

COMMUNITIES AT THE CENTRE

THE RESPONSE TO HIV
IN CARIBBEAN

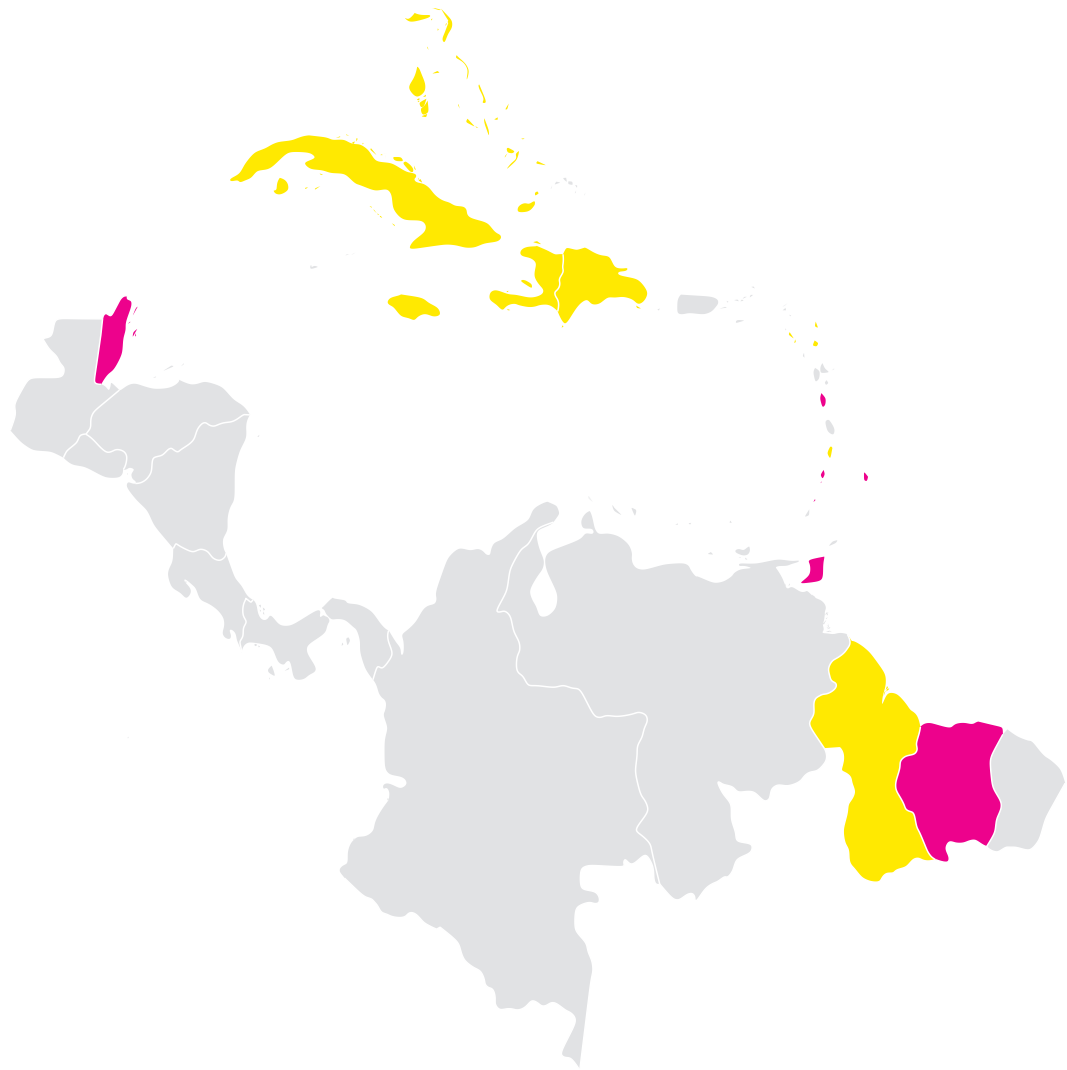
JUSTICE
JUSTITIE
DE JUSTICE

ENTRANCE
INGANG
ENTRÉE

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FIGURE 14.1 Provision of assisted partner notification services, Caribbean, 2018



■ No ■ Yes

Source: 2019 Global AIDS Monitoring.

CARIBBEAN

AT A GLANCE

There have been welcome decreases in new HIV infections and AIDS-related deaths in the region. However, efforts to expand treatment coverage have stalled.

Many people living with HIV are diagnosed several years after they acquire the virus. Policies and strategies are needed to reach these people sooner.

Countries need stronger strategies to reach all pregnant women living with HIV and their children with services, including HIV and syphilis diagnosis and treatment.

Differentiated, decentralized and non-discriminatory services are required to expand combination prevention and treatment coverage, especially for young people.

As external donor support decreases, countries must continue to increase domestic investment and improve service delivery to accelerate progress toward ending AIDS.

Across the Caribbean, progress has been made in reducing new infections and AIDS-related deaths, but these gains appear tenuous. National responses are highly dependent on donor funding, especially for programmes focused on key populations. Access to evidence-informed combination prevention services varies markedly, and scale-up of these services is needed, including increased investment in community programmes, pre-exposure prophylaxis (PrEP) for individuals at high risk of HIV infection and assisted partner notification following an HIV diagnosis (Figure 14.1).

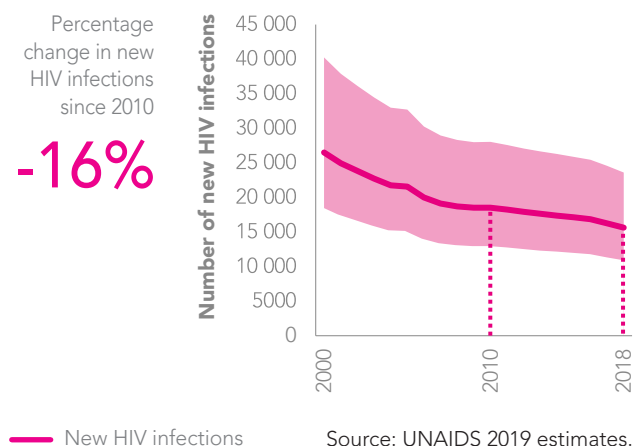
Many people living with HIV are diagnosed several years after they acquire the virus. Innovative testing strategies are required to reach those who have never been tested and to increase early diagnosis. In 2018, progress towards the second 90 (90% of people who know their HIV-positive status are accessing treatment) has stalled in the region due to slowing treatment uptake.

Discrimination against people living with HIV and key populations is a formidable barrier in the Caribbean, often fuelled by a lack of knowledge of HIV and human rights. Furthermore, there is little information on key populations; national health information systems should be strengthened to collect data to guide and monitor services for these populations. Rates of intimate partner violence experienced by women also are high in countries that report these data.

The region has made great strides towards the elimination of mother-to-child transmission, with Cuba being the first country to reach elimination in 2015; an additional six countries and territories reached that target in 2017. Cuba has since been re-certified. Treatment coverage among pregnant women living with HIV increased from 75% in 2017 to 86% in 2018, but programmes must be further scaled up to ensure elimination of mother-to-child transmission of HIV, syphilis, Chagas disease and perinatal hepatitis B (1). ■

STATE OF THE EPIDEMIC

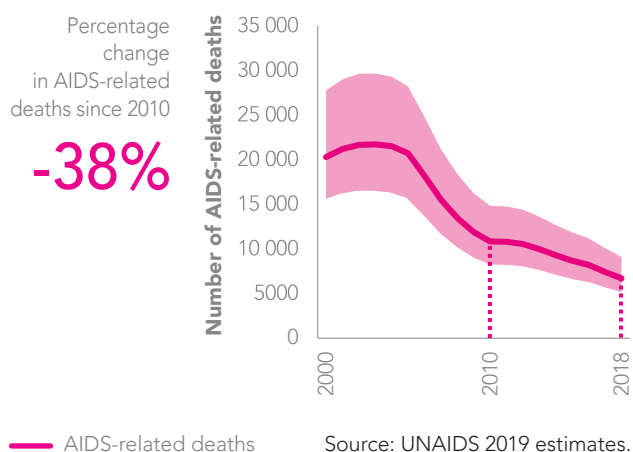
FIGURE 14.2 Number of new HIV infections, Caribbean, 2000–2018



An estimated 16 000 [11 000–24 000] people acquired HIV in the Caribbean in 2018, 16% fewer than in 2010 (Figure 14.5). HIV incidence between 2010 and 2018 increased in only one country in the region: Belize (Figure 14.4). All other countries reported declining incidence, with the decline in the Bahamas and Cuba exceeding 20%.

There has been a 38% decrease in the annual number of AIDS-related deaths since 2010, with 6700 [5100–9100] deaths in 2018 (Figure 14.3). The region’s incidence-prevalence ratio continued to decrease slowly, reaching 4.6% [3.2–7.0%] in 2018 (Figure 14.4).

FIGURE 14.3 Number of AIDS-related deaths, Caribbean, 2000–2018



Key populations and their sexual partners accounted for nearly half (47%) of new HIV infections in the region in 2018, including nearly one quarter (22%) among gay men and other men who have sex with men and 5% among transgender people (Figure 14.7). Median HIV prevalence was 18% among transgender people and 9% among gay men and other men who have sex with men (Figure 14.6).

