations, the unique challenges these groups face, and the funding gap for services to this population, dedicated and targeted funding efforts and specific budget allocations have been identified as important interventions. To date, however, such efforts have been relatively short term and on a small scale. Funders may want to consider more robust funding efforts to reach key populations and address the multiple challenges they face to mitigate harms and promote improved health outcomes.

Addressing risks of donor transitions and service integration

As donors seek to promote sustainability of the HIV response, including by transitioning service provision and financing to country governments, there are potential risks for key populations. This is especially the case where governments refuse to serve them, criminalize their behaviour, or otherwise may be unable to meet their needs. Exacerbating these challenges is the fact that many countries are facing multiple, simultaneous donor transitions, forcing hard decisions about what to prioritize with more limited funds. To address these challenges, studies have shown that advance planning, social contracting and supporting civil society organizations are interventions that can assist during such transitions *(4, 9–12, 94, 97, 99)*. At the same time, there is a potential need for ongoing and dedicated funding by donors for key population-focused HIV services, even as other services and functions are transitioned to country governments; indeed, a longer glidepath will likely be needed for maintaining and improving the HIV response among key populations. Similarly, with a growing trend toward integrating HIV services into the broader health system, attention needs to be paid to whether this may create additional harm for key populations. Ultimately, donor support for key population services and to key population organizations may be needed for the foreseeable future.

Conclusion

Despite increased attention to the challenges faced by key populations, key populations around the world continue to be at greater risk for HIV, have higher HIV prevalence, and experience significant barriers to prevention, treatment and care compared to the population overall. As shown in this chapter, these disparities are due in large part to structural factors that in turn contribute to increased individual HIV risk behaviours as well as behavioural and transmission patterns and dynamics. Together, these factors combine to create a cycle of inequity compounding vulnerability to HIV and compromising health outcomes. There are numerous evidence-based interventions that have been shown to help mitigate these impacts and address the needs of key populations. The main funders of key population-focused HIV services—PEPFAR and the Global Fund—have worked to incorporate much of this evidence into their guidance and requirements to countries. Still, there remains a substantial gap in programming and funding for key population services, and the structural factors that have long resulted in inequity for key populations are often intractable and embedded in larger societal structures and systems. This presents risks for key populations in particular, as PEPFAR and the Global Fund increasingly look to transition HIV services to country governments for greater sustainability. As such, there may be a need to identify new and innovative solutions for addressing the needs of key populations and for more durable and sustained funding even as funders transition programmes. Ultimately, given that most new HIV infections are among key populations and their sex partners, addressing the disproportionate impact of HIV on these groups will be fundamental to minimizing HIV-related morbidity and mortality and to the success of the broader HIV response.

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04

NO SUSTAINED HIV EPIDEMIC CONTROL WITHOUT EQUITY: CRITICAL NEEDS FOR PRIORITY POPULATIONS

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Key messages

- Within broader demographic categories, there are population groups who are disproportionately affected by HIV.
- The disproportionate effects of HIV on children are profound and diverse—millions have been orphaned, children living with HIV are markedly less likely than their adult counterparts to obtain lifesaving therapy, and many children experience violence, which is associated with increased odds of acquiring HIV.
- A total of 4000 adolescent girls and young women are newly infected with HIV each week, and adolescent girls and young women in eastern and southern Africa are three times more likely to acquire HIV than their male counterparts.
- Gender inequality increases HIV vulnerability and impedes the effectiveness of HIV prevention, testing and care and treatment programmes and services. The global epidemic of gender-based violence is but one manifestation of gender inequality and an important risk factor for HIV acquisition among women and girls.
- Effective efforts to address the HIV-related disparities experienced by these and other priority populations must be holistic, taking account of how individuals, families and relationships, communities, policies and systems influence a person's health and well-being, and how the dynamic interaction between these domains shape the social and behavioural determinants of the health of individuals, households and communities.
- This dynamic, multifactorial, socioecological approach is apparent in numerous HIV programmes, including:
  - → The family-centred model and life-cycle approach of the United States President's Emergency Plan For AIDS Relief (PEPFAR) Orphans and Vulnerable Children programme.
  - → PEPFAR's DREAMS partnership, which situates HIV biomedical interventions for adolescent girls and young women within a broader package of social and structural interventions, including focused educational, livelihood and social support programmes and services.
  - → Programmes that support survivors of gender-based violence with community-level interventions that address structural inequalities, including violence prevention and harmful gender norms.
- Failing to implement holistic approaches that provide essential services while addressing key social and behavioural determinants risks losing many of the gains made to date in the global HIV response.


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Introduction

The world can begin to end AIDS as a public health threat by 2030 by achieving ambitious targets outlined in the Global AIDS Strategy: 95% of people living with HIV know their HIV status, 95% of people who know their status are receiving treatment, and 95% of people on HIV treatment have a suppressed viral load so their immune system remains strong and they are no longer infectious *(1)*. Beyond these treatment targets, the strategy includes two essential elements in the 2030 goal: aggressive prevention interventions to ensure fewer than 370 000 new infections annually by 2025 and 200 000 new infections annually by 2030, and zero discrimination.

This ambitious strategy applies to all subpopulations and underscores the importance of scaling up critical enablers that affect HIV outcomes. However, despite progress in several countries, the world is still not on track to end AIDS as a public health threat by 2030. In 2022, about 4000 adults and children acquired HIV each day—a total of 1.3 million new HIV infections *(2)*. Furthermore, as previous chapters have demonstrated, HIV outcomes are not consistent across subpopulations to date, with some populations left behind by the gains made.

The Global AIDS Strategy recognizes that achievement of the 2030 target is hindered by critical structural barriers that impede access to services for many people across the world. The UNAIDS 10–10–10 targets call on the global community to take needed actions to address gender inequality, stigma and discrimination, and violence. And yet, as the IAS-Lancet Commission on Health and Human Rights *(3)* noted in 2024, global commitments to human rights and health equity are under threat, putting at risk the remarkable achievements in public health and development of the past few decades.

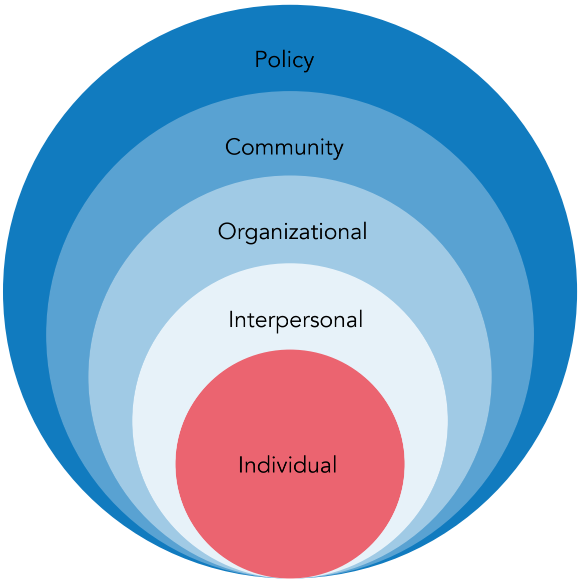
This chapter assesses advancements and challenges with respect to progress toward HIV epidemic control, focusing specifically on PEPFAR programmes. The chapter uses a programmatic lens focusing specifically on important ‘priority population’ groups behind the age, sex and wealth disaggregates, also underscored in the first pillar of the five-year PEPFAR strategy, ‘Health Equity for Priority Populations’. Populations that find themselves marginalized and stigmatized by structural inequalities include children, adolescent girls and young women, members of key populations, and LGBTQI+ individuals. It is these populations who are at most at risk for HIV, and for whom equity is essential to their health and well-being. The chapter examines drivers of health equity, including the determinants of health (socioeconomic factors, gender and social norms, policies and systems) among children, adolescent girls, and young women and the broader consequential pitfalls that will result if we fail to focus on these drivers of equity.

Service delivery models are examined for lessons learned about the optimal package of services and delivery platforms for priority populations and outcomes in more comprehensively meeting their HIV-related needs. A review of available budget attributions and allocations will demonstrate what is known, while also highlighting missing or inaccurate data points. The chapter specifically examines PEPFAR-funded programme models that focus on orphans and vulnerable children (OVC), adolescent girls and young women, and gender programming as a means to address HIV-related inequities (this chapter should be read as a complement to Chapter 3, which focuses on key populations). Based on these programmatic experiences, the risks of losing focus on equity are discussed, culminating in recommendations for future programming and investments.

The socioecological model (Figure 1) provides an important framework for understanding how individuals, families and relationships, communities, policies, and systems influence a person’s health and well-being, and how the dynamic interaction between these domains shape the social and behavioural determinants of health of individuals, households, and communities. It is an important framework that has been applied to help design and deliver programmes that strive to close gaps and remove inequities and move towards equality, particularly for those who have been marginalized and made vulnerable to HIV. The model is used to help identify key factors that influence a person’s health seeking behaviour and ultimately health equity, including HIV stigma and discrimination, harmful gender norms, impeding policies, and inequitable decision-making power and control over access to health resources.

Data-driven programming is a fundamental component of quality HIV work and is essential to

Figure 1.
The socioecological model



closing gaps in the HIV response. However, data collection and analysis have focused largely on clinical HIV service outcomes and less on the social and structural factors that guide programmatic decision-making. To gain better insights on the types of structural drivers that fuel HIV inequities and the impacts of programmes that seek to close these gaps, more and better data are needed on the social and structural drivers of critical behaviours. It is evident that gender inequality, gender-based violence, and unrelenting stigma and discrimination are undermining global efforts to achieve sustained control of the HIV epidemic. However, programme data and analysis of HIV prevention efforts, including measures of efficacy of combination prevention, and other proxy indicators for to the UNAIDS 10–10–10 targets,[1] have been underfunded and under-prioritized. This is an important moment to address these data gaps and improve our collective understanding of and response to health inequities.

Focus populations for equity: Who, why, and what is being done

In the past 20 years, PEPFAR has made important gains against the HIV epidemic with over 20 million people on lifesaving antiretroviral treatment (ART) and 5.5 million babies born HIV-free as a result of prevention interventions. In 2023, PEPFAR funding supported 1.9 million people to initiate HIV pre-exposure prophylaxis (PrEP) and reached almost 2.5 million adolescent girls and young women with HIV combination prevention services through the DREAMS (Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe) partnership *(4)*.

Despite these successes, HIV incidence remains stubbornly high, particularly among adolescent girls and young women and members of key populations. In sub-Saharan Africa, adolescent girls and young women accounted for more than 77% of new infections among young people aged 15–24 years in 2022. Adolescent girls and young women were more than three times as likely to acquire HIV than their male peers adolescent girls and young women *(5)*. Of the 1.54 million children aged 0–14 living with HIV globally, only 57% were receiving life-saving antiretroviral therapy in 2022, compared to 77% of adults living with HIV. While children constitute 4% of people living with HIV, they represent 13% of AIDS-related deaths. Exposure to HIV and its broader social and economic effects continue to impact generations and hamper progress towards the Sustainable Development Goals.

Spotlight on inequities: children

Country-level progress towards 95–95–95 epidemic control goals can mask the gaps that remain for specific ages and populations, driven by structural inequities. The particular needs and vulnerabilities of children have been long recognized in the HIV response, acknowledging their dependency on parents/caregivers for protection, stability, and well-being. Prior to the scale-up of HIV treatment, a primary concern was the high rate of adult mortality and resulting orphanhood. While treatment progress over the last two decades has enabled declines on both fronts, children remain vulnerable to multiple HIV impacts, and the remaining epidemiological gaps for children <15 point to persistent inequities that must be addressed (Figure 1).

The adverse effects on children of orphanhood—defined as the loss of one or both parents—is well-documented. According to UNAIDS, as of 2022 there were 13.9 million children globally who have lost one or both parents due to AIDS, and 10.3 million children orphaned by AIDS in sub-Saharan Africa remain in need of support. As HIV is an illness that affects the family unit, parental HIV remains a serious risk factor across many domains

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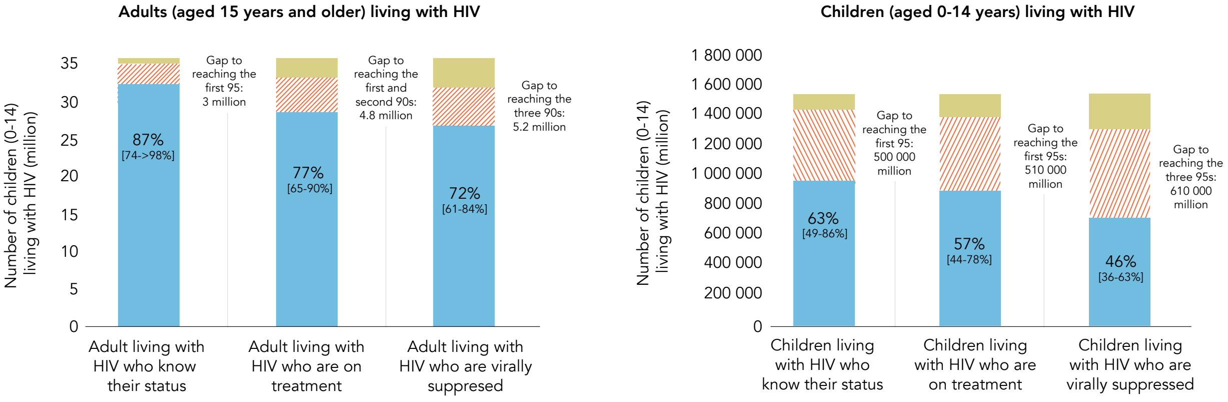
[1] The UNAIDS 10–10–10 targets provide that by 2025: less than 10% of countries have punitive legal and policy environments that deny or limit access to services; less than 10% of people living with HIV and key populations experience stigma and discrimination; and less than 10% of women, girls, people living with HIV and key populations experience gender inequality and violence.

Figure 1.
Global progress and gaps in reaching the 95-95-95 goals (>15 versus <15)



Adults (aged 15 years and older) living with HIV

Source: UNAIDS/WHO estimates

Children (aged 0-14 years) living with HIV

Source: UNAIDS/WHO estimates

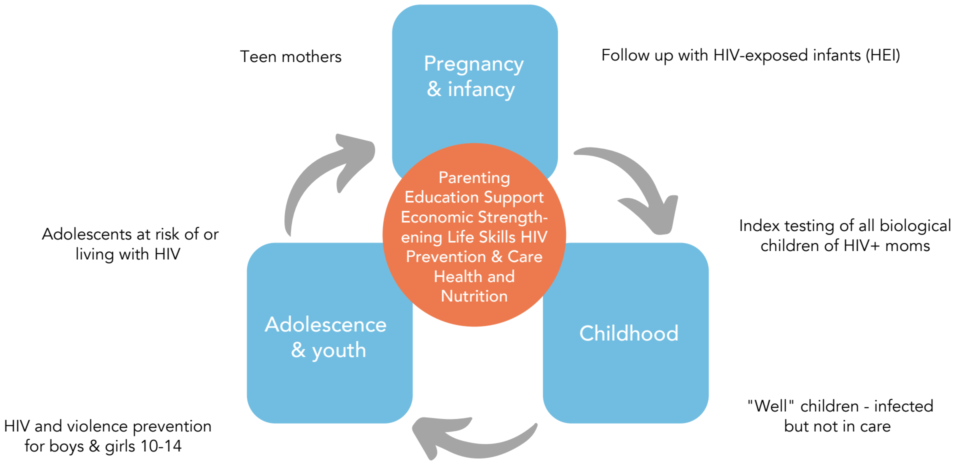
of child development *(6–10)*, even taking into account reductions in mortality due to antiretroviral therapy. Children of parents who are not yet receiving treatment or not virally suppressed are often the most vulnerable, as the reasons for their parents not accessing or adhering to treatment are themselves often risk factors for child well-being and development *(11)*. Parental AIDS illness or poor mental health stresses the household and puts children at risk for caregiver disruption, caregiving for ill parents or siblings and increased risk of school disruptions or school discontinuation, deepening financial burden or poverty, and, in the case of children living with HIV, diminishing rates of viral suppression *(5–7, 12)*. Only 57% of children aged younger than 14 years with HIV in sub-Saharan Africa have access to antiretroviral treatment *(13)*.

Adults with comparatively greater health, social, and economic vulnerabilities are often hard to reach, compounding the difficulties programs have in reaching their children. For example, there is evidence of low HIV testing for children of female sex workers living with HIV in Cameroon *(14)*. Adolescent mothers affected by HIV and their children have been highlighted as another vulnerable group *(15)*. Children of sex workers and people who inject drugs are both hard to identify and at risk for multiple negative outcomes, although such outcomes can potentially be mitigated by family and community support, parental healthcare, including mental health services, and improvements in the socioeconomic context *(16)*. Accelerating equity-focused efforts to eliminate perinatal transmission can prevent pediatric HIV infections.

Early childhood and adolescence are critical intervention periods to reduce later risks for HIV acquisition and to build resilience among HIV-affected children, particularly those who are very young *(10, 17, 18)*. For example, adverse childhood experiences can have long-term negative outcomes,including high sexual risk behaviour and increased odds of HIV acquisition*(19–28)*. Interventions in childhood, particularly those that promote a stable and safe environment, can mediate the negative effects of adverse childhood experiences *(29–31)*. Poverty and structural deprivation is a risk factor for HIV that may improve when addressed in childhood and adolescence (including for children and young people living with HIV) *(32–36)*.

There is a growing body of evidence linking HIV and violence against children *(37)*. Children and adolescents living with HIV or in households, where a member may be HIV positive, are more likely to experience violence. Increased vulnerability to violence can be perpetuated at an individual level, when individual children or adolescents can experience emotional abuse and maltreatment, including lack of family support. At a family/household level, HIV is associated with a range of factors that predict violence against children, including occurrence of domestic violence witnessed by children in the household. Additionally, having household members or the child diagnosed with HIV often exposes children or adolescents in the household to HIV-related stigma and social isolation. Violence against children and adolescents increases risks of acquiring HIV later in life. For

Figure 2.
Intergenerational approach to risk and resilience embedded in PEPFAR comprehensive programmes



example, physical, sexual, and emotional violence have been shown to lead to earlier engagement in HIV risk behaviours and reduced ability to access HIV treatment services *(36)*.

Girls are at risk for sexual violence throughout childhood and adolescence. While the age of first incident of sexual violence is greatest in adolescent girls aged 16–17 years, in some countries more than one in four girls who have experienced sexual violence in childhood report that the first incident happened when they were 13 years or younger *(38)*. Even when children and adolescents disclose their experience of violence, they rarely seek or receive services, including post-rape care *(37)*. The consequences of violence against children and adolescents are both direct and indirect, and the cost is cyclical, with violence in childhood increasing the risk of violence during adulthood, an intergenerational perpetuation of the cycle of violence.

Recognizing children's unique vulnerabilities in the context of HIV, since 2003 PEPFAR has made a firm commitment to funding and programming to improve children's health and well-being. This commitment is bolstered by PEPFAR authorizing legislation's inclusion of a 10% legislative earmark for comprehensive support to children and families. Orphans and vulnerable children (OVC) programming is unique within PEPFAR as the only family-based program. Comprehensive OVC programmes take a multigenerational approach to risk and resilience, recognizing that the adolescent girls and young women in the DREAMS partnership, the teens in adolescent HIV care, and the young families identified through services to prevent vertical HIV transmission will soon be the parents of the next generation of children. Programming tailored to age and developmental stages is important not only because it takes into account individual needs, but also because it can address critical transition periods for children and youth, such as early infancy, young children <5 between antenatal care and school age, early schooling and adolescence, including the transition from paediatric to adult care for adolescents living with HIV, a critical period for sustained retention in care and HIV treatment adherence *(39)*. This life cycle approach also accommodates interventions to address the intergenerational cycles of violence and poverty that can increase HIV risk and recognizes the critical role that parents and caregivers play in child health and protection.

A family-based approach that is integrated into a broad array of programmes (through active cross-referral with HIV, health, and social service platforms) ensures that children and families have access to the range of support they require to optimize their health and well-being. This includes the many health and supportive services needed to prevent children from acquiring HIV and to ensure children and their caregivers who are living with HIV receive the diagnostic, treatment, and care services they need to live a healthy life with HIV.

The OVC programme's multisectoral platform has proven to be a nimble tool, enabling priority subpopulation targeting and allowing geographical and other programming shifts over the last two decades to address the changing needs of children in an ever-evolving epidemic. For example, within budget confines that do not allow co-location with all clinical programming, PEPFAR OVC programmes routinely review prevalence and incidence data to ensure alignment with HIV burden and maximize coverage of children and adolescents living with HIV. Additionally, while early PEPFAR programming focused heavily on supporting the large numbers of children orphaned due to AIDS, OVC programmes have continually updated and refined targeting strategies to address evolving vulnerabilities. Current OVC programmes closely collaborate with both community stakeholders and clinical sites to target subpopulations most vulnerable to negative impacts, including children and adolescents living with HIV (especially those who are not virally suppressed), children of people living with HIV (especially children of parents who are not virally suppressed), HIV-exposed infants and their mothers, teen mothers, children of people within key populations (especially female sex workers), children who have experienced violence, and children who have lost one or both parents.

While responding to evolving epidemiological priorities, OVC programming has consistently maintained a fundamental community focus and family/household-based approach to addressing HIV risk and effects in multiple domains. This approach employs case management by community service providers, who collaborate closely with clinical sites for both identification and enrollment of families as well as bi-directional referrals: to clinics for testing, treatment, and other health services, and to community programmes for other needed and evidence-based socioeconomic support such as parenting support, education, and economic strengthening.

Of the 4.8 million OVC aged 0–17 served by PEPFAR programmes implemented by the US Agency for International Development (USAID), 59% are female, including adolescent mothers and adolescent girls and young women at higher risk of HIV and violence. Ninety-seven per cent of children and adolescents served by USAID self-report a known HIV status and 100% of those who are living with HIV are reported to be on treatment. As a result of USAID-led PEPFAR efforts to prioritize and offer enrollment to children and adolescents living with HIV, 77% of PEPFAR-supported children on treatment aged 0–14 years in districts with OVC programming currently receive comprehensive OVC support services. The comprehensive services provided to families in the OVC programme could include household economic strengthening, education support, primary prevention of HIV and sexual violence, building of parenting skills, facilitating access to maternal and child healthcare, and HIV specific testing, care, and treatment through close collaboration with clinical partners. The critical clinical wraparound support services to children and adolescents living with HIV/AIDS include: HIV testing referrals and support; linkage to clinical services; antiretroviral adherence counselling and viral load suppression support; and psychosocial, education, economic strengthening, and post-GBV support. The reason why 100% of children do not receive comprehensive services is that not all children and adolescents living with HIV may need OVC support, underscoring the programme's strategy of targeting children that are most vulnerable and/or at risk within the above-noted priority sub-populations.

USAID's OVC programme data has shown improved outcomes for children and adolescents living with HIV who are enrolled in the comprehensive OVC programme versus those who are not, including: higher rates of viral load suppression, appointment attendance and retention; increased disclosure rates among caregivers; and decreased treatment interruption for young mothers. For example, in Kenya, CALHIV whose caregivers who belonged to Voluntary Savings and Lending Associations (VSLA) had a higher proportion of virally suppressed CALHIV (87%) compared to those who were not (83%) *(40)*. Further, in the United Republic of Tanzania, multivariable analysis showed that as the higher frequency of home visits by the project staff increased, the likelihood of retention increased by 8% *(41)* and in South Africa home visits by community-based care workers increased the odds of a child being tested by 97% *(42)*.

