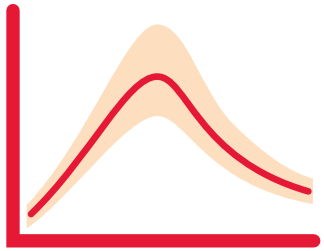
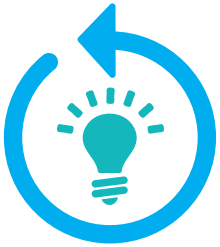
DATA FOR IMPACT

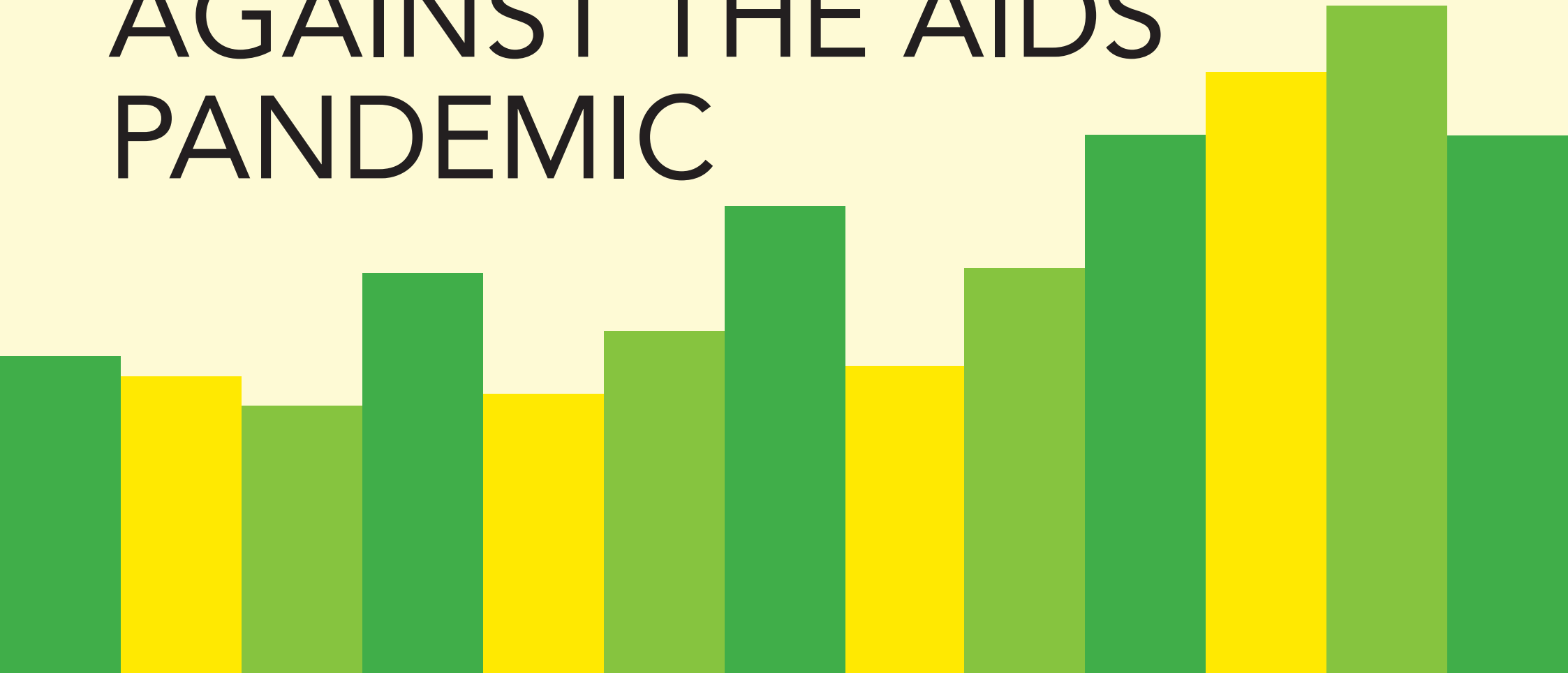
How UNAIDS data is guiding the world to end AIDS

CONTENTS





GENERATING DATA FOR EFFECTIVE ACTION AGAINST THE AIDS PANDEMIC



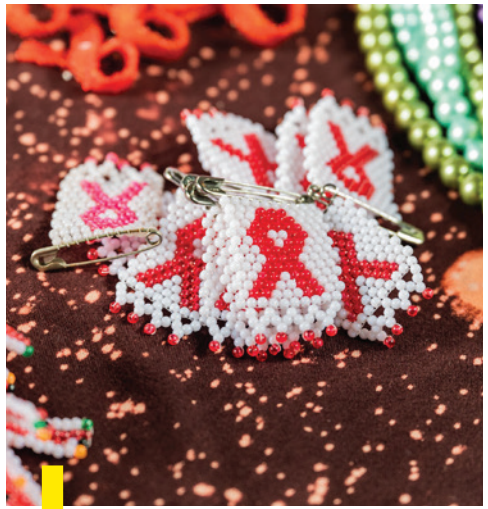
GENERATING DATA FOR EFFECTIVE ACTION AGAINST THE AIDS PANDEMIC

DATA HAVE LONG SERVED AS THE BEDROCK OF THE GLOBAL AIDS RESPONSE. TIMELY, ACCURATE DATA INFORM HIV POLICIES AND PROGRAMMES, STRATEGIC PLANNING AND RESOURCE ALLOCATION IN ORDER TO MAXIMIZE THE IMPACT OF THE RESPONSE.

Data on HIV and its innovations are also integral to the United Nation (UN) Decade of Action for the Sustainable Development Goals (SDGs) to promote gender equality, protect human rights and accelerate UN Reform.

As part of the UN's data strategy—which seeks to nurture data as a strategic asset for insight, impact and integrity—UNAIDS plays an indispensable role in generating data for effective action against the AIDS pandemic. It leads the world's most extensive data collection on HIV epidemiology, programme coverage, policy and finance, and it publishes the most authoritative and up-to-date information on the HIV pandemic and response. The UNAIDS database of country-reported data is a foundational pillar for global and regional AIDS programmes, research, advocacy and resource mobilization. The Global AIDS Monitoring system is the cornerstone of data for impact in the HIV response, as countries report annually against standardized indicators developed by UNAIDS.

In addition to supporting countries to collect and use strategic data, UNAIDS translates country data into actionable policies and programmes to prevent new HIV infections and AIDS-related deaths. Efforts to reduce HIV-related inequalities are guided by the 2021 Political Declaration on HIV and AIDS: Ending Inequalities and Getting on Track to End AIDS by 2030 and the Global AIDS Strategy 2021–2026: End Inequalities, End AIDS, which call on countries to improve the collection and use of data in order to accelerate progress towards the global targets for 2025.



Lusapila Women's Support Group at Lusaka City Council Community Development Centre in Mandevu, Lusaka, Zambia, June 2022. (UNAIDS/J.Mulikita)

Three objectives

UNAIDS supports countries in generating strategic data for impact in three ways:

1. **Know your epidemic:** up-to-date disaggregated epidemiological data, including new HIV infections, AIDS-related deaths, the number of people living with HIV and size estimations for key and other priority populations.[1]

2. **Know your response:** data on service coverage, service outcomes, barriers to service access and utilization, and social and structural factors that affect service uptake and HIV vulnerability.

3. **Make the money work:** data on international assistance and domestic spending on HIV, estimating resource gaps and identifying opportunities to enhance the efficiency and sustainability of HIV financing.

Working closely with a broad array of partners, UNAIDS provides countries and other partners with expert guidance and support at each stage of the process as they generate and use strategic data (Figure 1).[2] A multitude of partners rely on these data, including academics, researchers and scientists, activists and people across different sectors.

At this important juncture in the AIDS response, when the loss of momentum and the challenges posed by the COVID-19 pandemic and multiple humanitarian crises demand renewed commitment and innovation, the role of UNAIDS as a catalyst for the collection and effective use of data is more important than ever.

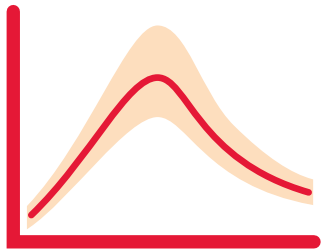
1 UNAIDS considers gay men and other men who have sex with men, sex workers, transgender people, people who inject drugs, and prisoners and other incarcerated people as the five main key population groups that are particularly vulnerable to HIV and that frequently lack adequate access to services.

2 Partners include UNAIDS Cosponsors and key stakeholders, such as the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund) and the United States President's Emergency Plan for AIDS Relief (PEPFAR).

FIGURE 1. **UNAIDS process for generating and using data**

KNOW YOUR EPIDEMIC

KNOW YOUR EPIDEMIC



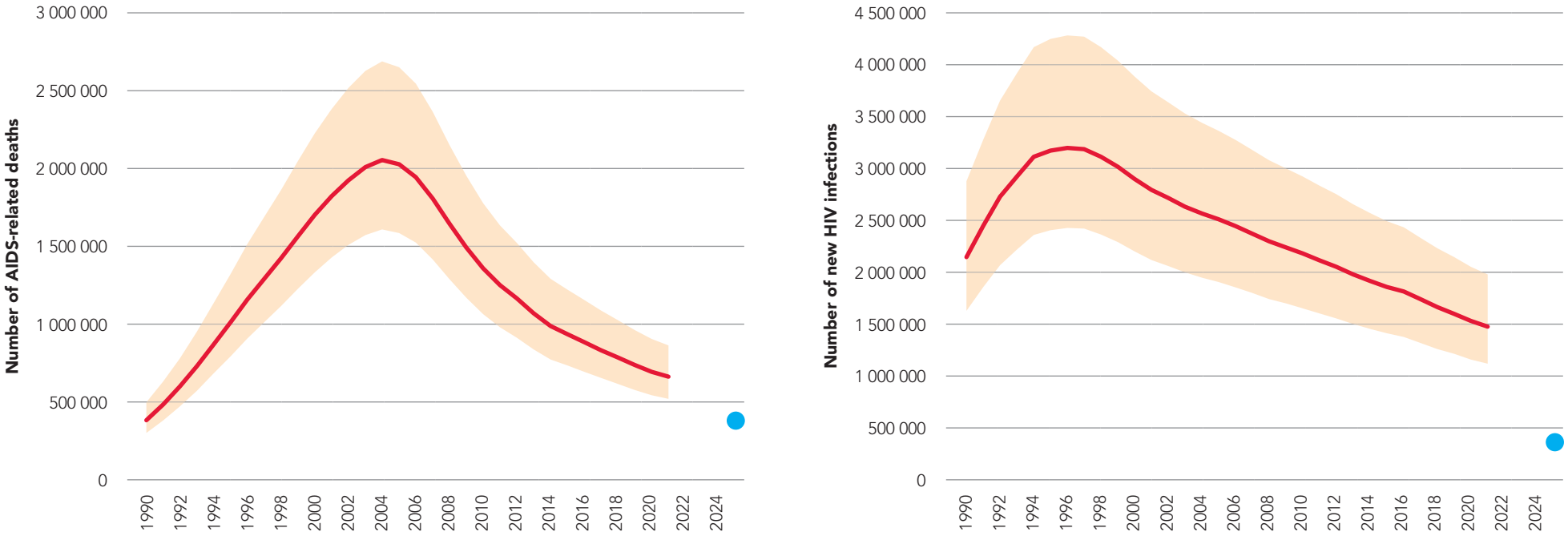
AN EFFECTIVE AIDS RESPONSE IS IMPOSSIBLE WITHOUT A CLEAR, UP-TO-DATE UNDERSTANDING OF THE EPIDEMIC, SUCH AS THE NUMBER OF PEOPLE LIVING WITH HIV, THE NUMBER OF NEW HIV INFECTIONS (SDG INDICATOR 3.3.1) AND THE NUMBER OF AIDS-RELATED DEATHS.