Data were available from six countries in the region on the population size of sex workers, gay men and other men who have sex with men, transgender people or prisoners. Five of those countries had a national population size estimate for at least one key population (Table 14.1). ■

FIGURE 14.4 Incidence-prevalence ratio, Caribbean, 2000–2018

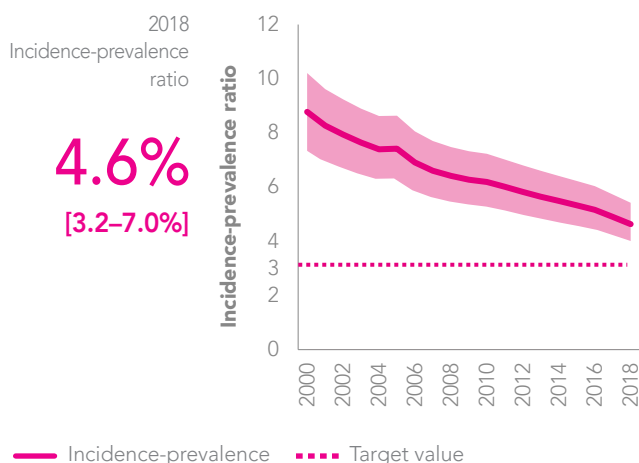
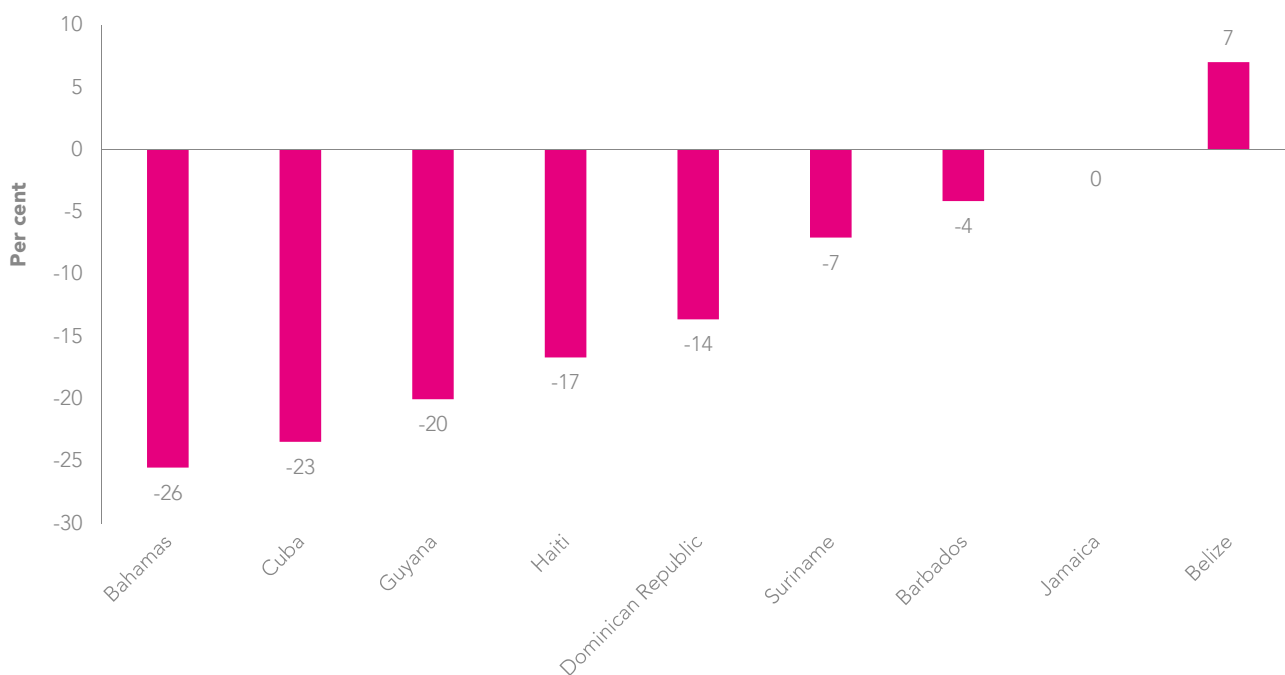


FIGURE 14.5 Percentage change in new HIV infections, by country, Caribbean, 2010–2018



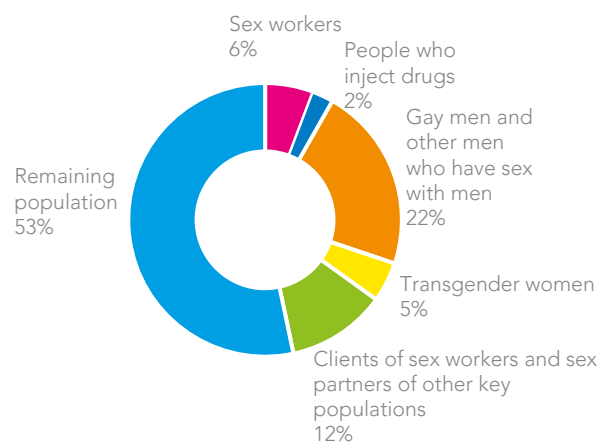
Source: UNAIDS 2019 estimates.

FIGURE 14.6 HIV prevalence among key populations, Caribbean, 2014–2018



Source: Global AIDS Monitoring, 2014–2018.

FIGURE 14.7 Distribution of new HIV infections (aged 15–49 years), by population group, Caribbean, 2018



Source: UNAIDS special analysis, 2019.

TABLE 14.1 Estimated size of key populations, Caribbean, 2018

| Country | National adult population (15+) | Sex workers | Sex workers as per cent of adult population (15+) | Gay men and other men who have sex with men | Gay men and other men who have sex with men as per cent of adult population (15+) | People who inject drugs | People who inject drugs as per cent of adult population (15+) | Transgender people | Transgender people as per cent of adult population (15+) | Prisoners | Prisoners as per cent of adult population (15+) |
|----------------------------------|---------------------------------|-------------|---|---|---|-------------------------|---|--------------------|--|-----------|---|
| Bahamas | 319 000 | | | | | | | | | 2300 | 0.73 |
| Dominican Republic | 7 731 000 | | | 130 000 | 1.71 | | | 9400 | 0.12 | 20 000 | 0.26 |
| Haiti | 7 487 000 | | | | | | | | | 11 000 | 0.14 |
| Jamaica | 2 243 000 | | | 42 000 | 1.89 | | | 3800 | 0.17 | | |
| Saint Lucia | 146 000 | | | 3000 | 2.05 | | | | | | |
| Saint Vincent and the Grenadines | 83 000 | | | | | | | | | | |

■ National population size estimate ■ Local population size estimate ■ Insufficient data ■ No data

Sources: Global AIDS Monitoring, 2018; United Nations, Department of Economic and Social Affairs, Population Division. World population prospects: the 2017 revision. 2018 (custom data acquired via website).

TAKING OUTREACH ONLINE IN JAMAICA

Peer outreach programmes face huge obstacles in societies where the lesbian, gay, bisexual, transgender and intersex (LGBTI) community is highly stigmatized and many gay men and other men who have sex with men are afraid to access HIV services. In Jamaica, the civil society organizations iFLEX and the TABS Project are collaborating with the National Family Planning Board to take their outreach work online with support from the LINKAGES project. In their work, the focus is on building a lifestyle-focused social media presence to connect with target audiences of transgender people and gay men and other men who have sex with men.

The project posts professionally designed ads, memes and videos on social media platforms to promote HIV testing—a method known as “passive outreach.” That component is combined with active outreach that links people to an online outreach worker who can assess their HIV risk. Online outreach workers can also arrange face-to-face meetings with a counsellor in a safe place, or they can arrange a referral to nearby HIV services. iFLEX and TABS facilitated more than 2500 online chats between clients and outreach staff from December 2017 to May 2019, and they supported almost 750 people to take an HIV test. Individuals who tested HIV-positive (3% of those who took an HIV test) were linked to treatment. Almost half (44%) of the new HIV cases that TABS assisted during 2018 were diagnosed through the new online outreach approach (2).

Valuable lessons are being learned. Provocative and relevant content attracts the most traffic—and the target audiences are best placed to advise on building that content. Novelty matters, and keeping the material fresh requires dedicated resources and effort. A specific challenge at the moment is to narrow the wide gap between the number of people who assess their risks online and those who go on to make appointments with service providers and take an HIV test (3). (Full story on page 39.)