In addition to individual and household impacts, the OVC programme's unique reach into the community and into households, and its multisectoral work with institutions beyond clinics—such as schools and child protection structures—is a critical contribution to essential systems strengthening for an equitable continuum of care for children. The programme's community and family-based approach enables continuing access for the hard-to-reach: children and households in isolated areas, those who do not attend a clinic, and those who may be hidden at home, such as those with a disability. Community acceptance and support for OVC interventions is often evidenced by reports of non-programme-funded replication of activities such as economic strengthening interventions (e.g. savings groups) and violence prevention curricula like Coaching Boys Into Men. Importantly, the OVC programme's established partnerships with ministries other than health, such as social welfare, education, safety, gender, and child protection, ground the OVC programme in host country contexts and strengthen the network of support for children and families.

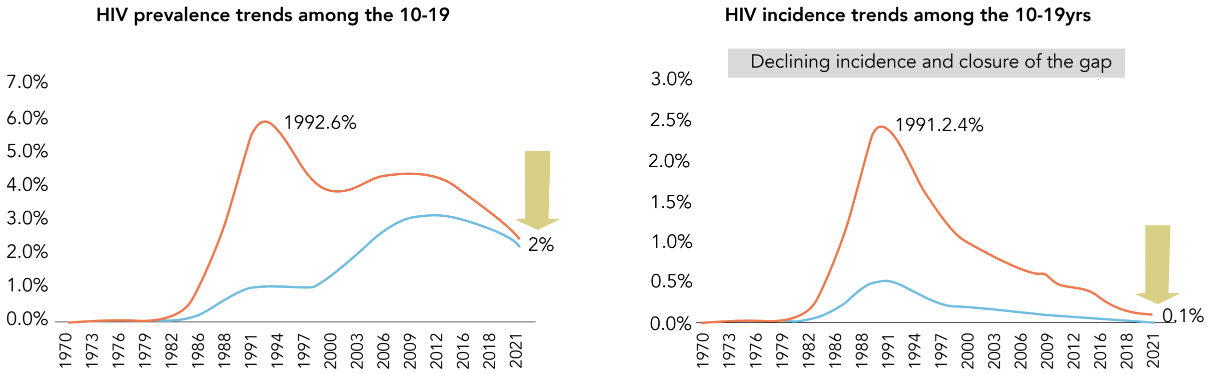
Spotlight on inequities: Adolescent girls and young women

Adolescent girls and young women, including females between 10 and 24 years old, necessitate and deserve prioritization in the HIV response. Every week, 4000 adolescent girls and young women (aged 15–24 years) were infected with HIV globally in 2022, with 3100 of these infections occurring in sub-Saharan Africa *(43)*. Considerable disparities in risks and vulnerabilities of HIV acquisition exist between adolescent girls and young women and adolescent boys and young men, though it is encouraging to see the gaps are closing in some countries. In eastern and southern Africa, adolescent girls and young women (15–24 years) are three times more likely to acquire HIV than male counterparts *(44)*. Inequitable cultural norms, inadequate schooling, lack of financial resources, and gender-based violence continue to contribute to the disproportionate risk of, and vulnerability to, HIV infection faced by adolescent girls and young women.

Equity issues were not identified or prioritized as needed early in the HIV response, contributing to the stark differences in the trajectory of HIV infections between adolescent girls and young women and adolescent boys and young men. Over the last two decades, concerted, although still inadequate, action by the global community, high-burden countries, and affected communities has helped close these gaps. The progress made to date is evident in the experience of Zimbabwe (Figure 3). Though attribution cannot be made to specific interventions, these improvements are likely due to the cumulative effects of prevention efforts such as the PEPFAR-funded DREAMS partnership, increases in HIV treatment access and rates of viral load suppression, and scale-up of PrEP and other prevention technologies.

While the expanding spectrum of biomedical prevention and treatment options and access will likely prevent countries reverting to the earlier level of inequities demonstrated so starkly by the trajectory of Zimbabwe's epidemic, these interventions alone will not close the remaining gap and maintain progress toward epidemic control for adolescent girls and young women. This is particularly true in countries where viral load suppression among male sexual partners remains suboptimal and where economic opportunities for young people lag. Adolescent girls and young women face greater HIV risk in countries where uncertainty, instability, inaccessibility, or insecurity constrain the ability to operate safely and effectively and settings where severe weather events (increasing due to climate change) impede service delivery.

Figure 3.
HIV prevalence and incidence trends among 10–19 year-olds in Zimbabwe



Source: Graphic developed by PEPFAR Zimbabwe from Zimbabwe HIV Estimates, 2023.

Extreme climate events of both heavy rainfall and drought have both been associated with higher HIV burden. Nagata and colleagues concluded that "the association between heavy rainfall and STIs and number of sexual partners suggests that an increase in the risk of sexual transmission is a plausible mechanism for the observed findings around HIV prevalence. Heavy rainfall could also worsen food insecurity, increasing the risk of transactional sex, or cause damage to public health infrastructure, reducing access to STI education, HIV testing, and treatment" *(45)*.

Low et al. found that "drought in Lesotho was associated with higher HIV prevalence in girls 15–19 years old in rural areas and with lower educational attainment and riskier sexual behavior in rural females 15–24 years old" *(46)*. As climate change continues to negatively impact communities, and particularly adolescent girls and women, with effects that are most pronounced among those who are most economically and socially vulnerable, the social safety net for adolescent girls and young women remains critical to provide essential economic support and autonomy for young women.

Biomedical prevention tools have an important role to play in improving HIV outcomes among adolescent girls and young women. PrEP use has increased among this group, in part due to the PEPFAR-funded DREAMS partnership and investments in PrEP scale-up. Targeting PrEP to adolescent girls and young women at the highest risk of acquiring HIV may be cost-effective in the long term, although risk is dynamic and grading the level of risk for individual adolescent girls and young women can be challenging. Often, it is the most vulnerable in this group who lack access to facility-based services.

However, approaches that focus too intently on biomedical tools and cost-effectiveness, without attention to the social and structural factors that affect access and outcomes, are unlikely to achieve maximum impact. Findings from a scoping review of oral PrEP for adolescent girls and young women indicate that a holistic, community-based approach to PrEP programme implementation might be needed for adolescent girls and young women and that more research is needed to determine the types and duration of services. Risks of HIV acquisition among adolescent girls and young women are driven by biological, behavioural, and structural factors which must be addressed through a combination prevention approach. Components of the service package in the PEPFAR-funded DREAMS partnership, such as social support and mentoring, parent/caregiver programmes, and adolescent responsive services, have been shown to improve uptake and effective use of biomedical prevention *(48–50)*. In addition, while interventions should be focused on adolescent girls and young women, it is essential that community members, parents, and sexual partners are contributing members to an enabling environment for adolescent girls and young women.

To respond to the multi-faceted lives of adolescent girls and young women, addressing their specific vulnerabilities and risks, PEPFAR announced the DREAMS (Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe) public–private partnership on World AIDS Day 2014 with an evolution to DREAMS NextGen in 2023 *(51)*. The DREAMS partnership began in areas of the highest HIV burden in ten countries in 2015 and expanded to 15 countries by 2018.

The DREAMS partnership provides a package of primary services to adolescent girls and young women, with secondary services to a subset of this group to address additional HIV vulnerabilities and risks. The DREAMS primary package of services includes building a strong, meaningful supportive social network for adolescent girls and young women, providing them mentor-led comprehensive sexuality education, and violence prevention education and interventions to encourage healthy and equitable gender norms. In the safe spaces provided through the DREAMS partnership, this group can learn and practice their new knowledge and skills and create supportive relationships and positive health-seeking behaviours in the long term.

Secondary services can include school support, comprehensive economic strengthening, and access to clinical services (e.g. HIV testing, family planning and reproductive health, PrEP, and post-violence care). For clinical services, the DREAMS partnership not only provides facilitated referrals to clinical platforms, but also delivers clinical services via mobile, community, and school-based delivery platforms. These platforms improve equity by addressing access issues such transportation costs, limited clinic hours, and stigmatization of adolescent girls and young women who seek health services.

Empowering adolescent girls and young women with better access, improved knowledge, and new skills only succeeds if an enabling environment is in place to support their long-term healthy outcomes. In recognition of this, the DREAMS partnership provides contextual interventions to improve communication between parents/caregivers and their adolescents, and to mobilize communities for norms change and violence prevention. Scaling these types of interventions is one component of DREAMS NextGen. This recent adaptation of the DREAMS partnership responds to demands to expand the reach of services and increase interventions that promote an enabling environment, befitting not only adolescent girls and young women, but all adolescents and youth. Additionally, DREAMS NextGen reinforces the transition of certain services to government ministries, includes male sexual partners in HIV testing and PrEP services, and scales gender norms and violence prevention interventions for adolescent boys and young men.

The DREAMS partnership is recognized globally as a successful HIV combination prevention intervention addressing the comprehensive HIV needs of adolescent girls and young women. However, measuring the impact of prevention programmes, especially for a model that delivers multiple, layered services, is extremely challenging. In the last year, the DREAMS partnership reached over 2.4 million adolescent girls and young women (aged 10–24 years), including nearly 1.8 million adolescent girls and young women who completed at least the primary package of services. In the ten original DREAMS partner countries, programme data show that 'DREAMS districts saw a significantly greater decline in new HIV diagnosis among women in antenatal care from 2015 to 2020 compared to districts without DREAMS programming, suggesting that DREAMS may have contributed to an acceleration in the declines' *(52)*.

While the goal of the DREAMS partnership is to reduce HIV infections among adolescent girls and young women, there are multiple other outcomes that should also be included in defining its success and allocating sufficient resources. The current DREAMS partnership metric is to ensure that adolescent girls and young women receive at least the 'primary package' of layered services. This outcome is limited as an annual snapshot indicator and does not provide information on the number or type of additional secondary services these individuals receive.

Another critical data point that is missing is how many parents/caregivers and community members have participated in the DREAMS partnership's contextual interventions as PEPFAR's monitoring, evaluation, and reporting indicators do not capture this data. Due to these missing data points, there is a risk of greatly underestimating the DREAMS partnership outcomes across the socioecological model and skewing assumptions on the cost.

To better understand the DREAMS partnership's reach, budget allocations, and outcomes and to inform future programming, USAID conducted a DREAMS Program Review in Malawi, South Africa, and Zimbabwe. Utilizing both PEPFAR and USAID programme data and mapping the PEPFAR budget subprogramme areas to USAID programme financial data, the budget per service values were calculated for various DREAMS partnership services in the three countries. According to this review, the budget for the primary package per adolosecent girl and young woman was US $13 in Malawi, US $12 in South Africa, and US $22 in Zimbabwe, showing that comprehensive primary programming, which generates lifelong benefits, can be implemented with a relatively low budget. The budget per adolescent girl and young woman for comprehensive economic strengthening, a secondary service, which this group of people, governments, and other stakeholders have cited as a highly valued programme feature, was US $76 in Malawi, US $39 in South Africa, and US $157 in Zimbabwe. As the cost per secondary service is higher than the primary package, ongoing donor support will be critical for sustaining and expanding access to this comprehensive package. Further assessment is needed to determine the variations across countries in these and other services that were analysed and to identify the interventions for transition from donor support to host country implementation *(53)*.

Since 2015, PEPFAR has invested over US $2 billion towards HIV combination prevention through the DREAMS partnership, reaching not only adolescent girls and young women but also parents/caregivers, community members, and male peers. While this is a significant overall investment, the annual investment was less than 8% of the PEPFAR budget in Fiscal Year 2024 *(54)*. Successful prevention programmes for priority populations depend on differentiated service delivery, including holistic approaches, support networks, and community-based programming. Direct, dedicated funds are essential for intentional, holistic programming, as without them governments and donors often neglect allocating funds for non-biomedical approaches for adolescent girls and young women, including as a result of stigmatization and cultural norms that negatively affect young people, especially young women. These interventions are also often labeled and perceived as too expensive, though there is a dearth of cost-effectiveness analysis to support these claims. As resources become more limited and direct service delivery continues to transition to country governments, it is critical to maintain, and even increase, the political will to designate combination prevention for adolescent girls and young women as a funding priority. If not, the global community will fail to end AIDS as a public health threat and risk seeing increasing gaps in HIV incidence between adolescent girls and young women and their peers.

Spotlight on inequities: Programmes addressing gender norms and gender-based violence

The concept of 'gender' is sometimes used as a synonym for 'cisgender women'. However, the concept of gender is much more nuanced and multifaceted. USAID's Gender Equality and Women's Empowerment Policy (2023) defines gender as

> *"a socially constructed set of rules, responsibilities, entitlements, and behaviors associated with being a man, a woman, or a gender-diverse individual, and the relationships between and among people according to these constructs. These social definitions and their consequences differ among and within cultures, change over time, and intersect with other factors (e.g., age, class, disability, ethnicity, race, religion, citizenship, and sexual orientation). Though these concepts are linked, the term gender is not interchangeable with the terms women, sex, gender identity, or gender expression" (55).*

Gender influences an individual's status within society, as well as the roles, norms, and behaviors that influence access to and the utilization of health services. Gender norms have a significant impact on how a society accords power and status, and to whom. Societies that embrace patriarchal, heteronormative identities as those who are accorded the most power and status are also those that have greater disparities in health equity, particularly among women and girls and gender and sexual minorities *(56, 57)*.

Gender inequality impedes the effectiveness of HIV prevention, testing, and care and treatment programmes and services *(58)*. One in three women worldwide have experienced violence in their lifetime *(59)* and one in four girls' first sexual encounter was unwanted *(60)*. It is more likely that a woman who experiences intimate partner violence will acquire HIV *(58)*, and survivors of such violence can face challenges adhering to treatment. Harmful gender norms, both for men and women as well as gender and sexual minorities, can increase the risk of HIV acquisition and also interrupt HIV testing and treatment. Fortunately, promising programmes exist to address gender inequities and prevent and respond to gender-based violence, helping break the cycle of gender inequality and its negative impact on HIV outcomes.

Addressing gender norms for HIV and gender-based violence prevention

Harmful gender norms that increase the risk of acquisition or transmission of HIV include those that endorse harmful or high-risk behaviours such as cross-generational and transactional sex; multiple concurrent partnerships; alcohol/substance misuse/abuse; inequitable control of household resources; poor use of health-care services; lack of support for a partner's health-care concerns; and stigma, discrimination, and violence related to sexual orientation and gender identity *(58–61)*. Research has shown that shifting harmful gender norms can support the uptake of HIV services *(62)*.

USAID funds evidence-based activities that address these harmful gender norms that contribute to behaviors that increase HIV risk, and that impede access to care and treatment services for those who need them. These evidence-based interventions include those that:

1. Support participants to understand and question existing gender norms and reflect on the impact of those norms on their lives and communities.

2. Include content that makes a clear link between gender norms and HIV prevention and treatment.

3. Deliver content across a series of interactive and participatory sessions that engage programme participants for at least ten hours.

These types of interventions, such as *Stepping Stones, Go Girls,* and *SASA!* were developed to engage programme participants across the socioecological framework (i.e. at the individual, small group, and community level), and have been successfully implemented in the DREAMS partnership, as well as in other comprehensive HIV and gender-based violence prevention programmes. These types of interventions have been shown to effectively address key health equity gaps, particularly for adolescent girls and young women, especially when combined with the offer of biomedical HIV prevention and sexual and reproductive health services.

Closing equity gaps in first-line support regarding gender-based violence

Recognizing the syndemic relationship between HIV and gender-based violence, referenced by Abigail Hatcher and colleagues as "concurrent, intersecting, and mutually reinforcing nature of these particular health problems," *(63)* USAID has prioritized the provision of immediate, first-line support to survivors of violence in its PEPFAR-funded HIV programmes and services, providing psychological first aid grounded in a rights-based approach. First-line support helps mitigate the impact of violence on people living with HIV and populations made vulnerable to HIV. It is often the most important care that can be offered to a person who has experienced or is experiencing violence.

Using the WHO framework 'LIVES' *(64)*, PEPFAR has mandated that programme facilitators and service providers be trained in how to safely identify potential survivors of violence and know how to provide a compassionate and survivor-centred response to a person who discloses their experience or fear of violence to them. USAID has trained hundreds of its workforce and members of its implementing partner workforce on how to deliver first-line support, an approach that emphasizes active listening, inquiring about a survivor's needs and concerns, validating what a survivor is saying, helping them identify ways to enhance their safety, and linking the survivor to additional medical and non-medical care. Endline training surveys indicate that, after completing the training, 81% of participants felt prepared to ask a programme participant if they have experienced gender-based violence, 82% felt prepared to talk to a survivor about their needs and options, and 74% felt prepared to help a survivor create a safety plan and refer for additional services.

To better meet the needs of children and adolescents, WHO released an adapted version of LIVES, known as LIVES CC. This uses the same principles and techniques as LIVES but has been adapted to be child-friendly and also acknowledges the need to support non-offending caregivers. USAID, through its implementation of the OVC programme and DREAMS partnership, has trained case managers and mentors on how to respond to children, adolescents, and their families in cases where violence is suspected or disclosed.

Clinical care for gender-based violence, including PEP for HIV prevention

The provision of timely, compassionate, and quality survivor-centred care for survivors of violence is essential to addressing health equity gaps, particularly for children, adolescent girls and young women, and key populations, who are disproportionately affected by gender-based violence *(65–67)*. USAID supports the delivery of clinical care for survivors of violence through both 'one stop centres' (those that offer both clinical and non-clinical care, such as legal and psychosocial support services), as well as through services integrated into standard care for people living with HIV at both public and private facilities. Critical to these services is the timely provision of HIV PrEP for survivors of sexual violence, an essential and highly efficacious biomedical HIV prevention intervention *(64)*. Significant equity gaps both in accessing and completing PEP, particularly among children, AGYW, and adult women exist, with programme data revealing gaps across the PEP cascade between those initiating and those completing PEP *(64–65)*. Further efforts are needed at the policy, facility, and community levels to reduce barriers, address stigma and improve access to and support completion of PEP.

Raising awareness and building empathy to address equity for key populations and LGBTQI+ individuals

The equity gaps for key populations and LGBTQI+ individuals articulated in Chapter 3 clearly demonstrate the gaps in health equity for populations that have been marginalized by structural inequities, including stigma, discrimination and violence. Fostering a more inclusive enabling environment for HIV prevention and treatment means building greater empathy and understanding among individuals, communities, workplaces and health systems towards gender and sexual minorities. With PEPFAR funding, the

Health Policy Project developed a transformative Gender and Sexual Diversity Training *(68)* for the US Government, host country governments and implementing partners. Results from the training *(69)* showed an overall improvement in attitudes towards gender and sexual minorities and may have helped to improve workplace norms to foster a culture of greater tolerance and respect. Such positive changes are essential to dismantle systems of stigma and discrimination and improve health equity for populations that have been marginalized.

Ensuring equity in the HIV response: The importance of key equity investments and the risks of losing focus

Despite the significant, historic achievements of the global HIV response, equity gaps persist for children, adolescent girls and young women and key populations. Although HIV investments have underwritten medications, systems, and services, these are often inaccessible for people who have been marginalized and made vulnerable by societies that do not grant them the same power and agency available to others. What has been built has proven insufficient to overcome the formidable structural barriers that these populations face. In addition to the unaddressed structural barriers, a lack of scale of effective interventions mean that inequities persist. Essential considerations for HIV programming across priority populations are outlined below.

HIV prevention for key and priority populations

Ending AIDS as a public health threat depends on successful achievement of all elements of the Global AIDS Strategy, including ambitious prevention interventions to greatly reduce new infections. Even in the context of significant HIV treatment scale-up and increasing viral load suppression rates, primary prevention is urgently needed *(70, 71)*. Discontinuing HIV prevention in the context of epidemic control will risk resurgence as people and contexts shift, potentially leading to a resurgence of HIV *(72)*.

> *"As the number of young people aged 15–24 increases, efforts to provide HIV prevention services to meet their needs must be scaled up if the world is to meet the global targets for reducing new HIV infections" (73, 74).*

For adolescents and young people, low coverage of HIV services is rooted in lack of knowledge about sexual and reproductive health, limited access to youth-friendly sexual and reproductive health services integrated with HIV care and psychosocial and economic challenges, including poverty, gender inequalities and a lack of family/community support *(75, 76)*. The multiplicity of factors affecting young people's risk and vulnerability underscores the importance of combination HIV prevention. Effective combination prevention is particularly important for subpopulations who are disproportionately affected by HIV, namely adolescent girls and young women, OVC, and key populations.

Emerging data show that the growing number of biomedical prevention options, including long-acting injectables, combined with flexibility in location of prevention services, is increasing the overall number of people accessing prevention *(77)*. Awareness and acceptability of prevention services can be enhanced by offering education on HIV prevention, PrEP and condoms in settings that are convenient and developmentally appropriate for adolescent girls and young women, including safe spaces, schools, universities/vocational training programmes. Community-based organizations can enhance awareness and acceptability of these services. Risk perception is a key motivator for PrEP use. Education on HIV and gender-based violence prevention, a cornerstone of the DREAMS partnership primary package, may help to align adolescent girls and young women's risk perception with actual risk and thereby increase their willingness to use PrEP and other biomedical interventions *(78)*. Other important lessons can be gleaned through the Maximizing Options to Advance Informed Choice for HIV Prevention (MOSAIC) project experience, a five year (2021–2026) USAID supported global project funded by PEPFAR designed to help adolescent girls and young women prevent HIV by improving access to new and emerging biomedical prevention products. Of course, there are tradeoffs to increase the focus and budget on HIV combination prevention, necessitating a review across an entire budget envelope and progress against other metrics for an informed and equitable shift.

Comprehensive programming and multisectoral approaches to address underlying drivers of HIV

A focus on the social and behavioural determinants of health allows an approach to HIV that is more comprehensive, extending beyond just biomedical factors, improving multiple facets of well-being, and having a potentially far-reaching impact on human development. Focusing on social and behavioural determinants can empower individuals and communities, reduce stigma, change inequitable gender norms, improve health literacy, and enable people to take control of their health and make better, healthier, informed choices.

In the past 20 years, PEPFAR has expanded its delivery of prevention and response services for gender-based violence through its network of public, private, and NGO service providers. PEPFAR's investments have not only expanded the delivery of care but have improved the overall quality of gender-based violence care while strengthening aspects of health systems that prevent and respond to violence. Providing integrated HIV and gender-based violence services can help to reduce risks for highly vulnerable populations and has improved linkages for survivors of gender-based violence to HIV services. These services address equity gaps by reaching individuals with survivor-centred services that meet their unique needs *(79–82)*.

The complexities of addressing social determinants of health and structural drivers of inequity require multisectoral interventions, coordination across health, education, and social welfare actors and stakeholders, and sufficient time and resources to test, refine, and sustain equitable approaches to social change. Donors and programme funders that seek quick results to complex public health challenges run the risk of undermining their own efforts. For example, short time frames and limiting the desired programme outcomes to one health variable can inadvertently limit the potential benefits of multifaceted approaches to addressing inequities beyond HIV, including violence, other STIs, and unintended pregnancies.

