

OPPORTUNITIES FOR QUICKER PROGRESS TOWARDS ENDING AIDS

3.





Investing in a sustainable response will render health, social and economic returns

HIV responses succeed when they are anchored in strong political commitment, follow the evidence, have reliable and adequate funding, and reduce the inequalities and discrimination that deny people the services and tools that can protect their health and well-being.



For all the gains made against AIDS, it still claims 630 000 [480 000–880 000] lives each year, most of them in disadvantaged communities and among people from marginalized and vulnerable populations. HIV remains a pandemic that feeds on injustice and reinforces inequalities. But HIV responses also have the tools, evidence and means to end this pandemic—and if those assets are equitably available and used effectively, countries can rapidly close the remaining gaps.

Now is not the time to lose momentum. Seizing the opportunity to invest in a sustainable response will render extraordinary health, social and economic returns. Investing in the HIV pandemic could enhance educational outcomes, especially for young women and girls, reduce gender inequalities and support economic growth in heavily affected parts of sub-Saharan Africa (1). Expanding HIV prevention and advancing health systems integration, gender equality and institutionalized community services will lay the foundations for long-term future gains.

History shows that HIV responses succeed when they are anchored in strong political commitment, follow the evidence, have reliable and adequate funding, and reduce the inequalities and discrimination that deny people the services and tools that can protect their health and well-being. It also underscores the importance of community-led interventions, and of delivering health-care services in ways that are more convenient and sensible. These are the same themes and approaches that anchor the United Nations Our Common Agenda and that guide actions towards achieving the Sustainable Development Goals (SDGs). There are huge opportunities to advance on all those fronts. Seizing them now will take the world to within reach of ending AIDS, and will add fresh momentum towards achieving a range of SDGs and building the foundations of a sustainable AIDS response beyond 2030.

Many countries have already succeeded in dramatically reducing their numbers of new HIV infections and AIDS-related deaths by implementing strong, well-funded responses coupled with firm political commitment and leadership, strengthened health systems, and engagement of communities. Following these successes and the achievement of the AIDS targets, the long-term strategies required to sustain low and constantly declining numbers of new HIV infections and AIDS-related deaths will evolve. Reaching SDG 3 to end AIDS as a public health threat will not signal the end of the multisectoral response to HIV but rather the achievement of a status that will have to be sustainably maintained and monitored (2).

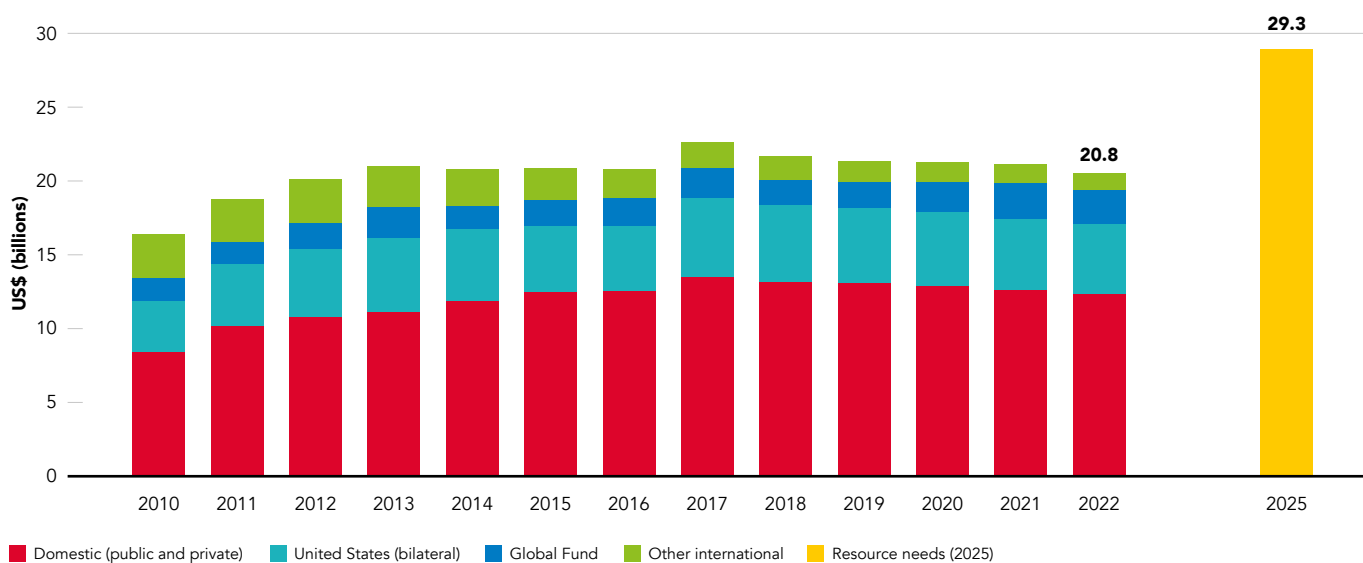
SEIZING THE OPPORTUNITIES WILL ADD FRESH MOMENTUM TOWARDS ACHIEVING A RANGE OF SDGS

The HIV funding gap is widening and must match the need

The HIV funding gap in low- and middle-income countries is widening. A total of US\$ 20.8 billion (constant 2019 US\$) was available for HIV programmes in low- and middle-income countries in 2022—2.6% less than in 2021 and well short of the US\$ 29.3 billion needed by 2025 (Figure 3.1). HIV resources increased substantially in the early 2010s, but they are currently at the same level as in 2013.

The global HIV funding gap is widening

Figure 3.1 Resource availability for HIV in low- and middle-income countries by source of funding, 2010–2022 and 2025 target



Source: UNAIDS financial estimates and projections, 2023 (<http://hivfinancial.unaids.org/hivfinancialdashboards.html>); Stover J, Glaubius R, Teng Y, et al. Modeling the epidemiological impact of the UNAIDS 2025 targets to end AIDS as a public health threat by 2030. PLoS Med. 2021;18(10):e1003831.
 Note: resource estimates are presented in constant 2019 US dollars (billions). The countries included are those that were classified by the World Bank in 2020 as being low- and middle-income.

In eastern and southern Africa and Latin America, the resources available in 2022 were close to the total amounts needed in 2025. In other countries, however, the shortfalls were large: a 82% gap in the Middle East and North Africa, 60% in eastern Europe and central Asia, 57% in Asia and the Pacific, and 31% in western and central Africa.

The reduction in resources available for HIV in 2022 is due to declines in both international and domestic funding. The US\$ 8.3 billion of external HIV funding in 2022 was 3% lower than in 2021. At the same time, domestic funding is diminishing.

The decline in HIV funding must be reversed. Progress against AIDS has been strongest in the countries and regions that have invested sufficiently in their HIV responses, notably eastern and southern Africa. Conversely, regions with the largest resource gaps—eastern Europe and central Asia and the Middle East and North Africa—are making the least headway against their HIV epidemics.



The HIV funding gap is widening

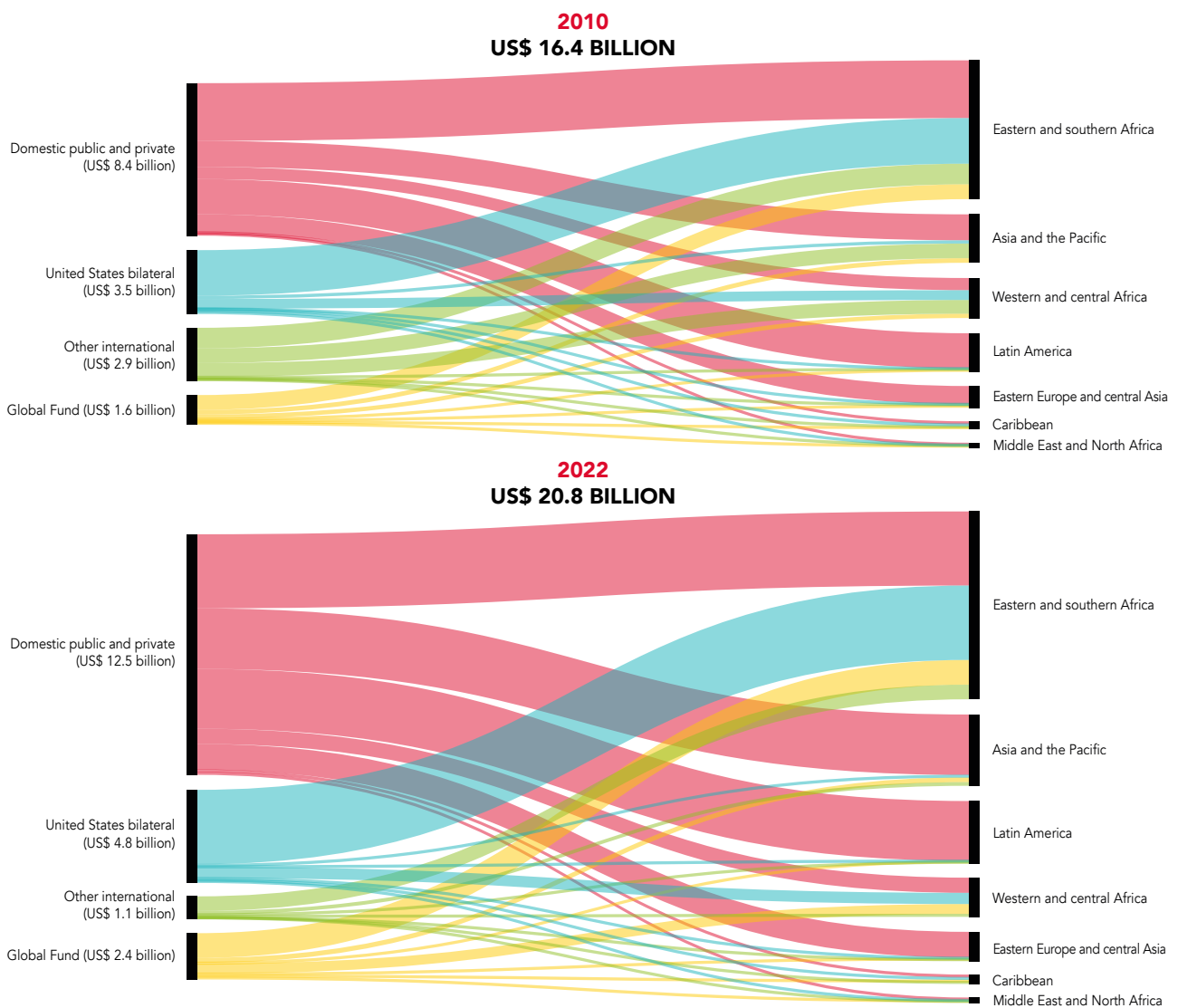
A total of US\$ 20.8 billion was available for HIV programmes in low- and middle-income countries in 2022—2.6% less than in 2021.

Domestic HIV funding is vital but under stress

Domestic HIV funding in low- and middle-income countries increased appreciably after 2000 and continued to rise after 2010, including in countries with high HIV burdens. About 60% of resources available in 2022 were sourced domestically, compared with about 50% in 2010 (Figure 3.2). Of the 73 reporting countries that reported most recent domestic HIV funding data, 42 (including most high-burden countries) have increased their domestic funding since 2015. Underpinning these funding decisions was the realization that delays and half-measures are ultimately much costlier than prompt, decisive action.