THE CASCADE FROM HIV TESTING TO VIRAL SUPPRESSION

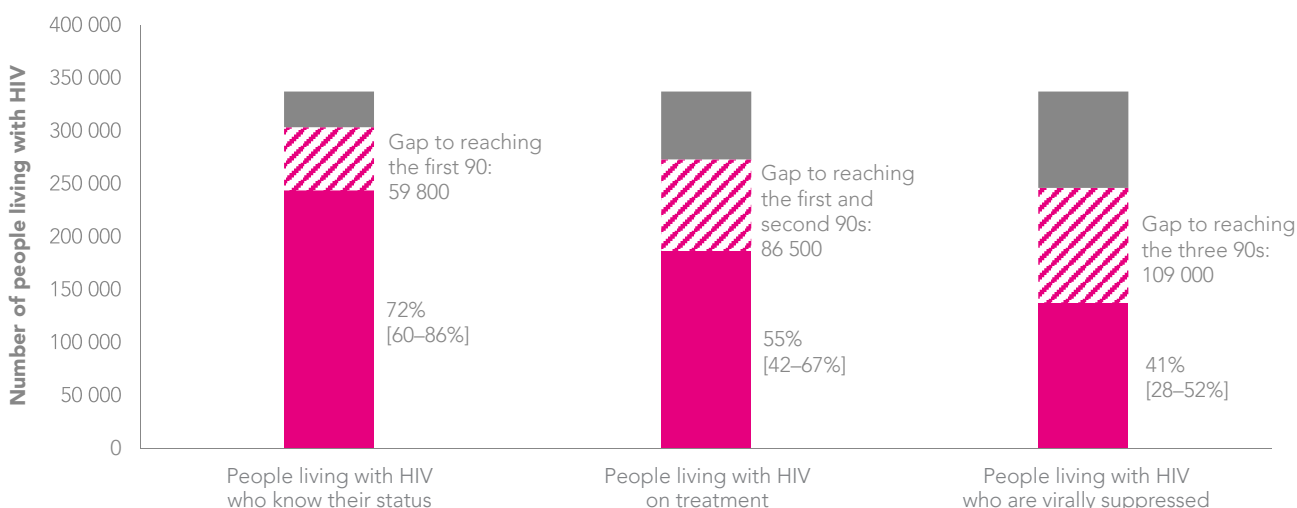
Progress along the HIV testing and treatment cascade in the region has slowed. Of the estimated 340 000 people living with HIV in 2018, 72% [60–86%] knew their status, 55% [42–67%] were on treatment and 41% [28–52%] were virally suppressed (Figure 14.8). In 2017, treatment coverage and viral suppression among people living with HIV were 54% [42–67%] and 40% [27–51%], respectively. Viral suppression among men was lower than among women in nearly all of the countries in the region with available data, highlighting an acute need to improve services for men (Figure 14.12).

The slowing progress in the region is in great part due to insufficient scale-up in treatment services among people living with HIV in Haiti, the country with the largest HIV burden in the region. However, once on treatment, 86% of diagnosed Haitians are virally suppressed (Table 14.2). Other notable successes in the region include Guyana, where 93% of people living with HIV know their status, and Barbados, which has reached 88% viral suppression among those on treatment.

One of the challenges impeding treatment initiation is late diagnosis. In 2018, five of 12 countries reporting data showed that 50% or more of newly diagnosed cases presented with CD4 counts less than 350 cells per mm³ (Figure 14.9). In 10 of 13 countries providing data, more than 20% of people living with HIV presented with advanced HIV disease (CD4 count <200 cells per mm³).

Among key populations, six countries provided data on knowledge of HIV status, which ranged from 44.3% to 97.5% among HIV-positive gay men and other men who have sex with men, and from 51% to 92.8% among sex workers living with HIV. In the Dominican Republic, 83.3% of transgender people living with HIV were aware of their status (Figure 14.10). ■

FIGURE 14.8 HIV testing and treatment cascade, Caribbean, 2018



Source: UNAIDS special analysis, 2019; see annex on methods for more details.

TABLE 14.2 90–90–90 country scorecard, Caribbean, 2018

| | First 90: percentage of people living with HIV who know their HIV status | | | Second 90: percentage of people living with HIV who know their status and who are on treatment | | | Third 90: percentage of people living with HIV on treatment who have suppressed viral loads | | | Viral load suppression: percentage of people living with HIV who are virally suppressed | | |
|----------------------------------|--|----------------------------|--------------------------|--|----------------------------|--------------------------|---|----------------------------|--------------------------|---|----------------------------|--------------------------|
| | All ages | Women (15 years and older) | Men (15 years and older) | All ages | Women (15 years and older) | Men (15 years and older) | All ages | Women (15 years and older) | Men (15 years and older) | All ages | Women (15 years and older) | Men (15 years and older) |
| Caribbean | 72 | 80 | 67 | 77 | 77 | 75 | 74 | 75 | 73 | 41 | 46 | 37 |
| Antigua and Barbuda | | | | | | | | 47 | 42 | 19 | 27 | 15 |
| Bahamas | | | | | | | | | | | | |
| Barbados | | | | | | | 88 | 88 | 88 | 44 | 55 | 39 |
| Belize | 49 | 51 | 48 | 58 | 58 | 56 | 65 | 65 | 67 | 18 | 19 | 18 |
| Cuba | 83 | 90 | 82 | 86 | 89 | 86 | 67 | 67 | 67 | 48 | 54 | 47 |
| Dominica | | | | | | | 55 | 58 | 53 | 18 | 27 | 14 |
| Dominican Republic | 82 | 91 | 75 | 68 | 67 | 69 | 67 | 65 | 70 | 37 | 40 | 36 |
| Grenada | | | | | | | 12 | 8 | 10 | 8 | 7 | 6 |
| Guyana | 93 | 95 | 95 | 73 | 82 | 64 | 81 | 81 | 80 | 55 | 63 | 49 |
| Haiti | 67 | 74 | 61 | 86 | 86 | 86 | | | | | | |
| Jamaica | | | | | | | 80 | 81 | 80 | 25 | 38 | 18 |
| Saint Kitts and Nevis | | | | | | | 60 | 73 | 55 | 25 | 16 | 35 |
| Saint Lucia | | | | | | | 35 | 33 | 37 | 15 | 14 | 17 |
| Saint Vincent and the Grenadines | 70 | 93 | 60 | 47 | 52 | 42 | 81 | 84 | 81 | 27 | 41 | 21 |
| Suriname | 60 | 71 | 50 | 87 | 87 | 87 | 87 | 88 | 86 | 45 | 54 | 38 |
| Trinidad and Tobago | | | | | | | | | | | | |

90–90–90: ■ 90% and above ■ 85–89% ■ 70–84% ■ 50–69% ■ Less than 50%
Viral load suppression: ■ 73% and above ■ 65–72% ■ 40–64% ■ 25–39% ■ Less than 25%

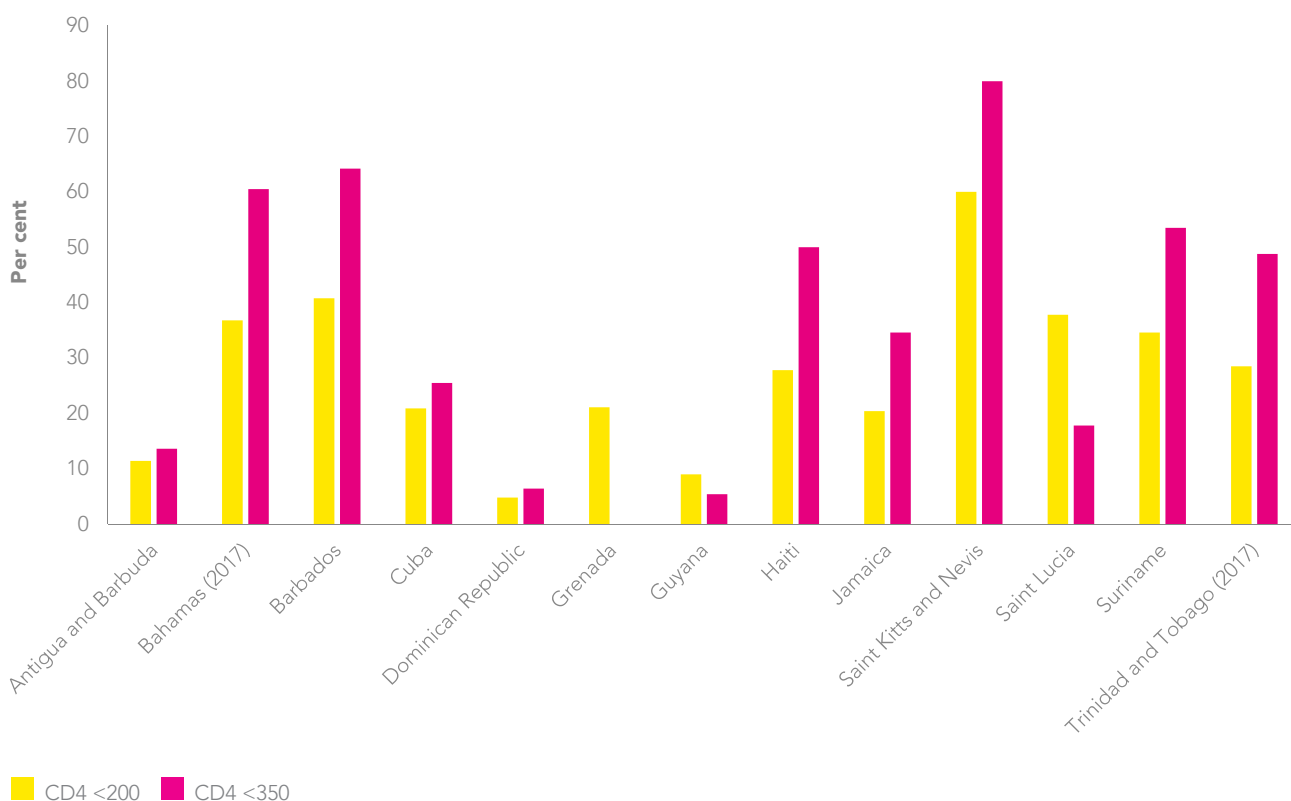
Source: UNAIDS special analysis, 2019.