Another potential pitfall to efforts to address the social and behavioural factors that increase vulnerability is the desire and necessity to quickly transition donor-funded efforts to host country governments. This transition must happen thoughtfully according to multiple factors, e.g. progress towards epidemic control, complexity of service delivery, platforms and structures that are in place and can be leveraged, and remaining gaps across the HIV continuum. However, transitions cannot be executed in the same manner across all programme areas. For example, programmes and services to address youth HIV needs, especially those of orphans and vulnerable children and adolescent girls and young women, are often diffused across several government ministries. While this reflects a desire for more holistic integrated services, the unintended result is often a lack of coordination and funding for such programmes. This is particularly the case for under-funded and under-staffed ministries, such as those focusing on women's/family/gender issues, youth, or other marginalized populations. Without intentional focus, funding and the time needed to cauterize the integrated multisectoral collaboration, the approach is undermined and can result in stalled progress.

Community-level services and community engagement are essential to achieve equity

Community-level services, including differentiated service delivery, are critical for marginalized subgroups whose needs are not comprehensively met at the facility level. Documented benefits of community-level services include better uptake of services by removing access barriers, and improved engagement in care and treatment adherence *(83, 84)*. In addition, community-level services frequently use multisectoral approaches that address the more comprehensive drivers of HIV at the individual and community levels. These are not new arguments, but rather are ones that the HIV community has been making for decades: "Repeated social science studies demonstrate that for many people at risk of HIV, particularly young people and those from marginalized or criminalized key populations, existing health services that purport to offer HIV treatment and prevention services are not places that welcome the very people who need those services most. Person-centred prevention links to the broader discussions of societal and legal barriers and ensuring that services are community led as well as improving the delivery of services." If sufficient attention to and investment in these components is not ensured, the underlying sociobehavioural determinants of HIV will persist and continue to drive the HIV epidemic among priority populations.

Preventing and responding to gender-based violence as it relates to HIV highlights the unique value of community-led approaches. Data has documented the economic burdens of gender-based violence, as well as the intergenerational trauma of experiencing violence in childhood and the subsequent links to experiencing or perpetrating violence in adulthood *(86,87)*. Programmatic evidence has demonstrated that community and family-centred interventions to prevent violence in childhood (such as parenting programmes, violence prevention, and socioeconomic support) can not only break the intergenerational cycles of violence, but can also reduce significant health equity gaps in adolescence and adulthood *(88)*. These benefits, in turn, help to improve the overall health and well-being of vulnerable populations, but can also reduce the economic burdens of morbidity and mortality caused by violence, poverty, and inequality. The risks of not providing community-led programmes and services that are responsive to the unique needs of vulnerable populations could mean further gaps in equity and risk resulting in increasing lifetime risk for both HIV and gender-based violence.

Enabling environment: The importance of sound laws, policies, and political will, and the unique challenges associated with fragile environments

An enabling environment, including policies promoting non-discrimination, gender equality, and internationally recognized human rights, are vital for an effective HIV response *(89)*. Evidence shows that countries with clear laws mandating non-discrimination, independent human rights institutions and strong responses to gender-based violence had higher levels of HIV status awareness and viral suppression compared to countries lacking these attributes and institutional responses. Conversely, laws and policies that criminalize key populations have been detrimental to the HIV response *(90)*.

Some countries have reneged on their previous commitments to protect internationally recognized human rights, particularly for women, girls and LGBTQI+ individuals. Discriminatory and punitive laws and public perceptions of these laws put individuals' health, livelihoods, and in some cases, life itself, at great risk. Efforts to curb access to sexual and reproductive health services, including HIV care, will lead to harmful short-term and long-term impacts, including HIV treatment failure, higher rates of unintended pregnancies, higher rates of STIs, and increased maternal and child morbidity and mortality.

During times of crises, conflict, or socioeconomic stress, gender-based violence, including violence against children, often increases. As a recent example, with the onset of COVID-19 lockdowns, there were global reports of increases in domestic and intimate partner violence and child abuse. At the outset of the COVID-19 pandemic, the United Nations Population Fund (UNFPA) estimated that for every three months the lockdown continued, an additional 15 million cases of gender-based violence were expected. While many countries designated gender-based violence services as essential, the reality was that many survivors—particularly people living with HIV, adolescent girls and young women, key populations, and LGBTQI+ individuals—were trapped in their homes, unable to seek timely post-rape care at health facilities or one-stop centres, unable to leave dangerous situations, or lacking access to any kind of in person group-based support or counseling. As the world faces more overlapping and more complex crises, including pandemics, the climate emergency, violent conflict, and natural disasters, the risks to health equity and human rights become even more acute.

Conclusion: Action to close persistent equity gaps

Tremendous progress has been made against the HIV epidemic in the last 20 years. However, progress is not equal across all subgroups, differing at various stages of the HIV continuum. Key considerations to close these equity gaps include: HIV combination prevention for subpopulations with persistent new HIV infections; comprehensive programming and multisectoral approaches to address underlying drivers of HIV and help to address broader health and development concerns; community-level services and community engagement to meet the service delivery needs of marginalized subpopulations; and continuous monitoring and nimble responses to ensure an enabling environment for marginalized populations made vulnerable to HIV.

In order to further refine programmes that advance health equity and make them fit for scale, it is essential to address the gaps in data that persist across prevention, multisectoral programming, and community-level service provision. These gaps exist for children in population-level surveys such as the Population-Based HIV Impact Assessments, as well as on priority topics such as gender equality, gender-based violence across the life course, and HIV infections averted. The lack of cost-effectiveness data is also a limiting factor, particularly in the context of sustainability programming. Without more analysis and new models on the cost-effectiveness of programmes, we risk returning to previous programming of single, less expensive interventions rather than building out holistic, evidence-based multisectoral programming for priority populations.

As emphasized by the Community for Understanding Scale Up (CUSP), a working group dedicated to understanding and advising good practices in scaling up evidence-based social norms interventions,

> *"In relation to cost, with social norms change, a longer view is needed. Instead of thinking about cost-effectiveness as the 'per beneficiary' financial cost of a single outcome during a particular funding cycle, we could think about it in terms of the overall cost–benefit of long term, sustainable social change impact. Funders would then find that investments in the longer-term processes that are key to shifting social norms and deeply embedded social structures that underpin violence, discrimination, and inequality, are more cost effective than 'quick fixes'." (91)*

Given the constrained fiscal space of many governments in low- and middle-income countries and the limited resources available to any one sector, strategic alignment and leveraging of existing national initiatives should be prioritized to help governments address cross-cutting determinants. One example is how OVC programmes and the DREAMS partnership leverage other national efforts in social protection programs and girls education initiatives, e.g. Education Plus. The benefits of keeping girls in school span health and development outcomes and are well documented in HIV programming *(92–94)*.

Sustainable achievement of HIV outcomes across key and priority populations requires programmes that address the sociobehavioural determinants that have made them more vulnerable to HIV. If HIV programmes and investments are not intentionally focused on comprehensive programming for key and priority populations, the global community risks losing the extraordinary gains made against the epidemic and will not achieve the goal of achieving and sustaining HIV epidemic control.

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05

INTEGRATING HIV SERVICES WITH HEALTH SYSTEMS: A PATHWAY TO EQUITY AND ENDING AIDS

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Key messages

- Comparative country-level data from national health databases and global surveillance reports in 182 countries were analysed to assess gains and losses (as measured by outcomes along the 95–95–95 and 10–10–10- targets of the Global AIDS Strategy) associated with the integration of HIV and health services.
- Linkage/integration of HIV and sexual and reproductive health services was associated with equity across all three 95–95–95 targets.
- Co-management of HIV and tuberculosis was associated with equity on the first two 95–95–95 targets.
- Discriminatory attitudes towards people living with HIV was correlated to the greatest loss of equity across the 95–95–95 targets.
- Gender inequality and a homophobic climate were associated with equity losses with respect to HIV test seeking.
- The involvement and leadership of civil society was consistently correlated with equitable outcomes for the 95–95–95 and 10–10–10 targets. This analysis underscores the critical value of community-led responses in promoting equity in the HIV response.
- Overall, HIV integration, a stronger health system and social determinants of health are associated with equity gains in the 95–95–95 HIV targets, although these gains can be offset by discriminatory attitudes, stigma and human rights violations.

Introduction

Despite significant advances in the global fight against HIV and AIDS, the epidemic continues to reflect the inequalities that fragment our societies. With approximately 39 million people living with HIV worldwide, the epidemic disproportionately affects women and girls and key population groups.

HIV and health services integration refers to the joining of HIV-related services and one or more health services previously managed and delivered partly or completely separately *(1)* in a coordinated way across the different levels and sites of care so that patients receive a continuum of services tailored to their needs throughout their course of life course *(2)*.

Health inequities refer to differences which are unnecessary and avoidable but, in addition, are also considered unfair and unjust *(3)*. Therefore, health equities imply that everyone should have a fair opportunity to reach their full health potential and should not be disadvantaged in reaching it *(4)*. In other words, everyone should have the capability *(5, 6)* to live the healthy life they want to live. Health equity can be considered a multidimensional concept that includes fair and just access to HIV and health services, but also the social determinants of health *(7)* and the removal of societal *(8)* and structural *(9)* barriers to HIV and health care. Indeed, health care itself represents a small share (from 15% to 43%) of the main drivers of one's health status *(10)*.

Therefore, if integration of HIV services could help address health disparities and inequities, it might help ensure that no one is left behind and improve health outcomes for all. This is particularly true for good health and well-being (UN Sustainable Development Goal (SDG) 3), gender equality (SDG 5) and reducing inequalities (SDG 10). HIV integration promotes justice and equity (SDG 16), community-led service delivery, and social contracting (SDG 17). It aligns with these goals by streamlining service delivery, optimizing resource use and ensuring that HIV services are as holistic as possible and accessible to all, especially the most vulnerable.

The 2021 United Nations Political Declaration on Ending AIDS and Inequality *(11)* and the 2021–2026 AIDS Strategy outlined a series of global targets and commitments to achieve the 2030 SDG target of ending AIDS as a public health threat *(12)* (Table 1).

Table 1:
The global AIDS targets

	Global AIDS targets
i	95% of people within the subpopulation who are living with HIV know their HIV status.
ii	95% of people within the subpopulation who are living with HIV and who know their HIV status are on ART.
iii	95% of people within the subpopulation who are on ART have suppressed viral loads.
iv	Less than 10% of people living with HIV and key populations experience stigma and discrimination.
v	Less than 10% of people living with HIV, women and girls and key populations experience gender-based inequalities and gender-based violence.
vi	Less than 10% of countries have punitive laws and policies.

The Global AIDS Strategy also details disaggregated HIV and health services integration targets and commitments for 2025. (See Supplementary Material S1.) These people-centred HIV integration targets provide the foundation for measuring the progress in integrating HIV and other health services. They also provide insight into how potential gains in equity could be achieved and measured.

The health benefits of HIV and health services integration

The literature provides compelling evidence of the potential gains of integrating HIV with selected health services to enhance equity in health access and outcomes. By bringing together services that are often siloed, health systems can offer more comprehensive, person-centred care that responds to the diverse needs of those living with or at risk of HIV. As used here, integration of HIV into systems for health is the integration of the full range of HIV prevention, treatment and care services, reaching all populations with stigma-free services, and public financing of community-led responses within existing health systems. This chapter excludes financial aspects though.

In their systematic review and meta-analysis, Bulstra et al.*(1)* underscore the enhanced outcomes of HIV and health integrated services. The HIV care and treatment cascade tended to be better in integrated services settings, including superior uptake of HIV testing, antiretroviral therapy initiation coverage, retention in HIV care and viral suppression, as well as improved health and health systems outcomes.

Perhaps one of the best examples of successful integration is in the area of sexual and reproductive health (SRH), where comprehensive, client-centred care can maximize health resources, enhance service quality and improve access for all with significant equity gains and reduce inequalities, particularly in low and middle-income countries. HIV and SRH integration improved access to contraception and antiretroviral therapy during pregnancy, as well as increased HIV testing rates *(13)*.

Moreover, HIV integration can improve access and quality of care for specific services people living with HIV may not access otherwise. One example is the integration of HIV and mental health services, which may improve both patient and service delivery outcomes *(14, 15)*. In Zimbabwe, the integration of mental health services into youth HIV care led to gains in HIV treatment adherence and mental well-being *(16)*. In addition, thanks to the successful scale-up of life-saving antiretroviral therapy, HIV can be assimilated as a chronic disease *(17, 18)* and new areas of integration, such as geriatric services, are emerging *(19)*.

HIV strategies have helped inform the integration of services for noncommunicable diseases (NCDs) *(20, 21)*. HIV successes, such as performance-based financing, task-shifting to community health workers, and decentralized services, can be adapted for NCD interventions *(22)*. Integrating NCD services with existing health-care systems could be an opportunity to build more robust and equitable health systems *(23)* as highlighted in Botswana *(24)* and Ethiopia *(25)*. Providing comprehensive care for HIV and NCDs within a unified service delivery framework could potentially reduce health-care disparities, improve access to care for underserved populations, and ultimately contribute to better health outcomes *(26)*.

The economic benefits of HIV integration

There are limited comparative studies on the economic benefits of integrating HIV and other health services. Three studies contributed to filling this gap, with evidence of the cost savings and efficiency gains from integrated HIV services *(1, 14, 27)*. These studies explored how integration might optimize resource use while improving access to care, especially for marginalized population groups. These studies looked beyond cost-effectiveness—acknowledging that more efficient does not mean more equitable—and considered the broader theme of equity, demonstrating how integrated approaches can make health care more accessible and equitable. However, these studies point to broad knowledge gaps with respect to the long-term impacts of integration on health equity, the scalability of successful models and their adaptability to different cultural and health system contexts. Indeed, existing literature points to the necessity of exploring how integration can be tailored to meet the needs of diverse populations, including women, adolescents and key populations, to ensure that the benefits of integration extend to all those affected by HIV.

The societal benefits of HIV integration

Societal enablers involve sectors other than health, including gender, justice and social protection. People living with HIV continue to face stigma and discrimination in accessing HIV-related services *(28)* and other health services *(29)*. HIV integration may potentially help remove societal barriers to accessing health and HIV services *(1)*, particularly when it involves peer and community-led direct services *(30)*. In addition, medical–legal partnerships can advance equity and improve health outcomes for people living with HIV by alleviating barriers to HIV treatment and care and increasing the continuum of care, patient engagement and community participation *(31)*.

In Kenya, HIV integration with maternal and child health applications improved antiretroviral therapy uptake among pregnant women *(32)*. This integration increased equity and effectiveness by offering a single health supply store, lowering barriers to access, and ensuring that women do not have to go through multiple health services to receive care *(33)*.

In Brazil, community-led initiatives have been instrumental in integrating HIV prevention and care with broader sexual and reproductive health services for sex workers and transgender populations. Measurements included changes in access to hormone medication along with HIV services, rates of consistent condom use and engagement in regular health *(34)*.

Finally, social protection mechanisms that are HIV-sensitive, i.e. social protection services that do not explicitly target HIV-related issues or people living with HIV but encompass HIV-related challenges, resulted in a more equitable distribution of health services among population groups living with or affected by HIV *(35)*.

These examples show the importance of holistic care that addresses both the physical and psychological factors of living with HIV and offers compelling evidence of the benefits of integrating HIV programmes with other health *(36)* and social services *(35)* by engaging communities, reducing barriers, and streamlining care. These experiences suggest that measuring HIV integration equity gains requires a nuanced, context-sensitive combination of measurements that involve community-led organizations.


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Measuring the equity gains of HIV integration

The existing evidence above suggests equity gains from the integration of HIV and other health services, particularly at the community level in low and middle-income countries. Measuring equity gains of HIV integration de facto includes the societal and structural drivers to achieving HIV outcomes, such as HIV-related stigma and discrimination, gender-based inequalities and gender-based violence, and punitive laws and policies. Measuring equity gains from HIV integration of societal enablers, especially in low and middle-income countries, requires a comprehensive and multidimensional approach that considers the interplay between human rights, gender equality, young people, community-led responses, and universal health coverage, making it particularly challenging to measure in some countries and settings. Measuring these gains implies improving and implementing justice-focused indicators sensitive to changes in stigma, discrimination, and access to rights. These indicators go beyond conventional health metrics to include measures of social inclusion, gender-based violence, human rights violations, and stigmatising and discriminatory practices—including in health-care facilities.

Existing tools, such as the conceptual framework for action on the social determinants of health *(37)* combined with health equity markers, such as the ones used for the HIV prevention roadmap *(38)* and the global AIDS monitoring *(39)*, could show how well-integrated health programmes work at reducing inequality. Developing an integration-focused HIV and health equity impact assessment tool *(40)* could eventually play a role in this context. Such an equity impact assessment could examine the potential and actual equity impacts of inclusive HIV and health services, focusing on the most disadvantaged and ensuring that combined efforts do not inadvertently widen health disparities.

The involvement of community-driven organizations is central to evaluation techniques to assess HIV integration equity gains. Community-led organizations and networks have detailed information about the challenges facing the communities they serve and can provide valuable insights into the effectiveness of integration efforts *(38)*. Their involvement ensures that the measures used are relevant and culturally appropriate and that the findings are used to promote meaningful change. Community feedback mechanisms and participatory evaluation methods can strengthen the assessment of equity gains and ensure that the voices of those most affected by HIV are heard and acted upon.

Measuring the equity gains of HIV integration faces several challenges, which stem from the extensive array of sectors involved and the lack of data regarding both the health components of HIV and other health services integration, as well as the societal and justice-focused dimensions mentioned above. This study aims to bridge this gap by examining the equity gains from integrating HIV services with selected health services and its impact on achieving the 95–95–95 and 10–10–10 HIV targets. This includes assessing the roles of social determinants of health, stigma and discrimination, and civil society engagement in influencing these outcomes. Our primary hypothesis posits that service integration correlates positively with equity gains, offering a strategic pathway to bolster HIV prevention, care, and treatment efforts globally. Furthermore, we hypothesize that socioeconomic factors are significantly associated with these equity gains, while stigma and discrimination present substantial obstacles to achieving desired health outcomes. Last, we hypothesize that civil society involvement can mitigate these challenges, highlighting the indispensable role of community-led initiatives in effective and inclusive HIV responses.

How the analysis was conducted

A model was developed using available data and measures comparable across countries to study the association of the six HIV global targets (see Table 1) with HIV integration, using country-level markers of selected social determinants of health described below.

Outcome measures

The outcome measures were the global HIV targets described in Table 1 and are represented by the following measures:

- *The first 95:* Percentage of people living with HIV who know their status. Measures were obtained from the latest data from UNAIDS *(41)*.
- *The second 95:* Percentage of people living with HIV receiving antiretroviral therapy. Measures were obtained from the latest data from UNAIDS *(41)*.

- *The third 95:* Percentage of people living with HIV who have suppressed viral loads. Measures were obtained the latest data from UNAIDS *(41)*.

- The first 10 on discriminatory attitudes towards people living with HIV were measured through representative surveys conducted worldwide *(42)*: "On this list are various groups of people. Could you please mention any that you would not like to have as neighbours?" possible answers for the different groups were: "Not asked", "No answer", "Don't know", "Not mentioned", "Mentioned". A dichotomous variable was created indicating whether respondents mentioned or did not mention the group: "People who have AIDS". Country values are the mean of all the country's participants, and the variable ranges between 0 and 1, where a higher value means that people living with HIV and key populations do not experience stigma and discrimination.

- The second 10 on the experience of gender-based inequalities and gender-based violence was measured with the share of women who experienced violence by an intimate partner *(43)*. Values are between 0 and 1, where 1 implies that women and girls do not experience gender-based inequalities and gender-based violence.

- The third 10 on countries having punitive laws and policies was measured with the World Justice Project (WJP) Rule of Law Index. The index evaluates the status of many of the human rights enumerated in the UN's Universal Declaration of Human Rights. These include four out of five indicators that have declined the most during the global rule-of-law recession documented by the WJP. Each country's score averages eight factors: Constraints on Government Powers, Absence of Corruption, Open Government, Fundamental Rights, Order and Security, Regulatory Enforcement, Civil Justice, and Criminal Justice *(44)*. Values are between 0 and 1, where 1 implies that countries do not have punitive laws and policies.

Explanatory variables

Markers and proxies were selected of key social determinants of health at the country level.

There are three measures of HIV integration based on available, officially published, data on: the co-management of TB and HIV treatment HIV–TB *(41)*; the share of people coinfected with HIV and hepatitis C virus (HCV) starting HCV treatment *(41)*; and SRH–HIV linkages *(45)*. Each of the three HIV integration measures were studied independently and a composite variable combining the form of integration (M=.817, SD=.465). It is important to note that these measures provide insights into critical HIV and other health services integration; they do not capture the full spectrum of HIV integration, nor the quality of these integrated services across different contexts. For each measure, the most recent year available was used, reported by the sources referenced above.

- *Universal Health Coverage (UHC) Service Coverage Index:* This index is measured by the average coverage of essential health services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, noncommunicable diseases and service capacity and access, among the general and the most disadvantaged populations. The indicator is an index reported on a unitless scale of 0 to 100, which is computed as the geometric mean of 14 tracer indicators of health service coverage. The tracer indicators are organized by four service coverage components: *(1)* reproductive, maternal, newborn and child health; *(2)* infectious diseases; (*3)* noncommunicable diseases; *(4)* service capacity and access *(46)*. Potential bias and collinearity between the UHC index and the second HIV target on antiretroviral therapy coverage were controlled. (See Supplementary Material S2 for more details.)

- *Healthcare Access and Quality (HAQ) Index:* The HAQ Index is measured on a scale from 0 (worst) to 100 (best) based on death rates from 32 causes of death that could be avoided by timely and effective medical care *(47)*.

- *Human Rights Index:* Based on V-Dem's expert assessments and index *(48)*, this captures the extent to which people are free from government torture, political killings and forced labour; they have property rights and enjoy freedom of movement, religion, expression and association—the variable ranges from 0 to 1 (most rights).

- *Homophobic Climate Index:* This is a robust and valid measure ranging between 0 to 1 for the least to the most homophobic countries, respectively. The Index reflects both institutional and social homophobia. Institutional homophobia was assessed by the existence or the enforcement of laws characterizing institutionalized homophobia. Social homophobia was measured by two variables on tolerance and acceptance of same-sex relationships in the general population collected through representative surveys conducted worldwide *(49).*

- *Discriminatory attitudes towards people living with HIV:* This is measured through representative surveys conducted worldwide *(42)*: "On this list are various groups of people. Could you please mention any that you would not like to have as neighbours?" possible answers for the different groups were: "Not asked", "No answer", "Don't know", "Not mentioned", "Mentioned". We created a dichotomous variable indicating whether respondents mentioned or did not mention the group: "People who have AIDS".

- *Gender Inequality Index:* This covers three dimensions: reproductive health; empowerment; and economic status. Scores are between 0 and 1, and higher values indicate higher inequalities *(50).*

- *Gender-based violence:* This is a measure for the share of women aged 15 and older who experienced physical or sexual violence from an intimate partner in the past year. Values are between 0 to 1, where a higher value means more gender-based violence *(51).*

- *Civil society fabric and dynamism:* These were measured with two variables: the engaged society score, which measures how ordinary people discuss policies in private and public. Values are between 0 and 1, where a higher value signifies more engagement *(52).* The second variable is the civil society participation index, measuring the extent to which citizens are active in diverse organisations involved in national policy changes. Index values are between 0 and 1; a higher value means the most active participation in civil society *(52).*

- *Control variables* such as HIV prevalence and incidence rates, schooling rates, unemployment, and gross domestic product (GDP) per capita in purchasing power parity were collected from UNAIDS, the World Bank, and WHO.