Since 2003, UNAIDS has supported countries to use uniform, evidence-informed models to generate their own estimates of these epidemiological measures.[3] Modelled estimates are required because it is impossible or ethically untenable to count the exact number of people living with HIV, those who are newly infected or those who die of AIDS-related causes (Figure 2). Modelled HIV estimates draw from the best available data from multiple sources, such as HIV sentinel surveillance in antenatal clinics, antiretroviral therapy utilization, surveys among key populations, HIV case reporting and vital registration systems. Estimates, including lower and upper bounds, provide a scientifically appropriate way of describing HIV epidemic levels and trends. Country estimates are aggregated to produce regional and global estimates.

Youth ambassador Sihle Mkhize provides HIV testing services at the Inanda Seminary Clinic in the Inanda township north of Durban, South Africa, 20 December 2021. (UNAIDS/Rogan Ward)

3 These modeling methods are described in a set of articles in a 2021 supplement (Volume 24, Supplement 5) of the *Journal of the International AIDS Society*. UNAIDS estimates can be found at https://aidsinfo.unaids.org/.

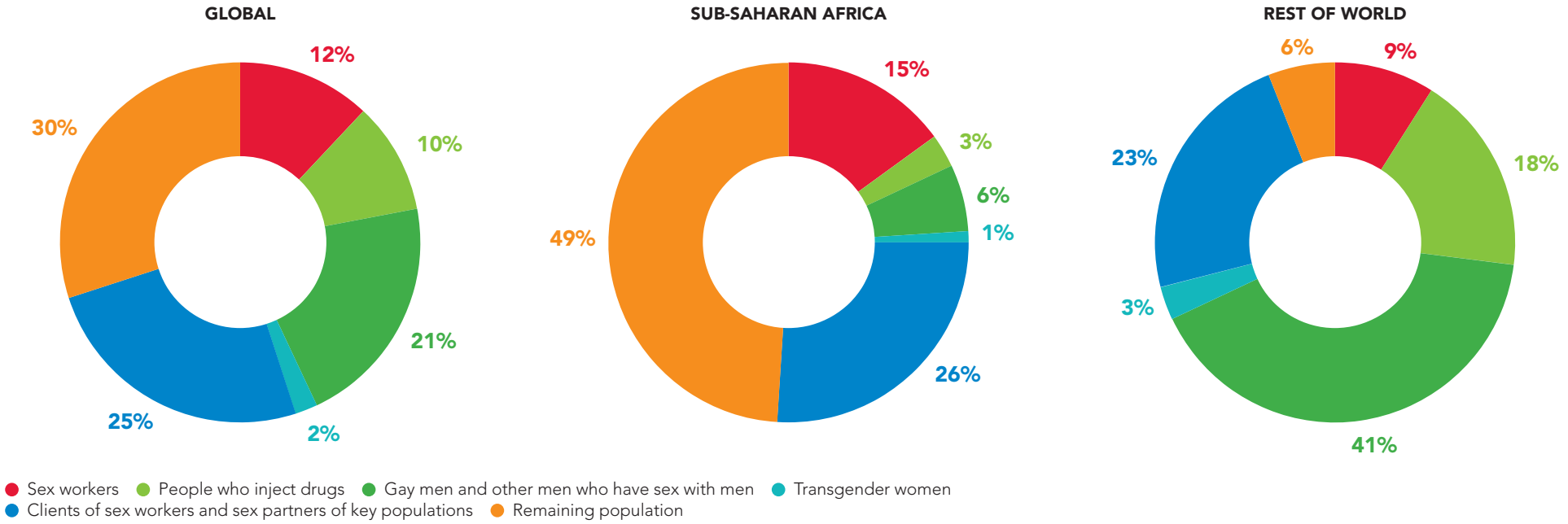
FIGURE 2. **New HIV infections and AIDS-related deaths, global, 1990–2021, and 2025 target**



Source: UNAIDS epidemiological estimates, 2022 (https://aidsinfo.unaids.org/)

Over time, these HIV estimates have become increasingly granular: in addition to overall estimates for HIV prevalence, incidence and mortality, estimates are now generated based on age, gender and key population status (Figure 3). A growing number of countries (39 in 2020) are also using UNAIDS-recommended models to generate subnational HIV estimates at the district level. Countries use population-disaggregated and subnational HIV estimates to focus resources on the locations and populations with the greatest need. HIV estimation methods also contribute to the development of HIV investment cases, enabling countries to project future costs for HIV treatment and prevention services and to plan for sustainable financing.

FIGURE 3. Distribution of new HIV infections by population group, global, sub-Saharan Africa and rest of world, 2021



Source: UNAIDS special analysis, 2022.

Note: Due to variations in the availability of data from one year to the next, we do not provide trends in this distribution.

Supporting countries to generate epidemiological estimates

To ensure that national models draw from the best available evidence, UNAIDS supports countries to strengthen and effectively monitor national HIV surveillance systems. Country teams are trained to use the mathematical models and leverage them to inform national strategies, policies and programmes. Countries use the models to project the future costs and impact of HIV investments.

The process of developing these HIV estimates benefits from the active involvement of strategic partners. At regional workshops, which are held every two years, the process of developing HIV estimates draws on the expertise of strategic partners, such as the United Nations Children's Fund (UNICEF) (paediatric HIV and vertical HIV transmission) and the United States Census Bureau (underlying population trends). Additional partners at both the global and country levels include the World Health Organization (WHO), United States Centers for Disease Control and Prevention (US CDC), the United States Agency for International Development (USAID), the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund), the Africa Centres for Disease Control and Prevention (Africa CDC) and others. UNAIDS' development and application of models to generate HIV estimates is guided by experts from the UNAIDS Reference Group on Estimates, Modelling and Projections, a collection of academic scientists who help ensure the models use the best available research and statistical methods.

The Global Fund to Fight AIDS, Tuberculosis and Malaria's Seventh Replenishment Conference. New York, United States of America, 21 September 2022. (UNAIDS/Znidarcic)

HIV estimates lead to an effective AIDS response

Partners at the global, regional and country levels use these HIV estimates to ensure that the AIDS response is as focused and effective as possible. HIV estimates serve as the foundation of the development of national HIV strategies, which unite diverse stakeholders around a set of agreed goals, targets and strategic directions. The development of a single, agreed-upon set of HIV estimates enhances the coordination and coherence of efforts.

UNAIDS' HIV estimates support the work of key partners. The development of Country and Regional Operational Plans by the United States President's Emergency Plan for AIDS Relief (PEPFAR) draws on HIV estimates published by UNAIDS, and PEPFAR also relies on these estimates to assess the progress that countries make towards epidemic control. HIV estimates published by UNAIDS also inform every stage of the Global Fund's work, including its replenishments investment cases, the development of funding proposals and concept notes by Country Coordinating Mechanisms (CCMs). CCMs determine country eligibility and fund allocation and make the case for Global Fund replenishment. Other key global health players who rely on UNAIDS' HIV estimates include WHO's Global Health Observatory, the database of the United Nations (UN) Population Division and the Global Burden of Disease study, which is produced by the Institute for Health Metrics and Evaluation.

UNAIDS presence at the country level supports the full grant development and implementation [process], ensuring that country proposals for Global Fund programmes are well designed based on science, providing vital real-time data and helping governments make key enabling policy and programme changes and resolve bottlenecks, [which] is vital to ensuring that the work of the Global Fund succeeds.

Peter Sands, Executive Director of the Global Fund, 50th meeting of the UNAIDS Programme Coordinating Board, 22 June 2021