The shift to domestic funding for HIV continued after 2010

Figure 3.2 Domestic and international resources for HIV by source of funding, by region, 2010 and 2022



Source: UNAIDS financial estimates, 2023 (<http://hivfinancial.unaids.org/hivfinancialdashboards.html>).
 Note: resource estimates are presented in constant 2019 US dollars.



@ACCSI/Venezuela

**ALMOST HALF OF
THE REPORTING 62
COUNTRIES ANTICIPATE
THAT THEIR 2024
ANNUAL HIV BUDGETS
WILL BE AT 2023 LEVELS
OR LOWER**

The rising trend has shifted since the COVID-19 pandemic emerged. Fiscal constraints and growing debt repayment obligations across countries are putting additional pressure on all domestic health investments (3). Domestic HIV funding available in 2022 was over 2% lower than in 2021, the third annual decrease in a row.

Competing claims on public spending and the vulnerable macroeconomic situations in many low- and middle-income countries, including towering debt burdens, are affecting domestic HIV funding. In these circumstances, many countries will struggle to increase their domestic HIV funding, and so external financing support remains vitally important. Almost half of the 62 countries that reported trends in their public budget allocations for HIV for 2024 anticipate that their annual HIV budgets will be at 2023 levels or lower.

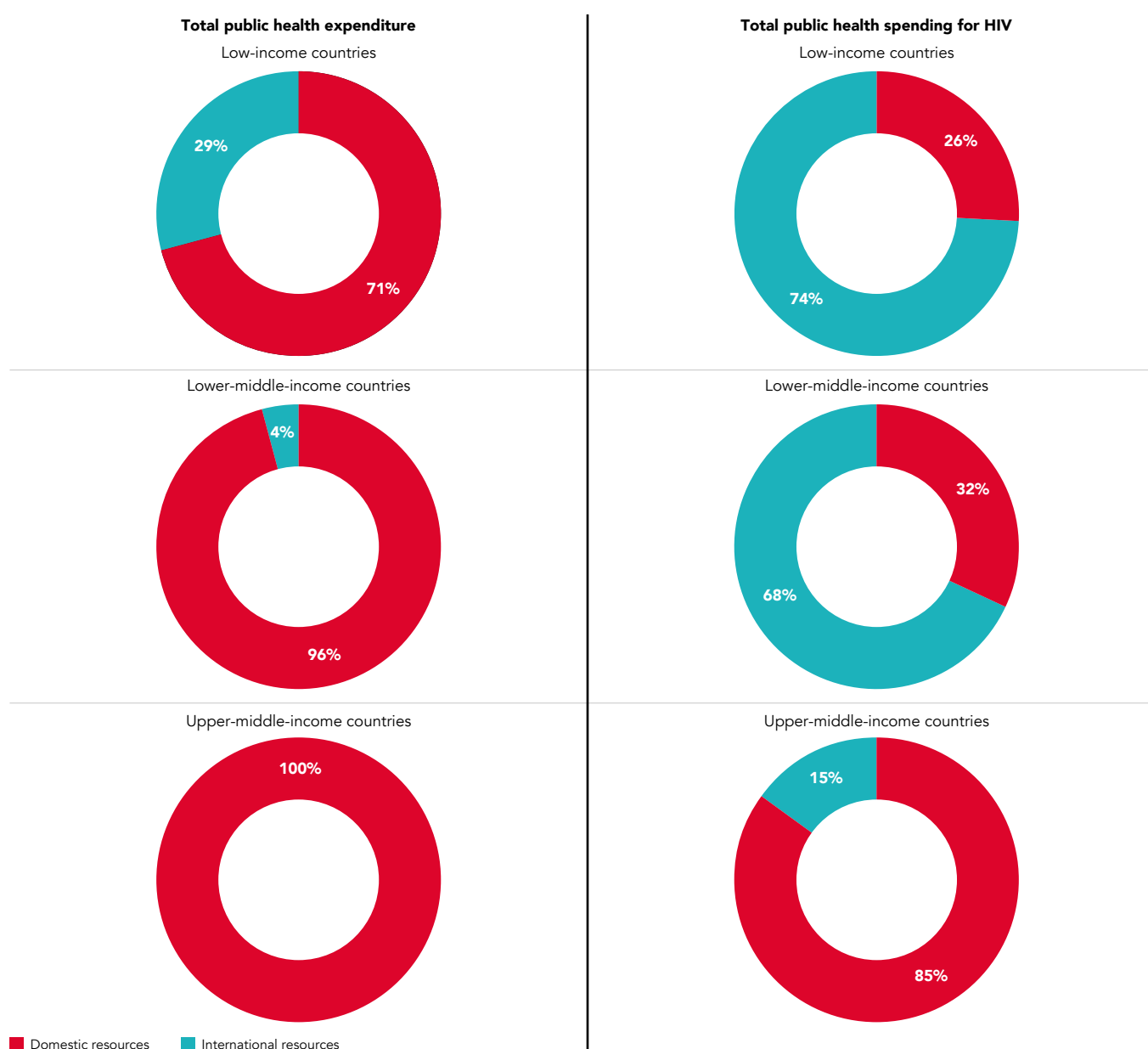
The ongoing reliance on external financing for HIV responses in many countries is at odds with financing patterns for health spending overall in low- and middle-income countries. Their total health spending is financed almost exclusively from domestic coffers, but HIV funding in low- and lower-middle-income countries comes mainly from external sources. Despite increases in domestic funding for HIV in the past decade, the share is relatively small compared with the share of domestic funding going towards health programmes overall.¹

¹ Globally, HIV spending represents about 1.5% of total health spending in low- and lower-middle-income countries.

Across low-income countries, about 71% of total health spending but only 26% of HIV funding came from domestic resources in 2020 (most recent available data) (Figure 3.3). In lower-middle-income countries, 96% of total health spending was domestically sourced, compared with 32% of HIV funding. This suggests that, at least in the short term, external financing will continue to be key for low- and lower-middle-income countries to end AIDS. At the same time, it is necessary for low- and lower-middle-income countries to maintain or even increase the domestic resources they allocate to their HIV responses in order to foster sustainability, strengthen their health systems, and consolidate country ownership of their HIV programmes.

Ongoing reliance on external financing for HIV responses is at odds with patterns for health spending overall in low- and lower-middle-income countries

Figure 3.3 Percentage of public spending for health overall and for HIV, by source of funding and by country income classification, 2020



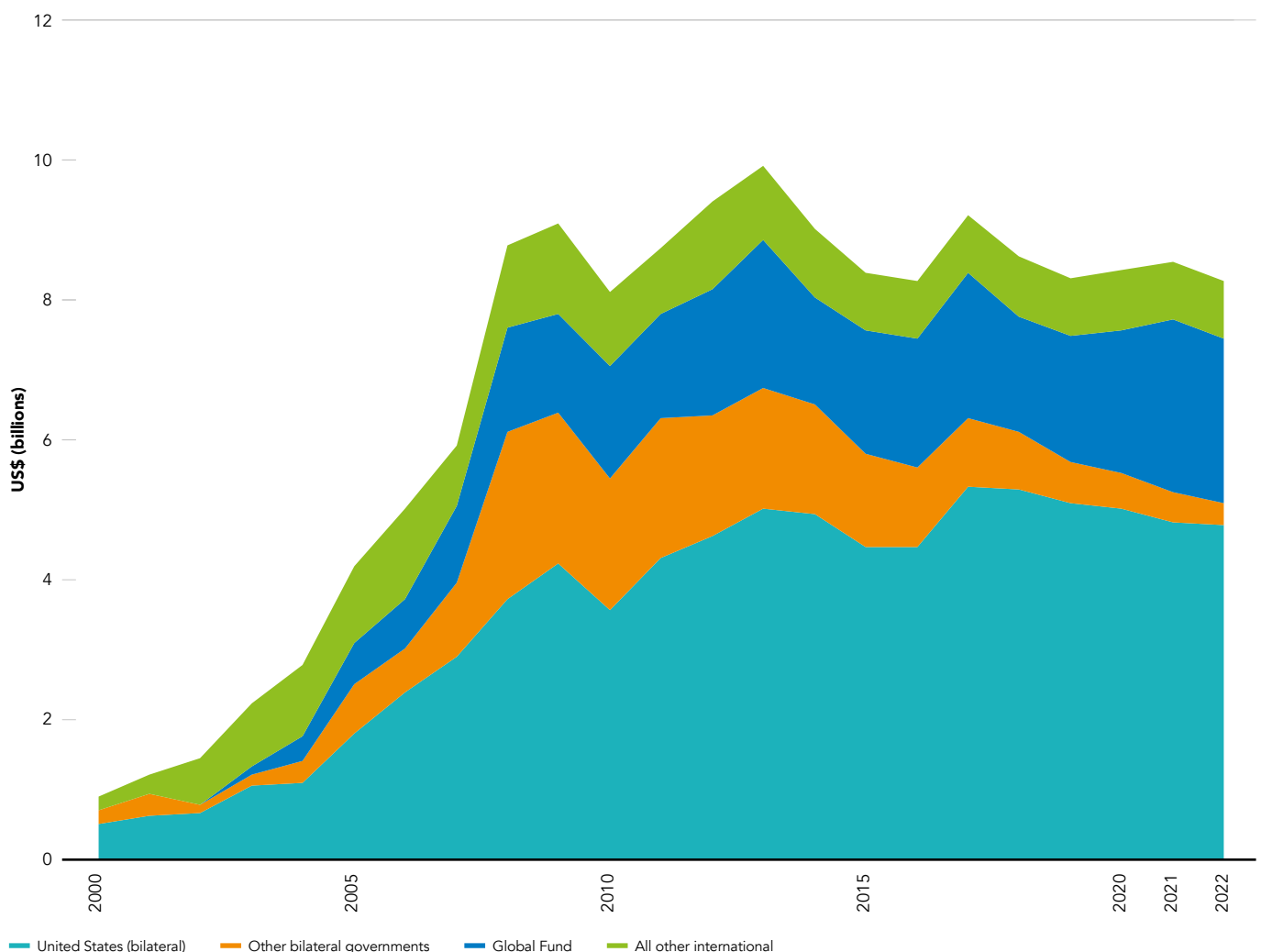
Source: UNAIDS financial estimates, 2023 (<http://hivfinancial.unaids.org/hivfinancialdashboards.html>); WHO Global Health Expenditure Database (<https://apps.who.int/nha/database>).

International HIV financing remains crucial in many countries

About 40% of HIV funding in low- and middle-income countries in 2022 was sourced internationally. Bilateral funding from the United States Government constituted 58% of all international assistance for HIV, while disbursements from the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) accounted for about 29%. Other international donors contributed the remainder, but that share has diminished considerably, from approximately US\$ 3 billion in 2010 to US\$ 1.2 billion in 2022, a 61% decrease (Figure 3.4).²

Most international funding for HIV comes from the Global Fund and PEPFAR

Figure 3.4 Resource availability for HIV in low- and middle-income countries by source of funding, 2000–2022



Source: UNAIDS financial estimates, 2023 (<http://hivfinancial.unaids.org/hivfinancialdashboards.html>).