Statistical methods

Spearman rank correlation analyses were used across 182 countries and territories *(53)* on the six HIV global targets described in Table 1. This technical choice reflects the nature of the data. Many of them are non-parametric, i.e. do not follow a normal distribution. Spearman rank correlation is a non-parametric measure of correlation that does not require the assumption of linear relationships and normally distributed residuals. This approach ensures that the results are robust and appropriately represent the monotonic relationship between the outcome measures and the explanatory variables of equity, allowing a valid and reliable interpretation of the results. All calculations were performed using Stata 16.

Results of the analysis

Table 2 presents the Spearman rank correlation analyses of the three 95–95–95 AIDS Global Target. The first 95 target (95% of people within the subpopulation who are living with HIV know their HIV status) was positively associated with integration ($\rho = .223$, $p = .016$), particularly with HIV–TB co-management ($\rho = .259$, $p = .005$) and SRH–HIV linkage ($\rho = .698$, $p < .001$). The first 95 target was also positively associated with markers of equity in health-care services, such as the Universal Health Coverage Index ($\rho = .369$, $p <.001$), the Healthcare Access and Quality Index ($\rho = .226$, $p = .011$) and public health-care expenditure ($\rho = .414$, $p <.001$). The first 95 target is correlated to HIV prevalence ($\rho = .220$, $p =.012$), education ($\rho = .217$, $p = .013$) and countries' average income ($\rho = .227$, $p = .011$).

Regarding the social determinants of health, the first 95 target was positively associated with better equity in resource distribution ($\rho = .306$, $p = .001$). It was strongly negatively correlated with discriminatory attitudes towards people living with HIV ($\rho = -.610$, $p < .001$), gender-based violence ($\rho = -.259$, $p = .003$) and gender-based inequality ($\rho = -.3.00$, $p = .001$). It was also negatively associated with countries' homophobic climate ($\rho = -.393$, $p < .001$). The first 95 target on HIV testing was positively associated with human rights through the rule of law index ($\rho = .421$, $p < .001$) and the human rights index ($\rho = .375$, $p < .001$). The engagement of citizens ($\rho = .314$, $p < .001$) and their participation in civil society organizations ($\rho = .378$, p < .001) were positively associated with the first 95 target.

The second 95 target (95% of people within the subpopulation who are living with HIV and who know their HIV status are on antiretroviral therapy) showed a moderate positive correlation (ρ = .258 p = .003) with HIV integration, mainly with the HIV–TB treatment co-management (ρ = .207, *p* = .018) and SRH–HIV linkage (ρ = .637, *p* < .001). In terms of measures of equity in health-care systems, the second HIV target was associated with the countries' public health-care expenditure (ρ = .241, *p* = .004). No correlation was found between universal health coverage or health-care access and quality, GDP per capita and education.

Regarding social determinants of health, the second 95 target on antiretroviral therapy coverage is positively associated with equity in resource distribution (ρ = .238, *p* = .005). Antiretroviral therapy coverage was positively associated with civil society participation, such as the engagement of citizens (ρ = .172, p = .041) and people's participation in civil society organizations (ρ = .274, *p* = .001). Discriminatory environments and practices were negatively correlated with treatment access, particularly regarding discriminatory attitudes towards people (ρ = -.518, *p* < .001) and the homophobic climate (ρ = -.174, *p* = .037).

The third 95 HIV target (95% of people within the subpopulation who are on antiretroviral therapy have suppressed viral loads) showed a weaker association with the health system's equity markers compared to the first and the second 95 targets. The viral suppression target strongly correlated with SRH–HIV linkage (ρ = .539, *p* < .001). Discriminatory attitudes towards people living with HIV were

Table 2:
Spearman rank correlation analyses of the 95-95-95 AIDS Global Targets

	First 95			Second 95			Third 95		
	n	ρ	p-value	n	ρ	p-value	n	ρ	p-value
HIV integration	117	.223	.016	129	.258	.003	97	.166	.103
From which:									
HIV & TB treatment co-management	117	.259	.005	129	.207	.018	97	.070	.496
HIV & HCV coinfected patients starting HCV treatment	31	-.312	.087	35	-.226	.192	28	-.231	.237
SRH & HIV linkage overall score	50	.698	<.001	56	.637	<.001	43	.539	<.001
Universal health coverage	133	.369	<.001	145	.177	.033	112	.112	.241
Healthcare Access and Quality	127	.226	.011	139	.086	.312	108	.087	.370
Public healthcare expenditure as a share of GDP (log)	133	.414	<.001	145	.241	.004	112	.162	.088
HIV incidence (aged 15+, log)	119	.126	.174	127	.125	.162	98	.113	.268
HIV prevalence (aged 15+, log)	129	.220	.012	141	.239	.004	108	.236	.014
GDP per capita, (PPP, log)	124	.227	.011	135	.029	.741	107	.059	.547
Schooling	131	.217	.013	143	.025	.764	111	-.040	.675
Unemployment	131	-.029	.739	143	-.184	.028	111	-.179	.060
Equity resource distribution (the higher, the better)	125	.306	.001	137	.238	.005	107	.166	.087
Discriminatory attitudes towards PLHIV (the higher, the worse)	73	-.610	<.001	82	-.518	<.001	67	-.475	<.001
Gender-based violence (the higher, the worse)	128	-.259	.003	140	-.051	.553	109	.025	.799
Gender inequality (the higher, the worse)	125	-.300	.001	136	-.116	.177	107	-.074	.450
The rule of law (the higher, the better)	106	.421	<.001	115	.225	.016	92	.247	.018
Human Rights (the higher, the better)	125	.375	<.001	137	.220	.010	107	.154	.114
Homophobic climate (the higher, the worse)	131	-.393	<.001	143	-.174	.037	111	-.158	.098
Engaged society	129	.314	<.001	141	.172	.041	109	.193	.045
Civil society participation	129	.378	<.001	141	.274	.001	109	.299	.002
Region	131	.217	.013	143	.115	.171	111	-.005	.960

strongly negatively associated with viral load suppression ($\rho = -.475$, $p < .001$). Finally, the third 95 target was correlated with human rights through the rule of law index ($\rho = .247$, $p = .018$) and civil society fabric, with citizen's engagement in society ($\rho = .193$, $p = .045$) and their participation in civil society organizations ($\rho = .299$, $p = .002$).

From Table 3, it appears that the first 10 target (Less than 10% of people living with HIV and key populations experience stigma and discrimination) was associated with SRH-HIV linkage ($\rho = .374$, $p = .042$), universal health coverage ($\rho = .287$, $p = .004$) and public health-care expenditure ($\rho = .364$, $p < .001$). No correlation was found ($\rho = .156$, $p = .118$) with health-care access and quality. The first 10 target was positively associated with human rights ($\rho = -.464$, $p < .001$) and strongly correlated with citizen's engagement in society ($\rho = .462$, $p < .001$) and civil society participation ($\rho = .548$, $p < .001$). The first 10 target was negatively associated with the homophobic climate ($\rho = -.554$, $p < .001$). No association with gender inequality was found.

The second 10 HIV target (Less than 10% of people living with HIV, women and girls and key populations experience gender-based inequalities and gender-based violence), proxied with lower rate of gender-based violence, was strongly associated with universal health coverage ($\rho = .790$, $p < .001$), health-care access and quality ($\rho = .770$, $p < .001$) and public health expenditure ($\rho = .619$, $p < .001$).

The gender-based violence target was negatively associated with HIV integration ($\rho = -.233$, $p = .004$), particularly with HIV–HCV integration ($\rho = -.372$, $p = .015$). The second 10 target was strongly correlated with countries' average income ($\rho = .768$, $p < .001$), education ($\rho = .769$, $p < .001$), and the equity in resource distribution ($\rho = .615$, $p < .001$). It was strongly negatively associated with gender inequality ($\rho = -.804$, $p < .001$) and the homophobic climate ($\rho = -.687$, $p < .001$). Finally, this target was strongly associated with human rights ($\rho = .562$, $p < .001$), people's engagement in society ($\rho = .400$, $p < .001$) and civil society participation ($\rho = .322$, $p < .001$).

The third 10 target (Less than 10% of countries have punitive laws and policies) was strongly correlated with markers of health systems' equity. It was positively correlated with TB-HIV integration ($\rho = .234$, $p = .010$) and SRH–HIV integration ($\rho = .367$, $p = .009$). It was strongly positively associated with universal health coverage ($\rho = .742$, $p < .001$), health-care access and quality ($\rho = .738$, $p < .001$), and public health-care expenditure ($\rho = .700$, $p < .001$). The third 10 target was also strongly associated with the countries' average income ($\rho = .796$, $p < .001$), education ($\rho = 0.736$, $p < .001$), and equity in resource distribution ($\rho = .841$, $p < .001$). The third 10 target was negatively correlated with discriminatory attitude towards people living with HIV ($\rho = -.232$, $p = .026$), gender inequality ($\rho = -.799$, $p < .001$) and the homophobic climate ($\rho = -.642$, $p < .001$). Finally, the third 10 target on

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Table 3:
Spearman rank correlation analyses of the 10-10-10 AIDS Global Target

	First 10 Stigma			Second 10 GBV			Third 10 criminal laws		
	n	ρ	p-value	n	ρ	p-value	n	ρ	p-value
HIV integration	82	.052	.644	153	-.233	.004	119	-.121	.189
From which:									
HIV & TB treatment co-management	82	.151	.174	153	.131	.106	119	.234	.010
HIV & HCV coinfected patients starting HCV treatment	25	-.113	.591	42	-.372	.015	32	-.279	.123
SRH & HIV linkage overall score	30	.374	.042	60	.176	.178	50	.367	.009
Universal health coverage	102	.287	.004	181	.790	<.001	140	.742	<.001
Healthcare Access and Quality	102	.156	.118	187	.770	<.001	135	.738	<.001
Public healthcare expenditure as a share of GDP (log)	102	.364	<.001	179	.619	<.001	140	.700	<.001
HIV incidence (aged 15+, log)	67	.413	.001	124	-.326	<.001	100	-.229	.022
HIV prevalence (aged 15+, log)	81	.435	<.001	140	-.349	<.001	114	-.228	.015
GDP per capita, (PPP, log)	100	.176	.080	175	.768	<.001	137	.796	<.001
Schooling	104	.081	.412	182	.769	<.001	141	.736	<.001
Unemployment	104	-.175	.076	182	.007	.924	141	.047	.580
Equity resource distribution (the higher, the better)	101	.152	.128	169	.615	<.001	130	.841	<.001
Discriminatory attitudes towards PLHIV (the higher, the worse)				102	-.121	.226	92	-.232	.026
Gender-based violence (the higher, the worse)	102	-.121	.226				136	-.685	<.001
Gender inequality (the higher, the worse)	99	-.132	.192	166	-.804	<.001	133	-.799	<.001
The rule of law (the higher, the better)	92	.232	.026	136	.685	<.001			
Human Rights (the higher, the better)	101	.464	<.001	169	.562	<.001	130	.775	<.001
Homophobic climate (the higher, the worse)	104	-.554	<.001	182	-.687	<.001	141	-.642	<.001
Engaged society	103	.462	<.001	169	.400	<.001	134	.569	<.001
Civil society participation	103	.548	<.001	169	.322	<.001	134	.549	<.001
Region	104	.554781	<.001	182	-.0598	.423	141	-.14155	.094

punitive laws and policies was strongly associated with people's engagement in society (ρ = .569, p < .001) and civil society participation in civil society organizations (ρ = .549, p < .001).

The Spearman correlation rank analyses of the three types of HIV integration presented in Table 4 show that SRH–HIV linkage (ρ = .350, p = .006) and HIV–TB treatment co-management (ρ = .204, p = .014) were positively correlated with universal health coverage. SRH–HIV and TB–HIV integration were also positively associated with public health-care expenditures (ρ = .481, p < .001 and ρ = .209, p = .008, respectively) and with greater equity in resource distribution (ρ = .365, p = .004 and ρ = .251, p = .003, respectively). The three types of HIV integration were associated with different social determinants: SRH–HIV linkage was significantly negatively associated with discriminatory attitudes towards people living with HIV (ρ = –.374, p = .042) and gender inequality (ρ = –.290, p = .026). Both SRH and TB integration were positively associated with human rights measured with the rule of law index (ρ = .367, p = .009 and ρ = .234, p = .010, respectively). Last, HIV–HCV integration showed very weak association with most of the social determinants of health, apart from gender-based violence (ρ = .372, p = .015), suggesting that it is associated with other determinants not captured in this study.

Table 4:
Spearman rank correlation analyses of HIV integration

	SRH & HIV linkage			HIV & TB treatment co-management			HIV & HCV coinfected patients starting HCV treatment		
	n	ρ	p-value	n	ρ	p-value	n	ρ	p-value
Universal health coverage	60	.350	.006	158	.204	.010	42	-.031	.848
Healthcare Access and Quality	60	.225	.083	152	.098	.229	42	.170	.283
Public healthcare expenditure as a share of GDP (log)	60	.481	<.001	157	.209	.008	42	.220	.161
HIV incidence (aged 15+, log)	53	.328	.016	120	.136	.140	29	.126	.514
HIV prevalence (aged 15+, log)	55	.517	<.001	129	.166	.060	35	-.053	.762
GDP per capita, (PPP, log)	58	.103	.444	148	.143	.083	41	-.010	.951
Schooling	60	.281	.029	156	.142	.078	42	.035	.827
Unemployment	60	.071	.592	156	-.083	.306	42	.063	.694
Equity resource distribution (the higher, the better)	59	.365	.004	143	.251	.003	37	-.013	.941
Discriminatory attitudes towards PLHIV (the higher, the worse)	30	-.374	.042	82	-.151	.174	25	.113	.591
Gender-based violence (the higher, the worse)	60	-.176	.178	153	-.131	.106	42	.372	.015
Gender inequality (the higher, the worse)	59	-.290	.026	142	-.120	.154	39	.054	.742
The rule of law (the higher, the better)	50	.367	.009	119	.234	.010	32	-.279	.123
Human Rights (the higher, the better)	59	.290	.026	143	.123	.144	37	-.323	.051
Homophobic climate (the higher, the worse)	60	-.129	.327	156	-.136	.089	42	.302	.052
Engaged society	59	.224	.088	147	.150	.070	37	-.301	.070
Civil society participation	59	.258	.049	147	.121	.144	37	-.201	.232
Region	60	.198	.129	156	.207	.010	42	.034	.833

What the results mean: A discussion

The study analysed data across 182 countries to identify the potential equity gains of integrating selected HIV and health services as a pathway to achieving equity and ending AIDS. It was found that the integration of HIV services with other health services, such as SRH, TB and HCV, is associated with the 95–95–95 and 10–10–10 global HIV targets and reducing inequities. However, it is clear that integration's effectiveness is contingent upon addressing the social determinants of health and removing the individual and societal barriers that fuel disparities between population groups living with or affected by HIV.

The study has some limitations. The first one relates to data availability, particularly regarding existing HIV integration, its breadth of implementation, quality and the accessibility by key and vulnerable population groups. More HIV integration initiatives are happening at the micro level, often at health-care facilities, but might not be reported as such in national data. Such absence in the model may lead to underestimation of the gains of HIV integration. In addition, the lack of comparable data limits their inclusion in this type of study and, thus, may introduce potential biases regarding the generalization of the findings. The reliance on secondary data from national health databases and global health surveillance reports may hinder such experiences from being adequately reflected. Finally, HIV integration probably happens with more health services *(54, 55)* than the three presented in this study but is not captured by current monitoring tools. Additionally, there is limited evidence on the methodologies to gather these integration measures. Further research should build on existing methods *(56-58)* and challenges to develop standardized measures of HIV and health service integration at the country level. In addition, country-level decentralized monitoring systems on

HIV integration should be encouraged to capture small-scale and diverse initiatives, generate needed primary data and better reflect the nuances, quality and depth of HIV service integration and its impacts at the local or community level.

Second, HIV integration is context-specific *(12, 59)*. The identification of the health services to link or integrate with HIV services strongly relates to the profile of the HIV epidemic, the structure of the health system and its devolution *(60)*. This study considered the health system, the HIV epidemic's characteristics, and the social determinants of health at the country level. More granularity per population group—particularly the key and vulnerable population groups—age group and geographical characteristics would be suitable to enable each country to identify its optimal path for HIV integration, building on its sociodemographic and health system profile.

Third, the study considers societal stigma, discriminatory attitudes, and laws as part of its analysis. The broader sociopolitical context influencing these factors might not be fully accounted for. Political will, funding priorities, and community engagement vary widely and can significantly impact the success of integration efforts, particularly in terms of accessibility, adequateness, and stigma-free for key and vulnerable population groups *(61, 62)*. These limitations underscore the importance of advancing research methodologies and advocate for a more granular examination of HIV service integration practices, and the accessibility of tailored integrated services for all. This approach will enable us to identify sustainable strategies that genuinely enhance equity within the global HIV response, ensuring that interventions are both effective and contextually relevant. Acknowledging these limitations, the study identified important findings, which are discussed below.

A positive correlation was found between HIV integration and the HIV targets, particularly with SRH–HIV linkage and HIV–TB treatment co-management, highlighting significant equity gains associated with integrating HIV and other health services. Similar equity gains can likely be achieved by integrating HIV services with mental health, sexually transmitted infections and cervical cancer, as identified in other studies *(1)*. Such integration initiatives could be scaled up to most countries, in line with the integration targets presented in the first section of the study, and more data needs to be collected. The analysis revealed a decrease in the size of the association between health systems' equity markers and the first to the second to the third 95–95–95 targets, particularly in terms of universal health coverage, health-care access and quality, and public health-care expenditure. It suggests that equity in health-care systems plays a key role in the initial steps of knowing one's HIV status but could be more efficient in effective linkage to initiating antiretroviral therapy and its adherence. It could indicate potential equity losses in the transition from HIV status diagnosis (first 95) to treatment adherence (second 95) and finally to viral load suppression (third 95). Therefore, strategies to end AIDS should focus on improving universal health and the barriers to healthcare access to enhance equity gains in HIV integration.

A more equitable resource distribution was found to be associated with the HIV treatment cascade. Nevertheless, the decrease in the effect size from the first to the third 95 targets suggests equity losses in how the different communities of people living with HIV benefit from public spending and have equal access to health care, which is happening in the later stage of the treatment cascade.

There is a non-linear association between economic development and equity gains of HIV integration across the HIV targets. It appears that if economic development is associated with better HIV outcomes, it does not necessarily translate into more equitable access to HIV services, as shown in Tables 3 and 4. Moreover, the poor association between the second and the third 95 HIV targets and economic development suggests that wealthier countries do not necessarily achieve better antiretroviral therapy coverage. Similarly, while educational achievement is associated with HIV awareness and HIV test seeking, it may not directly influence antiretroviral therapy scale-up and treatment adherence.

The above findings suggest that while achieving the three 95–95–95 HIV targets was associated with greater and more equitable HIV integration, a robust health system, economic development and education play an essential role in equitable access to HIV test-seeking, antiretroviral therapy and viral load suppression. This role nevertheless appears insufficient to ensure greater equity in the 95–95–95 targets; the findings showed that other dimensions of equity in health come into play. Among these other factors, societal stigma, such as discriminatory attitudes towards people living with HIV, homophobic climate and gender-based violence, emerged as barriers across all six HIV targets.

Stigma and discrimination against people living with HIV, as well as homophobia, both showed the most significant size effect across all three 95–95–95 targets. These negative links were larger with the first 95, undermining the entire continuum of HIV care and compounding inequity among people living with HIV and key populations to access treatment and live healthy lives. These findings underscore the importance of prioritizing multiprong actions to remove stigmatizing and discriminating attitudes and to tailor differentiated service packages and service delivery approaches to the specific needs of people.

Gender inequality and gender-based violence are significantly associated with poor HIV target outcomes. The most significant impacts of gender inequality and gender-based violence were on knowledge of HIV status among women living with HIV (first 95), suggesting that higher gender inequality is associated with inequity in HIV test seeking, with cascading consequences across the treatment cascade. The cross-cutting issues of gender inequality and gender-based violence indicate the necessity for integrated HIV services that are sensitive to the nuances of gender dynamics and capable of providing support mechanisms for survivors of gender-based violence. Addressing gender inequalities and gender-based violence is critical for ending AIDS and enhancing the overall equity and effectiveness of HIV interventions.

This study highlighted the negative association of a homophobic climate on every step of the HIV care continuum, translating into equity loss faced by sexual and gender diverse population groups in accessing HIV and health services. The size effect of the correlation between discriminatory attitudes towards LGBTQ+ people and the achievement of the first 95 and the 10–10–10 targets suggests that addressing stigma and discrimination towards key population groups should be a key element to end AIDS as a public health threat.

The positive and significant associations between the third 10 target on countries having punitive laws and policies with universal health coverage and other measures of equity in health-care systems, economic development and equity in resource distribution across the different social groups confirm the critical importance of addressing laws and policies to achieve all HIV targets. The positive correlation of the human rights framework and the integration of HIV services with sexual and reproductive health, TB, and HCV suggests that the future path of HIV integration should also include human rights protections and rule-of-law strengthening to both: (i) remove barriers to HIV and health services faced by key and marginalized populations; and (ii) create an enabling environment for more effective and equitable HIV interventions.

The study demonstrated the importance of civil society in achieving the HIV 95–95–95 targets. Emancipated civil society is linked with better HIV outcomes and can facilitate increased HIV testing, treatment initiation and viral load suppression, corresponding to equity gains through community awareness and activism. Nevertheless, the weak association between civil society engagement and the HIV integration services (with the exception of HIV–SRH integration), was not expected. Civil society engagement and participation might influence HIV integration in ways that are not directly measurable through 'traditional' variables due to the complexity of social dynamics. Also, civil society engagement and HIV integration might be associated indirectly, through other mediating variables such as health-care infrastructure improvements or policy changes. Finally, the relationship between the two might vary substantially across countries or contexts, making it difficult to identify a specific pattern. No literature on the topic was found, which warrants further investigation with quantitative and qualitative studies to better understand and promote the role of civil society organizations for better responsiveness and accountability from health systems and more effective integration of HIV and health services.

These findings also advocate for policies and practices that encourage greater involvement of civil society and community-led organizations in efforts to achieve the HIV targets. Enhanced civil society engagement in HIV integration could enable better health governance and achieve a more efficient and equitable HIV response at all levels. Moreover, the significant association between civil society engagement and the three 10–10–10 suggest that civil society and community-led organizations have the potential to address the societal attitudes and norms hampering the effectiveness of HIV integration efforts.

The intersection of health system improvements, socioeconomic conditions, and reductions in stigma and discrimination illustrates the complex landscape of equity gains and losses in HIV integration efforts. Achieving the 95–95–95 and 10–10–10 HIV targets and universal health coverage necessitate a comprehensive strategy that improves health services and addresses broader social determinants of health *(35, 36)*.

Conclusion

This study explored the relationship between the integration of HIV with other health services. It identifies the equity gains toward the 95–95–95 HIV targets through universal health coverage, better access and quality of health services and adequate health-care expenditure. The findings also point to the complex interplay of social determinants of health, including economic development, education, and equitable resource distribution; economic development and education appeared to be important factors in meeting the 95–95–95 Trgets, but insufficient to ensure equity in HIV services. Discriminatory attitudes towards people living with HIV and key population groups, criminalizing laws, gender inequality and gender-based violence were all negatively correlated with the HIV targets.