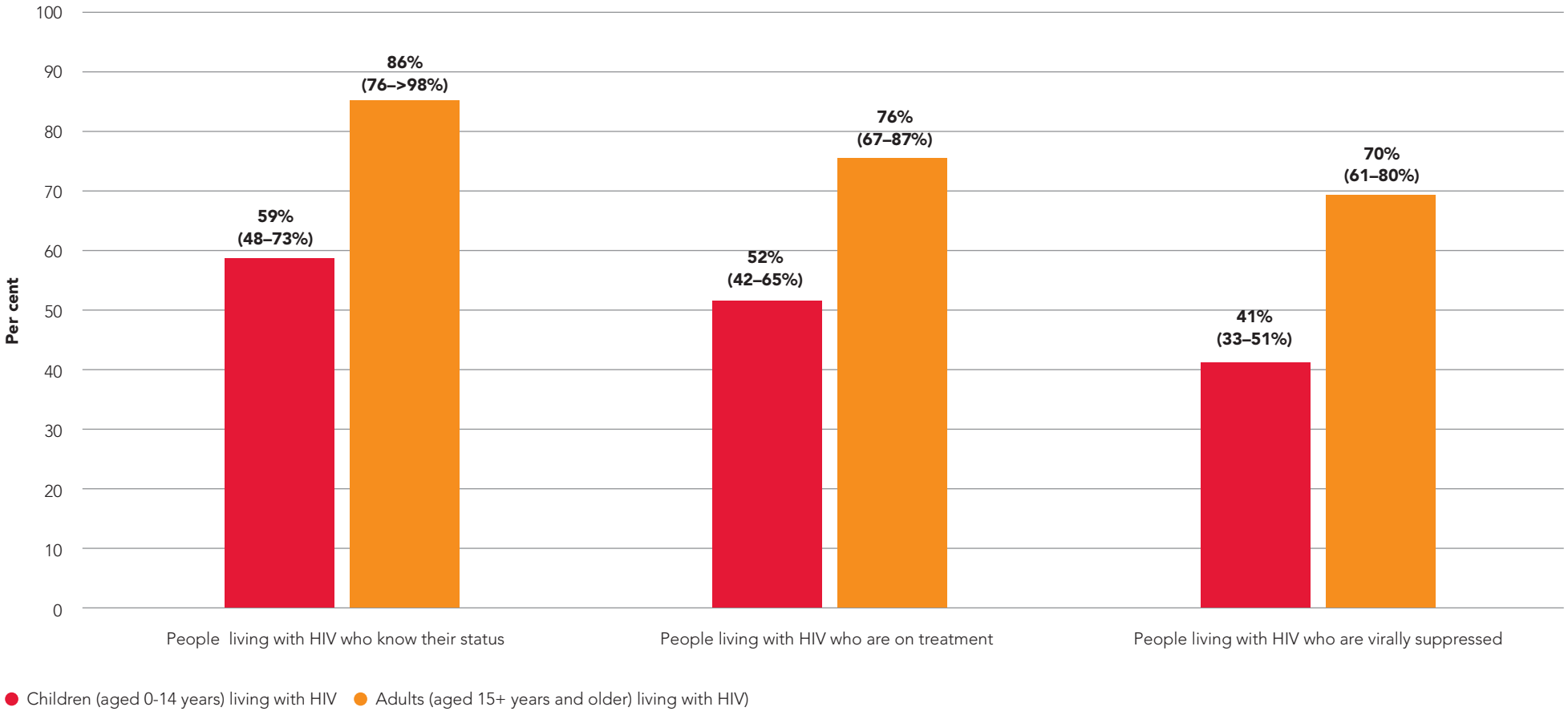
PARTNERS AT THE GLOBAL, REGIONAL AND COUNTRY LEVELS USE UNAIDS HIV ESTIMATES TO ENSURE THAT THE AIDS RESPONSE IS AS FOCUSED AND EFFECTIVE AS POSSIBLE.

Contributing to accountability and sustainability

Having a single set of HIV estimates promotes accountability for results. In particular, these estimates enable annual reporting on progress towards the SDG of ending AIDS as a public health threat by 2030 and against time-bound 2025 targets, such as the 95–95–95 targets for HIV testing, treatment and prevention services (Figure 4). The granularity of HIV estimates also helps to identify who is being left behind, which in turn informs efforts to adapt responses to close key gaps and address persistent inequalities.

Margaret Najjingo, an HIV-positive mother, gets a health check with her HIV-negative baby girl at MildMay Hospital in Kampala, Uganda, 24 October 2019. (UNAIDS/E.Echwalu)

FIGURE 4. **HIV testing and treatment cascade, children (aged 0–14 years) compared to adults (aged 15+ years), global, 2021**



Source: UNAIDS special analysis, 2022.

Together with other UNAIDS-compiled data, HIV estimates help demonstrate the impact of HIV investments and direct stakeholders' funding decisions. The Global Fund, for example, uses UNAIDS-generated HIV estimates to gauge the impact of Global Fund grants.

HIV estimates also enable data-informed advocacy. Evidence of slowing progress in reducing the HIV burden among children has given rise to a focus on intensified advocacy to address the needs of children for quality HIV treatment. The epidemic's disproportionate impact on adolescent girls and young women, as demonstrated in age- and sex-disaggregated HIV estimates, prompted the creation of the multipartner DREAMS initiative in 16 countries. Similarly, data documenting the persistence of profound inequalities in the AIDS response—including, but not limited to, the preponderance of new HIV infections among key populations and their sexual partners—informed the creation of the Global AIDS Strategy 2021–2026. The UNAIDS Key Population Atlas (https://kpatlas.unaids.org/dashboard) is an online portal that offers up-to-date, country-specific and subnational information on HIV- and health-related indicators for each key population.

The publication of HIV estimates also helps to keep AIDS on the global agenda. UNAIDS features HIV-related epidemiological trends in its flagship publications, including an annual Global AIDS Update and a yearly World AIDS Day report. HIV estimates are highlighted in annual reports from the UN Secretary-General to the UN General Assembly on progress towards global AIDS targets. HIV estimates also informed both the Global AIDS Strategy 2021–2026 and the 2021 Political Declaration on AIDS.

The Global AIDS Strategy 2021–2026 is a bold new approach to use an inequalities lens to close the gaps that are preventing progress towards ending AIDS. (UNAIDS)

DRIVING FOCUSED SUBNATIONAL ACTION ON AIDS

The different impact of HIV among diverse settings and populations demands differentiated, context-specific approaches. The Naomi model (https://naomi-spectrum.unaids.org/) provides local and district-level decision-makers with the subnational HIV estimates they need to craft locally focused responses.

Naomi employs a Bayesian statistical model that uses multiple data sources to generate locally specific estimates, including HIV prevalence and incidence and HIV treatment coverage. The model generates subnational estimates that are aggregated by sex and five-year age groups.

The increasing availability of subnational data is enabling countries and subnational jurisdictions to implement locally differentiated approaches. In Mozambique, Zambia and Zimbabwe, subnational estimates of HIV incidence among adolescent girls and young women are assisting in the development of locally focused efforts to strengthen HIV services for this heavily affected population (Figure 5). Collection and analysis of subnational trends also enabled South Africa to identify 27 high-priority districts for intensified support. Local HIV estimates, available through an online dashboard, are also supporting the efforts of Fast-Track Cities to accelerate progress towards the vision of zero new HIV infections and zero AIDS-related deaths.

FIGURE 5. Sub-national estimates of HIV incidence, adolescent girls and young women (aged 15-24 years), Malawi, United Republic of Tanzania, Zambia and Zimbabwe, December 2021

Source: UNAIDS epidemiological estimates, 2022.

TRIANGULATING MULTIPLE DATA SOURCES TO IMPROVE DATA FOR ACTION

HIV estimates generated through UNAIDS-approved models are often complemented by other data sources, enabling an even fuller understanding of national and local epidemics. For example, general population surveys yield important information on biological and behavioural data. Since 2014, Population-based HIV Impact Assessments (PHIA) have provided detailed assessments of the state of the HIV epidemic and response in 13 countries. This includes clinical details, such as average CD4 counts and the prevalence of HIV drug resistance. Bio-behavioural surveillance surveys also aid in collecting strategic data regarding key populations.

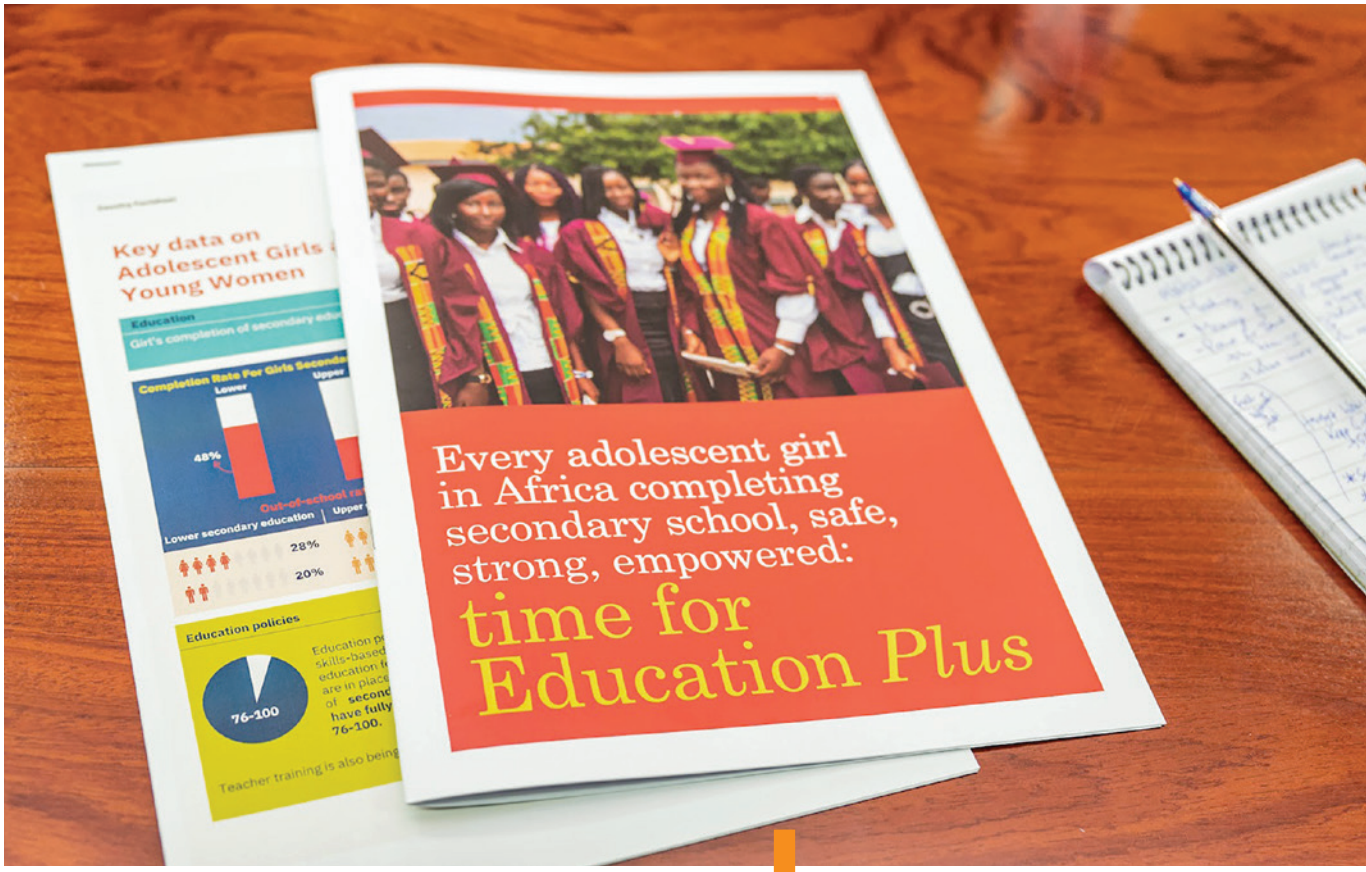
The triangulation of good-quality, comparable and diverse data informs national dialogues on the state of the HIV response and drives meaningful target-setting, planning, resource mobilization and allocation, and performance monitoring. With UNAIDS support, for instance, data triangulation informed the development of national HIV strategies in Jamaica and Zimbabwe. In the case of Zimbabwe, the resulting HIV strategy resulted in a full award from the Global Fund of US$ 448.9 million for 2021–2023, and it also fed directly into planning exercises by the government, PEPFAR and other partners.