Note: resource estimates are presented in constant 2019 US dollars.

² These other international donors include members of the Organisation for Economic Co-operation and Development, multilateral institutions such as the United Nations system, development banks, and philanthropic institutions such as the Bill & Melinda Gates Foundation, the Ford Foundation and the Wellcome Trust.

Development assistance for HIV has been—and will continue to be—crucial. The Global Fund and the United States President’s Emergency Plan for AIDS Relief (PEPFAR) play crucial roles and are also the largest funders of grants for health systems generally. The ripple effects of these investments are visible in other developmental outcomes, including falling child mortality rates, expanding tuberculosis (TB) prevention, screening and treatment, and strengthened community systems and partnerships.

These financing patterns have additional implications for the HIV response. In many countries, HIV prevention absorbs a small percentage of overall HIV funding. Despite substantial progress, new HIV infections are not decreasing at the rates needed to end AIDS by 2030. More funding for prevention programmes, especially among people from key populations, is vitally needed—as is smarter, more cost-effective use of funds. HIV prevention programmes typically depend heavily on international resources (principally the Global Fund and PEPFAR) (Figure 3.5). That reliance is especially heavy for programmes that focus on women and girls and people from key populations.

The Global Fund and PEPFAR are the main sources of funding for HIV prevention programmes

Figure 3.5 Percentage of funding for HIV prevention by source, selected countries with high burden of HIV, 2022



Source: UNAIDS Global AIDS Monitoring, 2023 (<https://aidsinfo.unaids.org/>).

UNAIDS analysis shows that where HIV prevention funding has been prioritized, HIV incidence has declined. Some countries where HIV incidence is declining, including the Dominican Republic, India, Kyrgyzstan and Togo, are targeting 3–16% of HIV spending towards prevention programmes for people from key populations. In contrast, countries with stagnating or increasing HIV incidence among key populations are steering a mere 0.5% or less of total HIV spending towards such programmes.

Yet, across low- and middle-income countries overall, spending on key population programmes is not increasing and a large funding gap persists. More funding on prevention programmes, especially for people from key populations, is needed, regardless of the source.

The global targets call for spending about US\$ 3.1 billion (or about 11% of estimated total resource needs) per year on societal enablers by 2025, including programmes addressing human rights; policy dialogue; reduction of stigma, discrimination and gender-based violence; and HIV-related legal services (4). In 2022, an estimated 5% of total HIV resources was spent on societal enablers.

Innovations for sustainable financing of the AIDS response

Several positive developments have emerged during the past decade in the HIV financing landscape, leading to increased resources and improved access to essential services. It is important to keep the momentum going on these developments.

Domestic resource mobilization has been the key driver of sustained financial resources in low- and middle-income countries, enabling them to generate more funds for their HIV responses. To maintain this positive trend, there is a need for increased domestic revenue mobilization, both through progressive tax reforms and control of tax evasion, and through the introduction of targeted health taxes (such as “sin taxes” for alcohol or tobacco use or excessive carbon emissions).

Multilateral organizations, governments and philanthropic foundations have joined forces, committing substantial funds towards the HIV response. Innovative financing mechanisms such as trust funds, social impact bonds and blended financing have also mobilized investments for HIV programmes. Despite the threatening external context, these kinds of positive steps towards sustainable financing have strengthened the global commitment and developed pathways to ending AIDS.

GLOBAL TARGETS CALL FOR SPENDING ABOUT 11% OF TOTAL ESTIMATED TOTAL RESOURCE NEEDS PER YEAR ON SOCIETAL ENABLERS; IN 2022, COUNTRIES SPENT ONLY AN ESTIMATED 5%

Programmes that put people first have the biggest impact

The removal of criminalizing laws, ending police harassment and violence, reducing stigma and discrimination, and increasing support for community and structural interventions would shift the HIV trajectory and help protect the health and human rights of people from marginalized populations (5).

Eliminating stigma, discrimination and punitive approaches would reboot HIV programmes

Laws that criminalize people from key populations and HIV non-disclosure, exposure or transmission drive people away from the support and services that can help them protect their health (6, 7).

Such laws, together with stigma and discrimination, combine to increase the risk of HIV, as concluded by a systematic review of studies across 10 sub-Saharan African countries, which showed that punitive and non-protective laws on sex work were associated with prevalent HIV infection (6). Criminalization of same-sex sexual behaviour has been found to be associated with higher HIV prevalence among gay men and other men who have sex with men based on data from 10 countries in sub-Saharan Africa (8). Criminalization of drug use has a similarly negative effect on HIV prevention and treatment (9). HIV criminalization undermines effective HIV prevention, treatment, care and support by dissuading people from seeking and using those services for fear of arrest and prosecution (10).

In contrast, decriminalization of drug use and possession for personal use is associated with greater access to harm reduction services, and reductions in violence, arrest or harassment by law enforcement agencies (9).

A SYSTEMATIC REVIEW OF STUDIES ACROSS 10 SUB-SAHARAN AFRICAN COUNTRIES SHOWED THAT PUNITIVE AND NON-PROTECTIVE LAWS ON SEX WORK WERE ASSOCIATED WITH PREVALENT HIV INFECTION



Harmful laws, stigma and discrimination combine to increase the risk of HIV among key populations

Increasing support for community and structural interventions would shift the HIV trajectory and help protect the health and human rights of people from marginalized populations.

Relatively straightforward changes could drastically improve the health and safety of people from key populations, including people living with HIV, reducing their HIV vulnerability and risk, and averting large numbers of HIV infections. The removal or, at the very least, non-enforcement of punitive and obstructive laws should be a high priority. A modelling study from 2015 reported that the decriminalization of sex work could avert 33–46% of new HIV infections over the course of a decade. Other changes, such as more supportive policing practices and increased access to safer work environments, would also avert substantial numbers of new infections. Modelling based on studies from Canada and Kenya has indicated that rapid elimination of violence by police, clients and strangers could avert 17–20% of new infections among female sex workers and their clients in those countries within a decade (11).

Similarly, people have to feel safe when using health-care services or they will tend to shun them. At least one in three of 27 reporting countries have data indicating that more than 10% of gay men and other men who have sex with men avoided using health-care services due to concerns about stigma, confidentiality or other issues. These numbers increase to more than one in two for sex workers (16 of 29 reporting countries), people who inject drugs (eight of 14 reporting countries) and transgender people (seven of 12 reporting countries). People living with HIV who anticipate high levels of HIV-related stigma are 2.4 times more likely to delay enrolment in care until they are very ill, compared with people who do not expect to encounter stigma (12).

An obvious way forward is for countries to repeal laws that sanction or perpetuate HIV-related stigma and discrimination, as the Global Commission on HIV and the Law has urged, and to act with greater resolve against stigma and discrimination (13).

Stronger accountability for health-care providers and HIV-related legal services can make stigma and discrimination a less common ordeal and reduce the disrespect and abuse some people experience at health-care facilities. Some countries, including Thailand and Viet Nam, have been introducing new training and protocols to reduce stigmatizing and discriminatory behaviours by health-care providers (14, 15). The use of peer supporters to help people navigate HIV and related services can protect against the fear of stigma, an approach that is being used in Kazakhstan (16).

Countries that have signed up to the Global Partnership for Action to Eliminate all Forms of HIV-related Stigma and Discrimination have committed to these and a range of other steps to reduce and respond to stigma and discrimination. The Central African Republic, with support from the Global Partnership, has revised its HIV law to decriminalize HIV transmission and lower the age of consent for HIV testing. In Argentina, new legislation on HIV, hepatitis and TB features a strong human rights perspective and emphasizes the rights of people living with HIV, other sexually transmitted infections and TB. Jamaica is also taking steps to improve the legal environment for people living with HIV and key populations.

AT LEAST ONE IN THREE REPORTING COUNTRIES INDICATED THAT OVER 10% OF KEY POPULATIONS AVOIDED USING HEALTH-CARE SERVICES DUE TO CONCERNS ABOUT STIGMA, CONFIDENTIALITY OR OTHER ISSUES

Community-led services can make an even bigger difference

Organizations of communities living with, at risk of or affected by HIV have long been the backbone of the HIV response, with the Greater Involvement of People Living with HIV (GIPA) principle formalized since 1994. It is largely due to their activism that affordable HIV medicines and prevention tools are now the norm across most of the world. They routinely raise the alarm about inequalities and gaps, monitor rights violations and service failings (17), propose improvements (e.g. community-led monitoring) (18), and hold health systems accountable (19). Recent country examples illustrate the improvements that can be achieved when community-led monitoring activities complement public health information systems to identify service deficiencies and solutions (18, 20, 21).

In an epidemic that especially affects people from vulnerable and ostracized populations, often alienated from standard health services, it is crucial that those people can trust, access and use the services they need for their health and well-being. Working mostly from the margins, many community-led organizations excel at providing people-centred, differentiated services for the people who need them (22, 23). In many countries, community-led organizations are leading HIV service providers for people from key and marginalized populations (24). Their resilience and adaptability proved crucial during the COVID-19 pandemic, when they kept core HIV services operating in many countries and took on COVID-19-related responsibilities (25).

Even in hostile conditions, community-led organizations are providing support and services that help people from key populations protect their health (26). Often, these organizations are more effective than standard health facility-based platforms at reaching underserved populations with services and support, especially where stigma and discrimination are rife. They also function as adjunct public health infrastructure, bringing services and information to poorly served communities, linking them with standard health services, and supporting them as they navigate those services. Among gay and other men who have sex with men, for example, community engagement and the presence of strong community-led organizations are associated with greater self-reported use of HIV and other health services (27).

Community-led responses are most effective when they link effectively with public health systems. These mutually supportive roles require favourable legal and regulatory environments and funding and capacity-building support for community-led organizations. The work of these organizations is commonly undermined, however, by funding shortages, policy and regulatory hurdles, capacity constraints, and crackdowns on civil society. If these obstacles are removed, community-led organizations can add even greater impetus to the global HIV response.

Steer more support to community-led HIV activities

Community organizations need sustainable funding and technical support to play their unique roles fully. Many of these organizations, however, find themselves adrift in a frugal and unstable HIV funding environment.

Current funding for community-led organizations does not match the commitments made in the Political Declaration and in many national HIV strategies.³ The bulk of funding comes from external donors, and reliable domestic funding for organizations that represent and serve vulnerable, marginalized communities is rare. Where domestic HIV expenditure has risen, little of it has been directed to community-led organizations, especially those working with people from key populations and adolescent girls and women (29). A resurgent conservatism that targets marginalized populations and attacks rights-based practices is making it more difficult to secure domestic funding for programmes and organizations that serve ostracized communities.