The findings show that civil society plays an important and complex role in increasing equity across all HIV targets. The capability and the commitment of national HIV programmes to involve civil society in HIV integration efforts have the potential to generate substantial equity gains in the 95–95–95 targets. Civil society and community-led organizations can ensure that discriminatory attitudes and HIV integration efforts are grounded in the realities of those most affected by the epidemic.

This study advocates for a greater integration of HIV and other health services through approaches that are rooted in equity, inclusivity and human rights. To achieve this, the study's findings are unambiguous: global and national HIV responses need to remove the individual and societal barriers that perpetuate disparities and inequities in the HIV response.

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Supplementary Material S1

Table S1.1.
Disaggregated HIV and health services integration 2025 targets and commitments

Overarching integration target: 90% of people living with HIV and people at risk are linked to people-centred and context-specific integrated services for other communicable diseases, noncommunicable diseases, sexual and gender-based violence, mental health and other services they need for their overall health and well-being.	
People living with HIV	90% of patients entering care through HIV or TB services are referred for TB and HIV testing and treatment at one integrated, co-located, or linked facility, depending on the national protocol.
	90% of people living with HIV receive TB preventive treatment.
	90% have access to integrated or linked services for HIV treatment and cardiovascular diseases, cervical cancer, mental health, diabetes diagnosis and treatment, education on healthy lifestyle counselling, smoking cessation advice and physical exercise.
Children (0–14 years)	95% of HIV-exposed newborns and infants have access to integrated services for maternal and newborn care, including prevention of the triple vertical transmission of HIV, syphilis, and hepatitis B virus.
Adolescent boys and young men (15–24 years)	90% of adolescent boys and men (aged 15–59 years) have access to voluntary medical male circumcision integrated with a minimum package of services[1] and multidisease screening[2] within male-friendly health-care service delivery in 15 priority countries.
Adult men (25+)	
School-aged young girls (9–14 years)	90% of school-aged young girls in priority countries have access to HPV vaccination, as well as female genital schistosomiasis *(S. haematobium)* screening and treatment in areas where it is endemic[3].
Adolescent girls and young women (15–24 years)	90% have access to sexual and reproductive health services that integrate HIV prevention, testing and treatment services. These integrated services can include, as appropriate to meet the health needs of local population, HPV, cervical cancer and STI screening and treat, female genital schistosomiasis *(S. haematobium)* screening and treatment, intimate partner violence (IPV) programmes, sexual and gender-based violence (SGBV) programmes that include post-exposure prophylaxis (PEP), emergency contraception and psychological first aid[4].
Adult women (25+ years)	
Pregnant and breastfeeding women	95% have access to maternal and newborn care that integrates or links to comprehensive HIV services, including for the prevention of the triple vertical transmission of HIV, syphilis and hepatitis B virus.
Gay men and other men who have sex with men	90% have access to HIV services integrated with (or linked to) STI, mental health and IPV programmes, and SGBV programmes that include PEP and psychological first aid.
Sex workers	90% have access to HIV services integrated with (or linked to) STI, mental health and IPV programmes, and SGBV programmes that include PEP and psychological first aid.
Transgender people	90% of transgender people have access to HIV services integrated with or linked to STI, mental health, gender-affirming therapy, IPV programmes, and SGBV programmes that include PEP, emergency contraception and psychological first aid.
People who inject drugs	90% have access to comprehensive harm reduction services integrating or linked to hepatitis C, HIV and mental health services.
People in prisons and other closed settings	90% have access to integrated TB, hepatitis C and HIV services.
People on the move (migrants, refugees, those in humanitarian settings, etc.)	90% have access to integrated TB, hepatitis C and HIV services, in addition to IPV programmes and SGBV programmes that include PEP, emergency contraception and psychological first aid. These integrated services should be person-centred and tailored to the humanitarian context, the place of settling and place of origin.

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[1] The minimum package of services delivered along with voluntary medical male circumcision includes safer sex education, condom promotion, the offer of HIV testing services and management of STIs.

[2] Additional services such as diabetes, hypertension and/or TB screening, and malaria management. To be adjusted depending on the location.

[3] Low and middle-income countries with HPV and HIV coinfections.

[4] For all subpopulations, PEP includes HIV testing and risk exposure assessment.

Supplementary Material S2: Collinearity Analysis Between UHC Index and ART Coverage

The universal health coverage (UHC) service coverage index is a composite index (0 to 100) made of the geometric mean of 14 measures of health service coverage grouped in four sub-indices. These indices are presented below with their variance inflation factor (VIF) and mean VIF of 2.41:

- UHC Service Coverage sub-index on service capacity an access (VIF= 3.08).
- UHC Service Coverage sub-index on reproductive, maternal, newborn and child health (VIF=3.06).
- UHC Service Coverage sub-index on infectious diseases (VIF = 2.30).
- UHC Service Coverage sub-index on noncommunicable diseases (VIF = 1.22).

The potential collinearity was assessed between the UHC index and the second 95 target on ART coverage, considering that HIV treatment coverage is one of the 14 tracer indicators of health service coverage.

The initial Spearman rank correlation test between the UHC index and ART coverage yielded a weak but statistically significant positive correlation (ρ = .177, p = .033).

Partial correlation analysis was conducted to control for potential bias and collinearity using the three UHC sub-indices. The residual analysis of both UHC and ART coverage was not statistically significant (ρ = .040, p = .632). The VIF values are below the threshold (10), indicating minimal multicollinearity (VIF mean = 2.41) and suggesting that the inclusion of ART coverage as one of the 14 tracer indicators does not overly inflate the correlation among the subindices.

Therefore, the inclusion of ART coverage within the 14 tracer indicators of the UHC index does not introduce significant bias or collinearity issues with the second HIV target.

06

MOVING FORWARD TO ENSURE EQUITY IN A SUSTAINABLE HIV RESPONSE

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Key messages

- The previous chapters explored the dimensions of equity in the global HIV response, compared equity in HIV programmes to equity in general health services, and used data analyses to explore the risks and benefits of integrating HIV programs in broader health systems. This chapter aims to distill some of the key insights gained from these analyses and to offer options for moving forward to ensure equity in a sustainable HIV response. Equity is important both from a human rights and fairness perspective, but also because epidemic control requires reaching key and vulnerable populations.

- Achieving equity will require centring equity in each phase and aspect of the global HIV response, including resource mobilization, pooling and allocation, programme implementation, service delivery, and monitoring and evaluation.

- Leading HIV funders and many low and lower-middle income countries are already working to increase equity in HIV response. Moving forward, it is necessary to build on these efforts while recognizing that much more needs to be done. New ways of thinking and doing business is a must to achieve genuine, sustainable equity in the context of HIV.

- Integration of and within HIV programmes and accelerating progress towards universal health coverage are critical priorities. However, wholesale absorption of HIV programmes in broader health systems, without specific efforts to strategically preserve and build on equity gains from the HIV response, has the potential to exacerbate inequities and lose many equity gains achieved to date. The HIV burden and the degree of health coverage (as measured by the UHC Service Coverage Index) offer ways to think critically about how best and at what pace to integrate HIV services.

- This chapter includes recommendations for closing persistent HIV equity gaps and for preserving equity gains over the long run. These recommendations focus on incentivizing adequate, sustainable and equitable financing; aligning and coordinating donor assistance with nationally determined priorities and approaches; harnessing innovative partnerships, new technologies, and community leadership and systems to reach those furthest left behind and close equity gaps; building and leveraging evidence to guide programming for equity reaching the greatest number of people with the highest need under budget constraints; and cultivating leadership and a conducive culture and institutions to promote equity in a sustainable HIV response.

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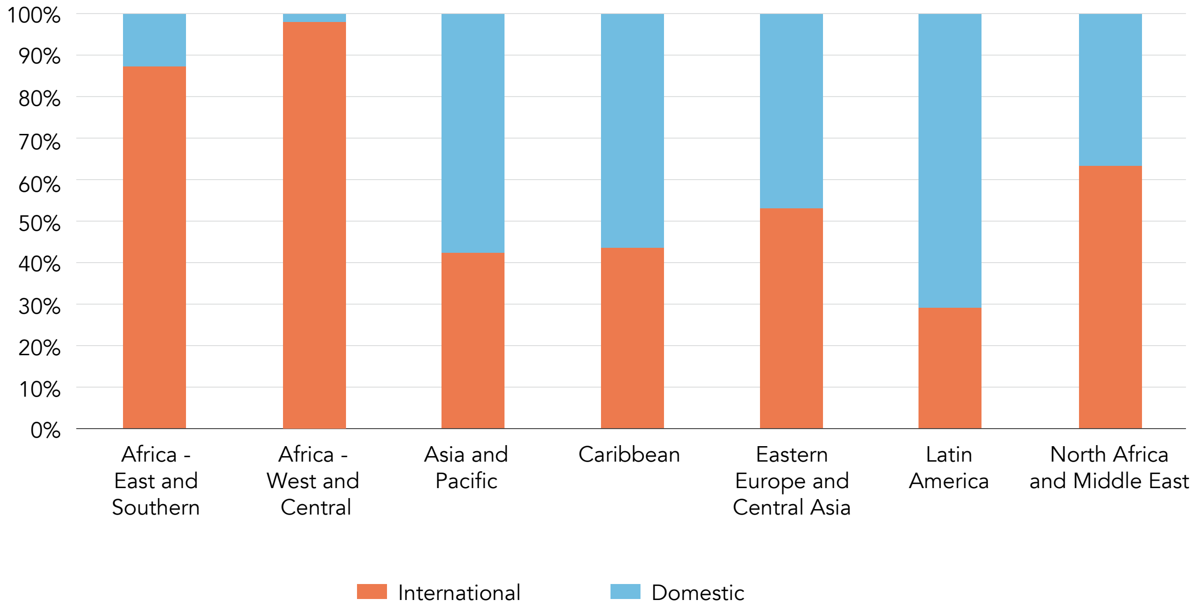
Introduction

Although critical gains have been made in advancing equity in the context of the global HIV response, the previous chapters describe the persistence of inequities that slows progress towards ending AIDS as a public health threat. Closing these equity gaps and sustaining equity gains over the long run is a critical global health priority.

While earlier chapters focused primarily on inequities in HIV service access and health outcomes, these inequities are also evident in how resources are allocated—for HIV specifically, within the HIV response and for health programmes generally. In 40 countries, where health receives less than 7% of consolidated government expenditure, the average per capita public expenditure on health is around just US $14 *(1, 2)*. Weak economic growth, weak revenue raising and taxation capabilities, low overall public expenditure, debt crises, and low prioritization of health in government budgets contribute to this low level of support for health.

Most of the countries with low budget prioritization for health also have very low GDP and substantial dependency on donors. Among the countries with the highest HIV burden (identified by highest HIV prevalence, the number of people living with HIV, HIV incidence and annual number of new infections), as shown in Table 1, the average health spending is only about 5.5% of GDP and government health expenditure is less than 8% of total government spending. In addition, the average share of external resources over the total HIV expenditure is 72% among low and low–middle–income countries in the table, with some countries close to 100% dependent on donor funding. HIV programmes for key populations heavily rely on donor financing, which supports close to 90% of such programmes in eastern and southern Africa and close to 100% in west and central Africa (Figure 1). Sustainable financing to support HIV populations constitutes a key strategic gap in the global HIV response *(3)*. While donor financing will remain important in scaling up and sustaining programmes for key populations, domestic resources will also be needed, but the willingness and capacity of countries to support these programmes remain uncertain. Heavy dependence on donor financing is also frequently accompanied by programmatic fragmentation, which increases inefficiencies *(4)*, diminishes impact and poses risks for long-term sustainability.

Figure 1.
Dependency of key populations programmes on international resources (all low and middle-income countries)



Source: UNAIDS financial estimates 2020 and 2021, Geneva: UNAIDS; 2021.

Table 1.
Health including HIV spending in highest HIV burden countries

Country (by alphabetical order)	Current health expenditure (CHE) as % of GDP	Domestic government health expenditure (GGHE-D) per capita (2021 constant US $)	Government health expenditure as % of total government expenditure	Total HIV expenditure as % of total health expenditure	Share of external HIV expenditure as % of total HIV expenditure	Share of domestic financing on prevention programmes for key populations
Angola	2.9%	$32	7.2%	3.8%	21.4%	62.8%
Botswana	6.2%	$302	12.8%	13.7%	37.7%	8.3%
Brazil	9.9%	$336	9.9%	0.4%	0.0%	NA
Cameroon	3.7%	$8	2.9%	NA	NA	NA
Central African Republic	8.6%	$5	5.4%	11.6%	84.7%	NA
Congo	3.6%	$33	7.2%	NA	NA	NA
Côte d’Ivoire	3.3%	$27	5.8%	1.0%	NA	NA
DRC	3.8%	$3	5.0%	9.6%	73.2%	0.0%
Equatorial Guinea	3.5%	$51	4.9%	NA	NA	NA
Eswatini	6.9%	$138	11.3%	28.6%	59.0%	0.0%
Ethiopia	3.3%	$7	6.2%	1.9%	95.5%	NA
Gabon	3.0%	$130	9.6%	1.1%	4.7%	NA
Gambia	3.4%	$13	7.6%	NA	NA	NA
Ghana	4.2%	$50	8.4%	3.9%	40.9%	0.0%
Guinea-Bissau	8.1%	$7	3.9%	NA	NA	NA
India	3.2%	$23	3.7%	0.2%	0.0%	100.0%
Indonesia	3.3%	$76	10.3%	0.4%	45.0%	9.5%
Kenya	4.5%	$43	8.8%	15.2%	43.9%	45.6%
Lesotho	10.8%	$52	9.4%	41.9%	76.5%	0.0%
Malawi	7.2%	$9	7.1%	26.0%	96.7%	0.0%
Mexico	5.9%	$287	11.0%	1.2%	0.6%	99.7%
Mozambique	8.2%	$11	7.2%	36.8%	96.5%	0.0%
Myanmar	5.0%	$11	3.6%	3.0%	81.6%	4.5%
Namibia	8.9%	$203	10.8%	12.7%	32.8%	NA
Papua New Guinea	2.3%	$35	6.2%	3.4%	77.3%	11.8%
Rwanda	7.0%	$23	9.1%	23.1%	91.0%	0.0%
South Africa	8.4%	$326	15.3%	7.1%	27.1%	7.6%
South Sudan	8.1%	$4	2.1%	7.1%	73.5%	0.0%
Suriname	7.1%	$301	13.5%	NA	NA	NA
Thailand	4.4%	$226	12.6%	1.1%	8.5%	83.8%
Uganda	4.3%	$8	4.1%	27.1%	83.6%	0.0%
Tanzania, United Rep. of	3.4%	$12	6.5%	23.6%	98.9%	NA
Viet Nam	4.6%	$69	9.2%	NA	NA	NA
Zambia	6.6%	$32	9.1%	0.3%	98.3%	NA
Zimbabwe	3.0%	$13	4.8%	40.0%	75.0%	0.0%

Source: Global Health Expenditure Database. WHO (Geneva); AIDSinfo. UNAIDS (Geneva), both accessed July 2024.

Notes: The analysis is based on the most recent data available. Wherever possible, the figures are averaged with three most recent years of data.

In addition to inequities in health spending between countries, health spending and outcome inequalities within countries are prominent across the world. HIV awareness, access to HIV prevention and treatment services as well as HIV incidence and mortality vary significantly within countries with respect to gender, education, geography, age, income and other key factors, with especially dire results for key and vulnerable populations *(5)*. As mentioned in Chapter 2, the surveys from the Population-based HIV Impact Assessment (PHIA) Project show worse coverage and outcomes among rural as compared to urban communities in some countries, in poorer compared to richer communities, in men as opposed to women and in those aged <25 years. Chapter 3 provides clear evidence of significant service coverage gaps for key and vulnerable populations. These inequities may require specific interventions to close access and outcome gaps in specific socioeconomic and demographic groups. There is evidence from Uganda, Zambia and Zimbabwe that focused interventions have succeeded in reducing inequities, including gender inequalities, and optimizing the impact on HIV. Women and girls living with and affected by HIV also face barriers to services. They are prone to gender-based violence in homes and communities, coercion, stigma, neglect in services regarding their sexual and reproductive health, and lack of attention to their psychosocial needs as mothers and to their priorities more broadly in programmes and policies. Action to address inequities will also benefit from analytical expertise regarding the many intersecting factors that give rise to disparities, including epidemiological and social factors.

As well as the 95–95–95 targets for HIV testing and treatment, the societal enabler targets, outlined in both the 2021 Political Declaration on HIV and AIDS and the Global AIDS Strategy 2021–2026, commit countries to a critical milestone of equity, that is, by 2025, less than 10% of people living with HIV and key and vulnerable populations experience stigma and discrimination, less than 10% experience gender-based inequalities and violence and less than 10% of countries have punitive laws and policies.

The Global Fund, PEPFAR and UNAIDS all recognize that the goal of ending HIV cannot be achieved without maximizing health equity, gender equality and human rights. This means ensuring comprehensive programmes and approaches to remove human rights and gender-related barriers that slow the progress in the HIV response, limiting access to HIV-related services. Chapters 3 and 4 on gender equality and human rights highlight the impact of inequities on the health of all, including women, girls, gender-diverse people, men and boys living with HIV and people in key and priority populations.

Addressing inequity gaps in the global HIV response will likely require action from multiple angles, given the complexity of the root causes of these inequities *(6, 7)*. In addition, it will require better evidence and strategic programming to most effectively and equitably provide treatment and reach people among whom new infections are occurring as a critical public health equity challenge. Engagement of multilateral actors, which have a key role to play in identifying and addressing inequities, will remain essential. In this chapter, a policy framework on programming for equity is proposed, followed by a detailed articulation of the core components of this policy framework and description of the overarching elements and conditions to enable implementation of the framework. It then provides an overview of the efforts of funders and countries to promote an equitable HIV response, highlighting key considerations to improve and preserve equity in the HIV response in the context of universal health coverage.

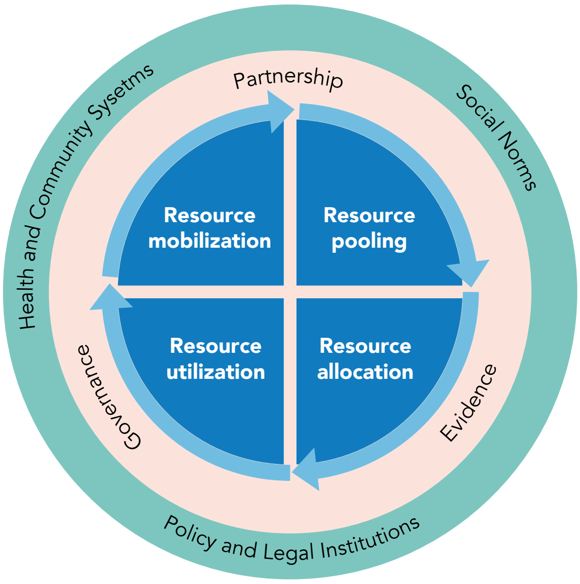
A policy framework on programming for equity

The socioecological model highlighted in Chapter 1 and elaborated in Chapter 4 provides a clear structure to unpack the many social, behavioural and policy factors that influence health and health inequalities to guide programme design to reduce inequality.

This chapter approaches equity from a programmatic angle. Echoing the socioecological model, the proposed policy framework posits that closing inequities requires solid health and community systems, conducive social and gender norms as well as human rights, enabling social and political institutions, coupled with strong political will, partnership and evidence. Together, these elements will enable equitable financing through approaches to mobilize, pool, allocate and utilize resources in ways that embed equity across the policy-making and programme implementation processes. Financing plays a critical role in efforts to reduce inequities, but must also be understood and addressed in tandem with social, political and scientific factors.

Figure 2 depicts the proposed policy framework for equity. At the core of the framework are the mobilization, pooling, allocation and utilization of resources at global, national and subnational levels. Strong governance, partnerships and evidence (the middle circle) as well as functioning health and community systems, conducive social and gender norms, and sound policy and legal institutions (the outer circle) are overarching and enabling elements that are imperative to support the core actions for equity.

Figure 2.
Policy framework of programming for equity



Core components of programming for equity

As Figure 2 emphasizes, a specific focus on equity must be embedded at each stage of the HIV response as described below.

Resource mobilization for health equity

Promoting and sustaining health equity requires countries to make stronger commitment in government financing for health and donors to update their funding approaches. Donor funding, particularly through large programmes such as PEPFAR and the Global Fund, has played a critical role in supporting countries combating HIV and has achieved significant impact *(8, 9)*. To correct large intercountry inequalities, donors may need to: continue and intensify the focusing of resources towards low-income countries and increasingly target their support in higher-income contexts towards addressing inequities, particularly for key and vulnerable populations[1], as is current practice with the Global Fund. Multilateral and bilateral actors will also need to radically enhance and restructure their incentive systems to mobilize countries' own budgets for health and disincentivize poor budgetary practices. Though some countries may need significant donor support well beyond 2030, all countries need to progressively contribute to their own programmes and integrate services as they improve primary health care and advance towards universal health coverage *(10)*, and design approaches that enhance equity and protect the poor, most vulnerable and disadvantaged populations. This will require: revenue generation approaches that reduce the financial burden on these groups; subsidizing insurance premiums; providing services at little or no cost for those who are unable to pay; ensuring protection from catastrophic costs; and increasing people's ability to choose how and where they access services.

Resource pooling and alignment to promote equity

One option to promote an equity-focused response is to better align and coordinate donor resources. For example, at the global level, donor communities could better align and coordinate resources with a dedicated objective to promote an equitable HIV response, earmark funding for priority interventions, ensure complementarity to avoid duplication and enhance synergies, or build in funding conditions that promote equity, impact and sustainability. Enhanced resource coordination and alignment across global health initiatives (e.g. Global Fund, Gavi, Global Financing Facility) would provide an opportunity to strengthen joint approaches to promote health equity—a critical shift of global health initiatives and the global health financing ecosystem to achieve universal health coverage *(11)*. This work offers opportunities to prioritize donor investment in the equity promotion agenda in health, including HIV. At the country level, donor and domestic resources should also be carefully aligned and coordinated to narrow equity gaps, through HIV programme funds or health insurance schemes.

The role of governments in promoting equity can be underpinned in how they pool resources. With

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[1] The Global Fund is already taking this approach, which is formally included in Global Fund policies including its Sustainability, Transition and Co-financing (STC) policy.

respect to the global movement towards universal health coverage, one option for sustainable and equitable HIV responses would be through public and mandatory health insurance schemes, especially when expressly designed to cover priority HIV prevention, diagnostic and treatment interventions, with priority given to those furthest behind. Free or subsidized insurance premiums can be provided to key and vulnerable populations. Ensuring that HIV services are free of charge, or at least very low-cost, will have particular benefits among the rural poor and women and girls, as out-of-pocket (OOP) health costs are an important driver of gender inequities *(12)*, given the lower spending and financial decision-makers power of women and girls.