Live Positively mural on Pechon Street, downtown Kingston, Jamaica. (UNAIDS)

Further strengthening epidemiological data

Moving forward, UNAIDS is developing user-friendly methods (including consolidated tools) to enable countries to generate HIV estimates with reduced external support. Additional efforts are also focusing on closing important gaps in strategic epidemiological data. In particular, developing a more complete picture of HIV among key populations is an urgent priority. Although bio-behavioural surveillance surveys provide essential information about HIV-related trends and vulnerabilities among key populations, these studies are costly. As a result, UNAIDS and its partners are exploring less costly and time-consuming—but still scientifically valid—means of collecting HIV epidemiological and behavioural data among key populations.

It is especially challenging to collect and effectively use data for impact among adolescent girls and young women. In such a large population—in 2021, there were close to 600 million adolescent girls and young women between the ages 15 and 24 globally—decision-makers and programme implementers need ways to focus efforts on those who are at highest risk of acquiring HIV. To this end, UNAIDS and its partners have designed a new algorithm that aims to help identify adolescent girls and young women at higher risk in order to inform programme design and focus.[4]



The Education Plus initiative was launched in 2021 to ensure that all adolescent girls and young women in sub-Saharan Africa can access quality secondary education. (UNAIDS)

4 Estimates of HIV prevalence and incidence at subnational levels from the Naomi model were used along with incidence rate ratios for each risk group to estimate the number of new infections and the incidence rate for each district, age and risk population. For more information, see: Annex from *IN DANGER: UNAIDS global AIDS update 2022* (https://www.unaids.org/sites/default/files/media_asset/2022-global-aids-update_en.pdf).

KNOW YOUR RESPONSE

KNOW YOUR RESPONSE

UNAIDS HELPS COUNTRIES UNDERSTAND AND EVALUATE THEIR RESPECTIVE AIDS RESPONSES. THIS INCLUDES COLLECTING AND ANALYSING DATA THROUGH THE GLOBAL AIDS MONITORING PROCESS TO MONITOR THE REACH AND IMPACT OF HIV PROGRAMMES AND NATIONAL POLICY RESPONSES, AND TO MEASURE STRUCTURAL FACTORS THAT INCREASE HIV VULNERABILITY AND REDUCE SERVICE UPTAKE.

This is done through elements such as those within the National Commitments and Policy Instrument (NCPI) component of the Global AIDS Monitoring, which measures progress in developing and implementing policies, strategies and laws related to the HIV response. Analysing diverse kinds and sources of data provides countries with a clearer picture of where responses may be falling short and who risks being left behind.

The routine collection, reporting and analysis of data helps countries monitor progress towards the targets outlined in the Global AIDS Strategy 2021–2026. Different data sources help assess whether interventions are reaching those in greatest need, and they promote accountability in the AIDS response, informing the monitoring of progress towards achievement of the global AIDS targets endorsed in the 2021 Political Declaration on AIDS.[5]

The programme data collected and reported by UNAIDS has transitioned from an earlier, singular focus on HIV treatment coverage: it now draws on both programme data and epidemiological modelling in order to report on outcomes at each stage of the HIV treatment cascade. The 2021 Political Declaration on AIDS and the Global AIDS Strategy 2021–2026 reflect this important shift in the AIDS response—from a focus on overall service cascade outcomes to an insistence on

Lilian Namiiro, a sex worker from Uganda, is an activist and an advocate for HIV prevention. HIV prevention for key and priority populations received unprecedented urgency and focus in the new Global AIDS Strategy, 2021–2026. (UNAIDS/E.Echwalu)

5 For a summary of the commitments and targets in the 2021 Political Declaration on AIDS, see: *Ending inequalities and getting on track to end AIDS by 2030* (https://www.unaids.org/sites/default/files/media_asset/2021-political-declaration_summary-10-targets_en.pdf).

monitoring cascade outcomes for all populations at higher risk of HIV.

In addition, UNAIDS also supports countries to monitor societal enablers of a robust AIDS response,[6] in keeping with the 10–10–10 targets in the 2021 Political Declaration on AIDS.[7] This information, which is primarily derived from policy data and population surveys, helps countries implement interventions that reduce HIV vulnerability and create an enabling environment for an effective, inclusive and equitable AIDS response.

Supporting countries to collect and use programme data

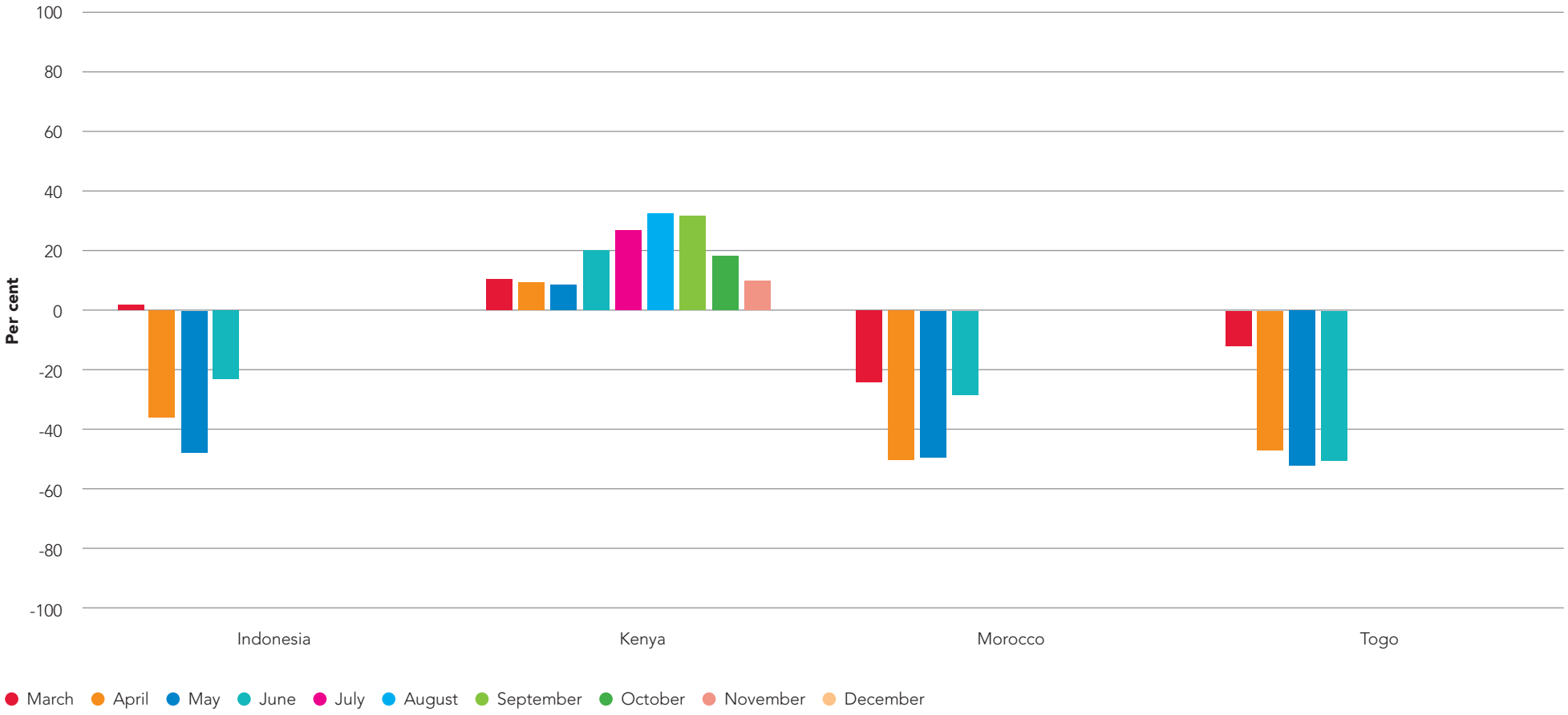
As the HIV prevention toolkit has expanded, the spectrum of data reported on prevention services has also increased (Figure 6). Countries use service utilization to report uptake of certain aspects of combination HIV prevention, such as voluntary medical male circumcision and pre-exposure prophylaxis (PrEP). Population-based household surveys and other studies provide information on the frequency of condom use, while tracking of condom shipments enables monitoring of the annual number of condoms distributed. Multiple data sources, including bio-behavioural surveillance and service utilization data, enable monitoring of HIV prevention coverage among individual key populations. Special data collection was conducted during the COVID-19 pandemic, helping decision-makers understand and address the pandemic's impact on HIV service provision. The programme data collection systems remained functional in the face of the pandemic in many countries, often showing the negative effects that the pandemic and some of its responses had on service coverage.

Dr. Prak Narom councils a new PrEP client at NCHADS Health Clinic in Phnom Penh, Cambodia on June 17, 2022. (UNAIDS/Todd Brown)

6 Societal enablers include supportive laws and policies, as well as societies that respect gender equality and do not discriminate against key populations and people living with HIV.

7 The 10–10–10 targets aim to: (a) reduce to no more than 10% the number of women, girls and people living with, at risk of and affected by HIV who experience gender-based inequalities and gender-based violence; (b) ensure that less than 10% of countries have restrictive legal and policy frameworks that unfairly target people living with, at risk of and affected by HIV, such as age of consent laws and laws related to HIV non-disclosure, exposure and transmission, laws that impose travel restrictions and mandatory testing, and laws that lead to the denial or limitation of access to services; and (c) ensure that less than 10% of people living with, at risk of and affected by HIV experience stigma and discrimination, including by leveraging the potential of U + U (Undetectable = Untransmittable).

FIGURE 6. Per cent change in the number of sex workers reached with HIV prevention interventions per month, compared to baseline, selected countries, 2020



Source: UNAIDS/WHO/UNICEF HIV services tracking tool, 2021.
Note: The baseline is the average of the January and February 2020 reports.

To help countries report programme data, UNAIDS, PEPFAR and other partners provide technical support for reporting against agreed programme indicators. This includes the use of SPECTRUM and other models to generate programme estimates where direct utilization data are either not available or insufficient.