Community-led HIV activities in low- and middle-income countries are being funded largely by external donors such as the Global Fund or PEPFAR, and by various philanthropic and bilateral donors. The Global Fund Breaking Down Barriers to Access initiative has led to some key population-led organizations receiving financial and technical support for the first time, according to its 2022 mid-term assessment (30).⁴ The PEPFAR 3.0 Sustainable Action Agenda includes support to local organizations to deliver HIV services.

Social contracting—whereby governments contract civil society organizations to provide certain services—can increase the reach and impact of HIV programmes and allow governments to support (at arm's length) possibly controversial services for people from marginalized populations. They can also nurture pragmatic partnerships between community organizations and national health programmes and offer access to predictable funding (26).

In addition to erratic funding, inhospitable legal and regulatory contexts encumber community-led organizations. In many countries, there is a reluctance to collaborate with or support civil society organizations, especially those representing young girls and women and people from ostracized populations. Often that unwillingness is formalized by regulatory hurdles that make it difficult for organizations to receive funding and operate (31).

³ The 2021 Political Declaration on Ending AIDS commits United Nations Member States to increase the proportion of HIV services delivered by community-led organizations to reach 30% of HIV testing and treatment services, 80% of HIV prevention services for people from high-risk populations, and 60% of programmes to achieve societally enabling environments by 2025 (28).

⁴ The Breaking Down Barriers initiative provides financial and technical support to 20 countries to remove gender- and human rights-related barriers to HIV, TB and malaria services. Investments in these 20 countries have risen from around US\$ 9 million in 2014–2016, to US\$ 78 million in 2017–2019, to over US\$ 130 million in 2020–2022.

A lack of institutional arrangements linking the activities of these organizations into overarching health systems and weak technical and managerial capacities further inhibit the current work and future contributions of community-led organizations. Trusted partnerships between public health systems and community-led organizations are important, and they can contribute to greater effectiveness, cost savings and efficiencies to national HIV responses.

A UNAIDS study found that social contracting arrangements were operating in 18 of the 59 countries reviewed and were being introduced gradually in 16 others. Little evidence was found of functional integration of services provided by contracted community-led organizations and those provided by government facilities, although it is likely that some integration was occurring or planned but had not yet been documented (32).



Greater equity will unlock new opportunities and build a sustainable response

The inequities and inequalities that fuelled the spread of HIV have not been eliminated. In some places, they are triggering rising numbers of new infections. In many places, inequities and inequalities are blocking quicker and wider success in protecting people against HIV and advancing towards ending the pandemic. But there are great opportunities to rapidly remove some of these obstacles. Investing in a response that supports equitable access to new technologies, along with strong social protection, education and gender equality programmes, will lay the foundations for a sustainable AIDS response.

Equitable access to new technologies and other innovations

Essential health-care technologies should be affordable and available to all, but they are not—a fact driven home by the highly unequal access to COVID-19 vaccines and treatments.

Some of the biggest breakthroughs against the AIDS pandemic have been due to successful demands for affordable and equitable access to antiretroviral medicines and other HIV tools. Steep price reductions—achieved through voluntary licensing deals, generic production and pooled procurement, for example—have made it possible to provide highly effective HIV treatment for free or at low cost in low- and lower-middle-income countries across the world. Similar demands have been carried over to other public health priorities, such as TB, cervical cancer and viral hepatitis.

ON AVERAGE THE UNIT PRICES FOR ANTIRETROVIRAL REGIMENS ARE ALMOST 2.5 TIMES HIGHER IN EASTERN EUROPE AND CENTRAL ASIA AND LATIN AMERICA THAN IN WESTERN AND CENTRAL AFRICA



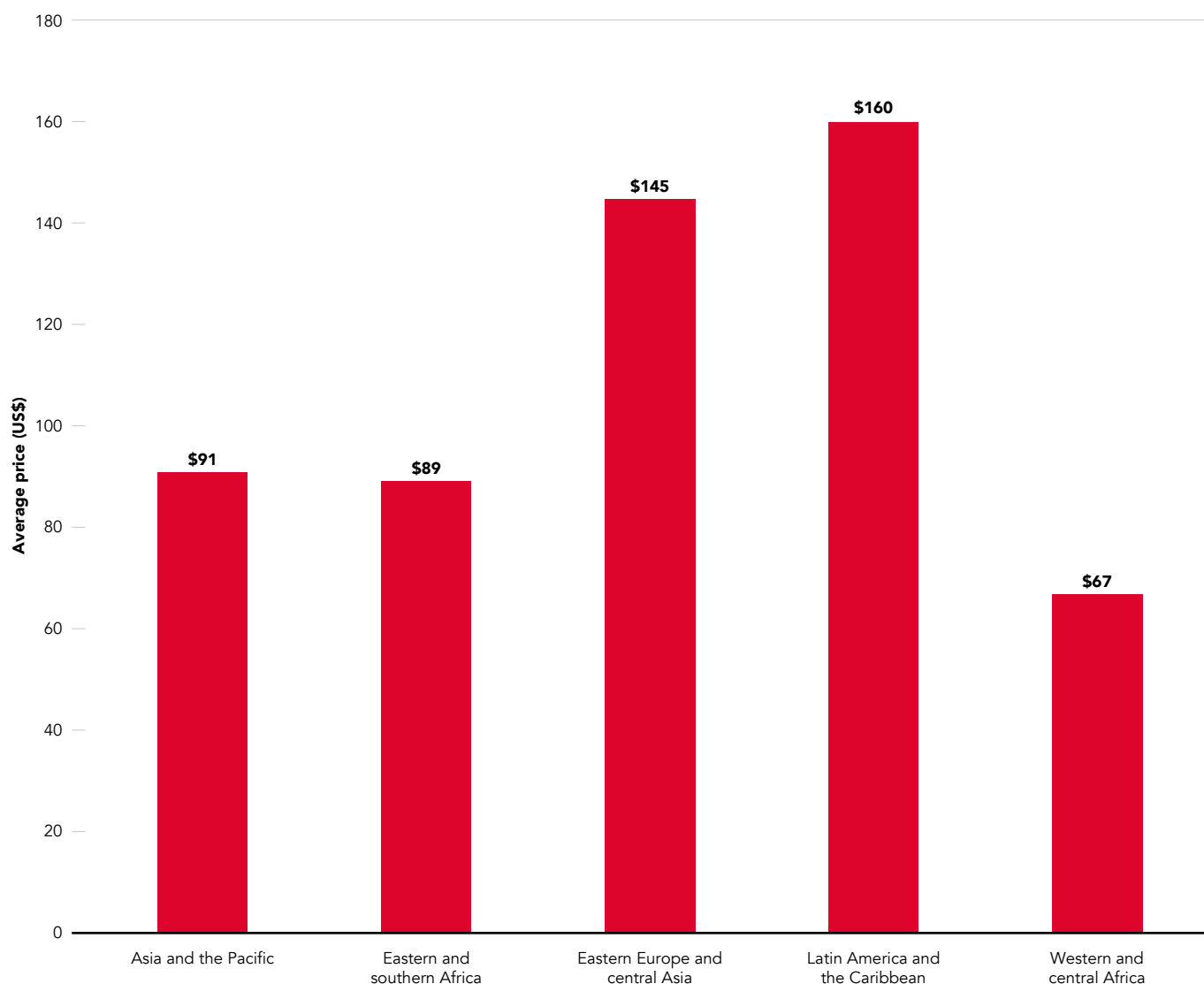
Inequities and inequalities are blocking quicker and wider success in protecting people against HIV

Investing in a response that supports equitable access to new technologies will lay the foundations for a sustainable AIDS response.

Affordability of new health technologies is an ongoing challenge—and an ongoing priority involving advocacy, activism and legal challenges. For example, the Make Medicines Affordable campaign, a consortium of 13 community-based organizations, has filed almost 70 challenges in 13 countries against patents aimed at maintaining monopolies for antiretroviral medicines, TB medicines and COVID-19 treatments. A quarter of the oppositions have succeeded, resulting in budget savings of an estimated US\$ 473 million in Argentina, Brazil, Thailand and Ukraine (33). On average, though, the unit prices for main first-line antiretroviral regimens are still almost 2.5 times higher in eastern Europe and central Asia and Latin America than in western and central Africa (Figure 3.6). Significant cost savings could be made if countries can achieve further reductions in the prices of these medicines.

Prices of antiretroviral medicines still vary widely

Figure 3.6 Average price (US\$) per person-year for antiretroviral regimen (dolutegravir/lamivudine/tenofovir), by region, 2021



Source: UNAIDS Global AIDS Monitoring, 2022 (<https://aidsinfo.unaids.org/>); government customs data accessed through <https://www.seair.co.in/>.
Note: data are for 64 countries that reported to UNAIDS Global AIDS Monitoring 2022.

Long-acting injectable pre-exposure prophylaxis (PrEP) is a pressing example of pricing inequalities. In clinical trials, people receiving long-acting cabotegravir were 70–90% less likely to acquire HIV than people taking daily oral PrEP (34, 35). There is new evidence that quarterly injections with cabotegravir could offer women sufficient protection against HIV infection (36). This has huge potential to offer people, and women in particular, an additional option and greater autonomy to protect themselves against HIV infection.

The initial pricing for long-acting cabotegravir was prohibitively expensive. In the United States of America, it exceeded US\$ 22 000 per year. A voluntary licensing deal struck in 2022 between the manufacturer ViiV Healthcare and the Medicines Patent Pool allows about 90 countries to purchase less expensive generic versions of the medicine once generic manufacturing begins. The deal covers all of Africa (except Libya) and other low- and lower-middle-income countries (37, 38). Injectable cabotegravir PrEP remains very expensive in many countries, however, including upper-middle-income countries such as Argentina, Brazil, Mexico and Thailand. It has been estimated that countries excluded from the voluntary licensing deal account for about 8% of total new HIV infections per year (about 120 000 new infections) (39).

IN CLINICAL TRIALS, PEOPLE RECEIVING LONG-ACTING CABOTEGRAVIR WERE 70–90% LESS LIKELY TO ACQUIRE HIV THAN PEOPLE TAKING DAILY ORAL PREP

As part of the arrangement with the Medicines Patent Pool, three generic producers will be able to manufacture long-acting cabotegravir, and additional producers may be added at a later stage. Generic production should dramatically lower prices. Analysis by the United States Food and Drug Administration has found that the entry of three or more generic manufacturers in the market reduced the price of a medicine by up to 95% (40), while voluntary licensing of other HIV medicines in low- and middle-income countries is estimated to have saved about US\$ 830 million (41).

The Indian company Cipla announced in May 2023 that it would produce a generic version of long-acting cabotegravir at its plants in South Africa. It could take three to five years before production starts, however, and ViiV Healthcare is expected to remain the sole producer for the next few years (42). This has led to concerns that it may take time for production volumes to match the anticipated increase in demand for injectable PrEP at reduced prices. Upfront purchasing commitments, perhaps financed through social investment funds, may be necessary to ramp up production so this potentially powerful prevention tool can reach more people (43).

Vaccine hopes suffer a blow

In contrast to the rapid progress achieved in developing vaccines against the SARS-Cov-2 virus, HIV continues to bedevil efforts to craft an effective vaccine. The only remaining phase III efficacy trial for a HIV vaccine was shut down in January 2023 after the candidate vaccine failed to reach preset standards of efficacy.