“INTERACTING WITH A REAL PERSON WHILE BEING ABLE TO REMAIN ANONYMOUS ENCOURAGES PEOPLE TO ASK QUESTIONS WITHOUT FEAR OF RIDICULE OR JUDGMENT. AND PEOPLE APPRECIATE THAT WE TALK TO THEM AS IF WE’RE FRIENDS AND JUST SHARING SOME INFORMATION, INSTEAD OF [GIVING THEM] A LECTURE.”

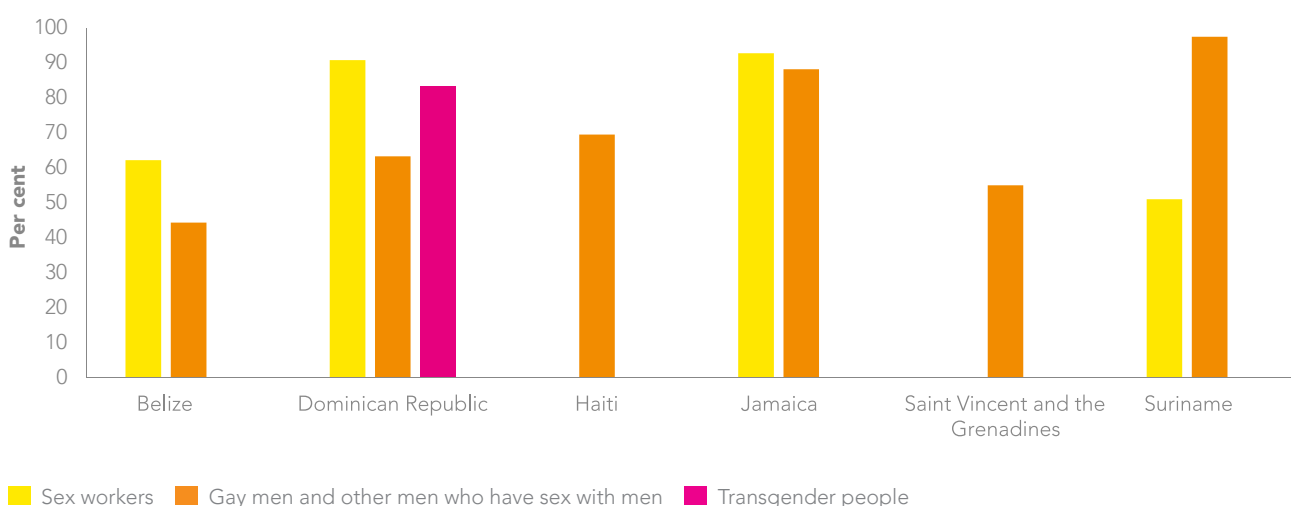
Alex Sterling of iFLEX describes his work as an online outreach worker.

FIGURE 14.9 Percentage of people living with HIV with a low CD4 count at initiation of antiretroviral therapy, Caribbean, 2018



Source: 2019 Global AIDS Monitoring.

FIGURE 14.10 Knowledge of status among key populations, Caribbean, 2016–2018



Note: Data shown come from surveys, which are typically conducted in areas with high prevalence and needs and may not be nationally representative.

Source: Global AIDS Monitoring, 2016–2018.

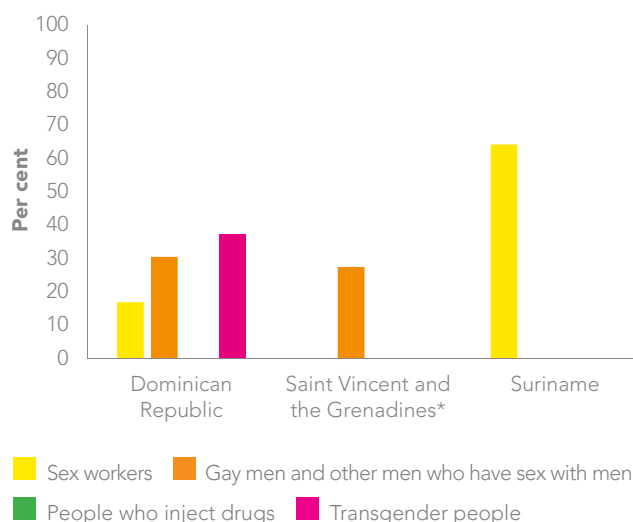
A COMBINATION APPROACH TO PREVENTION

The majority of countries in the region had public policies for the delivery of HIV prevention services that included at least five of the nine prevention services recommended by the World Health Organization (WHO) for gay men and other men who have sex with men, transgender women and female sex workers (Table 14.3). However, only one country's public policies included all nine services for female sex workers, and none had policies with all nine services for transgender people or for gay men and other men who have sex with men.

The availability of prevention data for key populations varies widely; in some instances, data are entirely lacking. Only three countries provided data on key populations accessing combination HIV preventions services. Suriname reported that 64.1% of sex workers reported receiving at least two services within the past three months, and only 16.8% did so in the Dominican Republic (Figure 14.11).

The Caribbean has a high level of intraregional movement. A large and rapid influx of Venezuelan refugees and migrants is affecting health systems and HIV prevention programmes, particularly in Guyana and Trinidad and Tobago. The HIV-related needs of mobile populations are not fully understood, and their needs are often not integrated into health-care budgets and programming. Services should be provided to these mobile populations in their native language (e.g., Haitian Creole and Spanish), including for prevention programmes among key populations. ■

FIGURE 14.11 Percentage of key populations who reported receiving at least two prevention services in the past three months, Caribbean, 2016–2018

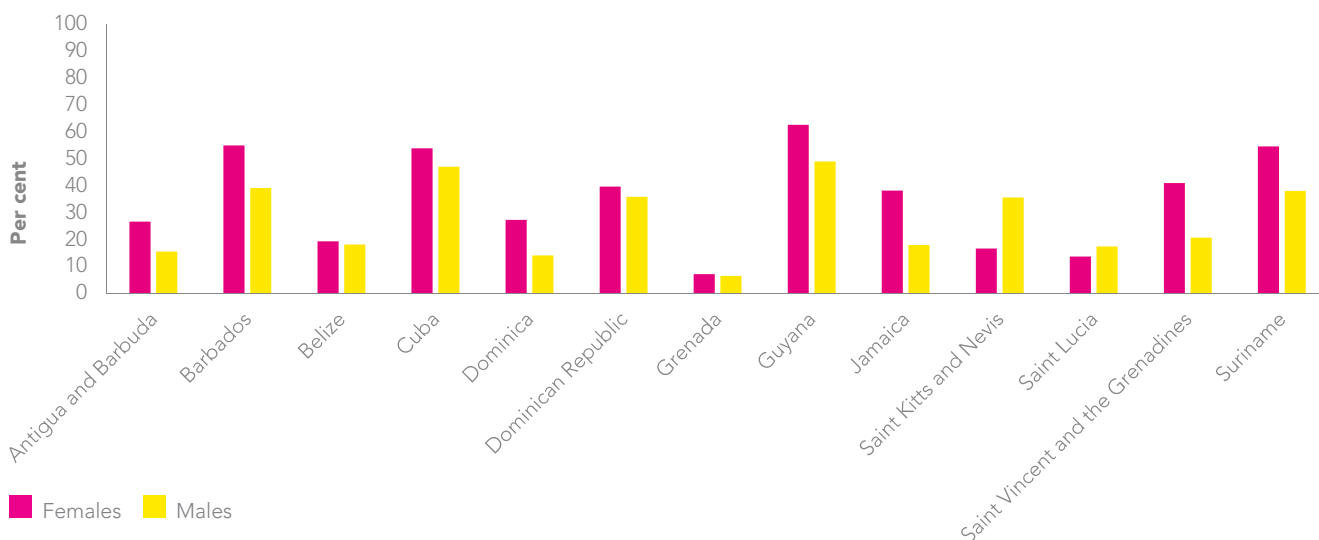


Note 1: The use of an asterisk (*) indicates that data for marked countries come from programme data (which tend to show higher values due to the use as a denominator of the number of key population members that are linked to the programme) and not from a survey.

Note 2: Possible prevention services received among sex workers, gay men and other men who have sex with men and transgender people: condoms and lubricant, counselling on condom use and safe sex, and testing of sexually transmitted infections. Possible prevention services received among people who inject drugs: condoms and lubricant, counselling on condom use and safe sex, and clean needles or syringes.

Source: Global AIDS Monitoring, 2016–2018.

FIGURE 14.12 Viral load suppression among adults (aged 15 years and older) living with HIV, by sex, Caribbean, 2018



Source: UNAIDS special analysis, 2019.