While there is significant opportunity to sustain and strengthen equitable HIV responses, experience to date indicates that key intervention areas are often missing in such schemes. Some countries have established public health insurances schemes that cover HIV services to various degrees *(13)*. For example, six countries in Asia (Cambodia, India, Indonesia, Philippines, Thailand and Viet Nam) have health insurance schemes that cover HIV treatment, although most do not cover HIV prevention services (except for Thailand, which covers some prevention services). A similar review of thirteen Global Fund-supported countries in Latin America and Caribbean suggests that though insurance schemes in those countries often cover testing, treatment, and prevention, pre-exposure prophylaxis (PrEP) is less likely to be covered than other prevention services *(14)*. Frequently, "lack of awareness, complicated administrative processes, documentation requirements, co-payments or facility fees, stigma and discrimination, mixed success with sensitization training, and weak data privacy systems" *(15)* impede the enrollment in health insurance schemes of key and vulnerable populations, regarding which little data on health insurance coverage exists. Many countries, especially low- and lower-middle income countries in Africa, are still in the early stages of establishing health insurance schemes. HIV services in those settings are often not yet part of the benefit packages of emerging health insurance schemes but instead are supported by separate funding sources, posing potentially serious risks with respect to both fragmentation and sustainability.

Although gains have been made in expanding health coverage, momentum towards universal health coverage has stagnated since 2015 *(16)*. As countries work to build the systems needed for universal health coverage, HIV prevention and treatment services, especially for key and vulnerable populations (including women, girls and gender diverse people), need to be integrated in health insurance schemes. Health insurance schemes need to be designed and operationalized in a way that key and vulnerable population can effectively access and benefit from the schemes *(17)*.

Resource allocation to finance fairly and equitably

Regardless of whether national HIV responses are financed through health insurance schemes or earmarked programme funding, sound resource allocation can improve equity. As HIV disproportionately affects key and vulnerable populations with poor health coverage, equity considerations must be centred in HIV resource mobilization and budgeting. Specific consideration must focus both on horizontal equity to ensure a fair distribution between regions and on vertical equity to ensure that those with greater need receive more resources.

How to allocate

As resources are inevitably finite, careful study is required to determine how best to allocate available resources across population groups, geographies and interventions, as different ways of resource allocation can have drastically different equity consequences.

Common resource allocation approaches often consider the comparative cost-effectiveness of different HIV interventions, with the aim of maximizing total impact. Those approaches if well applied, can already help narrowing the equity gap as they shed light on the need to prioritize interventions that can most efficiently bring down new infections by choosing the right interventions and targeting resources towards the populations and geographical areas with the highest HIV incidence, including prevention programs among key and valuable populations *(18, 19)*. Those approaches can be enhanced further by taking equity explicitly into account when allocating resources. This helps improve transparency on the distributional impact of the investment on subpopulations or geographical areas, as compared with the total impact approach that does not really pay that much attention on who have benefited from the investment and how equitable this is.

Incorporating equity explicitly could strengthen the rational for investing in key and vulnerable population and other groups most left behind who are at the highest risk. Approaches combing cost-effectiveness and equity to inform resource allocation decisions include regional allocation formular *(20, 21)*, extended cost-effectiveness analysis (ECEA) *(22, 23)*, distributional cost-effectiveness analysis (DCEA) *(24, 25, 26)*, as well as multiple-criteria decision analysis *(27, 28)*, which takes into account cost-effectiveness, equity and other key factors.

Many countries such as India, Kenya and Nigeria have highly federalized systems that lack mechanisms and incentives to address allocation weaknesses at the subnational level. In such cases, appropriate attention needs to be given to interprovincial or interdistrict equity in the way resources are distributed, for example through formal equitable share formula and conditional grants (e.g. South Africa *(29))*, risk adjusted capitation, or in the case of HIV distribution of funding based on the number of persons on treatment or documented unmet need. In Argentina, Plan Nacer, later called Programa Sumar, effectively incentivized provincial interventions and contributions through measures associated with the flow of funding from the federal to the state level *(30)*. Common use of standardized budget programme structures and reporting systems can help promote equity, as can innovative financing channels such as social contracting for reimbursement of service delivery by civil society organizations.

There are several HIV resource allocation models available to support countries in identifying optimal intervention mix to maximize impact under varied resource envelopes based on cost-effectiveness (31). Those models require sound epidemilocal and financial data to best inform resource allocation. Other tools have been developed *(32, 33)* to support policy-makers to factor equity as well as cost-effectiveness into the process for prioritizing interventions and allocating resources. These tools enable stakeholders to weigh the (health) impact of interventions differently depending on their respective equity consequences (e.g. more equitable health distribution across population groups, financial risk protection). These approaches weigh or rank equity favouring interventions higher, even when a sole focus on cost-effectiveness might not do so.

Groups to prioritize

Marginalized groups, specifically priority populations (see Chapters 3 and 4, including adolescent girls and young women in eastern and southern Africa, gender diverse people, and key and vulnerable populations), experience higher rates of HIV prevalence and acquisition than the general population and have specific needs. These realities must be considered when funding is prioritized. As Chapter 3 noted, however, some countries that have assumed financing and oversight of programs for stigmatized and discriminated against populations have not meaningfully prioritized such programs.

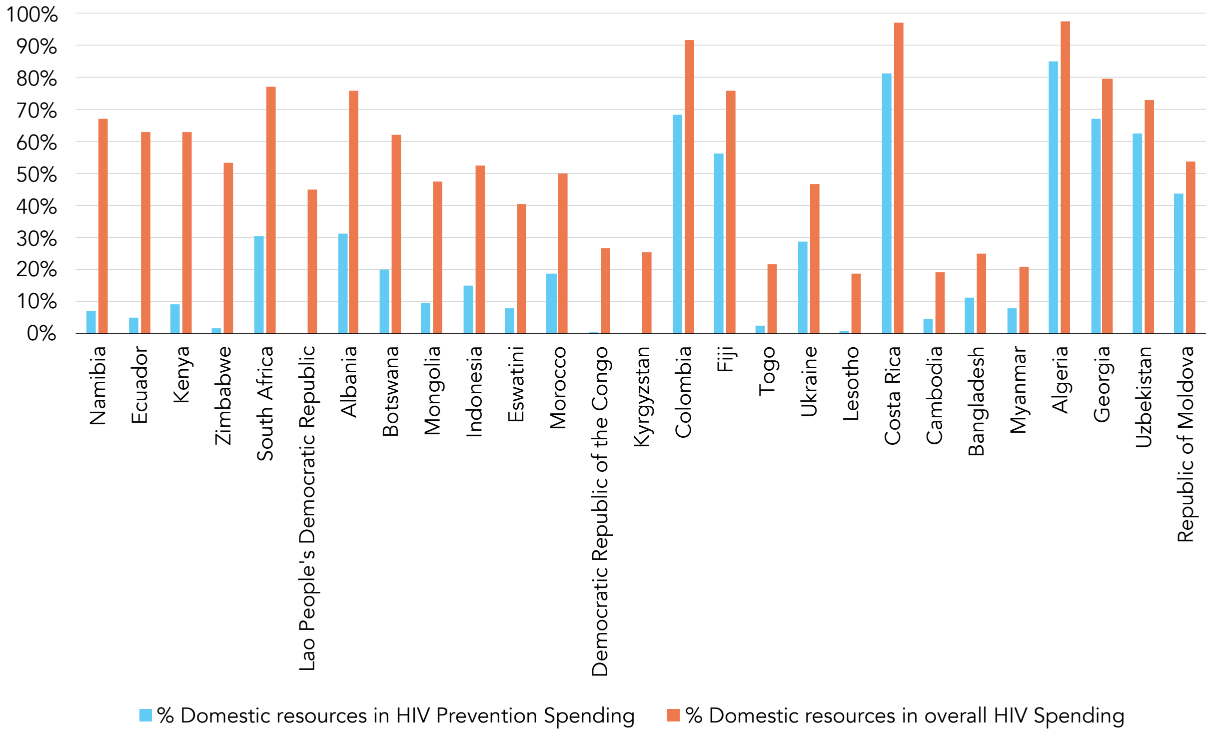
In low and lower-middle income countries, funding allocated to HIV prevention services represents a small share of overall HIV expenditure, even in regions where most new HIV infections occur within key and vulnerable groups. International sources provide the majority (at least two-thirds) of funding for programmes focused on key and vulnerable populations. This heavy reliance on international funding potentially puts HIV prevention programmes for key populations at risk over the long term.

Countries' willingness to allocate domestic resources for HIV prevention programmes, particularly those focusing on key populations, varies across countries. Forty-seven out of sixty two countries had a lower domestic share of HIV prevention spending compared to their domestic share of overall HIV spending (Figure 3).

By 2025, the annual estimated resource needs for HIV prevention for key and vulnerable populations is projected to be 20% of total resource needs. However, only 3% of HIV prevention resources in low and middle-income countries are currently allocated to dedicated HIV prevention services for key populations (Figure 4). (Estimating the share of HIV funding allocated to programming for key and vulnerable populations is challenging, as members of these groups may also access prevention and treatment services that are not specifically dedicated to them and as key populations should never be required to disclose their status in order to obtain access to essential services.)

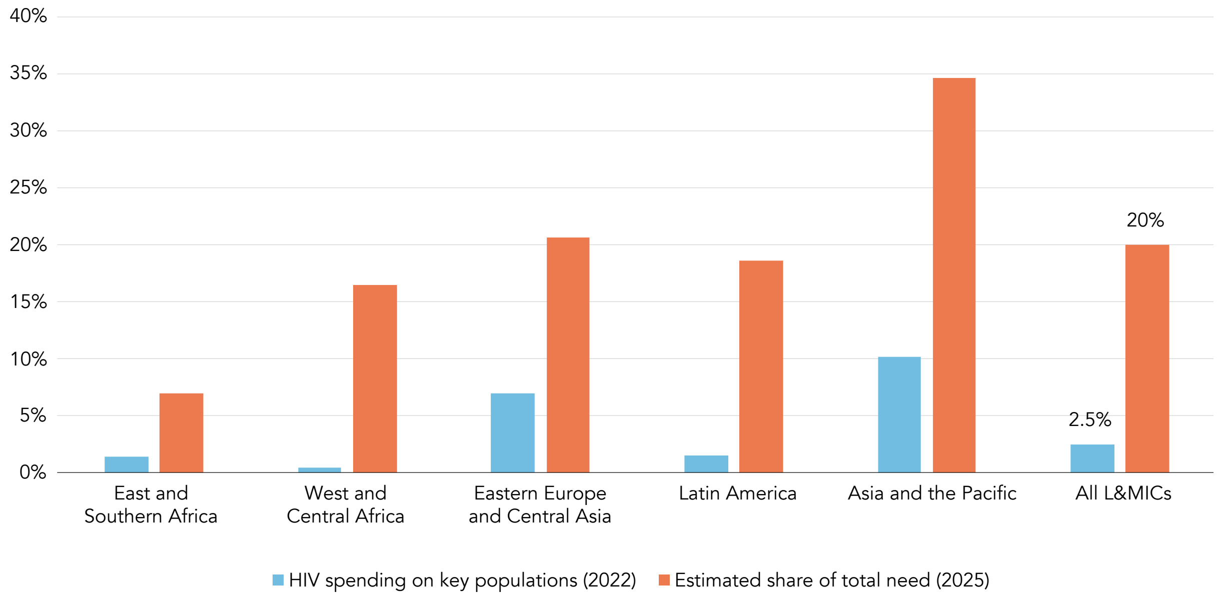
As all countries are confronted with resource constraints to varying degrees, how to most strategically allocate resources to optimize epidemiological and equity impact is at the heart of programming for equity. This means priority should

Figure 3.
Extent of willingness to support prevention, especially key and vulnerable population programmes, from domestic resources



Source: Government reports to Global AIDS Monitoring, last accessed through UNAIDS HIV Financial dashboard, May 2024.

Figure 4.
Key population prevention programme spending versus estimated share of the total HIV resource needs by region



Source: Government reports to Global AIDS Monitoring, last accessed through UNAIDS HIV Financial dashboard, May 2024 be given to the prevention, treatment and care of key populations (e.g. female sex workers, other men who have sex with men, people who inject drugs and transgender people), adolescent girls and young women, young boys, vulnerable women and children, the rural poor, and other marginalized populations at high HIV risk and living with HIV.

The trick to do the job well is strategic and precise targeting, as not all members of priority populations are equally at risk. Instead of focusing on all adolescent girls and young women, poor people, rural dwellers and children in pursuit of equity, the priority should be given to adolescent girls and young women in high HIV incidence locations, children living with HIV, and the poor with high HIV risk. In addition, the focus also needs to be given to older men, especially in eastern and southern Africa, to optimize protection of adolescent girls and young women in those high HIV transmission settings *(34)*. In short, application of an equity lens must also take account of epidemiological patterns to close equity gaps most efficiently.

Other programme areas critical to fund

Focusing on the right groups is a good place to start. Resources, however, must also be allocated toward an enabling environment, to ensure that quality services reach the priority groups. This calls for sufficient investments in:

- Programmes and initiatives to remove human rights and gender-related barriers, including harmful laws and policies as well as gender inequalities and stigma and discrimination against the above population groups.

Efforts to strengthen critical health and community systems *(35)*, such as strengthening service delivery platforms to enhance access.

Resource utilization: Promoting equity through improving service accessibility, affordability, acceptability and quality

Health inequalities also need to be addressed in the process of designing and delivering services to ensure that services are people-centred and appropriate for the specific target population. This includes integrating HIV services into other service delivery platforms to increase access and close coverage gaps, with sufficient protections to ensure accessibility and friendliness for key populations and youth. Sexual and reproductive health, gender-based violence and family planning services are important to provide but mostly overlooked in HIV investments. Scaling up community-based and community-led service delivery that enhance accessibility for those left behind is also needed.

Addressing financial, physical, social and legal barriers to health is critical for service uptake, especially for the most marginalized and disadvantaged. Designing and tailoring services to make them non-judgmental, more acceptable and appealing to key and vulnerable populations ultimately promotes service access and quality, enhancing efficiency and effectiveness of the investment.

Promoting gender equity demands further efforts to eliminate coercive and abusive treatment toward women and children (e.g. coercing or forcing women to take up specific services, denying women services or advice, judgmental attitudes about sexual and reproductive health choices, as well as preventing women and/or babies from leaving hospital unless the bill is paid). The many facets of coercion and neglect in services experienced by women living with HIV are both a human rights violation and a form of gender-based violence. Women, girls and gender diverse people living with and affected by HIV also face HIV-related and gender-based violence and inequalities in their homes and communities that limit their ability to realize their rights.

Gender-transformative approaches—which tackle the root causes of gender inequality by transforming gender norms and relations, promoting shared power, supporting women's empowerment and advancing equitable decision-making and control over resources—should be prioritized within community service delivery and community-led monitoring, with focused resources provided to organizations of and led by women living with HIV and women from key populations.

Innovation is also critical to improve the effectiveness and efficiency of equitable service delivery, including leveraging digital technology, and service delivery through private sector engagement. Many countries have been creative in designing context-specific initiatives to reach those hardest to reach through differentiated service delivery *(36)* and breaking down barriers to the provision of services among the most marginalized and neglected.

Promoting equity of the HIV response in the context of universal health coverage

Resource mobilization, coordination and alignment, allocation and utilization for the HIV response cannot be carried out in isolation, but instead should be integrally linked and coordinated with the global movement toward universal health coverage. As explained in Chapter 5, integrating HIV services into health systems can provide an effective, efficient and sustainable pathway to equity. Integration can occur financially for HIV services to be covered as part of health insurance schemes and programmatically with HIV services provided as part of the service packages delivered at facilities or communities.

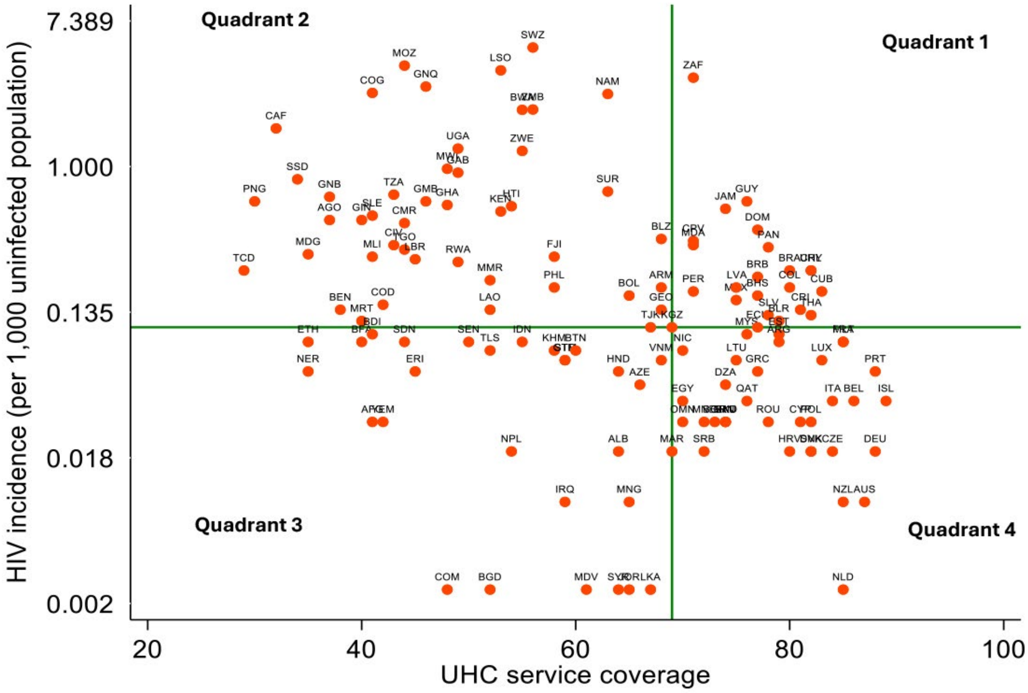
On the path toward integration and universal health coverage, however, there is no 'one size fits all' strategy. Depending on the relative HIV burden of countries and their overall health system performance in guaranteeing access to health services, integrating HIV into the broader health system may be subject to potentially heterogeneous impacts and effects. It might reasonably be argued that countries with a high HIV burden, but that are performing poorly in terms of access to overall health services, may end up performing poorly after integrating HIV into the broader system.

It is therefore important to consider those country contexts when approaching integration. Employing a quadrant-based typology to evaluate the equity implications of integrating HIV services into broader health systems, Figure 5 categorizes countries into four quadrants based on HIV incidence and the universal health coverage index. Specifically, Quadrant 1 comprises countries with both high HIV burden and high universal health coverage service. Integration in these countries can leverage significant domestic resources to provide care for people living with HIV and reduce future acquisitions. Quadrant 2 includes countries, predominantly in sub-Saharan Africa, with high HIV burden but low universal health coverage service. These countries rely heavily on external health financing and would benefit from strengthening the overall health system and increasing domestic funding before progressive integration occurs. On the other hand, Quadrant 3 consists of countries with low universal health coverage service and low HIV burden, but high OOP health spending. For effective integration, these countries need to address inequities in financing and improve overall service coverage to capitalize on their relatively low HIV burden. Finally, Quadrant 4 includes countries with low HIV burden but high service coverage. These nations, characterized by significant government health spending, provide favourable environments for integrating HIV services into the broader health system. However, as shown in earlier chapters, access barriers for people living with HIV and key and vulnerable populations still exist and will need to be addressed.

More detailed analysis by quadrants can be found in Table 2, which describes health financing, HIV burden (including HIV prevalence among key and vulnerable population as shown in Figure 6) and service coverage for each category of countries. For each quadrant, Table 2 describes characteristics of those countries and analyzes implications to be considered in terms of potential challenges and risks of integrating HIV services into general health systems.

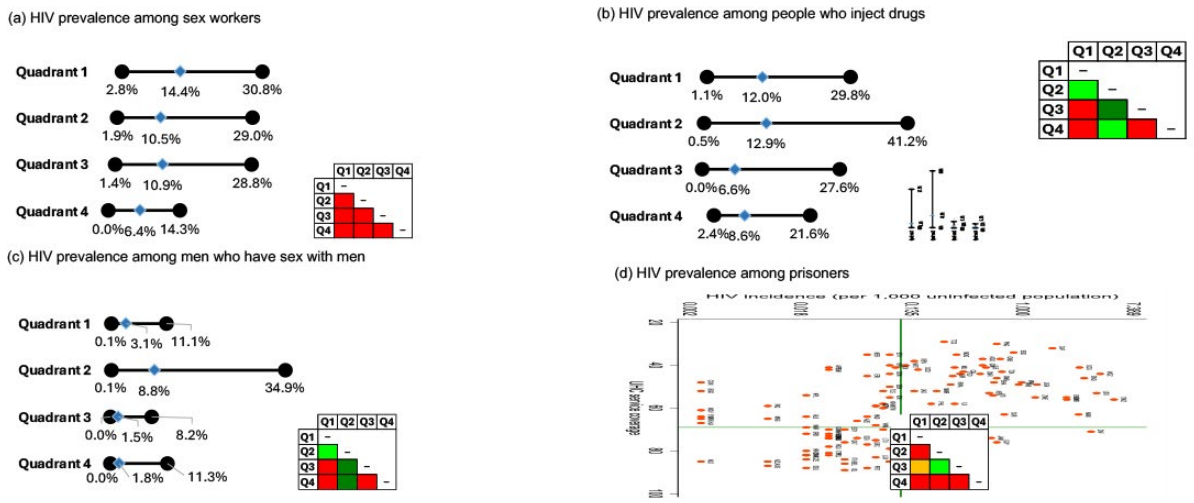
Given that there are potential equity gains but also risks associated with integrating HIV into broader health systems, each country must tailor its integration strategy (e.g. when and how) based on its specific context to ensure that no one, especially key and vulnerable populations, is left behind in the pursuit of universal health coverage.

Figure 5.
Typology of countries based on HIV incidence for all ages and universal health coverage index, 2021



Source: Authors' plot using data from WHO 2023; AidsInfo 2023.

Figure 6.
Summary of HIV prevalence among key populations by quadrants defined in Figure 5



Notes: For each quadrant, the lowest value is the minimum value, the highest value is the maximum, and the average value is in-between the minimum and maximum values.

Source: WHO 2023; Aidsinfo 2023.