UNAIDS also supports countries in effectively using programme data to improve their HIV responses. For the reporting of knowledge of HIV status, UNAIDS and WHO assist countries in differentiating between new HIV diagnoses and positive tests from people who have previously tested HIV-positive, as well as between first-time testers and repeat testers. UNAIDS has also pioneered digital data visualization tools, such as the Health Situation Room, which stores country-specific data in country-tailored dashboards to support decision-making and programming in eight countries in sub-Saharan Africa that have a high HIV burden.

Stigma and discrimination and criminalization tend to make transgender and gender-diverse people invisible. In March 2022, UNAIDS launched Unbox Me to advocate for the rights of transgender children in the lead-up to the International Transgender Day of Visibility. (UNAIDS)

Monitoring societal enablers

UNAIDS is developing metrics to track progress towards the 10–10–10 targets on societal enablers and new targets related to community-led services for HIV testing, prevention, treatment and societal enablers. UNAIDS is now working with countries to help them implement methods to monitor key HIV-related inequalities, with the aim of informing national efforts to end these inequalities.

Using a combination of bio-behavioural surveillance, population-based surveys and the People Living with HIV Stigma Index (undertaken in partnership with the Global Network of People Living with HIV and the International Community of Women Living with HIV), UNAIDS tracks the prevalence of violence against key populations, attitudes towards violence against women, and levels of HIV-related stigma and discrimination experienced by key populations and people living with HIV. In addition to gauging the prevalence of key structural factors, conducting multiple Stigma Index studies over time enables countries and communities to gauge if and how stigma and discrimination are evolving, permitting interventions to be more carefully tailored and targeted. In 2020, UNAIDS and its partners rolled out an updated, standardized methodology for the Stigma Index—known as "2.0"—that aims to improve the ability of stakeholders to assess key trends over time. Launched in 2010 through a consultative and multistakeholder process, the Gender Assessment Tool (GAT), led by national stakeholders and partners, assists countries in evaluating the HIV epidemic, context and response from a gender perspective in order to identify the needs of women and girls in all their diversity in the context of the HIV response at the country level and to make their responses gender transformative, equitable and rights based.

UNAIDS also tracks the HIV policy landscape. Through the NCPI, an annual component of Global AIDS Monitoring, UNAIDS monitors national laws and policies related to the HIV response across the commitments set out in the 2021 Political Declaration on AIDS. The NCPI is a questionnaire consisting of two parts: the first is completed by national authorities, while the second is completed by community and civil society representatives and other partners involved in the national response. The Laws and Policies Analytics platform (https://lawsandpolicies.unaids.org/) allows access to all the policy data reported by countries since 2017, complemented with document reviews conducted by UNAIDS.

UNAIDS IS DEVELOPING METRICS TO TRACK PROGRESS TOWARDS THE 10–10–10 TARGETS ON SOCIETAL ENABLERS AND NEW TARGETS RELATED TO COMMUNITY-LED SERVICES FOR HIV TESTING, PREVENTION, TREATMENT AND SOCIETAL ENABLERS.

Knowing your response helps to improve it

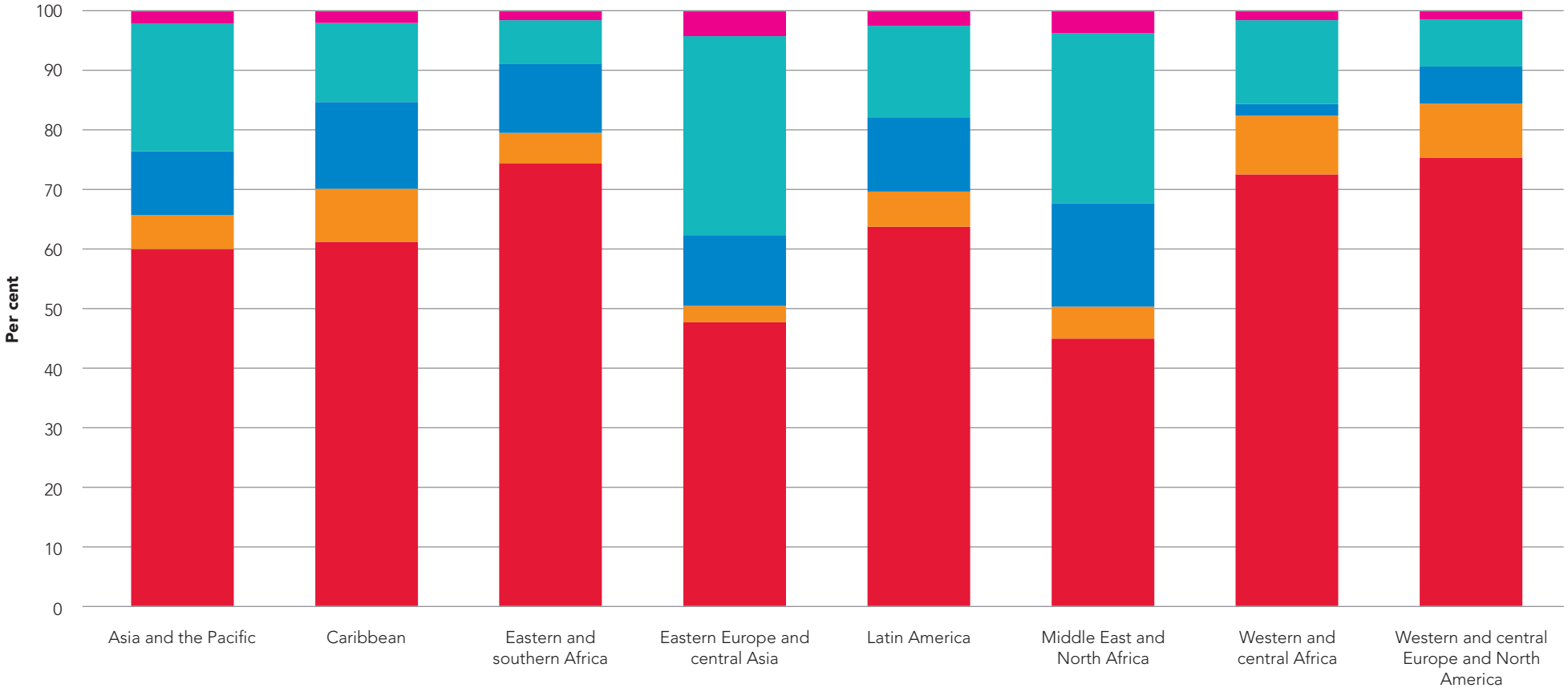
Data on programmes and societal enablers permit greater strategic precision in national efforts to close gaps and improve service outcomes. For example, monitoring of service cascades highlights where gaps are most pressing (Figure 7).

Granular programme data enable more strategic targeting of efforts. In the case of voluntary medical male circumcision, age monitoring of circumcision recipients has shown that uptake is heavily concentrated among young male adolescents, highlighting the need for a greater focus on increasing circumcision demand among young adult males. Data disaggregation by location enables countries to identify subnational settings where intensified efforts are needed to close coverage gaps. Programme data also have benefits for individual service sites, enabling programmes to identify key gaps where intervention is needed.

Knowing your epidemic helps with implementing the optimal mix of interventions. For example, UNAIDS monitoring of data on programmes and social enablers has documented lagging progress in scaling up critical pillars of combination HIV prevention. In response, 28 focus countries that together account for 73% of new HIV infections have, with the support of UNAIDS, responded to these data by developing national road maps for strengthening and scaling up HIV prevention services. In Thailand, the results of two rounds of the Stigma Index spurred the government to systematically scale up a response to stigma and discrimination in health-care settings. In South Africa, findings from the Stigma Index resulted in the launch of a national investigation into instances of forced sterilization of women living with HIV. The persisting stigma that challenges the HIV response has also led to the convening of the Global Partnership for Action to Eliminate All Forms of HIV-related Stigma and Discrimination, and many countries in the partnership rely on UNAIDS data to develop their national action plans for human rights.

Country-reported data on programmes and social enablers compiled by UNAIDS support efforts to mobilize resources for national responses, informing the development of funding applications to the Global Fund. In Sierra Leone, for instance, the gender assessment was timed to coincide with the development of the new national strategic plan and the Global Fund's New Funding Model (NFM) grant application securing US$ 2 million worth of interventions targeting young women and girls in the NFM III Grant (2021-2023). Outcomes from the gender assessment supported advocacy efforts with the Ministry of Education that led to the abolishment of policy prohibiting pregnant girls from attending school. Data for knowing your epidemic also contribute to greater accountability in the response, informing AIDS target-setting at the national and global levels and enabling annual tracking of progress towards these targets.

FIGURE 7. People living with HIV, people newly infected in the past 6 months, and HIV testing and treatment cascade, adults (aged 15+ years), by region, 2021



Source: UNAIDS special analysis, 2022.