The Mosaico (HPX3002/HVTN706) study was the latest of several halted vaccine trials—a reminder of how unusual HIV is and how difficult it is to vaccinate against (44). Two other trials, Uhambo and Imbokodo, closed in February 2020 and August 2021, respectively, after failing to demonstrate sufficient efficacy. This did not mean that the candidate vaccines generated no immunity to HIV, but the response was too weak and idiosyncratic to constitute useful efficacy (45).

Thus far, some efficacy for a candidate vaccine has been found only in RV144, the so-called “Thai Trial”, where a 31% lower infection rate was observed among people who received the vaccine. However, the efficacy of that vaccine waned quickly over time.

Attention has now shifted to mRNA approaches, using technologies honed during the development of COVID-19 vaccines. These approaches allow for quick modification (46). mRNA platforms are being used in two international clinical trials—one in Rwanda and South Africa and one in the United States (47). Also promising are the recent results from an early-phase clinical study that indicate an experimental HIV nanoparticle vaccine is safe in humans, although its efficacy is yet to be determined. That vaccine itself would not offer protection, but it could form part of a broader vaccination regimen (48). The hope is to eventually develop a multistep HIV vaccination regimen that can guide the immune response to provide greater protection against HIV infection (49).

A successful vaccine would dramatically shift the outlook for ending AIDS, and the search for an HIV vaccine should remain a priority. At the same time, the lack of success thus far underscores the need to unlock the full potential of combination HIV prevention.

Social safety nets should reach everyone in need and reduce gender inequality

The COVID-19 pandemic exposed wide gaps in social protection coverage across all countries—the result of significant underinvestment in social protection, especially in Africa and Asia. As of 2020, only 47% of the global population was effectively covered by at least one social protection benefit. Coverage in sub-Saharan Africa, the region with the largest burden of HIV and many other health challenges, was only 17%. In 2020, many dozens of countries in all regions augmented their social protection systems as part of their responses to COVID-19. Many of these interventions, however, have been cut back or halted. Some four billion people lack any form of reliable social protection (50).

**THE PROVISION OF
FREE HIV TREATMENT
IN MANY COUNTRIES
ACROSS THE WORLD
HAS SAVED MILLIONS
OF LIVES**

These gaps exist despite strong evidence that social protection programmes can reduce poverty and help to meet multiple needs of poor and excluded people, as well as benefit people living with, at risk of or affected by HIV (51–53).

Social protection programmes can potentially contribute to the HIV response in several ways. The provision of free HIV treatment in many countries across the world—a form of in-kind social assistance—has saved millions of lives and is helping to reduce new HIV infections.

Other in-kind assistance, such as free or subsidized school fees, has been shown to increase school enrolment, attendance and completion rates, especially for girls (54–56). Increased school attendance and more years of secondary schooling are associated with a lower risk of acquiring HIV, especially among adolescent girls and young women (57, 58). Numerous campaigns and programmes are under way to improve education attainment levels in low- and middle-income countries, among them the Education Plus initiative, which is supporting 13 countries to explore law and policy reforms that can increase educational opportunities and attainment for girls and young women.

A wealth of international evidence testifies to the benefits of income support in relation to maternal and child health, children's nutritional status, increased use of health-care services and contraception by women (59), school enrolment (for boys and girls) and attendance (for girls), and unintended pregnancies among young women (60). In South Africa, child support grants have been credited with reducing poverty levels, especially in provinces with very high poverty rates and in female-headed households (61, 62). Crucially, these income support schemes seem to be most effective when they form part of broader strategies to achieve more equitable access to good-quality public goods (63).

Analysis of data from populations-based surveys in 42 countries found that in countries with cash transfer programmes covering at least 5% of impoverished populations, women had a lower probability of having acquired sexually transmitted infections in the previous 12 months and were more likely to have taken an HIV test in the past 12 months. Income transfers were also associated with slight reductions in numbers of new HIV infections and AIDS-related deaths (53).

To strengthen the contribution that social protection can make in the AIDS response, programmes should aim to be “inclusive of populations who are at risk of HIV infection or are susceptible to the consequences of HIV infection” (64). A new study of the HIV-inclusivity of social protection programmes in 20 low- and middle-income countries and across Latin America and the Caribbean found that none explicitly discriminated against people living with, at risk of or affected by HIV (65). Stigma and discrimination—towards people living with HIV, and towards ostracized and marginalized populations generally—were important hindrances to access in all the countries, however, underscoring the need to eliminate stigma and discrimination from social protection and health-care services in order to reap their full benefits.

Integrated services can have an even bigger impact

There are major opportunities to build on the impact of integrated HIV and other health services. Deeper and effective integration can help health services become more convenient and responsive to people's needs and can accelerate progress towards ending AIDS. At the same time, integration can support the achievement of universal health coverage and enhance health outcomes (66).

The scale-up of high-quality people-centred services through a primary health-care approach can be a critical step for achieving HIV targets and broader health aims (67). Members of all populations must be able to access health services and benefit from health system resources free from stigma and discrimination (68). Better integration of HIV services within the health sector and further leveraging of health systems can be an important step towards greater cohesion within the World Health Organization (WHO) primary health-care approach to achieving universal health coverage.

The most common forms of integration involve HIV services and services for TB, maternal and child health, sexual and reproductive health, and primary care services (66). Services for HIV, syphilis, viral hepatitis and other sexually transmitted infections are becoming more functionally integrated with antenatal and postnatal services. There is also greater recognition of the need for closer integration with noncommunicable disease programmes, especially for older people with HIV (see Chapter 2), and mental health services and support.

INTEGRATION OF HIV AND TB SERVICES AVERTED APPROXIMATELY 13 MILLION DEATHS AMONG PEOPLE LIVING WITH HIV BETWEEN 2000 AND 2021



Integration can support the achievement of universal health coverage

Deeper and effective integration can help health services become more convenient and responsive to people's needs and can accelerate progress towards ending AIDS.

These adaptations are having a positive impact. Integration of HIV and TB services has contributed to steep reductions in numbers of AIDS-related deaths, and integration of HIV testing and treatment with maternal and child care has prevented almost 3.4 million HIV infections in children since 2000. Integrated family planning and HIV services contribute to reducing unintended pregnancy and pregnancy-related maternal mortality among women living with HIV (69).

A large meta-analysis of 114 studies, mostly from sub-Saharan Africa, found that HIV treatment and care outcomes, including viral suppression rates, were better when integrated services were delivered, while treatment success for non-HIV-related diseases and conditions and uptake of non-HIV services were commonly higher in integrated services (66). In addition to improving health outcomes, successful integration can boost cost-effectiveness, bring cost savings for service providers (through increased coverage and reduced costs, if services can be delivered simultaneously and using the same platforms), and save costs for people using the services (by reducing the transport and opportunity costs of repeat clinic visits). An economic analysis in Cambodia, for example, found that integrated approaches for the elimination of vertical HIV transmission, hepatitis B and syphilis were highly effective and cost-effective (70). Similarly, a systematic review of 19 studies, mostly from Asia, found that providing integrated HIV and sexual and reproductive health and rights services to sex workers was highly cost-effective (71).

The advantages of integration can be exploited more fully—for example, through further integration of health information, procurement, supply management and financing systems. There are also opportunities for the multiuse of clinical and laboratory platforms, and for instituting more routine linkages, capacity-building and referrals between HIV, TB, sexual and reproductive health services, cervical cancer, noncommunicable diseases, mental health, gender-based violence and social protection programmes.

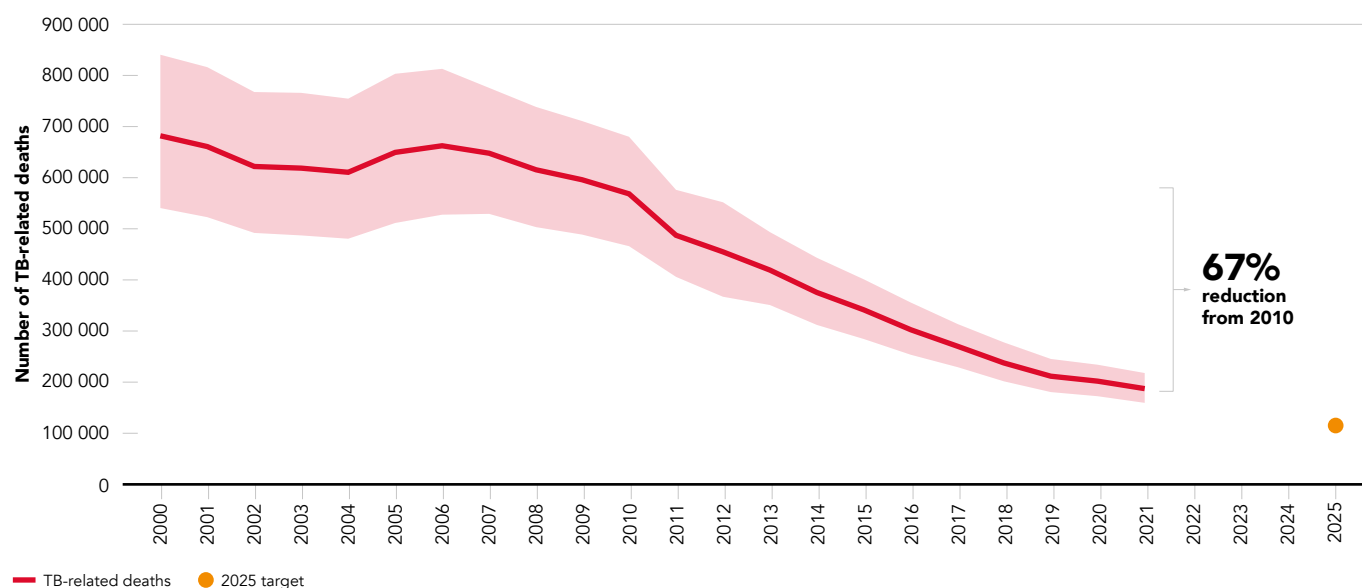
These integration efforts have to address stigma, discrimination and abuse within health-care services, and they must serve efforts to reach the people who are least likely to access the services and get the support they need. Deeper and effective integration—including within the context of universal health coverage—must strengthen, not weaken, the emphasis on people-centred approaches, equity and human rights protections. Resources will be required to ensure the truly meaningful engagement of people living with or affected by HIV in mainstreaming their perspectives into the health sector at all levels—engagement is not a cost-neutral activity.

Integrated TB and HIV services can save millions more lives

Increased access to antiretroviral therapy and improvements in the integrated delivery of HIV and TB services averted approximately 13 million [11–14 million] deaths among people living with HIV between 2000 and 2021 (8.5 million in Africa, 2.9 million in south-east Asia). There were 67% fewer TB-related deaths globally in 2021 among people living with HIV, compared with 2010 (see Chapter 2) (72).