Table 2.
Potential equity gains, risks and strategies of integrating HIV into the broader health system by quadrant

Quadrant 2: Relatively high HIV burden but low universal health coverage service **Situation:** This quadrant includes countries such as Benin, Eswatini, Ghana and Lesotho. Countries in sub-Saharan Africa dominate this quadrant. Antiretroviral therapy coverage for countries in this quadrant stands at 62.2%, slightly lower than the overall average estimated at 63%. Domestic health expenditure (US $60 per capita) is significantly lower than the global average (US $691). Of total health expenditure, government funds (34%), external (24%), and OOP (33%) is higher than in quadrants 1 and 4. The average burden of HIV among key populations is the highest in this quadrant. Heavy investments in response to the high HIV burden have strengthened HIV disease programs better than the general health system. **Implications:** Integration needs to build on the existing HIV response mechanism to avoid reversal of gains made so far. External support is required for longer than that for other quadrants to sustain the HIV response. External support, however, needs to focus on strengthening general health financing by subsidizing insurance premiums for people living with HIV as well as services in health benefit packages to reduce OOP and improve the access of people living with HIV and key populations to non-HIV services, especially for comorbidities and non-communicable diseases.	**Quadrant 1: High burden and high universal health coverage** **Situation:** This quadrant includes countries such as Cuba, Mexico, Peru, South Africa and Thailand. Antiretroviral coverage (65.6%) is greater than the global average (63%). These countries have high health expenditure, but low OOP and external health expenditure compared to Quadrants 2 and 3. Quadrant 1 has a relatively lower-than-expected antiretroviral coverage and a relatively high prevalence of HIV among key populations. The quadrant is characterized by strong health systems and high overall health service coverage service. **Implications:** Integration of HIV into general health services is easy due to already stronger health systems. However, Quadrant 1 countries need to integrate HIV financing for the promotion of prevention, treatment, and non-HIV services. This includes subsidizing health insurance contributions of people living with HIV, the poor and vulnerable populations as well as integrating HIV services into health benefit packages. These countries also need to consider social contracting to expand coverage to key populations who are excluded by the general health system.
Quadrant 3: Relatively low HIV burden and low universal health coverage service **Situation:** This quadrant includes countries such as Cambodia, Ethiopia, Nepal, and Senegal. Antiretroviral coverage at 58% is less than that among countries in other quadrants, although some Quadrant 3 countries have made important gains in increasing antiretroviral therapy coverage (e.g. Cambodia, Nepal). Domestic health expenditure (at US $86 per capita) is significantly lower than the global average (US $691). Of total health expenditure, sources are the government (37.2%, half of Quadrant 4), external (14.6%), and OOP (44% higher than all quadrants). Countries in this quadrant have a relatively low average HIV burden, including among the key and vulnerable populations but also the lowest antiretroviral coverage. **Implications:** Countries need sustained advocacy to build political buy-in to include HIV in insurance and health benefit packages because of the small size of the epidemic. Investments in systems strengthening is required to facilitate subsequent integration of the HIV response into benefit packages. Countries also need to advocate for classification of people living with HIV as vulnerable for purposes of social protection to enable the leveraging of social protection systems to facilitate access to treatment and prevention services as well as non-communicable diseases.	**Quadrant 4: Relatively low HIV burden but high universal health coverage service** **Situation:** Countries in the quadrant include Algeria, Australia, Egypt, Italy, Malaysia and New Zealand. Average antiretroviral coverage (67.8%) is the highest among quadrants, although coverage is much lower in some Quadrant 4 countries (e.g. Malaysia). Domestic health expenditure averages US $1971 per capita, the highest of the four quadrants. Of total health expenditure, government contributes 69.8 %, external aid 0.8%, and OOP 22.8%. The low HIV prevalence among key and vulnerable populations is associated with high health coverage service. Quadrant 4 countries are characterized by strong health systems, high health coverage and low HIV burden, with great service coverage for non-HIV services, non-communicable diseases, and co-morbidities. **Implications:** Primary threats to integrating prevention and sexual and reproductive health services into the general health system include stigma, discrimination, gender inequalities and criminalization. Such integration is comparatively straightforward due to already strong underlying health systems. However, countries in this quadrant need to integrate HIV financing to promote prevention, treatment, and non-HIV services. This includes subsidizing health insurance contributions of people living with HIV, the poor and high-risk populations. There is considerable stigmatization to be addressed for key populations to promote HIV prevention and treatment service use. Subsidizing health insurance becomes more vital for those countries, with private health insurance dominating health financing.

To recap, in Quadrant 1, countries like Cuba, Mexico, and South Africa may leverage their high health coverage to increase antiretroviral therapy coverage and provide substantial services to key populations. However, without deliberate efforts, key populations may not receive priority, potentially leaving some individuals behind. Quadrant 2, with countries like Ghana and Lesotho, faces significant challenges due to low health coverage and heavy reliance on external funding. Integrating HIV services here may lead to reduced access to ART if not managed carefully. Quadrant 3 countries, such as Cambodia and Ethiopia, need to reduce out-of-pocket health spending and improve health service coverage to avoid worsening their already low antiretroviral coverage. Quadrant 4 countries, largely comprising high-income countries with very low HIV burden, have the potential for successful integration due to their high health service coverage and low HIV burden, but must address existing access barriers and ensure that integrated services meet the needs of key populations.

Overarching elements in programming for equity

As the policy framework illustrates, the extent to which resources can be effectively mobilized, pooled, allocated and utilized to promote equity is highly dependent on governance, partnerships and evidence as well as broader environmental factors such as health system, human rights, gender and social norms and policy and legal institutions.

Governance: Strengthen political will and inclusive decision-making process

Making HIV services equitable is a political choice, as in the absence of political action health service coverage and outcomes will inevitably reflect the society's underlying social and structural inequities. Political will is critical for establishing and implementing policies to promote health equity, including making institutional and financial commitments to narrow equity gaps.

Strengthening political will for equitable HIV services requires a multifaceted approach that engages key stakeholders, builds public support, and leverages evidence and advocacy. Strategies to strengthen political will can include:

- Raising awareness and building consensus through public awareness campaigns and leveraging social media.

- Engaging and mobilizing stakeholders through building coalitions among advocacy groups, community organizations (including community-led organizations promoting the health and rights of women, girls and key populations), health providers, global health development partners including donors, and other stakeholder to advocate for health equity.

- Leveraging data and evidence to show existing inequities and the health, social and economic benefit of health equity to inform policy decisions.

- Promoting accountability of policy-makers and leaders for achieving health equity by holding them accountable through legislation, performance evaluation, voter engagement, and other means.

- Strategically engaging political leaders, through for instance identifying and cultivating champions for health equity within political leadership and providing policy makers with the right information and evidence they need to advocate for health equity.

Partnership: Harness the power of joint action

Achieving an equitable HIV response requires partnerships between and across funders, technical partners, governments, private sector and civil society, including communities most affected, in multiple dimensions and formats. This could range from building a common strategic vision and aligning efforts around advocacy and financing, to coordinating service delivery, sharing information, and collaborating on innovation. One critical area of partnership to highlight for an equitable HIV response is community engagement.

The empowerment of communities most affected by HIV, and their leadership and engagement in decision-making including on HIV resource allocations, is a cornerstone for obtaining health equity. Achieving health equity requires listening to, and valuing, the expertise of communities, which best understand the realities and needs of those who live with or are affected by HIV. The Global Fund, UNAIDS and PEPFAR are all committed to supporting communities to lead the response to HIV. Indeed, the Global Fund itself was founded thanks to the activism of communities most affected by HIV, TB and malaria, with civil society, including affected communities. remaining critical partners across the Global Fund ecosystem, including on the governing board and in Country Coordinating Mechanisms.

Community-led interventions are central to a rights-based, gender-transformative response to HIV and to sustaining gains into the future. People living with or affected by HIV, including women, girls, transgender and gender diverse people, have reached people that government and private services often fail or neglect to reach. Community-led efforts help connect people with the services they need and hold providers, governments, international organizations and donors to account on fundamental principles of human rights *(37)*. For example, studies have demonstrated “over 40 beneficial outcomes linked to a range of peer and community-led HIV activities, including improved HIV-related knowledge, attitudes, intentions, self-efficacy, risk behaviours, risk appraisals, health literacy, adherence, and viral suppression.” *(38)*. Communities have advocated for a response to HIV that extends beyond health access targets to be inclusive of psychosocial needs, sexual and reproductive health and rights, gender-based violence and peer support, as well as change within an enabling environment. They have also connected people locally, regionally and globally, driving inspirational movements for health, gender equality, non-discrimination, dignity and human rights for all.

Community engagement and leadership must not only be appropriately valued, but also adequately funded, with communities provided with resources to engage meaningfully and equitably in decision-making and advocacy for an equity-oriented HIV response. This is especially critical at a time when communities and civil society are confronting shrinking civic space *(39, 40)*, a lack of sustainable financing to support their work, and political attacks on the very communities that are most affected by HIV.

Key actions to promote community leadership in the HIV response include: resourcing and facilitating representation of communities (including representation of women, girls and gender diverse people living with HIV and from key populations) on advisory and governing boards. It also calls for support for a range of community-led services, advocacy and monitoring grounded in the priorities of communities and recognition and promotion of their role in ensuring the mental and physical health and rights of people living with and affected by HIV.

Among the other strategic areas where partnerships should be strengthened include:

- *Resource alignment across funders and governments.* Such alignment can best avoid duplication, support strategic deployment and efficient use of resources for key and vulnerable populations, and ensure co-investment in the same systems and services that will need to be sustained, support strategic deployment and efficient use of resources to key and vulnerable populations.

- *Leveraging data and evidence to show existing inequities and the health, social and economic benefit of health equity to inform policy decisions.* The Sustainable Access to Markets and Resources for Innovative Delivery of Healthcare (SAMRIDH) *(41)* offers an excellent example of leveraging public and private resources, expertise and cutting-edge health-care solutions, effectively reaching rural and vulnerable populations through innovative service delivery, such as mobile services and increased use of telehealth.

- *Promoting South–South collaboration to better shape markets for essential health products and disseminate new technologies.* This includes, for example, improving the availability and quality of critical products for diagnostic, treatment and preventive services and taking actions to lower prices through pooled procurement mechanisms at global (e.g. Wambo, UNOPS, UNICEF) and regional (e.g. Africa Medical Supplies Platform) levels *(42)*. It is also important to enhance co-investment in strengthening supply systems for HIV and sexual and reproductive health products, including their last mile delivery.

Evidence: Use data to drive and inform equitable investments

Evidence lays the foundation across the policy/programmatic cycle to enhance equity, from policy formulation and implementation to progress tracking and evaluation. Evidence is needed to identify the people and the locations where HIV transmission is most likely to occur and understand levels of inequality in terms of disease burden, health financing, service access, coverage, quality, and health outcome and impact. In addition to informing decisions about improving programme design and prioritization, evidence is also key to measure how policies and investment decisions perform in terms of promoting equity, enabling rapid adaptations where needed and serving as the basis for improved planning for the future.

Current approaches to the collection and use of data provide essential information for the HIV response but do not always focus on considerations of equity. Efforts are needed to build on the current achievements of the HIV response in generating strategic information to devise innovative means of generating evidence specifically on issues of equity.

Measuring and tracking progress

Reducing inequalities that are driving the HIV epidemic is at the core of Global AIDS Strategy 2021–2026, which seeks to put the world on track to end AIDS as a public health threat by 2030. Those inequalities are determined by societal factors, policies and implementation decisions as well as resource availability and allocation. It is only through routine measurement and monitoring of those inequalities that we can measure the progress against the Global AIDS Strategy.

As has been shown in the preceding chapters, there are many ways to measure HIV-related inequalities and monitor how they change over time. What is essential is to ensure that those measures of inequality are the most relevant, feasible to monitor and comparable across time and possibly across different countries.

HIV-related inequalities and their determinants work through different layers of a causal pathway, from increasing vulnerabilities to restricting access to and utilization of services to finally impacting HIV incidence, quality of life and mortality. Countries and their global multilateral and bilateral partners should collaboratively select indicators to measure inequalities across the many dimensions of inequality. The WHO guidelines *(43)* on monitoring health inequalities provides the initial guidance for harmonizing the terminology and methods.

While the efforts of all stakeholders in the HIV response will ultimately be measured by success in reducing HIV incidence and AIDS-related deaths and improving quality of life of people living with HIV and communities of key and vulnerable populations, these indicators do not on their own ensure an equitable response. As the brief history of the work of Markus Haacker highlights, broad measures of overall results may often mask inequitable outcomes. As relevant policy and programmatic characteristics and outcomes profoundly impact the HIV response's equity, indicators are needed at these levels too.

National monitoring and evaluation frameworks, data collection methods, analytical approaches and dissemination cycles must specifically focus on measuring HIV-related inequalities across a set of equity dimensions. As Chapter 3 notes, strategic data on key populations is challenging to collect but essential to drive equity gains in the HIV response. The best way for measuring the inequalities related to key population status is through data collection or modelling exercises that focus on key and general population together. New data collection tools might become necessary, but in the resource-constrained situation, the priority should be given to ensuring data availability for what is already included in the global and national monitoring frameworks (e.g. Global AIDS Monitoring system, PHIA, Demographic and Health Surveys) as part of the routine data collection and focus rather on the ways of analyzing those data for monitoring inequalities.

A few examples of such indicators include: antiretroviral and antenatal care coverage by sex and age, geographical location, dimensions of inequality (e.g. urban versus rural residence, education and wealth). UNAIDS has recently launched an inequality visualization platform with data from general population surveys, key population surveys and modelling exercises. Data available through that platform can be used to inform discussions on monitoring inequalities at the country level.

Costing, budgeting, resource tracking to enable efficiency analyses and strategic planning for efficient and equitable HIV responses

Financial monitoring for equity should build on existing HIV expenditure tracking methods, including National AIDS Spending Accounts. However, adaptations will be needed, as costing data remains scarce with respect to delivering critical HIV interventions focused on key and vulnerable populations, such as interventions to remove human rights and gender-related barriers and to address the HIV-related needs of adolescent girls and young women and key populations, such as PrEP, condom programmes, harm reduction and sexual and reproductive programmes for people who inject drugs and others. In addition, there is limited information and evidence on the types of delivery modalities for different interventions that are most-cost effective or on the optimally efficient cost structure for community-led and -based service delivery. Information regarding how service delivery costs vary across geographies for the same intervention, a pivotal input for robust national and sub-national planning, is also not well understood.

Weak public financing management (PFM) systems often undermine reliable resource tracking. Information is often not readily available on HIV investments by source, intervention areas, beneficiaries and geography. This not only affects the efficiency of funders' and governments' planning and programme implementation, but also undermines sustainability. Granular resource tracking data is necessary to support equitable HIV financing.

Action is much needed to improve costing, budgeting and resource tracking of HIV investment, which will help identify funding gaps, direct resources to key and vulnerable populations, and improve accountability, providing pathways for targeted interventions for HIV impact and reducing disparities in the HIV response.

Monitoring and research agenda

Key steps need to be taken in the realm of monitoring and research if equity in the HIV response is to be accelerated.

First, better data on equity are needed. While National AIDS Spending Accounts generate increasingly granular data on HIV-related spending, improved metrics for measuring equity in HIV service access and outcomes are urgently needed. Balancing the need to reduce donor-required reporting, HIV programmes should consider reporting disaggregated data on age, sex (and gender where relevant), geography, income, education, social marginalization, and other social disadvantage measures. In addition, consideration should be given to developing context-specific tools to measure social vulnerability, given the strong correlation between social vulnerability and adverse health outcomes *(44)*.

The application of tools like Lorenz curves, as highlighted in Chapter 2, can also help track progress in closing equity gaps. Lorenz curves and Gini coefficients were used effectively during the COVID-19 pandemic to quantify inequities *(45)*, offering useful insights as national programmes seek to close subnational equity gaps.

Using digital health tools and mobile technology to gather real-time data on service access and outcomes, particularly in hard-to-reach areas, may also be needed. While not without their risks, AI tools may potentially be useful in helping develop models that can predict and respond to the needs of marginalized populations. However, it is critical that community perspectives shape how and where such tools are employed, especially since digital inequities often interact with other dimensions of inequity and social vulnerability including gender inequalities.

Second, health systems must evaluate performance gaps related to interventions focused on key and vulnerable populations, including women, girls and gender diverse people from such populations and living with HIV. Routine measurement is needed for performance gaps (i.e. the differences between current and ideal uptake of interventions) and outcome gaps (i.e. the expected improvements in outcomes, including health disparities) *(46)*.

It is critical to improve and modernize HIV prevention monitoring to provide information on whether population groups at greatest need actually use HIV prevention options and have the knowledge and power to do so. It is also important to evaluate the implementation and outcomes of integrated service delivery models to identify best practices for maintaining equity. Evaluating these gaps will help assess the potential to reduce health disparities related to quality outcomes—effectiveness, efficiency, timeliness, people-centredness, rights-based, etc.—through improved uptake of the intervention and enhanced understanding of how interventions can close access and outcome gaps. HIV programmes can and should optimize resource allocation tools that incorporate efficiency and equity, quantifying trade-offs between the two, and allowing decision-makers to explore different ways to achieve equity *(47, 48)*.

Third, investment is needed in equity-informed, community-engaged implementation science. Given that HIV risk is fundamentally influenced by the complex sphere of human psychology, biology, social, gender, cultural norms and other factors *(49, 50)*, to most effectively addressing equity requires more precise understanding of what factors matter most and thus to be addressed first. Recognizing the unique challenges and barriers experienced by key and vulnerable populations (including women, girls and gender diverse people from key populations), formative implementation science methods should involve people with relevant lived experiences to identify and monitor contextually specific barriers to accessing or receiving an intervention. Careful attention should be given to the meaningful involvement of individuals from key and vulnerable populations (e.g. female sex workers, gay men and other men who have sex with men, transgender people, people who inject drugs, vulnerable women and children and people living with HIV, racial/ethnic minorities, socioeconomically disadvantaged communities, sexual and gender minorities) in the design and implementation of these interventions. Although these individuals may not participate in all stages of the implementation process, they should not be excluded on this basis *(51)*. Applying principles of co-creation (e.g. community-based and led participatory research and integrated knowledge translation), stakeholders at all levels should be involved in planning and implementation, allowing adequate time and resources for engagement.

To support strategic resource allocation for HIV impact and equity, it is imperative to better understand both the results (e.g. service coverage, behavioral change and health impact) as well as the cost of interventions, including cost drivers of implementation (e.g. modalities, platforms, locations of service delivery) of different interventions. Such evidence is sparse but critical to support policy-makers in prioritizing the right interventions for the right populations groups as well as delivering services at the right level of cost.

Fourth, research and monitoring efforts need to be both sustainable and equitable. It is essential that research strategies for scaling up successful equity-focused interventions are done in a sustainable manner. It is similarly key that an equity focus inform the science of sustainability. The former demands that equity research leverage local scientific expertise and offers locally relevant and affordable solutions. The latter demands that the evaluation of sustainability efforts, including integration of HIV services into broader health systems, measure whether the effects on equity.

While integrated services may help reduce stigma, gender inequalities and other human rights violations towards people living with HIV, optimize the cost-effectiveness of scarce resources, close coverage gaps and improve access, and promote the delivery of holistic client-centred programming, it will be equally important to ensure that integration advances equity for all people living with or affected by HIV with prioritizing those affected most.

Beyond investing in research to identify strategies to close equity gaps, there is a pressing need for more evidence that demonstrates the utility of community engagement in HIV programming. Robust research demonstrating the public health impact, as well as the cost-saving dividend of community engagement, will be helpful in supporting and guiding donor partners and ministries of health in investing in community-led monitoring.

Overarching factors

Health and community systems

The extent to which financing and delivery of core interventions focused on key and vulnerable populations can be most effective and efficient depends in large measure on the underlying health and community systems. This includes the effectiveness of these systems in translating resources into outputs, outcomes and impact. Without well-functioning health and community systems, equity will be hard to achieve, even if sufficient resources are equitably allocated.

Robust planning, implementation and management of system-level investment (e.g. health information, human resources including that for civil society organizations such as community-led organizations, supply chain and laboratory systems) are needed to close equity gaps in the HIV response. Core and long-term funding for civil society organizations including community networks and particularly those led by people living with HIV and key populations—for instance women-led organizations – and support for their priorities, is vital.

Narrowing equity gaps in the HIV response requires enhanced service accessibility in rural and remote areas, especially where HIV incidence is high, and in the communities where key and vulnerable populations live and in places where they interact with others including their sexual partners. This requires strong health and community systems capable of reaching the target population with tailored approaches and leveraging new technology. Providing people with meaningful options regarding specific service and service delivery platforms can promote equity by making services acceptable to those in need and by including community organizations as critical elements of service delivery and of the monitoring of service availability and quality.

Social norms

A key source of inequity are harmful social norms, including inequitable gender norms and stigmatizing attitudes towards people living with HIV and key and vulnerable populations. These harmful norms contribute to HIV vulnerability and deter people from seeking the services they need. Sustainable equity in the HIV response requires investments in efforts to change harmful norms and minimize stigma, which can exist not only in the general population but specifically among health professionals and policy makers. Due to budget constraints, care will be needed in selecting the specific types of interventions that can most cost-effectively address social norms *(52, 53)*.

Policy and legal institutions

Harmful laws and policies contribute to HIV-related inequities. These include punitive laws criminalizing sex work, personal drug use and LGBTQI people, restricting women's rights, denying gender identify, requiring parental consent for adolescents to access HIV testing or sexual and reproductive health services, and limiting civil society space. Sound policy and legal institutions must be in place to better govern and facilitate health resource mobilization, allocation and utilization processes, to address stigma and discrimination and gender inequalities in services, protect everyone's right to health, and regulate the interaction among different stakeholders.

Closing the equity gap: An overview of current efforts

This section provides a snapshot of the approaches that major funders like the Global Fund and PEPFAR have taken to promote equity in the global HIV response. Their approaches are explained in terms of overall strategy, resource allocation, country engagement, programme area of focus, as well as future directions. This section also highlights a few country examples to showcase how countries mobilize, allocate and utilize resources as well as leverage leadership, communities, evidence to narrow equity gaps on the ground.

The Global Fund's efforts to promote an equitable HIV response

Overall strategy. The Global Fund was founded on the principle of health equity. Over the more than 20 years since its inception, this commitment to advancing health has remained at the forefront of the partnership's evolving model and approach. A number of key shifts in approach, as summarized below, have helped drive a step-change towards a more equitable response to HIV, TB and malaria.

Resource allocation. The first significant shift is the way in which Global Fund funding is allocated. Under the original rounds-based model, any eligible country could apply for funding during a limited time period. The amount of funding requested was determined by the applicant, and these rounds typically rewarded the best articulated applications but did not necessarily consider countries with the most acute financing need or disease burden. In 2012, the Global Fund Board approved the move to an allocation-based funding model, marking a shift to financing based on need and ability to pay using domestic funds. Under this allocation-based model, all countries eligible for funding are provided with an upfront commitment for an amount determined by income status and disease burden.

In addition to consideration of disease burden and ability to pay, additional equity-driven factors are used for qualitative adjustment to the Global Fund's allocation methodology, including adjustments for key populations in the context of HIV, to account for the underrepresentation of these populations in available data, as well as considerations such as population displacement. These adjustments are intended to ensure that the allocation of resources aligns with need.

Over time, the change from a rounds-based model to an allocation-based funding model has shifted Global Fund funding towards lower-income countries with higher disease burden. This has culminated in an estimated 92% of Global Fund funding allocated to low-income and lower-middle income countries in the 2023–2025 allocation period. This helps ensure that finite funds are allocated where they are most needed.

Finally, the Global Fund's allocation policy reflects the fact that health inequities, and the stigma, discrimination and inequalities that drive them, are global injustices that know no geographical boundaries. Uniquely in the global HIV response, the Global Fund maintains financing in some upper-middle income countries where the HIV epidemic primarily or disproportionately affects key populations. Lower-middle income countries are required to focus at least 50% of all Global Fund funding on key and vulnerable populations, and upper middle-income countries are required to focus 100% of funding on key and vulnerable populations.

Across all countries supported by the Global Fund, most of the Global Fund investment in HIV response has been allocated to support the provision of prevention, testing and treatment services. These investments are hugely informed by equity imperatives. For example, Global fund HIV prevention investments (e.g. products, services, programmes and systems) are almost entirely directed at key populations, adolescent girls and young women and male sexual partners.

Country engagement. The second key shift has been the re-centring and strengthening of community leadership in the HIV, TB and malaria response. Alongside the shift to the allocative model, the introduction of 'country dialogue' marked a significant strengthening of meaningful engagement of communities. Country dialogue is a process by which people affected by the three diseases can share their experiences and help define programmes and services that best meet the needs of communities, and where choices are made about which services the Global Fund should be asked to fund. The Global Fund requires communities to be meaningful participants in the country dialogue process.