TABLE 14.3 Number of countries with public policies for delivery of HIV prevention services recommended by the World Health Organization, by key population, Caribbean

| Caribbean | Gay men and other men who have sex with men | Female sex workers | Transgender women |
|---|---|--------------------|-------------------|
| HIV testing and counselling | 14 | 12 | 11 |
| Sexually transmitted infection diagnosis and treatment | 11 | 10 | 9 |
| PrEP | 1 | 2 | 3 |
| Post-exposure prophylaxis (PEP) | 6 | 0 | 4 |
| Condoms | 14 | 12 | 10 |
| Lubricants | 13 | 10 | 10 |
| Antiretroviral therapy for all | 13 | 10 | 12 |
| Peer-led community outreach activities | 12 | 9 | 9 |
| Sexual health information and education | 10 | 8 | 9 |
| Number of countries with public policies for delivery of all nine services | 0 | 1 | 0 |
| Number of countries with public policies for delivery of five to eight services | 12 | 10 | 10 |
| Number of countries with public policies for delivery of four services or less | 4 | 5 | 6 |

Note: Number of countries in the region (n = 16).

Source: HIV prevention in the spotlight: an analysis from the perspective of the health sector in Latin America and the Caribbean, 2017. Washington (DC): Pan American Health Organization, UNAIDS; 2017.



Young people gather on the Malecon in Havana, Cuba.

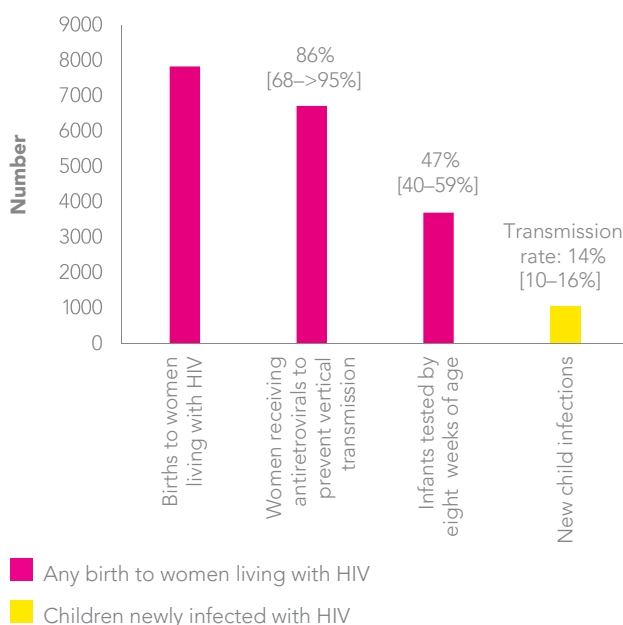
ELIMINATING MOTHER-TO-CHILD TRANSMISSION

The rate of mother-to-child transmission of HIV was 14% [10–16%] in 2018. The proportion of pregnant women living with HIV in 2018 receiving antiretroviral medicines to prevent vertical transmission of HIV and protect their own health was 86% [68–>95%]. Coverage of early infant diagnosis in 2018 was 47% [40–59%] (Figure 14.13).

Early infant diagnosis coverage varies considerably between countries. Antigua and Barbuda, which has been validated as having eliminated mother-to-child transmission of HIV, achieved 100% coverage of infants receiving HIV testing in the first four to six weeks of life, as did Dominica and Grenada. Elsewhere, rates vary, ranging between 46% and 71% (Figure 14.14).

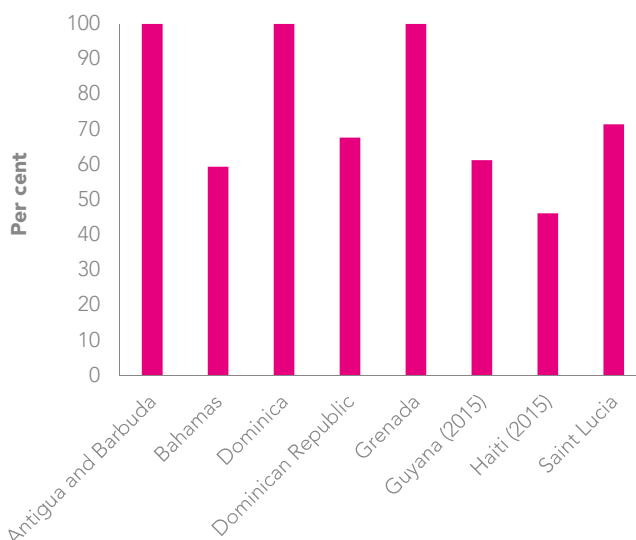
Seven countries and island states in the Caribbean have been validated as having eliminated mother-to-child transmission of HIV: Anguilla, Antigua and Barbuda, Bermuda, the Cayman Islands, Cuba, Montserrat, and Saint Kitts and Nevis. Eliminating mother-to-child transmission region-wide will require countries to develop strategies to reach all pregnant women living with HIV and their children with health and social services, including HIV and syphilis diagnosis and treatment. ■

FIGURE 14.13 Cascade of services for preventing vertical transmission, numbers of new HIV infections and transmission rate, Caribbean, 2018



Source: UNAIDS 2019 estimates; 2019 Global AIDS Monitoring.

FIGURE 14.14 Percentage of infants receiving HIV testing in the first 4–6 weeks, Caribbean, 2018



Source: 2019 Global AIDS Monitoring.

CONFRONTING STIGMA AND DISCRIMINATION

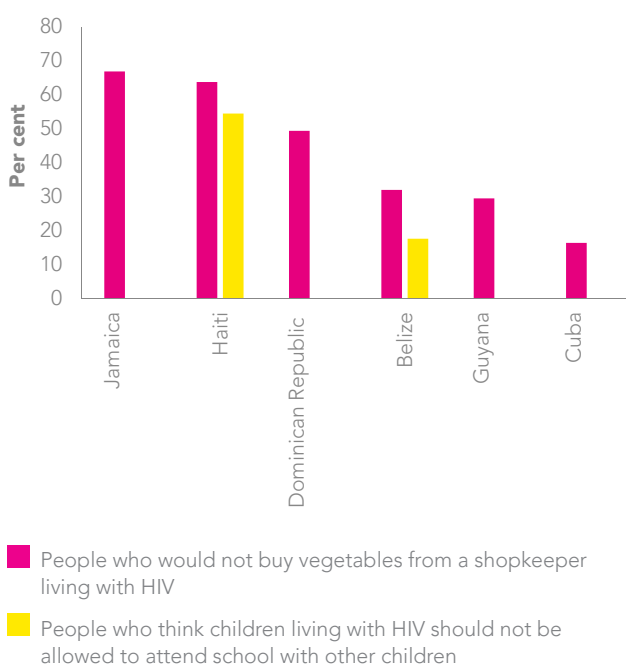
Little progress has been made in reducing misconceptions about HIV and the ensuing stigma and discrimination. Two thirds (67%) of people in Jamaica said they would not purchase vegetables from a vendor living with HIV. Such stigmatizing attitudes also were high in Haiti (64%), the Dominican Republic (49%), Belize (32%) and Guyana (29%). Eighteen per cent of people surveyed in Belize—54% in Haiti—believed that children living with HIV should not be allowed to attend school with other children (Figure 14.15).

Efforts are underway to combat stigma and discrimination in the region, including the #UnitedPositively initiative, which was launched by

the Caribbean Regional Network of People Living with HIV/AIDS (CRN+) in March 2019. The campaign challenges governments, policy-makers, civil society organizations, regional media and members of key populations to use social media to denounce stigma and discrimination that prevent vulnerable populations from accessing prevention, care, treatment and support (4).

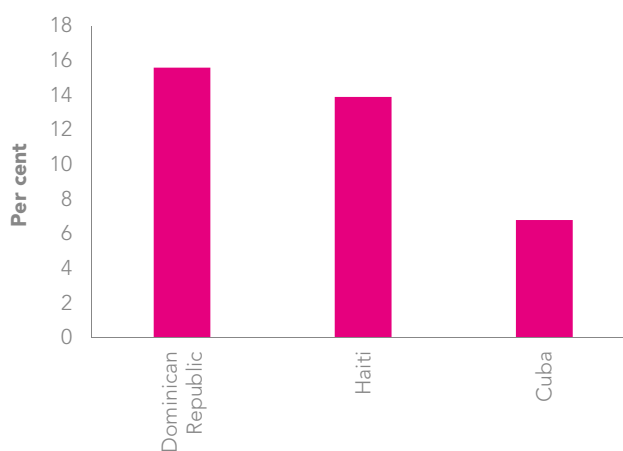
Intimate partner violence is high among countries with recent data, with 16% of adult women in the Dominican Republic, 14% in Haiti and 7% in Cuba reporting physical and/or sexual violence by an intimate partner (Figure 14.16). ■

FIGURE 14.15 Percentage of men and women aged 15–49 years with discriminatory attitudes towards people living with HIV, Caribbean, 2013–2017



Source: Population-based surveys, 2013–2017, countries with available data.