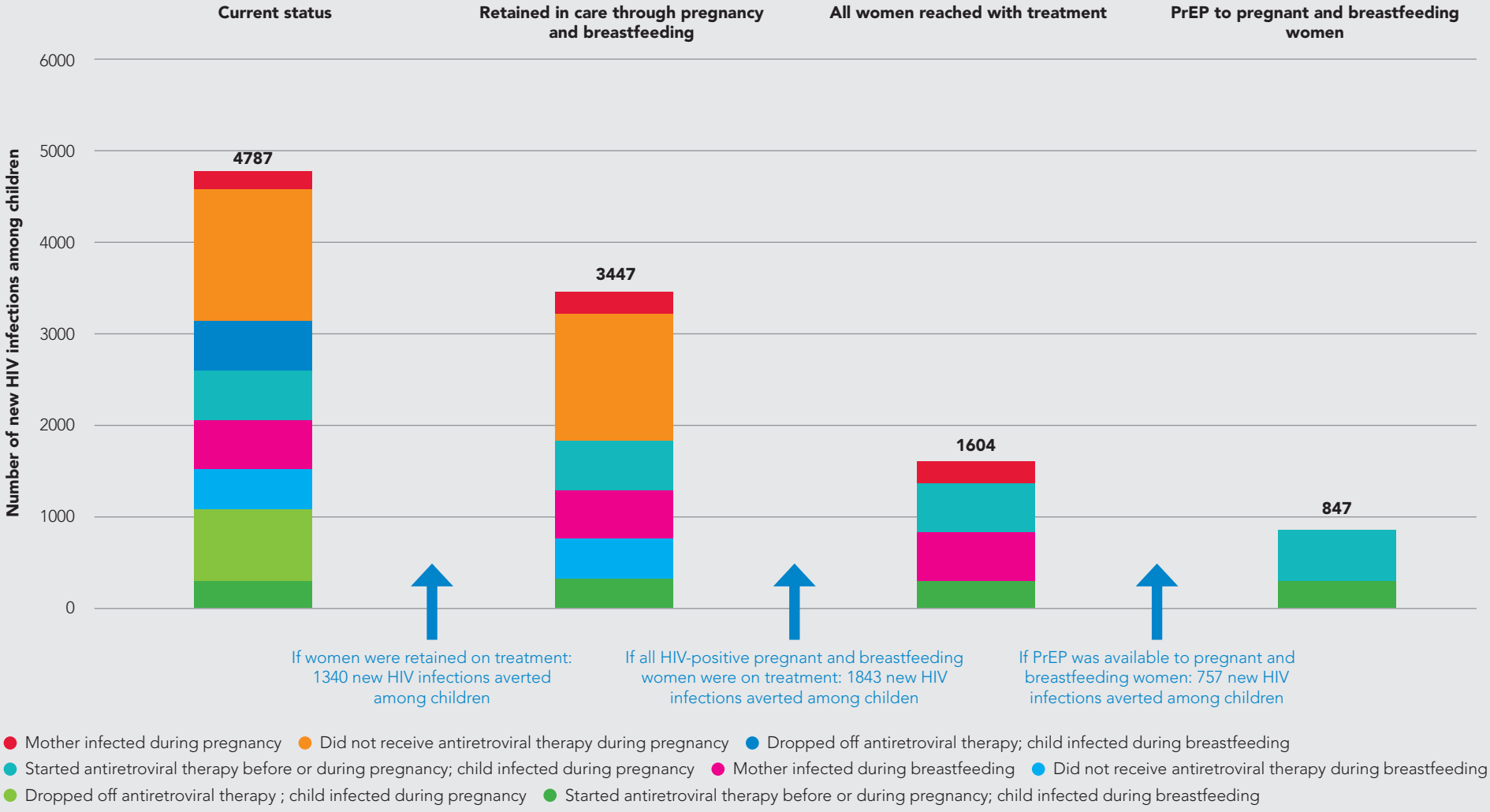
INCREASING THE PRECISION OF NATIONAL EFFORTS TO PREVENT NEW HIV INFECTIONS AMONG CHILDREN

The "stacked bar" visualization tool enables countries to quantify the reasons why children continue to acquire HIV through vertical transmission in settings that have high antiretroviral therapy coverage among adult women living with HIV (Figure 8). This approach empowers decision-makers to intervene with greater strategic precision. For example, a stacked bar that shows significant discontinuation of HIV treatment during pregnancy points towards the need to boost interventions to retain pregnant women who initiate antiretroviral therapy in care.

In Zimbabwe, for instance, decision-makers leveraged findings from the country's stacked bar analysis to develop a costed plan to increase coverage of early infant diagnosis and to improve efforts to locate patients lost to follow-up and re-engage them in care. In Uganda, the stacked bar analysis encouraged the country to adopt PrEP for pregnant and breastfeeding women.

Emma Mambo, Katswe Sistahood volunteer, and her daughter,Tanaka Mamvura, at home in Epworth, Zimbabwe , November 2019. (UNAIDS/C. Matonhodze)

FIGURE 8. **Modelled scenarios for reducing vertical transmission of HIV using the "stacked bar" tool, Zimbabwe, 2021**



Source: UNAIDS epidemiological estimates, 2022.

USING DATA TO STRENGTHEN THE AIDS RESPONSE IN PAKISTAN

The benefits of triangulating multiple data sources are apparent in Pakistan, where national partners benefited from the UNAIDS HIV and AIDS Data Hub for Asia-Pacific (https://aphub.unaids.org) in developing the country's new HIV strategy 2021-2025. The regional Data Hub provides ready access to a range of HIV-related data from across the region, using data visualization tools to enable decision-makers to identify and address subnational gaps.

UNAIDS supported Pakistan's analyses of key population size estimates, HIV service cascades and subnational inequalities and service provision. To inform the country's new strategy, UNAIDS aided Pakistan in developing national and provincial AIDS response scenarios and in undertaking an epidemiological impact analysis. These diverse data-driven activities persuaded Pakistan to prioritize the introduction and scale-up of innovative interventions, such as HIV self-testing and PrEP.

Further strengthening data on the AIDS response

Key trends offer important opportunities to further strengthen the strategic use of programme data to guide and accelerate national responses. For example, the increasing availability of electronic health records can improve the timeliness, accuracy and comprehensiveness of programme data. This is evident in Cameroon and Haiti, which use electronic health information to track HIV outcomes and inform programmatic and policy approaches.

Community-led monitoring offers an important avenue to ensure that the AIDS response addresses community perspectives and priorities, and that these are translated into action to address shortcomings not identified by other routine monitoring systems. Ritshidze, a community-led monitoring system that collects data at 400 clinics and community health centres in South Africa, supported by UNAIDS and PEPFAR, has highlighted key clinical service features that need improvement, such as the unavailability of multimonth antiretroviral prescriptions at some facilities.

COMMUNITY-LED MONITORING OFFERS AN IMPORTANT AVENUE TO ENSURE THAT THE AIDS RESPONSE ADDRESSES COMMUNITY PERSPECTIVES AND PRIORITIES.

Ritshidze has been developed and designed in response to the crisis in public clinics. It gives communities the tools and techniques to monitor the quality of HIV, tuberculosis and other health services provided at clinics and escalate performance problems to relevant decision-makers in order to advocate for change.

Lotti Rutter, Health Global Access Project (Health GAP)

The UNAIDS-supported Five Cities Project—implemented in China, Guatemala, India, Nepal and Sierra Leone by the International Treatment Preparedness Coalition and other partners—documented the negative effects of COVID-19 on HIV services and identified effective strategies to maintain and enhance services during the pandemic.

Further efforts are needed to address persistent challenges in the collection of programme data. In addition to additional investment in routine health data reporting, support is also needed for complementary surveys and community-led monitoring. Generating accurate estimates of service coverage for key populations also remains a major challenge, and a number of low- and

A Ritshidze community worker interviews a client at Vlakfontein Clinic, Gauteng, South Africa. (Ritshidze/Rian Horn)

middle-income countries (11 among the countries that reported through the Global AIDS Monitoring system in 2020) do not regularly report data on viral load suppression. These and other data gaps are the focus of intensive technical support from UNAIDS to enable countries to collect and effectively use timely, reliable reports on the full spectrum of HIV indicators in order to help drive progress in their national responses.

> **The HIV response and struggle is at a crossroads. We are seeing remarkable progress in some regions, notably in southern and eastern Africa, but, in some areas of some countries, [there have also been] increases. It's time not only to know your gaps but to close those gaps.**
>
> Ambassador Dr John Nkengasong, United States Global AIDS Coordinator and Special Representative for Health Diplomacy, launch of IN DANGER: UNAIDS global AIDS update 2022, Montreal, Canada, 28 July 2022

Additional work is also needed to ensure that knowledge about the AIDS response is translated into effective action to improve it. For instance, UNAIDS is working to ensure that mechanisms, including new data visualization tools and innovative platforms, are in place to make data available in a user-friendly manner to political leaders, government officials at all levels, funding mechanisms (such as the Global Fund) and civil society (including activists and communities). This will help ensure that public health action is taken at the right scale and that it is focused in the right locations and on the right populations.

Launch of UNAIDS Global AIDS Update 2022. Montreal, Canada, 27 July 2022. (UNAIDS/N.Gregory)

MAKE THE MONEY WORK

MAKE THE MONEY WORK

UNAIDS TRACKS HIV SPENDING FLOWS. THIS HELPS DETERMINE WHETHER SUFFICIENT RESOURCES ARE BEING MOBILIZED AND WHETHER EXISTING FUNDS ARE BEING USED IN THE MOST STRATEGIC WAY.

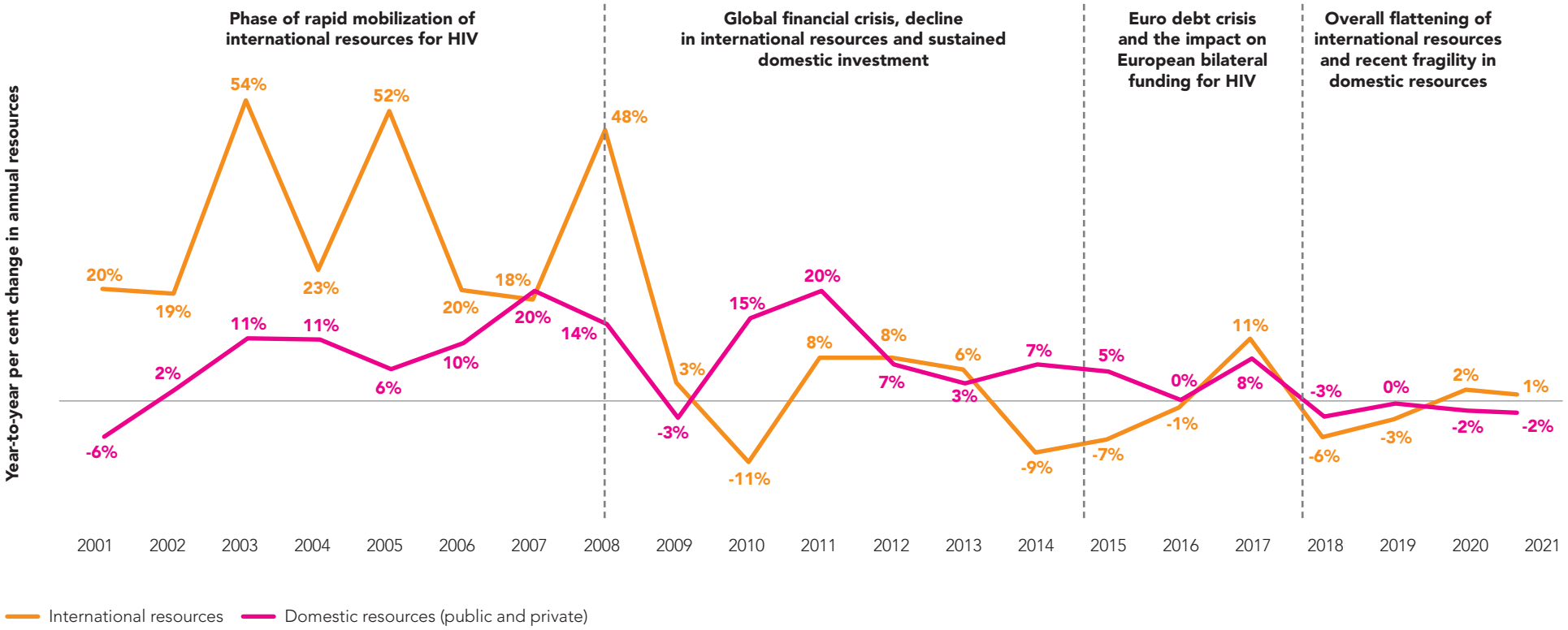
Reliable, up-to-date and disaggregated data on HIV financing are vital to guide and inform decision-making on HIV investments at the national, regional and global levels.