Country Co-ordinating Mechanisms (CCMs)—the national committees that submit funding applications to the Global Fund and oversee grants on behalf of their countries—are at the heart of the Global Fund partnership, with communities playing a key role in their success. Requirements to ensure the meaningful engagement of communities in CCMs have strengthened over time, followed by stand-alone and dedicated funding to support and facilitate community engagement across the Global Fund grant life-cycle, including in mechanisms such as country dialogue and CCMs. For example, funding to support the meaningful participation of adolescent girls and young women in Global Fund processes has supported seven young women to sit on their national CCM and help shape national HIV programmes to better meet their needs and realities.

While communities have always had representation on the Global Fund Board, in 2004 the delegation gained full voting rights, marking a significant shift not only in meaningful community engagement and leadership, but also a shift in power within Global Fund governance back to communities, which has helped strengthen an equity-oriented approach to strategy and policy development.

Community leadership involves not only meaningful engagement and participation in decision-making, but also recognition of the importance of community systems as a critical element of wider health systems in the HIV and global health response. The Global Fund invests in community organizations and systems, and in the strengthening of these organizations and systems (e.g. capacity development, policy and regulatory reform). Since 2015 the Global Fund has worked in partnership with civil society, including affected communities, PEPFAR and UNAIDS to invest in community-led monitoring (CLM) as a powerful tool to increase program quality, impact and equity. Each successive funding cycle since 2015 has seen an increase in investments in CLM, in line with growing recognition of its impact.

Programme area of focus. The third key shift has been the increasing focus on human rights and gender equality. Human rights was explicitly outlined as an objective in the Global Fund's 2012 strategy. The Breaking Down Barriers initiative, launched in 2014, which provides matching funds and technical assistance to remove human rights and gender-related barriers to health services, has helped incentivize a ten-fold increase in investments in human rights programming in the national programmes supported by the Global Fund. The Global Fund has learned valuable lessons from the Breaking Down Barriers initiative on what it takes to reduce gender and human rights-related barriers and expand access to health services with communities in the lead.

Similarly, the Global Fund's approach to better meeting the needs of adolescent girls and young women in the HIV response has included significant investments in evidence-based approaches that are strategically tailored to their needs, and more effectively targeted towards where the need is greatest. The introduction of matching funds has led to a steady rise in in-country programmatic and financial allocations for programming for adolescent girls and young women over time, and greater prioritization within HIV primary prevention funding for this population. A similar shift in prioritization has been incentivized through the introduction of key populations matching funds.

The Global Fund's approach to gender equality continues to evolve as the partnership moves towards gender integration across its portfolio and a shift to a more consistently gender-transformative approach. This evolving understanding of the importance of sex and gender to health and the responses to HIV, TB and malaria continues to shape the Global Fund's investments, including the introduction of a portfolio-wide Gender Equality Marker to track and improve how gender equality investments are included within national programs funded by the Global Fund, and dedicated catalytic fund for communities and civil society to advance gender equality in their communities.

These key shifts have been underpinned by the introduction of new monitoring and accountability mechanisms that continue to drive an enhanced focus on equitable funding, community engagement and community systems, and human rights and gender equality. These include a set of minimum expectations for community engagement across the grant life cycle; the introduction of 'programme essentials' as the standard for evidence-based interventions and approaches, which include human rights and gender equality; and partnership-wide key performance indicators (KPIs) that track reductions in health inequities through Global Fund supported programming, and track progress on human rights and gender equality. These KPIs not only act as monitoring and accountability mechanisms, but also elevate health equity, gender equality and human rights to key measures of success for the partnership.

Future directions. The Global Fund's new strategy responds directly to the dramatic changes in the global health context by introducing an evolving objective on pandemic preparedness and response, to bring the Global Fund partnership's expertise and inclusive model to this new imperative. While working to accelerate progress towards ending AIDS, tuberculosis and malaria, the Global Fund is also prioritizing support for resilient and sustainable systems for health to accelerate the shift from more siloed interventions to more integrated, people-centred models of prevention, treatment and care,

The Global Fund partnership is supporting communities at the front line of the anti-rights pushback on gender equality and human rights, providing dedicated support to ensure their safety and security and providing resources to continue their work to advance gender equality and human rights in their communities. The Global Fund strategy also commits the partnership to using its diplomatic voice more purposefully to protect and promote gender equality, human rights and equity, and challenge harmful and discriminatory laws, policies, and practices that help drive health inequities.

The primary goal of the Global Fund is still to end AIDS, TB and malaria. That is what the Global Fund partnership was created to do, and it is against this benchmark that its success will be judged. But in times of instability and growing injustice, there is huge power in a global partnership of communities, civil society, technical partners, implementer governments, development partners and the private sector that is driven by principles of fairness and justice. There has never been a more urgent need for the Global Fund's vision of 'a world free of the burden of AIDS, tuberculosis and malaria with better, equitable health for all'.

PEFPAR's approach to promote equitable HIV responses

Overall strategy. PEPFAR is deeply committed to health equity. Under the leadership of Ambassador Nkengasong, PEPFAR has prioritized equity for equitable treatment and outcomes, both in the way that it operates, and for the populations it serves. This approach builds on PEPFAR's longstanding commitment to prioritizing marginalized populations, including adolescent girls and young women, children, and key populations. While profound inequities remain in accessing HIV prevention and treatment services, PEPFAR's equity focus over the last two decades has led to substantial declines in new infections among key populations in PEPFAR-supported countries in sub-Saharan Africa. PHIA data (highlighted in Chapter 2) provide compelling evidence of how sustained investments to close equity gaps contribute to achieving broad epidemiologic goals. Under Ambassador Nkengasong's tenure, there has seen a renewed focus on strategies that accelerate efforts to effectively and efficiently extend the reach of evidence-based HIV prevention and treatment programming to those populations experiencing the largest equity gaps. As such, strengthening the enabling environment for improved health and well-being by addressing critical policy, programmatic, social and structural barriers (e.g. stigma, punitive laws and gender-based violence) and inequities in HIV service access, uptake, and continuity, particularly for children, adolescent girls and young women, and key population are critical elements of PEPFAR's overall strategy.

Resource allocation. PEPFAR's country-specific resource allocation has evolved over time from emergency expansion to increased focus on accelerating progress, optimizing efficiencies and sustaining gains with flat appropriation levels. Moving forward, PEPFAR is transitioning from a one-size-fits all funding model to one that is based on the specific needs and disease burden of each country. It is hoped that this approach will ensure that resources are allocated where they are most needed, addressing disparities and promoting health equity. While the details of this new approach will be forthcoming in the months ahead, the shift to resource allocation that factors in disease burden, demography and qualitative factors including equity gaps and challenging operating environments, will hopefully ensure that countries with the largest equity gaps receive the necessary resources and support. In addition to country-specific resource allocations, PEPFAR has a long history of prioritizing key population programming through central, 'headquarter' funding mechanisms. These one-off strategies have been well described, including in Chapter 3. Moving forward, consideration will focus on resource allocation strategies that ensure that resources are prioritized to close equity gaps for priority populations through sustained funding streams, rather than one-off initiative funding is warranted.

Country engagement. PEPFAR has long sought to ensure that country partners are engaged in shaping programme priorities and resource allocation. Moving forward, and in service of the broader sustainability agenda, PEFPAR will seek to ensure that country-specific resource allocation decisions are determined in collaboration with the partner government's HIV programme priorities, especially where partner governments and PEPFAR are aligned around closing equity gaps. Not only is this important for sustainable models of care, but coordination across all resource flows can maximize the impact of each dollar invested by reducing duplication and addressing prioritized gaps. Through the commitment to country ownership, this changing to a vision of PEPFAR working with partner countries to identify unmet needs, prioritizing unmet needs and making allocation decisions using diverse funding to ensure that investments are additive and complementary. For PEPFAR, support for country ownership also means organizing to support a country-led framework for a continuum of care. This is reflected as a national system organized around the country's response to the epidemic, rather than around the needs of donors, laying out the standard of care and delivery system planned to provide it.

PEPFAR places significant emphasis on the meaningful engagement of communities in the HIV response. This includes involving people affected by HIV in decision making processes and program design to ensure that interventions are relevant and effective. As such, and consistently over the last two decades, PEPFAR has invested in community organizations and systems to enhance their capacity and effectiveness. This includes support for community-led monitoring to help improve programme quality, impact and equity by ensuring that the voices of affected communities are heard and acted upon.

Programme area of focus. In recent years PEPFAR has prioritized several initiatives, programming, and data investments such as the DREAMS public–private partnership, Accelerating Progress in Peds/PMTCT (AP3), and the Key Population Investment Fund (KPIF) that provide compelling evidence of its commitment to closing equity gaps.

DREAMS: As discussed in Chapter 4, the DREAMS programme is an ambitious public–private partnership aimed at mitigating HIV incidence among adolescent girls and young women in regions with the highest HIV burden. Launched on World AIDS Day in 2014, DREAMS began its activities in 2015 in ten sub-Saharan African countries: Eswatini, Kenya, Lesotho, Malawi, Mozambique, South Africa, United Republic of

Tanzania, Uganda, Zambia, and Zimbabwe, and expanded to five additional countries in 2017: Botswana, Côte d'Ivoire, Haiti, Rwanda, and Namibia. Each week, 4000 adolescent girls and young women acquire HIV, including 3100 in sub-Saharan Africa. Taking account of the many factors that increase the vulnerability of adolescent girls and young women, the DREAMS programme addresses both the individual health needs and the socio-behavioural determinants that impact adolescent girls and young women's vulnerability to HIV acquisition. As a multicomponent intervention targeting a population at high risk of HIV acquisition, DREAMS is a compelling example of PEPFAR's investment in addressing health inequities. Nonetheless, ongoing analyses to determine what DREAMS components are most impactful and cost-effective, and for different contexts, are necessary, especially as PEPFAR seeks to ensure that partner governments are able to assume greater fiscal and programmatic oversight for these components in the future.

Accelerating progress in eds/PMTCT (AP3): Children affected by HIV often lack agency and rely on caregivers who themselves may be disempowered, stigmatized and marginalized, making children one of the most underserved populations in the global HIV response. As Chapter 4 described, children living with HIV experience among the most serious of HIV-related inequities, substantially lagging adults in knowledge of HIV status, access to antiretroviral therapy and viral suppression. To close gaps in HIV prevention, testing, and treatment services for pregnant and breastfeeding women and pediatric HIV care, PEPFAR launched the Accelerating Progress in Pediatric and PMTCT (AP3) programme in seven countries (Democratic Republic of the Congo, Mozambique, Nigeria, South Africa, Uganda, United Republic of Tanzania and Zambia) in 2022. AP3 employs a six-pronged surge approach: *(1)* dedicated human resources for health (HRH); *(2)* strategic budget/expenditure reporting; (3) strengthened monitoring and evaluation (M&E) efforts; *(4)* paediatric community-led monitoring (CLM); *(5)* socioeconomic support, psychosocial support, and case management; and *(6)* regular review meetings. These elements enhance accountability and holistic care for children and pregnant and breastfeeding women.

Key populations: PEPFAR emphasizes the importance of tailored approaches that address the unique needs of specific groups, including sex workers, gay men and other men who have sex with men, transgender individuals, people who inject drugs, and prisoners. Key strategies include ensuring access to comprehensive and stigma-free health-care services, promoting community-led monitoring and advocacy, integrating prevention and treatment services, and utilizing data-driven approaches to identify and respond to gaps in care. As explained in Chapter 3, PEPFAR in July 2024 launched an action plan to address equity gaps for key populations, using earmarks and matching funds to increase overall funding for activities focused on key populations, supporting a civil society network for key populations, and focusing specific support of key population community organizations in Uganda.

Future directions. Despite its achievements in addressing and closing equity gaps, PEPFAR faces several ongoing challenges. As this report has described, substantial inequities persist across the response, linked to structural barriers such as economic disparities and inadequate health systems prevent many from receiving necessary care. Moreover, the challenges are occurring within a constrained fiscal environment, with diminishing resources available, after factoring inflation and increases in programmatic costs. Looking ahead, PEPFAR intends to evolve its country guidance, to prioritize shared responsibility and accountability, which includes supporting greater country leadership for the HIV response. In Fiscal Year 2025, PEPFAR will encourage countries to adapt to a potentially declining budget trajectory from donors by keenly focusing on programme needs, while increasing domestic resource mobilization. Aligning with country leadership, this may mean that HIV programmes in PEPFAR-supported countries evolve from top-down, disease-specific programming to integrated approaches that cater to the unique needs of individuals at risk for and living with HIV. This strategy aims to create lasting impacts and address upstream vulnerabilities contributing to HIV risk, ensuring inclusive and responsive programmes that benefit all communities. In this context, PEPFAR will continue to prioritize health equity and programmes for priority populations, especially where there is a lack of political will in the country to support those activities. Moreover, PEPFAR will continue to prioritize programmes for key populations including privileging resources for these programmes through changes in COP guidance that are under-development.

Countries' approaches promoting an equitable HIV response

Many countries have taken proactive approaches to promote equitable HIV response. This section highlights some country experience in core elements of programing for equity as described in the earlier section of this chapter.

Resource mobilization, coordination and allocation

- Thailand illustrates the equity-promoting potential of enhancing the alignment and coordination resources. Domestic resources currently cover 90% of total HIV investments. Recognizing that key populations account for more than half of all new HIV infections, expenditure for key and vulnerable population programming tripled from 2015 to 2018 *(54)*. Thailand has established universal health coverage, which covers HIV prevention and certain prevention services such as PrEP *(55)* as well as health services for cross-border migrants *(56)*, and systematically used evidence to inform decisions regarding the benefit package and reimbursement.

- In South Africa, a conditional grant for HIV helps promote equity in HIV service access, as the usual funding distribution formula did not take account of differences in HIV burden between provinces. The country is likely over time to progressively integrate HIV services into chronic care, phasing out its conditional grant. This will likely require adjustments to the funding formula to take account of the differing costs associated with differences in the prevalence of HIV or other chronic diseases between provinces.

Promoting community led, community based and differentiated service delivery tailored to key and vulnerable populations, enhancing service accessibility and efficiency

Numerous countries have also taken steps to promote community-led and based service delivery *(37)*, including through the use of social contracting to finance these service options. UNAIDS and ITPC West and Central Africa have trained community members in community-led monitoring and assisted in validating country indicators covering all aspects of community engagement. A growing number of countries are promoting differentiated service delivery, which enables the delivery of HIV services in community settings, including through peer workers. Progress is being made even under a hostile legal environment in some settings.

- Morocco Talayan's Walk-In Assistance Programme in Rabat, Tangier and Marrakech is increasing the accessibility and acceptability of services for sex workers and transgender people, who are frequently discouraged from seeking HIV services as a result of criminalization and stigma. The programme is administered by Talayan, a sex worker-led collective, offering vital assistance and support. It provides safe, judgment-free spaces where individuals can share their experiences and access health-care services with respect and understanding.

- In Egypt, the Safe Circles Initiative provides HIV self-testing kits, education and support to the LGBTQI community. Outreach teams visit local coffee shops, community centres, and even discreet gatherings, engaging in open conversations about sexual health, holding workshops on sexual and reproductive health and rights, breaking down taboos and misconceptions. The initiative collaborates with local NGOs to host events where HIV self-test kits are distributed and prioritizes the creation of safe spaces for people living with HIV. To date, more than 400 individuals have received support through the project.

- The Democratic Republic of Congo, as an active participant in CQUIN (the HIV Coverage, Quality, and Impact Network), is scaling up differentiated service delivery, prioritizing community participation in this process. Approaches include community antiretroviral distribution points, youth adherence clubs, mentor mothers, provision of antiretroviral medicines in private pharmacies, night-time screening for key populations, and the distribution of condoms and lubricants. The Global Fund has supported mapping of key population organizations to support differentiated service delivery. While the initiative shows signs of progress, its sustainability is threatened by a recent decision by the Justice Minister of the country to mandate the arrest of individuals engaging in or deemed to be promoting homosexuality. Effort will be continued to protect the rights of key and vulnerable populations in order to sustain the equity gains.

Promoting equity through political leadership and removing harmful social norms, gender inequalities, stigma, discrimination and legal institutions

There are encouraging examples on how global communities work closely with national authorities and other stakeholders to foster enabling environment to enhance service uptake among those at high HIV risks by promoting sound social norms and legal justice.

- HIV transmission was criminalized in Zimbabwe, which was shown through a legal environment assessment completed in 2019 as a barrier that discouraged people from getting tested for HIV and obtaining treatment and as a driver of stigma and discrimination against people living with HIV and other key and vulnerable populations. UNAIDS has worked with the national AIDS council and Zimbabwe Lawyers for Human Rights, parliament members, activists, and communities to repeal section 79 of the Criminal Law Code of Zimbabwe. Thanks to the joint effort, Zimbabwe's parliament ultimately repealed these provisions in 2022 *(57)*.

- In Uganda, access to HIV services for key populations is hindered by a climate of criminalization, the lack of protective legislation, and high levels of stigma and discrimination and gender inequality. Despite these challenges, Uganda has made notable progress in enhancing health services for key populations through innovative approaches, including community-based and community-led service delivery by community health workers, often key populations themselves. PEPFAR has scaled up differentiated service delivery models such as key population navigators and PrEP champions. Efforts to increase demand for health services among key populations include targeted information campaigns, peer-led education, and social media outreach. The Uganda Ministry of Health is leading an outstanding effort to improve its national condom programme, including enhancing condom access for key and vulnerable populations. These initiatives address barriers such as fear of discrimination and lack of awareness, empowering key populations with knowledge and fostering a supportive environment to drive increased service utilization.

Key recommendations and action points

Incentivize and ensure adequate, efficient and equitable financing

- It is critical that national and local governments take into account the stagnation of development assistance for health and the fiscal constraints confronting donor countries due to the slow recovery of global economy post COVID-19. The significant funding gap for the HIV response, especially for key and vulnerable populations, calls for stronger commitment of national governments to step up domestic investment in the HIV response to sustain funding that enables and promotes equitable access and outcomes.

- The donor community must synergize the limited resources available with a laser focus on promoting equity, maximizing impact, supporting country priorities and avoiding duplication.

- Resources must be allocated with equity as a core objective while also trying to maximize health impact. This means prioritizing key services to meet the needs of those most left-behind (e.g. key populations, vulnerable women and children, rural poor of high HIV risk) and to ensure sufficient investment in health and community systems needed for service provision, including through innovative means such as social contracting for community-led responses. It also means investing and showing policy leadership in removing human rights and gender-related barriers to service uptake.

- Efforts must also continue to search for smart ways of delivering services more efficiently, leveraging digital technology, deploying cost-effective service modalities, and integrating planning and service delivery across diseases through the most accessible platforms.

Harness innovative partnerships, new technologies and community systems to reach the most left behind

- Stronger coordination and partnerships among development partners is needed to support countries' commitment on equitable HIV responses.

- Efforts should be redoubled to ensure that communities are at the centre of the response, including women and key and vulnerable population-led networks and organizations. Their priorities should be understood and supported.

- Focused efforts are warranted to mobilize the private sector to actively participate in finding solutions to reach the target populations and narrow equity gaps.
- Service delivery should be designed in ways to optimize accessibility and acceptability, shifting from supply-side-centered to people-centred delivery approaches.
- Steps are also needed to leverage digital technology including artificial intelligence to provide preventive and curative services more effectively and efficiently.

Build and leverage evidence to guide programming for equity

- HIV stakeholders should generate and leverage evidence to support advocacy for equity.
- Resources should be allocated to the right interventions focused on the right population groups and delivered in the right places, with quality services to be delivered at the right cost through the right platforms. Programmatic information must be linked with financial data to inform effective, efficient and equitable resource allocation and use.
- Improved metrics are needed to measure equity in service access, quality, and outcome.
- Digital technology should be leveraged for quicker and cheaper data collection and sharing, particularly in remote areas.
- Equity-informed and community-engaged implementation research should be carried out to better understand key and vulnerable populations and design the right approach for reaching them, including cost-effective community engagement and service delivery modalities to best meet their needs.

Cultivate leadership and a conducive culture and institutions

- Focused efforts are needed to identify and cultivate champions for health equity and to build political leadership.
- A robust, action-oriented coalition across stakeholders is needed to increase the accountability of policy makers to prioritize equity across all aspects of the HIV response.
- Investments should strengthen the leadership, engagement and capacity of communities affected by and responding to HIV (including organizations and networks led by women, girls and gender diverse people living with and affected by HIV) , respecting their expertise across advocacy, governance, implementation and accountability.
- Action is required to ensure that institutional decision-making processes at different levels are inclusive of community-led networks and organizations, and that funding processes are inclusive of representatives of community-led networks and organizations, including those led by women, girls and gender diverse people.
- Conducive social norms should be promoted to eliminate HIV-related stigma and discrimination and ensure gender equality.
- It is necessary to develop and implement laws, policy and practices to protect human rights, gender equality, enabling and improving access to services among key and vulnerable population.

Conclusion

Programming for equity requires understanding the status of inequities within the HIV response. It is necessary to identify who are the most left behind (e.g. their age, gender, HIV risks and burden, socioeconomic status, etc.), where they live, what services they need, where HIV transmission is mostly likely to occur, and why those who need services have not received the services they need.

For those left behind, analyse why these inequities exist. For example, is this due to lack of resources, leading to financial and physical barriers to services, due to gender inequalities and/or discrimination and stigma, causing social barriers to service access, or due to harmful laws, policies and practices?

Programming for equity must prioritize resource mobilization as well as more efficient and equitable resource pooling, allocation and utilization. This will require that funders, national governments, technical partners and service providers place equity at the very centre of their decision-making and daily routine. Leadership, partnership, innovation, and a strong capacity for evidence generation and use will facilitate better financing for equity. Achieving equity ultimately will not be possible without building stronger health and community systems, transforming harmful social norms and establishing conducive policy and legal institutions.

In concrete terms, programming for equity requires a new way of doing business, which requires a fundamental shifting of the mindset of policy makers to prioritize equity across all aspects of the HIV response, with a focus on reach first those who are most left behind and most at risk of HIV infection.

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Annex I:
The Equity of the HIV Response Coordination Committee and Technical Working Group

Members of the Coordination Committee

Jaime Atienza Azcona	UNAIDS (Convener).
Allyala K. Nandakumar	GHSD/PEPFAR and Brandeis University
Geoff Garnett	The Bill & Gates Melinda Foundation
Jennifer Kates	KFF
Kalipso Chalkidou/Matthew MacGregor	The Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund)
Michael Ruffner	GHSD/PEPFAR

Members of the Technical Working Group

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Annaliese M. Limb	USAID
Charles Birungi	UNAIDS
Daniel Mwai	Government of Kenya
Deborah V Stenoien	Brandeis University
Drew Voetsch	US CDC
Erik Lamontagne	UNAIDS
Iris Semini	UNAIDS
Jennifer Kates	KFF
Justice Novignon	Africa CDC
Kim Seifert-Ahanda	USAID
Mark Blecher	Government of South Africa
Michael J. Reid	GHSD/PEPFAR
Monica Jordan	Brandeis University
Neeta Bhandari	The Bill & Melinda Gates Foundation
Rebecca Ross	USAID
Shufang Zhang	GFATM
Susanna Baker	USAID
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