FIGURE 14.16 Percentage of ever-married or partnered women aged 15–49 years who experienced physical and/or sexual violence by an intimate partner in the past 12 months, Caribbean, most recent data, 2013–2017



Source: Population-based surveys, 2013–2017.

INVESTING TO END AN EPIDEMIC

The financial resources available for HIV responses in the Caribbean have fluctuated over time, reaching the same level in 2018 as in 2010 (constant 2016 US dollars).¹ In total, US\$ 326 million was available for the Caribbean’s HIV programmes in 2018, considerably less than the US\$ 600 million needed to achieve its Fast-Track Targets by 2020 (Figure 14.17).

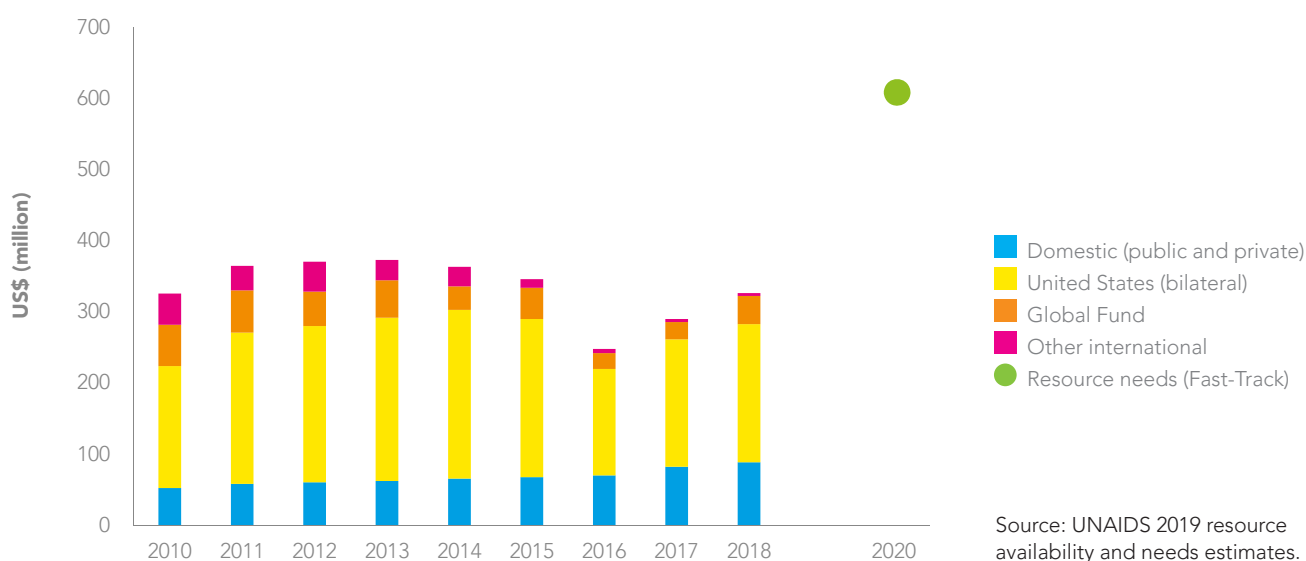
The availability of domestic resources for the HIV response increased by 69% during this eight-year period, reaching 27% of the total resources for HIV in the region. International donors decreased their share from 84% in 2010 to 73% by 2018: during that period, bilateral contributions from the Government of the United States of America increased by 13%, while disbursements from the Global Fund to Fight

AIDS, Tuberculosis and Malaria (the Global Fund) and all other international sources decreased by 32% and 91%, respectively.

Total funding for the region increased by 13% in 2018 compared to 2017. Domestic resources increased by 8%, bilateral funds from the Government of the United States increased by 9% (reaching 60% of all funds for the region), and Global Fund contributions increased by 63% (reaching 12% of the total).² All other international sources decreased by 10% and accounted for just 1% of total HIV resources in 2018.

More than 90% of the HIV response in Haiti, which has the largest epidemic in the region, is financed by international donors. ■

FIGURE 14.17 HIV resource availability, by source, Caribbean, 2010–2018, and projected resource needs by 2020



1 Details on the revised UNAIDS estimates for resource availability in low- and middle-income countries can be found in the Investing to End an Epidemic chapter.

2 The Global Fund disbursements to countries decreased by 20% globally in 2018 because most funding grants ended in 2017, hence the changes in the level of disbursements.

REFERENCES

1. EMTCT plus. Framework for elimination of mother-to-child transmission of HIV, syphilis, hepatitis B, and Chagas. Washington (DC): Pan American Health Organization, World Health Organization; 2017 (<http://iris.paho.org/xmlui/handle/123456789/34306>, accessed 6 July 2019).
2. FHI 360, LINKAGES project. A vision for going online to accelerate the impact of HIV programs. Washington (DC): FHI360; 2019.
3. Benjamin Eveslage, Technical Advisor for Online HIV Services, LINKAGES project, FHI360. Personal communication, 12 June 2019.
4. CRN+ launches #UnitedPositively. In: PANCAP: Pan Caribbean Partnership Against HIV/AIDS [Internet]. 19 March 2019. Georgetown (Guyana): PANCAP; c2019 (<https://pancap.org/pancap-releases/crn-launches-unitedpositively/>, accessed 6 July 2019).

EPIDEMIC ESTIMATES

| | 2010 | 2015 | 2018 |
|-------------------------------------|----------------------|----------------------|----------------------|
| New HIV infections | | | |
| New HIV infections (all ages) | <500 [<500– <500] | <500 [<500– <500] | <500 [<200– <500] |
| New HIV infections (0–14) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| New HIV infections (women, 15+) | <100 [<100– <200] | <100 [<100– <100] | <100 [<100– <100] |
| New HIV infections (men, 15+) | <200 [<200– <200] | <200 [<200– <200] | <200 [<200– <200] |
| HIV incidence per 1000 population | 0.82 [0.72–0.93] | 0.66 [0.57–0.77] | 0.55 [0.47–0.66] |
| AIDS-related deaths | | | |
| AIDS-related deaths (all ages) | <200 [<200– <500] | <500 [<200– <500] | <200 [<200– <500] |
| AIDS-related deaths (0–14) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| AIDS-related deaths (women, 15+) | <100 [<100– <100] | <100 [<100– <200] | <100 [<100– <100] |
| AIDS-related deaths (men, 15+) | <200 [<100– <200] | <200 [<100– <200] | <100 [<100– <200] |
| People living with HIV | | | |
| People living with HIV (all ages) | 5800 [5100–6600] | 6000 [5300–6700] | 6000 [5300–6700] |
| People living with HIV (0–14) | <500 [<500– <500] | <500 [<200– <500] | <200 [<200– <500] |
| People living with HIV (women, 15+) | 2600 [2300–2900] | 2600 [2400–2900] | 2600 [2300–2800] |
| People living with HIV (men, 15+) | 2900 [2500–3400] | 3200 [2800–3600] | 3300 [2800–3700] |
| HIV prevalence (15–49) | 2.2 [1.9–2.5] | 1.9 [1.7–2.1] | 1.8 [1.5–1.9] |

LAWS AND POLICIES

| | |
|---|--|
| Laws criminalizing the transmission of, non-disclosure of or exposure to HIV transmission | Yes |
| Criminalization of sex work among consenting adults | Any criminalization or punitive regulation of sex work |
| Criminalization of same-sex sexual acts | Laws penalizing same-sex sexual acts have been decriminalized or never existed |
| Drug use or possession for personal use is an offence | Possession of drugs for personal use or drug use and/or consumption are specified as criminal offences |
| Criminalization of transgender people | Neither criminalized nor prosecuted |
| Laws or policies restricting the entry, stay and residence of people living with HIV | No |
| Parental consent for adolescents to access HIV testing | Yes, for adolescents younger than 18 years |
| Spousal consent for married women to access sexual and reproductive health services | Yes |
| Mandatory HIV testing for marriage, work or residence permits or for certain groups | Yes |

STIGMA AND DISCRIMINATION

Percentage of women and men aged 15–49 years who report discriminatory attitudes towards people living with HIV

Percentage of people living with HIV denied health services because of their HIV status in the last 12 months

Percentage of people living with HIV who reported a health-care professional told others about their HIV status without their consent