The target of an 80% decline in numbers of TB-related deaths by 2025 is within reach

Figure 3.7 Number of TB-related deaths among people living with HIV, global, 2000–2021 and 2025 target



Source: Global tuberculosis report. Geneva: World Health Organization; 2022 (<https://apps.who.int/iris/handle/10665/363752>, accessed 17 July 2023).

Such is the scale of the overlapping TB and HIV epidemics, however, that TB still claimed the lives of 190 000 [160 000–220 000] people living with HIV in 2021. There is a huge need and opportunity for integration to make an even bigger impact. TB treatment success rates are slightly lower for people living with HIV (77%) than for all people with a new episode of TB (86%). The success rates among people living with HIV are highest in sub-Saharan Africa (>80%).

Coverage of antiretroviral therapy among people living with HIV estimated to have TB continues to vary widely in the 30 countries with a high burden of both TB and HIV—from as low as 9% in the Philippines to 81% in Uganda in 2021. Only 12 of these 30 countries achieved treatment coverage of at least 50% for both HIV and TB (72).

The annual number of people living with HIV who receive TB preventive treatment has risen steeply but is still well short of the 90% coverage target set for 2025. Services were disrupted in 2020 by the COVID-19 pandemic but recovered somewhat the next year in the WHO African and Eastern Mediterranean regions. The vast majority of people living with HIV receiving TB preventive treatment were in Africa (2.5 million) (72).⁵

An even greater impact can be achieved with integrated HIV and TB services if persistent hindrances are removed, including stigmatization by health-care staff, shortages of medical supplies and staff, and erratic adherence to treatment guidelines. These can be addressed with strengthened procurement and supply chains, improved staffing levels and training, and provision of psychosocial support (73).

⁵ Nigeria, South Africa, Uganda, the United Republic of Tanzania, Zambia and Zimbabwe accounted for over 2.1 million of these people.

Making greater use of other integration opportunities

Cervical cancer is the most common cancer among women living with HIV, who have a six-fold higher risk of developing invasive cervical cancer compared with women without HIV (74). Worldwide, cervical cancer is the fourth most frequent cancer in women, with an estimated 604 000 new cases in 2020. Approximately 35 000 of these were among women living with HIV, the vast majority in eastern and southern Africa (75). Integration of HIV and cervical cancer primary prevention, screening, treatment and care services could provide further much-needed protection against cervical cancer, and ultimately its elimination.

To achieve the elimination of cervical cancer globally, countries must aim by 2030 to vaccinate 90% of girls against human papilloma virus (HPV; which causes cervical cancer) by the age of 15 years, ensure 70% of women receive two high-performing screening tests (including testing for HPV) at the ages of 35 and 45 years, and provide treatment for 90% of women with precancerous lesions or cervical cancer (74).

The Go Further partnership for ending AIDS and cervical cancer in sub-Saharan Africa, which brings together the George W. Bush Institute, PEPFAR, UNAIDS, and the Roche and Merck pharmaceutical corporations (76), has supported more than 5.7 million cervical cancer screenings for women living with HIV since 2018 (77). The screenings were done in HIV care settings that have integrated cervical cancer services. Of the precancerous lesions identified, 76% were treated, resulting in the provision of over 285 000 treatments in 12 eastern and southern African countries with the highest HIV burdens of and cervical cancer (77). Such integrated services are still unevenly available in and across countries in Africa and beyond, however. Sixteen of the 19 evaluated countries in Latin America have already implemented HPV vaccination programmes, but Mexico is the only country that has met the target of having 90% of girls fully vaccinated for HPV by age 15 years (78, 79).

There are reports that some women living with HIV feel coerced into undergoing cancer screening and do not receive sufficient information and choice about the service. As with all health services, it is vital for people to be meaningfully engaged in decisions regarding their use of services in ways that respect their rights, choices and confidentiality. Furthermore, even where screening is free of charge for women living with HIV, the cost of treatment and the burden of paying for transport and arranging child care put cervical cancer treatment out of reach for many women (80).

Integrated HIV and sexual and reproductive health services have been found to improve access to and quality of antenatal care, while reducing stigma (81). In addition to HIV-specific care and support, they contribute to reducing unintended pregnancies and pregnancy-related maternal mortality among women living with HIV (69).

The integration of HIV testing and treatment with maternal and child care has been central to the massive expansion of antiretroviral therapy coverage among women living with HIV and their male partners, and in preventing millions of HIV infections in children. An investigation found that HIV care and antiretroviral therapy initiation were fully integrated in about 80% of maternal and child health services in southern Africa and 76% in eastern Africa, but integration is still much less common in western and central Africa (30–40%) (82). Efforts towards the triple elimination of mother-to-child transmission of HIV, syphilis and hepatitis B virus are further advancing integrated service delivery for mothers and children (72). Integration efforts also need to address the widespread occurrence of maltreatment of women and girls by health-care providers. A systematic review in sub-Saharan Africa found that 44% of women experienced some form of disrespect and abuse during the process of childbirth at health facilities (83).

There are other missed opportunities. A meta-analysis of studies, mostly from the Americas and Africa, found that only about a third (35%) of people diagnosed with another sexually transmitted infection were also tested for HIV, although dual testing was much more common in countries with a high burden of HIV (84). Meanwhile, the decentralization and integration of viral hepatitis C care with harm reduction services or primary care is showing some evidence of improved access to testing and linkages to care and treatment (85).

In many low- and middle-income countries, the increasing prevalence of noncommunicable diseases is intersecting with their HIV epidemics, partly because people living with HIV (especially older people) face increased risks of noncommunicable diseases (86–88). A cohort study in Latin America in 2015 found that around half of people on HIV treatment aged 50 years or older had at least one noncommunicable disease (89).

A STUDY IN LATIN AMERICA FOUND THAT AROUND HALF OF PEOPLE ON HIV TREATMENT AGED 50 YEARS OR OLDER HAD AT LEAST ONE NONCOMMUNICABLE DISEASE

The integration of prevention and treatment services for HIV and noncommunicable diseases could enable countries to expand health-care coverage for people living with or affected by HIV and noncommunicable diseases, and improve their health outcomes and well-being. It could also address some of the risks of developing noncommunicable diseases among people living with or at risk of HIV. Although countries have been adopting integration policies (90), actual integration is still nascent and uneven. A meta-analysis of 26 studies from sub-Saharan Africa found that approximately one in five people living with HIV had hypertension, but that screening and treatment for hypertension were infrequent in most HIV clinics (88).

The need to link or integrate HIV and mental health services has gained increased recognition, in light of evidence that people living with or at risk of HIV experience mental health conditions at higher rates than people in the general population (91–93). Successful integration would enhance HIV and wider physical and mental health outcomes (94, 95). It presents both a challenge for the overstretched health systems of many low- and middle-income countries (where mental health services can be scarce and of poor quality), and an opportunity in places where specialized mental health services are limited but where some of those services could be provided by lay and other nonspecialized health workers.

**THE INTEGRATION
OF HIV AND RELATED
SERVICES AS PART
OF HUMANITARIAN
RESPONSES IS AN
ONGOING PRIORITY**

There is a concerted push towards integrating HIV services for people in humanitarian settings, with HIV funding requests to the Global Fund increasingly including programmes for refugee and internally displaced populations (96). The growth in climate change-induced and conflict-related humanitarian emergencies is cause for great concern: in 2022, the number of people displaced by war, violence, persecution or human rights abuses exceeded 100 million for the first time (97).

In some regions, these populations include significant numbers of people living with HIV whose access to HIV treatment and other services is often destabilized. In addition, HIV-related stigma, poverty, fear of deportation and language barriers deter many people from seeking and using available services. An estimated 30 000–40 000 Venezuelan migrants and displaced people are living with HIV and a substantial proportion of the 240 000 people living with HIV in Ukraine are among the five million people driven from their homes by the war in that country.

The civil war in Sudan has displaced at least one million people, over 220 000 of whom have sought refuge in neighbouring countries (98). Many hospitals and health facilities have been damaged or forced to shut, and medical supply lines have been badly disrupted. In Khartoum, where at least 4600 people were living with HIV, less than half of HIV treatment centres were still operating in May 2023.⁶ The integration of HIV and related services as part of humanitarian responses is an ongoing priority.

More extensive integration holds great promise, but success depends on a wide range of factors, including the capacity, structure and financing of health systems, and adequate training and coordination of health workforces (99). It is essential to involve the affected communities, including people from key populations, in the design and delivery of integrated programmes so the services meet the needs of the people who use them.

⁶ Personal communication with UNAIDS Country Office, Khartoum, 19 June 2023.