UNAIDS , led by its Equitable Financing Practice, plays a central role in data collection and analysis with respect to financing the AIDS response, leveraging its access to diverse governmental, multilateral and civil society data. UNAIDS monitors expenditures from domestic and international sources in 118 low- and middle-income countries, collecting data on earmarked domestic budgets for HIV and on total and programme-specific expenditures for HIV-related activities. As commodity expenditures account for nearly 40% of AIDS spending globally, UNAIDS draws from multiple data sources (such as governments, manufacturers and India customs data) to monitor average unit prices and procurement volumes for key first- and second-line antiretroviral medicines. UNAIDS also monitors disbursements for HIV by international donors, collaborating each year with the Henry J. Kaiser Family Foundation to publish a comprehensive report on donor HIV financing. In addition, UNAIDS collaborates with the Global Advocacy for HIV Prevention (AVAC) to monitor investments in research and development for new prevention technologies, including HIV vaccines and PrEP.

The most recent data underscore both the challenges of mobilizing resources for the response and the need to fully leverage strategic data to close resource gaps and maximize efficiency. At the end of 2021, the amounts available to the AIDS response in low- and middle-income countries (US$ 21.4 billion) were markedly short of the US$ 29.3 billion (in constant 2019 dollars) that will be needed in 2025 to get the response on track. International HIV assistance declined by 6% from 2010 to 2021 and has declined steadily since 2012–2013. Domestic investments in the response did grow by 25% in 2010–2021, but have shown signs of plateauing in recent years (Figure 9).

Awareness materials at AIDS 2022 Conference in Montreal, Canada, July 2022. (UNAIDS)

FIGURE 9. Year-to-year change in resource availability for HIV from domestic and international sources, low- and middle-income countries, 2001–2021



Source: UNAIDS financial estimates, 2022 (http://hivfinancial.unaids.org/hivfinancialdashboards.html).

Note: International resources include all multilateral funding (e.g., the Global Fund and various UN agencies and programmes), all bilateral funding (including from the United States Government) and funding from philanthropic sources.

Helping countries conduct National AIDS Spending Assessments

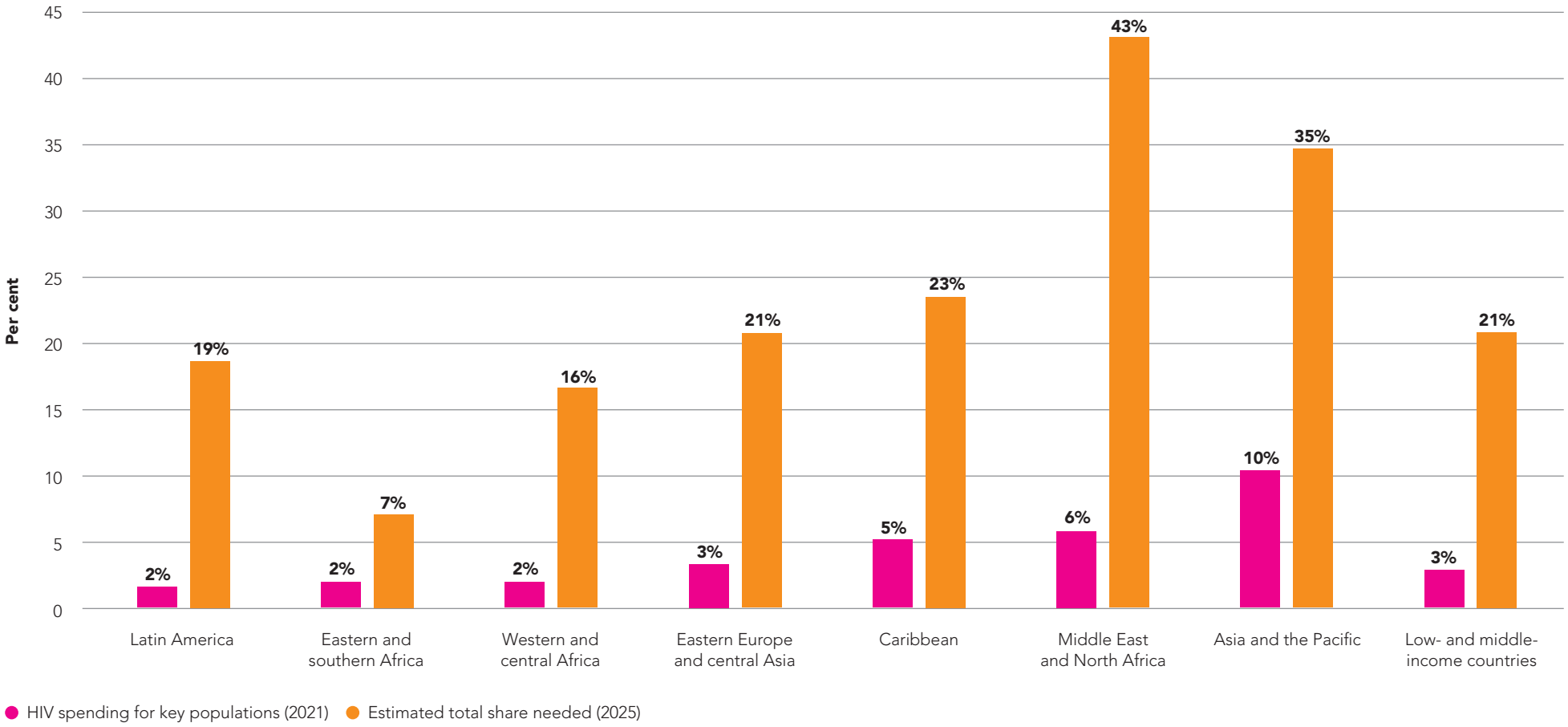
UNAIDS and its country partners use the National AIDS Spending Assessment (NASA) framework, which generates information on the amount of resources used in national AIDS responses and on spending trends and patterns. UNAIDS provides countries with a resource tracking tool for the NASA, as well as support and guidance on technical processes for expenditure tracking and quality assurance of reported financing data. UNAIDS maintains an online dashboard (https://hivfinancial.unaids.org/hivfinancialdashboards.html#) that allows ready access to the full scope of HIV financing data.

The NASA generates critical insights that can help inform national responses. Monitoring of HIV resource flows allows countries to compare impact against investments, helping to identify where and how their response may be falling short or leaving some settings or populations behind. The NASA also helps countries: (a) assess their dependence on external donors, both generally and with respect to critical aspects of the response (such as programming for key populations); (b) identify areas of underinvestment (such as HIV prevention); and (c) monitor and assess financial contributions to different stages in the HIV testing and treatment cascade. In 61 low- and middle-income countries that reported granular financing data on investments in key populations to UNAIDS, only 2.6% of HIV funding focused on programmes for key populations, even though these groups and their partners accounted for nearly two thirds of new HIV infections in 2020. These and other insights from NASAs support focused advocacy to increase financing for neglected aspects of the response.

At the same time that UNAIDS works with countries to track available resources, it also generates evidence-informed projections of the level of resources needed for the response. This, in turn, enables countries, donors and other stakeholders to quantify the AIDS resource gap (Figure 10) and undertake advocacy to mobilize additional resources. Monitoring by UNAIDS indicates that the funding gap is especially pronounced for lower middle-income countries and in regions outside eastern and southern Africa.

THE NATIONAL AIDS SPENDING ASSESSMENT FRAMEWORK GENERATES INFORMATION ON THE AMOUNT OF RESOURCES USED IN NATIONAL AIDS RESPONSES AND ON SPENDING TRENDS AND PATTERNS.

FIGURE 10. Percentage of total HIV spending for prevention and societal enabler programmes for key populations, 2021, and estimated total share needed, 2025, in low- and middle-income countries and by region



Source: UNAIDS financial estimates and projections, 2022; UNAIDS Global AIDS Monitoring, 2022; Stover J, Glaubius R, Teng Y, Kelly S, Brown T, Hallett TB et al. Modelling the epidemiological impact of the UNAIDS 2025 targets to end AIDS as a public health threat by 2030. PLoS Med. 2021;18(10):e1003831.

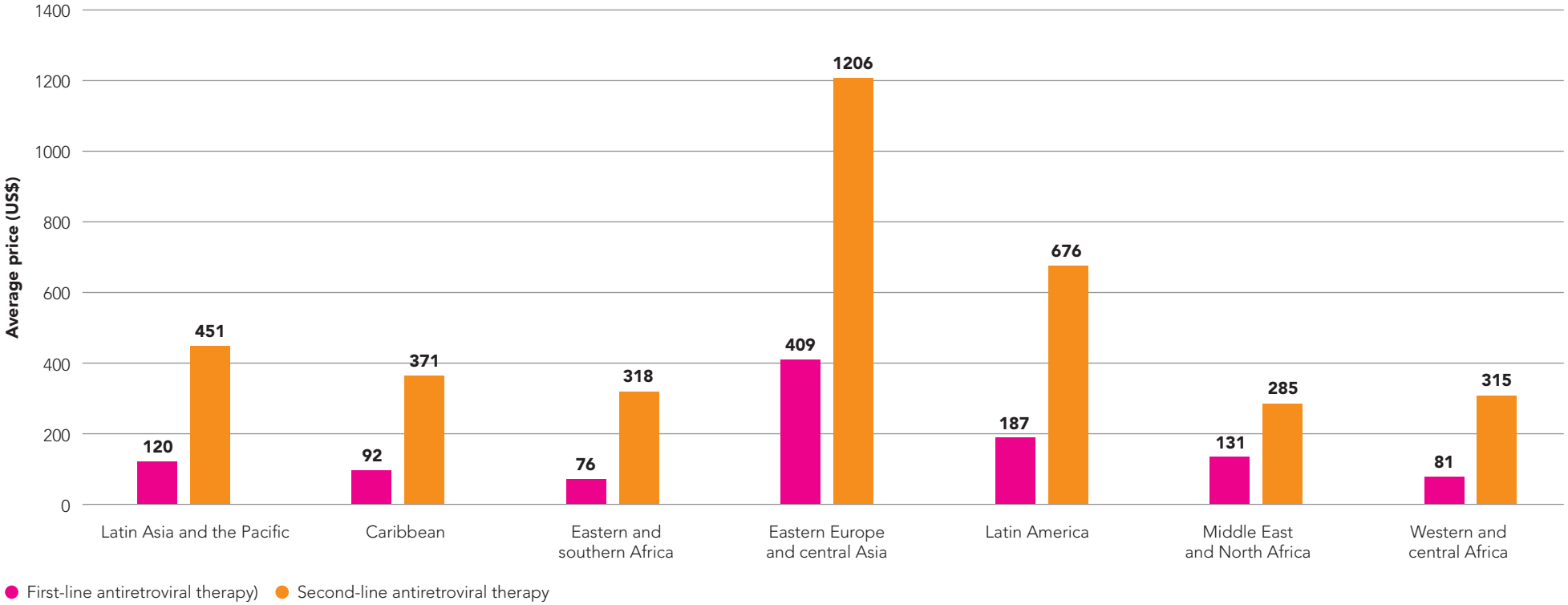
Note: Data are from 61 countries that reported their latest expenditures on prevention and societal enabler interventions. Testing and treatment services are not included.