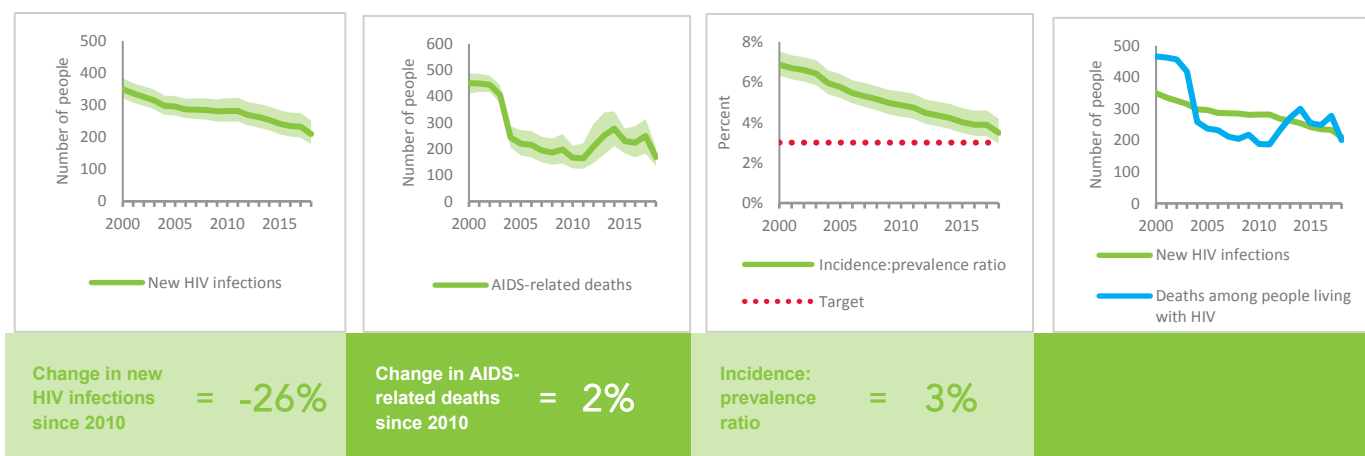
VIOLENCE

Proportion of ever-married or partnered women aged 15–49 years who experienced physical or sexual violence from a male intimate partner in the past 12 months

EXPENDITURES

| | Financing sources | | | | | Total |
|-----------------------------|-------------------|-----------------|-----------------------|----------------------------|---------------------------|-------------|
| | Domestic private | Domestic public | International: PEPFAR | International: Global Fund | International: all others | |
| Last available report: 2009 | \$12 749 | \$4 402 073 | ... | ... | \$301 889 | \$4 901 265 |

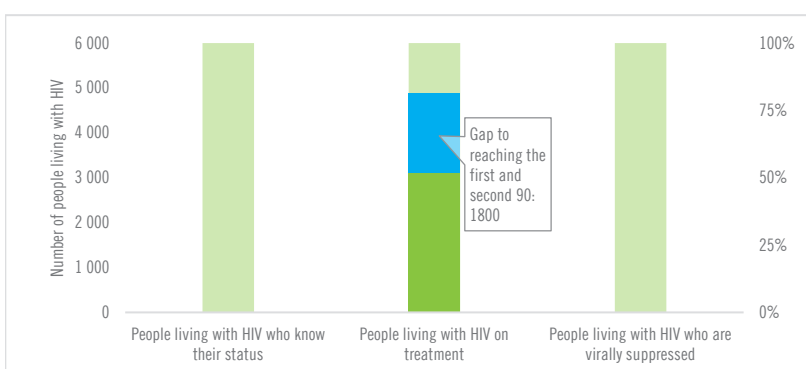
EPIDEMIC TRANSITION METRICS



KEY POPULATIONS

| | Sex workers | Gay men and other men who have sex with men | People who inject drugs | Transgender people | Prisoners |
|---|-------------|---|-------------------------|--------------------|-----------|
| Estimated size of population | ... | ... | ... | ... | 2300 |
| HIV prevalence | ... | 19.6% | ... | ... | 2.2% |
| Know their HIV status | ... | ... | ... | ... | ... |
| Antiretroviral therapy coverage | ... | ... | ... | ... | ... |
| Condom use | ... | ... | ... | ... | ... |
| Coverage of HIV prevention programmes | ... | ... | ... | ... | ... |
| Avoidance of health care because of stigma and discrimination | ... | ... | ... | ... | ... |
| Expenditures (0) | ... | ... | ... | ... | ... |

HIV TESTING AND TREATMENT CASCADE



| | ... | 52% [45–58%] 3100 | ... |
|------------------------|-----------------|----------------------|-----------------|
| All ages | ...% [...–...%] | | ...% [...–...%] |
| Children (0–14) | ...% [...–...%] | 21% [18–26%] 40 | ...% [...–...%] |
| Women (15+) | ...% [...–...%] | 58% [51–64%] 1500 | ...% [...–...%] |
| Men (15+) | ...% [...–...%] | 49% [42–55%] 1600 | ...% [...–...%] |

ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION

| | 2010 | 2018 |
|---|-----------------|--------------------|
| Percentage of pregnant women living with HIV accessing antiretroviral medicines | ...% [...–...%] | ...% [...–...%] |
| Early infant diagnosis | ...% [...–...%] | 59.3% [52.9–68.4%] |

HIV COMORBIDITIES

| | |
|---|------------|
| Estimated number of incident tuberculosis cases among people living with HIV (2017) | 23 [20–27] |
| People living with HIV who started TB preventive therapy (2017) | ... |
| Cervical cancer screening of women living with HIV | ... |
| People coinfecting with HIV and hepatitis B virus receiving combined treatment | ... |
| People coinfecting with HIV and hepatitis C virus starting hepatitis C treatment | ... |

HIV PREVENTION

| | |
|--|----------------|
| Adults aged 15+ years with unsuppressed viral load | ... |
| Knowledge of HIV prevention among young people aged 15–24 years (2014) | |
| — Women | 2.8% |
| — Men | 5.8% |
| Condom use at last sex with a non-marital, non-cohabiting partner | |
| — Women | ... |
| — Men | ... |
| Women aged 15–49 years who have their demand for family planning satisfied by modern methods | ... |
| Men aged 15–49 years who are circumcised | Not applicable |
| Voluntary medical male circumcisions performed according to national standards | Not applicable |
| People who received PrEP at least once during the reporting period (2018) | 23 |
| Harm reduction | |
| — Use of sterile injecting equipment at last injection | ... |
| — Needles and syringes distributed per person who injects | ... |
| — Coverage of opioid substitution therapy | ... |
| — Naloxone available (2019) | No |
| — Safe injection rooms available (2019) | No |

EPIDEMIC ESTIMATES

| | 2010 | 2015 | 2018 |
|-------------------------------------|----------------------|----------------------|----------------------|
| New HIV infections | | | |
| New HIV infections (all ages) | <200 [<200- <200] | <200 [<200- <200] | <200 [<200- <200] |
| New HIV infections (0–14) | ... [...-...] | ... [...-...] | ... [...-...] |
| New HIV infections (women, 15+) | <100 [<100- <100] | <100 [<100- <100] | <100 [<100- <100] |
| New HIV infections (men, 15+) | <200 [<100- <200] | <200 [<100- <200] | <200 [<100- <200] |
| HIV incidence per 1000 population | 0.61 [0.52–0.7] | 0.59 [0.49–0.69] | 0.58 [0.47–0.69] |
| AIDS-related deaths | | | |
| AIDS-related deaths (all ages) | <100 [<100- <100] | <100 [<100- <100] | <100 [<100- <100] |
| AIDS-related deaths (0–14) | ... [...-...] | ... [...-...] | ... [...-...] |
| AIDS-related deaths (women, 15+) | <100 [<100- <100] | <100 [<100- <100] | <100 [<100- <100] |
| AIDS-related deaths (men, 15+) | <100 [<100- <100] | <100 [<100- <100] | <100 [<100- <100] |
| People living with HIV | | | |
| People living with HIV (all ages) | 2300 [2100–2600] | 2800 [2500–3100] | 3000 [2700–3400] |
| People living with HIV (0–14) | ... [...-...] | ... [...-...] | ... [...-...] |
| People living with HIV (women, 15+) | 720 [640–800] | 920 [830–1000] | 1000 [910–1100] |
| People living with HIV (men, 15+) | 1600 [1400–1800] | 1900 [1600–2200] | 2000 [1700–2300] |
| HIV prevalence (15–49) | 1.3 [1.2–1.4] | 1.5 [1.3–1.6] | 1.5 [1.3–1.7] |

LAWS AND POLICIES

| | |
|---|--|
| Laws criminalizing the transmission of, non-disclosure of or exposure to HIV transmission | No |
| Criminalization of sex work among consenting adults | Any criminalization or punitive regulation of sex work |
| Criminalization of same-sex sexual acts | Yes, imprisonment (14 years - life) |
| Drug use or possession for personal use is an offence | ... |
| Criminalization of transgender people | Neither criminalized nor prosecuted |
| Laws or policies restricting the entry, stay and residence of people living with HIV | No |
| Parental consent for adolescents to access HIV testing | Yes, for adolescents younger than 18 years |
| Spousal consent for married women to access sexual and reproductive health services | No |
| Mandatory HIV testing for marriage, work or residence permits or for certain groups | No |

STIGMA AND DISCRIMINATION

Percentage of women and men aged 15–49 years who report discriminatory attitudes towards people living with HIV **2018**
45.5

Percentage of people living with HIV denied health services because of their HIV status in the last 12 months

Percentage of people living with HIV who reported a health-care professional told others about their HIV status without their consent