References

- 1 A triple dividend: the health social and economic gains from financing the HIV response in Africa. Geneva: Joint United Nations Programme on HIV/AIDS; 2023 (<https://www.unaids.org/en/resources/documents/2023/a-triple-dividend>, accessed 2 July 2023).
- 2 Ghys PD, Williams BG, Over M, et al. Epidemiological metrics and benchmarks for a transition in the HIV epidemic. *PLoS Med.* 2018;15(10):e1002678.
- 3 From double shock to double recover. Washington, DC: World Bank; 2023 (<https://www.worldbank.org/en/topic/health/publication/from-double-shock-to-double-recovery-health-financing-in-the-time-of-covid-19>, accessed 2 July 2023).
- 4 With the right investment, AIDS can be over: a US\$ 29 billion investment to end AIDS by the end of the decade. Geneva: Joint United Nations Programme on HIV/AIDS; 2021 (https://www.unaids.org/en/resources/documents/2021/JC3019_InvestingintheAIDSresponse).
- 5 Shannon K, Crago AL, Baral SD, et al. The global response and unmet actions for HIV and sex workers. *Lancet.* 2018;392(10148):698–710.
- 6 Lyons CE, Schwartz SR, Murray SM, et al. The role of sex work laws and stigmas in increasing HIV risks among sex workers. *Nat Commun.* 2020;11(1):773.
- 7 Reeves A, Steele S, Stuckler D, et al. National sex work policy and HIV prevalence among sex workers: an ecological regression analysis of 27 European countries. *Lancet HIV.* 2017;4(3):e134–e140.
- 8 Lyons C. Utilizing individual level data to assess the relationship between prevalent HIV infection and punitive same sex policies and legal barriers across 10 countries in sub-Saharan Africa. Abstract OAF0403. Presented at the 23rd International AIDS Conference, 6–10 July 2020 [virtual] (<https://www.abstract-archiv.org/Abstract/Share/82510>, accessed 3 July 2023).
- 9 DeBeck K, Cheng T, Montaner JS, et al. HIV and criminalization of drug use among people who inject drugs: a systematic review. *Lancet HIV.* 2017;4:e357–e374.
- 10 Patterson SE, Milloy MJ, Ogilvie G, et al. The impact of criminalization of HIV non-disclosure on the healthcare engagement of women living with HIV in Canada: a comprehensive review of the evidence. *J Int AIDS Soc.* 2015;18(1):20572.
- 11 Shannon K, Strathdee SA, Goldenberg SM, et al. Global epidemiology of HIV among female sex workers: influence of structural determinants. *Lancet.* 2015;385(9962):55–71.
- 12 Gesesew HA, Tesfay Gebremedhin AT, Demissie TD, et al. Significant association between perceived HIV-related stigma and late presentation for HIV/AIDS care in low- and middle-income countries: a systematic review and meta-analysis. *PLoS One.* 2017;12(3):e0173928.
- 13 Risks, rights and health: supplement 2018. New York: Global Commission on HIV and the Law; 2018 (<https://hivlawcommission.org/supplement/>, accessed 2 July 2023).
- 14 Ikeda DJ, Nyblade L, Srihanaviboonchai K, et al. A quality improvement approach to the reduction of HIV-related stigma and discrimination in healthcare settings. *BMJ Global Health.* 2019;4:e001587.
- 15 Pulerwitz J, Oanh KTH, Akinwalemiwa D, et al. Improving hospital-based quality of care by reducing HIV-related stigma: evaluation results from Vietnam. *AIDS Behav.* 2015;19:246–256.
- 16 Women help women overcome HIV stigma in Kazakhstan, with ICAP's support. New York: ICAP; 2019 (<https://icap.columbia.edu/news-events/women-help-women-to-overcome-hiv-stigma-in-kazakhstan-with-icaps-support/>, accessed 10 July 2023).
- 17 Yawa A, Rambau N, Rutter L, et al. Using community-led monitoring to hold national governments' and PEPFAR HIV programmes accountable to the needs of people living with HIV for quality, accessible health services. Abstract PED453. Presented at the International AIDS Conference, 18–21 July 2021 [virtual] (<https://www.abstract-archiv.org/Abstract/Share/83685>, accessed 3 July 2023).
- 18 Baptiste S, Manouan A, Garcia P, et al. Community-led monitoring: when community data drives implementation strategies. *Curr HIV/AIDS Rep.* 2020;17(5):415–421.
- 19 Oberth G, Baptiste S, Jallow W, et al. Understanding gaps in the HIV treatment cascade in eleven West African countries: findings from a regional community treatment observatory. Cape Town: Centre for Social Science Research; 2019 (<http://www.cssr.uct.ac.za/cssr/pub/wp/441>, accessed 2 July 2023).
- 20 Best practices for community-led monitoring. Community-led Accountability Working Group; 2022 (<https://healthgap.org/wp-content/uploads/2022/09/CLAW-Best-Practices-in-Community-Led-Monitoring-EN.pdf>).
- 21 Establishing community-led monitoring of HIV services: principles and processes. Geneva: Joint United Nations Programme on HIV/AIDS 2021 (<https://www.unaids.org/en/resources/documents/2021/establishing-community-led-monitoring-hiv-services>).
- 22 Joint United Nations Programme on HIV/AIDS, Stop AIDS Alliance. Communities deliver: the critical role of communities in reaching global targets to end the AIDS epidemic. Geneva: Joint United Nations Programme on HIV/AIDS; 2015 (https://www.unaids.org/en/resources/documents/2015/JC2725_communities_deliver, accessed 2 July 2023).
- 23 Differentiated service delivery for HIV treatment: summary of published evidence. Geneva: International AIDS Society; 2020 (<https://www.differentiatedservice.org/wp-content/uploads/Summary-of-published-evidence.pdf>, accessed 2 July 2023).
- 24 Ayala G, Sprague L, van der Merwe LL, et al. Peer- and community-led responses to HIV: a scoping review. *PLoS One.* 2021;16(12):e0260555.
- 25 Holding the line: communities as first responders to COVID-19 and emerging health threats. Geneva: Joint United Nations Programme on HIV/AIDS; 2022 (<https://www.unaids.org/en/resources/documents/2022/holding-the-line-communities-first-responders>, accessed 2 July 2023).
- 26 Guidance note for the analysis of NGO social contracting mechanisms: the experience of Europe and central Asia. New York: United Nations Development Programme; 2019 (https://www.undp.org/sites/g/files/zskgke326/files/migration/eurasia/NGO_socialcontracting_EN.pdf, accessed 2 July 2023).
- 27 Arreola S, Santos GM, Solares D, et al. Barriers to and enablers of the HIV services continuum among gay and bisexual men worldwide: findings from the Global Men's Health and Rights Study. *PLoS One.* 2023;18(5):e0281578.
- 28 Political Declaration on HIV and AIDS: ending inequalities and getting on track to end AIDS by 2030. New York: United Nations; 2021 (<https://documents-dds-ny.un.org/doc/UNDOC/GEN/N21/145/30/PDF/N2114530.pdf?OpenElement>, accessed 2 July 2023).
- 29 Burrows D, McCallum L, Parsons D, Falkenberg H. Global summary of findings of an assessment of HIV service packages for key populations in six regions. Washington, DC: APMG Health; 2019 (<https://www.globalfundadvocatesnetwork.org/resource/global-summary-of-findings-of-an-assessment-of-hiv-services-packages-for-key-populations-in-six-regions/>, accessed 2 July 2023).
- 30 Mid-term assessment summary report: Global Fund Breaking Down Barriers initiative. Geneva: Global Fund to Fight AIDS, Tuberculosis and Malaria; 2022 (https://reliefweb.int/attachments/f830ac25-127a-4833-9279-9dfe8fb44edc/core_2022-breaking-down-barriers-mid-term-assessment_summary_en.pdf, accessed 2 July 2023).
- 31 In danger: UNAIDS global AIDS update 2022. Geneva: Joint United Nations Programme on HIV/AIDS; 2022 (https://www.unaids.org/sites/default/files/media_asset/2022-global-aids-update_en.pdf, accessed 2 July 2023).
- 32 Financing community-led HIV responses: social contracting—using domestic resources to fund HIV service delivery by community-led organizations. Geneva: Joint United Nations Programme on HIV/AIDS; 2023 [forthcoming].
- 33 Community-based organizations: the latest bastion against abusive patent protection on life-saving medicines—the experience of Make Medicines Affordable consortium. Abstract PESAF08. Presented at the 24th International AIDS Conference, Montreal, 23 July–3 August 2022 (https://aids2022.org/wp-content/uploads/2022/08/AIDS2022_abstract_book.pdf, accessed 3 July 2023).
- 34 Landovitz RJ, Donnell D, Clement ME, et al. Cabotegravir for HIV prevention in cisgender men and transgender women. *N Engl J Med.* 2021;385(7):595–608.
- 35 Delany-Moretlwe S, Hughes JP, Bock P, et al. Cabotegravir for the prevention of HIV-1 in women: results from HPTN 084, a phase 3, randomised clinical trial. *Lancet.* 2022;399(10337):1779–1789.
- 36 Marzinke M, Guo X, Hughes J, et al. Cabotegravir pharmacology in the background of delayed injections in HPTN 084. Abstract 159. Presented at the Conference on Retroviruses and Opportunistic Infections, 19–22 February 2023, Seattle (<https://www.iasusa.org/wp-content/uploads/2023/04/april-2023.pdf>, accessed 3 July 2023).
- 37 Cabotegravir long-acting (LA) for HIV pre-exposure prophylaxis (PrEP). Geneva: Medicines Patent Pool; 2022 (<https://medicinespatentpool.org/licence-post/cabotegravir-long-acting-la-for-hiv-pre-exposure-prophylaxis-prep>, accessed 2 July 2023).