Using financing data to improve efficiency

Financing data helps identify measures to enhance the efficiency of HIV spending, such as optimizing purchase prices for HIV commodities (Figure 11).

Resource tracking helps guide and demonstrate the impact of technical programmatic efficiencies, such as multimonth dispensing and community delivery of HIV services.

FIGURE 11. Average price (US$) per person-year for first- and second-line antiretroviral therapy, by region, 2021



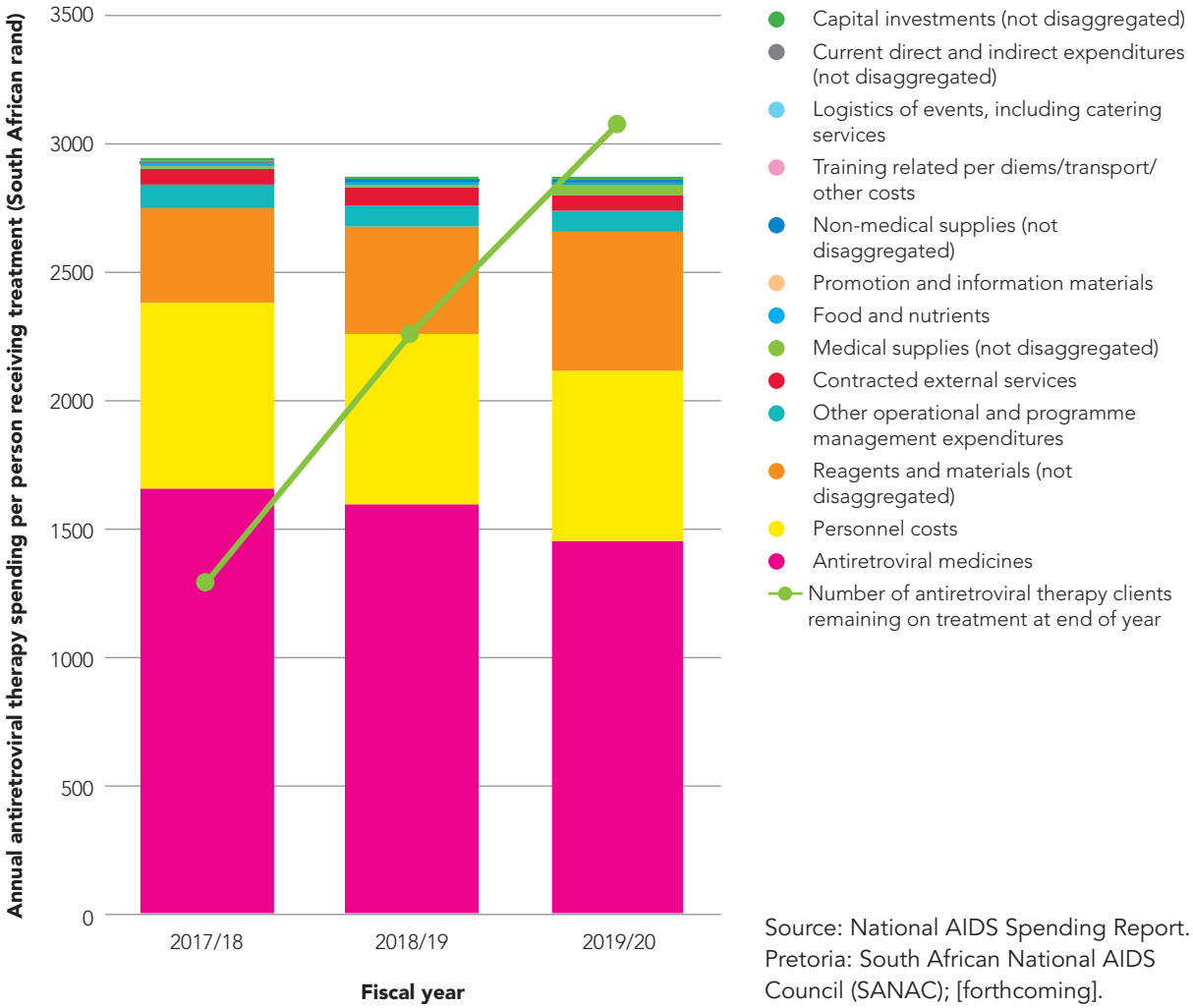
Source: UNAIDS financial estimates, 2022 (http://hivfinancial.unaids.org/hivfinancialdashboards.html); UNAIDS Global AIDS Monitoring, 2022 (https://aidsinfo.unaids.org/).

Note: Data are for 89 countries that reported to UNAIDS Global AIDS Monitoring system in 2021 and 2022.

A data-based analysis by UNAIDS demonstrates that optimizing procurement by achieving economies of scale and fully leveraging the flexibilities available under the Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS) would increase the number of people receiving antiretroviral therapy by 2025 by 35%, with only a modest 14% increase in resources (Figure 12). The yields from such a modest investment would be sufficient to ensure achievement of the 95–95–95 testing and treatment targets for 2025.

FINANCING DATA HELPS IDENTIFY MEASURES TO ENHANCE THE EFFICIENCY OF HIV SPENDING.

FIGURE 12. South Africa National Department of Health annual treatment spending per client on antiretroviral therapy, by production factor/cost item (in South African rand), 2017–2020



Source: National AIDS Spending Report. Pretoria: South African National AIDS Council (SANAC); [forthcoming].

UNAIDS financing data support national planning for sustainable AIDS responses. Through extensive technical support from UNAIDS, 54 countries have undertaken HIV investment cases since 2014. The investment case methodology draws from epidemiological, programme and financing data to project costs and public health impact associated with differing financing scenarios. This approach points national decision-makers towards opportunities to improve the efficiency of HIV responses, while UNAIDS analyses of fiscal space help countries identify opportunities to increase domestic HIV investments.

By providing the investment landscape for external donors and domestic funders, UNAIDS supports the work of its many strategic partners. The Global Fund uses UNAIDS-reported financing data to monitor several of its key performance indicators, such as co-financing requirements, support for human rights interventions and funding for key population programming. Both PEPFAR and the Global Fund also draw from UNAIDS HIV financing data to assess domestic resource mobilization.

Kyiv Teenergizer's team organized an HIV thematic party for adolescents and young people in Kyiv, Ukraine. (UNAIDS/ Teenergizer)

LEVERAGING RESOURCE TRACKING TO STRENGTHEN THE HIV RESPONSE IN THE CENTRAL AFRICAN REPUBLIC

The Central African Republic has a generalized AIDS epidemic, but in 2020, only 62% of people living with HIV knew their HIV status and only 58% of people living with HIV were accessing treatment.

To develop its national strategy for 2021–2025, the Central African Republic undertook a comprehensive review of its national HIV epidemic and response. As part of this review, the country conducted a NASA for the first time in a decade.

The NASA found that treatment and care consume more than half of the country's HIV-related spending. Only about 7% of spending in 2016–2018 focused on HIV prevention—with prevention spending declining by 25% over the three years—and only 6% addressed societal enablers. Among prevention spending, less than 1% supports programmes for key populations. The country also remains heavily dependent on international assistance, with donor funding accounting for well over 90% of HIV-related assistance. Altogether, available funding in 2018 was roughly 80% short of the amount needed to fully fund the previous national strategic plan.

The findings of the assessment are supporting advocacy for increased domestic funding, particularly for HIV prevention and paediatric care. The new national strategy for 2021–2025 prioritizes strengthened accountability and more efficient and effective programme implementation. The findings of the assessment were leveraged to obtain a nearly threefold increase in funding from the Global Fund.

Further strengthening financing data to make the money work

The longer-term financial effects of COVID-19 are only now becoming clear, with many middle-income countries experiencing severe fiscal constraints. A historical analysis by UNAIDS demonstrates that prior shocks (such as the 2008–2009 financial crisis, the Eurozone crisis and the refugee crisis of 2015) resulted in notable decreases in HIV external assistance, suggesting considerable vulnerabilities for HIV financing as a result of the pandemic. To generate a robust evidence base for understanding and mitigating the pandemic's effects on domestic AIDS investments, UNAIDS has initiated a survey of the 25 countries that together represent more than 80% of all people receiving antiretroviral therapy. The goal is to measure the pandemic's impact on government funding for HIV treatment in 2022.

Several important data gaps warrant further focus, including to monitor the new targets related to community-led services. While one of the great benefits of UNAIDS' approach to HIV resource tracking is its multisectoral breadth in tracking the full continuum of HIV activities (including for integrated services, such as those related to ensuring sexual and reproductive health and rights, and those that are not health-related), this breadth is undermined by data gaps in many countries around non-health components of HIV spending. Since inadequate or outdated information on unit costs also hinders HIV financing analyses, UNAIDS works to distil insights on average unit costs from NASAs and to provide assistance to researchers to undertake the much-needed costing studies.

Launch of the Global Alliance Initiative to end AIDS in children by 2030: Building partnerships, communities and innovation. Montreal, Canada, 1 August 2022. (UNAIDS/N.Gregory)

Suggested citation. DATA FOR IMPACT. How UNAIDS data is guiding the world to end AIDS. Geneva: Joint United Nations Programme on HIV/AIDS; 2022. Licence: CC BY-NC-SA 3.0 IGO.

UNAIDS/JC3066E

UNAIDS
Joint United Nations Programme on HIV/AIDS
20 Avenue Appia
1211 Geneva 27
Switzerland
+41 22 791 3666
unaids.org