- 38 Cabotegravir long-acting PrEP out of reach for upper middle-income countries. *aidsmap*, 8 February 2023 (<https://www.aidsmap.com/news/feb-2023/cabotegravir-long-acting-prep-out-reach-upper-middle-income-nations>, accessed 2 July 2023).
- 39 Pepperrell T, Cross S, Hill A. Cabotegravir-global access to long-acting pre-exposure prophylaxis for HIV. *Open Forum Infect Dis*. 2022;10(1):ofac673.
- 40 Conrad R, Lutter R. Generic competition and drug prices: new evidence linking greater generic competition and lower generic drug prices. Silver Spring, MD: United States Food and Drug Administration; 2019 (<https://www.fda.gov/media/133509/download>, accessed 2 July 2023).
- 41 Morin S, Das M, Bubb-Humfries O, et al. Quantifying the health and economic impact of voluntary licensing of HIV medicines in low- and middle-income countries: putting numbers on additional uptake, deaths averted, and money saved by MPP licenses. Abstract OAE0403. Presented at the 24th International AIDS Conference, Montreal, 23 July–3 August 2022 (https://aids2022.org/wp-content/uploads/2022/08/AIDS2022_abstract_book.pdf, accessed 3 July 2023).
- 42 Kunene Z. The anti-HIV injection will be made in SA: here are four benefits of the deal that made it happen. *Bhekisisa Centre for Health Journalism*, 9 May 2023 (<https://bhekisisa.org/health-news-south-africa/2023-05-09-the-anti-hiv-injection-will-be-made-in-sa-it-could-cost-between-r600-and-r800-a-pop/>, accessed 2 July 2023).
- 43 Gonzalez L. Just six injections a year can prevent HIV: here's what it will take for the world to afford them. *aidsmap*, 2 August 2022 (<https://www.aidsmap.com/news/aug-2022/just-six-injections-year-can-prevent-hiv-heres-what-it-will-take-world-afford-them>, accessed 2 July 2023).
- 44 Phase 3 Mosaic-based investigational HIV vaccine study discontinued following disappointing results of planned data review. Seattle, WA: HIV Vaccine Trials Network; 2023 (<https://www.hvtn.org/news/news-releases/2023/01/phase-3-mosaic-based-investigational-hiv-vaccine-study-discontinued-following-disappointing-results-planned-data-review>.html, accessed 2 July 2023).
- 45 Cairns G. Minimal antibody response in Imbokodo compels change of course for HIV vaccine research. *aidsmap*, 31 July 2022 (<https://www.aidsmap.com/news/jul-2022/minimal-antibody-response-imbokodo-compels-change-course-hiv-vaccine-research>, accessed 2 July 2023).
- 46 Baleta A. HIV vaccine research set to change focus in wake of Mosaico disappointment. *Spotlight*, 30 January 2023 (<https://www.spotlightnsp.co.za/2023/01/30/hiv-vaccine-research-set-to-change-focus-in-wake-of-mosaico-disappointment/>, accessed 2 July 2023).
- 47 Editorial. *Lancet*. 2020;395(10221):384–388.
- 48 Leggat DJ, Cohen KW, Willis JR, et al. Vaccination induces HIV broadly neutralizing antibody precursors in humans. *Science*. 2022;378(6623):eadd6502.
- 49 Tabak L. Encouraging first-in-human results for a promising HIV vaccine. NIH Director's blog, 6 June 2023 (<https://directorsblog.nih.gov/2023/06/06/encouraging-first-in-human-results-for-a-promising-hiv-vaccine/>, accessed 2 July 2023).
- 50 World social protection report 2020–22: social protection at the crossroads—in pursuit of a better future. Geneva: International Labour Organization; 2021 (https://www.ilo.org/global/publications/books/WCMS_817572/lang-en/index.htm, accessed 2 July 2023).
- 51 Chipanta D, Pettifor A, Edwards J, et al. Access to social protection by people living with, at risk of, or affected by HIV in Eswatini, Malawi, Tanzania, and Zambia: results from population-based HIV impact assessments. *AIDS Behav*. 2022;26:3068–3078.
- 52 Rasella D, Aquino R, Santos CA, et al. Effect of a conditional cash transfer programme on childhood mortality: a nationwide analysis of Brazilian municipalities. *Lancet*. 2013;382:57–64.
- 53 Richterman A, Thirumurthy H. The effects of cash transfer programmes on HIV-related outcomes in 42 countries from 1996 to 2019. *Nat Hum Behav*. 2022;6:1362–1371.
- 54 Lincove JA. The influence of price on school enrollment under Uganda's policy of free primary education. *Econ Educ Rev*. 2012;31(5):799–811.
- 55 United Nations Children's Fund, World Bank. Abolishing school fees in Africa: lessons from Ethiopia, Ghana, Kenya, Malawi, and Mozambique. Washington, DC: World Bank; 2009 (<https://openknowledge.worldbank.org/entities/publication/a55bc38c-5d2b-5932-83e4-debc56e30da9>, accessed 2 July 2023).
- 56 Nielsen HD. Moving toward free primary education: policy issues and implementation challenges. New York: United Nations Children's Fund; 2009 (<https://documents1.worldbank.org/curated/en/623261468162267740/pdf/540080WPOSFAI010Box345635B01PUBLIC1.pdf>, accessed 2 July 2023).
- 57 De Neve J-W, Fink G, Subramanian SV, Moyo S, Bar J. Length of secondary schooling and risk of HIV infection: evidence from a natural experiment. *Lancet Glob Health*. 2015;3:e470–e477.
- 58 Mensch BS, Grant MJ, Soler-Hampejsek E, et al. Does schooling protect sexual health? The association between three measures of education and STIs among adolescents in Malawi. *Popul Stud (Camb)*. 2020;74(2):241–261.
- 59 Pega F, Liu SY, Walter S, et al. Unconditional cash transfers for reducing poverty and vulnerabilities: effect on use of health services and health outcomes in low- and middle-income countries. *Cochrane Database Syst Rev*. 2017;11(1):CD011135.
- 60 Perera C, Bakrania S, Ipince A, et al. Impact of social protection on gender equality in low- and middle-income countries: a systematic review of reviews. *Campbell Syst Rev*. 2022;18(2):e1240.
- 61 Satumba T, Bayat A, Mohamed S. The impact of social grants on poverty reduction in South Africa. *J Econ*. 2017;8(1):33–49.
- 62 Granlund S, Hochfeld T. "That child support grant gives me powers": exploring social and relational aspects of cash transfers in South Africa in times of livelihood change. *J Dev Stud*. 2020;56(6):1230–1244.
- 63 Fischer A. Poverty as ideology: rescuing social justice from global development agendas. London: Zed Books; 2018.
- 64 Social protection: a Fast-Track commitment to end AIDS. Geneva: Joint United Nations Programme on HIV/AIDS; 2018 (https://www.unaids.org/sites/default/files/media_asset/jc2922_social-protection-fast-track-commitment-end-aids_en.pdf, accessed 2 July 2023).
- 65 Chipanta D, Marais H. Are people living with, at risk of, or affected by HIV accessing social protection programmes? Evidence from HIV and social protection assessments from low-and middle-income countries (2017–2022). Geneva: Joint United Nations Programme on HIV/AIDS [forthcoming].
- 66 Bulstra CA, Hontelez JAC, Otto M, et al. Integrating HIV services and other health services: a systematic review and meta-analysis. *PLoS Med*. 2021;18(11):e1003836.
- 67 World Health Organization, United Nations Children's Fund. Operational framework for primary health care: transforming vision into action. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/337641>, accessed 2 July 2023).
- 68 Framework on integrated, people-centred health services: report by the Secretariat. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/handle/10665/250704>, accessed 2 July 2023).
- 69 Nkhoma L, Sitali DC, Zulu JM. Integration of family planning into HIV services: a systematic review. *Ann Med*. 2022;54(1):393–403.
- 70 Zhang L, Tao Y, Woodring J, et al. Integrated approach for triple elimination of mother-to-child transmission of HIV, hepatitis B and syphilis is highly effective and cost-effective: an economic evaluation. *Int J Epidemiol*. 2019;48:1327–1339.
- 71 Rinaldi G, Kiadaliri AA, Haghparast-Bidgoli H. Cost effectiveness of HIV and sexual reproductive health interventions targeting sex workers: a systematic review. *Cost Eff Resour Alloc*. 2018;16:63.
- 72 Global tuberculosis report 2022. Geneva: World Health Organization; 2022 (<https://apps.who.int/iris/handle/10665/363752>, accessed 2 July 2023).
- 73 Kadia BM, Dimala CA, Fongwen NT, Smith AD. Barriers to and enablers of uptake of antiretroviral therapy in integrated HIV and tuberculosis treatment programmes in sub-Saharan Africa: a systematic review and meta-analysis. *AIDS Res Ther*. 2021;18(1):85.
- 74 Global strategy to accelerate the elimination of cervical cancer as a public health problem. Geneva: World Health Organization; 2020 (<https://www.who.int/publications/i/item/9789240014107>, accessed 2 July 2023).
- 75 Sung H, Ferlay J, Siegel RL, Laversanne M, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin*. 2021;71:209–249.
- 76 Go Further program-wide highlights. Go Further; 2022 (https://gwbceniterimgix.net/Publications/Resources/Go_Further_Highlights/2022_May/GoFurther_GlobalHighlights_v2_16_MAY_2022.pdf, accessed 2 July 2023).
- 77 Unpublished data from PEPFAR/Go Further, 2023 (<https://www.state.gov/partnership-to-end-aids-and-cervical-cancer/>) [forthcoming].
- 78 Nogueira-Rodrigues A, Flores MG, Macedo Neto AO, et al. HPV vaccination in Latin America: coverage status, implementation challenges and strategies to overcome it. *Front Oncol*. 2022;12:984449.

- 79 Human papillomavirus (HPV) vaccination coverage. Geneva: World Health Organization (<https://immunizationdata.who.int/pages/coverage/hpv.html>, accessed 2 July 2023).
- 80 Early detection remains key in cervical cancer elimination. Harare: Geneva: World Health Organization; 2023 (<https://www.afro.who.int/countries/zimbabwe/news/early-detection-remains-key-cervical-cancer-elimination>, accessed 2 July 2023).
- 81 Ford N, Newman M, Malumo S, et al. Integrating sexual and reproductive health services within HIV services: WHO guidance. *Front Glob Womens Health*. 2021;2:735281.
- 82 Humphrey J, Nagel E, Carlucci JG, et al. Integration of HIV care into maternal and child health services in the global leDEA consortium. *Front Glob Womens Health*. 2023;4:1066297.
- 83 Kassa ZY, Tsegaye B, Abeje A. Disrespect and abuse of women during the process of childbirth at health facilities in sub-Saharan Africa: a systematic review and meta-analysis. *BMC Int Health Hum Rights*. 2020;20:1–9.
- 84 Saleem K, Ting EL, Loh AJW, et al. Missed opportunities for HIV testing among those who accessed sexually transmitted infection (STI) services, tested for STIs and diagnosed with STIs: a systematic review and meta-analysis. *J Int AIDS Soc*. 2023;26(4):e26049.
- 85 Oru E, Trickey A, Shirali R, et al. Decentralisation, integration, and task-shifting in hepatitis C virus infection testing and treatment: a global systematic review and meta-analysis. *Lancet Glob Health*. 2021;9(4):e431–e445.
- 86 Sahu M, Szpiro A, van Rooyen H, et al. Cardiovascular risk among people accessing differentiated HIV care in South Africa. Abstract 665. Presented at the Conference on Retroviruses and Opportunistic Infections, Seattle, WA, 19–23 February 2023 (<https://www.croiconference.org/abstract/cardiovascular-risk-among-people-accessing-differentiated-hiv-care-in-south-africa/>, accessed 3 July 2023).
- 87 Hsue PY, Waters DD. Time to recognize HIV infection as a major cardiovascular risk factor. *Circulation*. 2018;138:1113–1115.
- 88 Isaac DK, Khan Z. Prevalence, awareness, treatment, control of hypertension, and availability of hypertension services for patients living with human immunodeficiency virus in sub-Saharan Africa: a systematic review and meta-analysis. *Cureus*. 2023;15(4):e37422.
- 89 Belaunzaran-Zamudio PF, Caro-Vega Y, Giganti MJ, et al. Frequency of non-communicable diseases in people 50 years of age and older receiving HIV care in Latin America. *PLoS One*. 2020;15(6):e0233965.
- 90 Adeyemi O, Lyons M, Njim T, et al. Integration of non-communicable disease and HIV/AIDS management: a review of healthcare policies and plans in East Africa. *BMJ Glob Health*. 2021;6(5):e004669.
- 91 Hughes E, Bassi S, Gilbody S, et al. Prevalence of HIV, hepatitis B, and hepatitis C in people with severe mental illness: a systematic review and meta-analysis. *Lancet Psychiatry*. 2016;3(1):40–48.
- 92 Chuah FLH, Haldane VE, Cervero-Liceras F, et al. Interventions and approaches to integrating HIV and mental health services: a systematic review. *Health Policy Plan*. 2017;32(Suppl 4):iv27–iv47.
- 93 Uthman OA, Magidson JF, Safren SA, Nachega JB. Depression and adherence to antiretroviral therapy in low-, middle- and high-income countries: a systematic review and meta-analysis. *Curr HIV/AIDS Rep*. 2014;11(3):291–307.
- 94 Conteh NK, Latona A, Mahomed O. Mapping the effectiveness of integrating mental health in HIV programs: a scoping review. *BMC Health Serv Res*. 2023;23(1):396.
- 95 Integration of mental health and HIV interventions: key considerations. Geneva: Joint United Nations Programme on HIV/AIDS; 2022 (https://www.unaids.org/sites/default/files/media_asset/integration-mental-health-hiv-interventions_en.pdf, accessed 2 July 2023).
- 96 The inclusion of refugee and internally displaced persons in Global Fund applications, 2020–2022. Geneva: United Nations High Commissioner for Refugees; 2020 (<https://express.adobe.com/page/LAif2adc3j3n3/>, accessed 2 July 2023).
- 97 UNHCR: global displacement hits another record, capping decade-long rising trend. Geneva: United Nations High Commissioner for Refugees; 2021 (<https://www.unhcr.org/en-us/news/press/2022/6/62a9d2b04/unhcr-global-displacement-hits-record-capping-decade-long-rising-trend.html>, accessed 2 July 2023).
- 98 Sudan emergency: UNHCR supplementary appeal, May–October 2023. Geneva: United Nations High Commissioner for Refugees; 2023 (<https://reliefweb.int/report/sudan/sudan-emergency-unhcr-supplementary-appeal-may-october-2023>, accessed 2 July 2023).
- 99 Hope R, Kendall T, Langer A, Bärnighausen T. Health systems integration of sexual and reproductive health and HIV services in sub-Saharan Africa: a scoping study. *J Acquir Immune Defic Syndr*. 2014;67(Suppl 4):S259–S270.