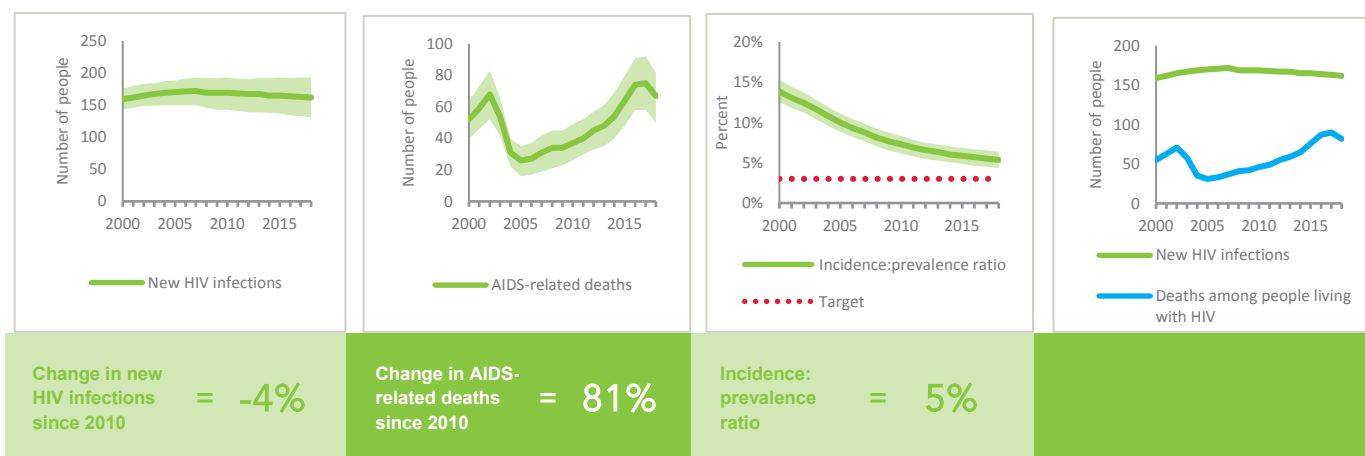
VIOLENCE

Proportion of ever-married or partnered women aged 15–49 years who experienced physical or sexual violence from a male intimate partner in the past 12 months

EXPENDITURES

| | Financing sources | | | | | Total |
|-----------------------------|-------------------|-----------------|-----------------------|----------------------------|---------------------------|--------------|
| | Domestic private | Domestic public | International: PEPFAR | International: Global Fund | International: all others | |
| Last available report: 2013 | ... | \$ 478 563 | \$235 742 | ... | \$10 256 837 | \$15 971 143 |

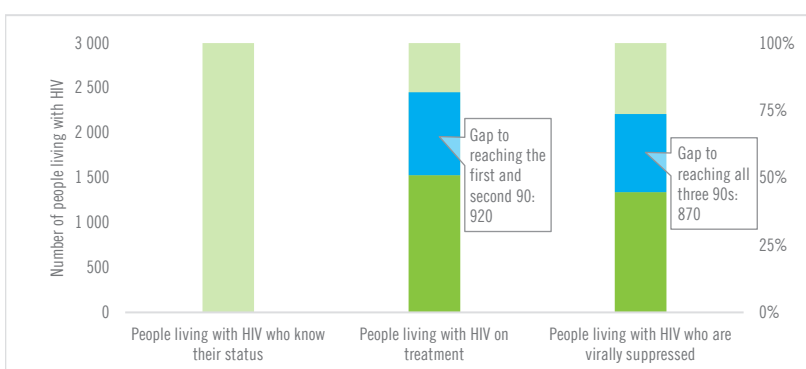
EPIDEMIC TRANSITION METRICS



KEY POPULATIONS

| | Sex workers | Gay men and other men who have sex with men | People who inject drugs | Transgender people | Prisoners |
|---|-------------|---|-------------------------|--------------------|-----------|
| Estimated size of population | ... | ... | ... | ... | ... |
| HIV prevalence | 0.0% | 2.8% | ... | ... | ... |
| Know their HIV status | ... | ... | ... | ... | ... |
| Antiretroviral therapy coverage | ... | 35.3% | ... | ... | ... |
| Condom use | ... | 58.2% | ... | ... | ... |
| Coverage of HIV prevention programmes | ... | ... | ... | ... | ... |
| Avoidance of health care because of stigma and discrimination | ... | ... | ... | ... | ... |
| Expenditures (0) | ... | ... | ... | ... | ... |

HIV TESTING AND TREATMENT CASCADE



| | ... | 50% [44–57%] 1500 | 44% [39–50%] |
|-----------------|-----------------|----------------------|--------------|
| All ages | ...% [...-...%] | | |
| Children (0–14) | ...% [...-...%] | ... | ... |
| Women (15+) | ...% [...-...%] | 62% [56–69%] 640 | 55% [49–61%] |
| Men (15+) | ...% [...-...%] | 44% [38–51%] 880 | 39% [33–45%] |

ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION

| | 2010 | 2018 |
|---|-----------------|-----------------|
| Percentage of pregnant women living with HIV accessing antiretroviral medicines | ...% [...-...%] | ...% [...-...%] |
| Early infant diagnosis | ...% [...-...%] | ...% [...-...%] |

HIV COMORBIDITIES

| | |
|--|---------|
| Estimated number of incident tuberculosis cases among people living with HIV (2017) | 0 [0–0] |
| People living with HIV who started TB preventive therapy (2017) | 0% |
| Women who tested positive for HIV among those screened for cervical cancer (programme data) (2018) | 1.9% |
| People coinfecting with HIV and hepatitis B virus receiving combined treatment (2017) | 0% |
| People coinfecting with HIV and hepatitis C virus starting hepatitis C treatment (2017) | 0% |

HIV PREVENTION

| | |
|--|-------|
| Adults aged 15+ years with unsuppressed viral load | 0.7% |
| Knowledge of HIV prevention among young people aged 15–24 years (2014) | |
| — Women | 47.6% |
| — Men | 44.8% |
| Condom use at last sex with a non-marital, non-cohabiting partner (2017) | |
| — Women | 19.7% |
| — Men | 42.1% |

| | |
|--|----------------|
| Women aged 15–49 years who have their demand for family planning satisfied by modern methods | ... |
| Men aged 15–49 years who are circumcised | Not applicable |
| Voluntary medical male circumcisions performed according to national standards | Not applicable |
| People who received PrEP at least once during the reporting period (2018) | 28 |

| Harm reduction | |
|---|-----|
| — Use of sterile injecting equipment at last injection | ... |
| — Needles and syringes distributed per person who injects | ... |
| — Coverage of opioid substitution therapy | ... |
| — Naloxone available (2019) | No |
| — Safe injection rooms available (2019) | No |

EPIDEMIC ESTIMATES

| | 2010 | 2015 | 2018 |
|-------------------------------------|----------------------|----------------------|----------------------|
| New HIV infections | | | |
| New HIV infections (all ages) | <500 [<500– <500] | <500 [<500– <500] | <500 [<500– <500] |
| New HIV infections (0–14) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| New HIV infections (women, 15+) | <200 [<200– <200] | <200 [<200– <200] | <200 [<200– <200] |
| New HIV infections (men, 15+) | <200 [<200– <200] | <200 [<200– <200] | <200 [<200– <200] |
| HIV incidence per 1000 population | 0.9 [0.84–0.96] | 0.83 [0.76–0.9] | 0.81 [0.73–0.89] |
| AIDS-related deaths | | | |
| AIDS-related deaths (all ages) | <200 [<100– <200] | <200 [<200– <200] | <200 [<200– <500] |
| AIDS-related deaths (0–14) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| AIDS-related deaths (women, 15+) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| AIDS-related deaths (men, 15+) | <100 [<100– <100] | <100 [<100– <200] | <200 [<100– <200] |
| People living with HIV | | | |
| People living with HIV (all ages) | 3700 [3400–4100] | 4500 [4100–5000] | 4900 [4400–5400] |
| People living with HIV (0–14) | <200 [<200– <200] | <200 [<200– <200] | <200 [<200– <200] |
| People living with HIV (women, 15+) | 1700 [1500–1800] | 2000 [1800–2300] | 2200 [2000–2500] |
| People living with HIV (men, 15+) | 1900 [1700–2100] | 2300 [2000–2600] | 2500 [2200–2800] |
| HIV prevalence (15–49) | 1.9 [1.7–2.1] | 1.9 [1.8–2.1] | 1.9 [1.7–2.1] |

LAWS AND POLICIES

| | |
|---|--|
| Laws criminalizing the transmission of, non-disclosure of or exposure to HIV transmission | Yes |
| Criminalization of sex work among consenting adults | ... |
| Criminalization of same-sex sexual acts | Laws penalizing same-sex sexual acts have been decriminalized or never existed |
| Drug use or possession for personal use is an offence | ... |
| Criminalization of transgender people | ... |
| Laws or policies restricting the entry, stay and residence of people living with HIV | Yes |
| Parental consent for adolescents to access HIV testing | ... |
| Spousal consent for married women to access sexual and reproductive health services | ... |
| Mandatory HIV testing for marriage, work or residence permits or for certain groups | ... |

STIGMA AND DISCRIMINATION

| | | |
|--|------|------|
| Percentage of women and men aged 15–49 years who report discriminatory attitudes towards people living with HIV (2011 refers to women only) | 2011 | 2016 |
| | 32 | 36.9 |
| Percentage of people living with HIV denied health services because of their HIV status in the last 12 months | | 2013 |
| | | 6.6 |
| Percentage of people living with HIV who reported a health-care professional told others about their HIV status without their consent | | 2013 |
| | | 9.2 |

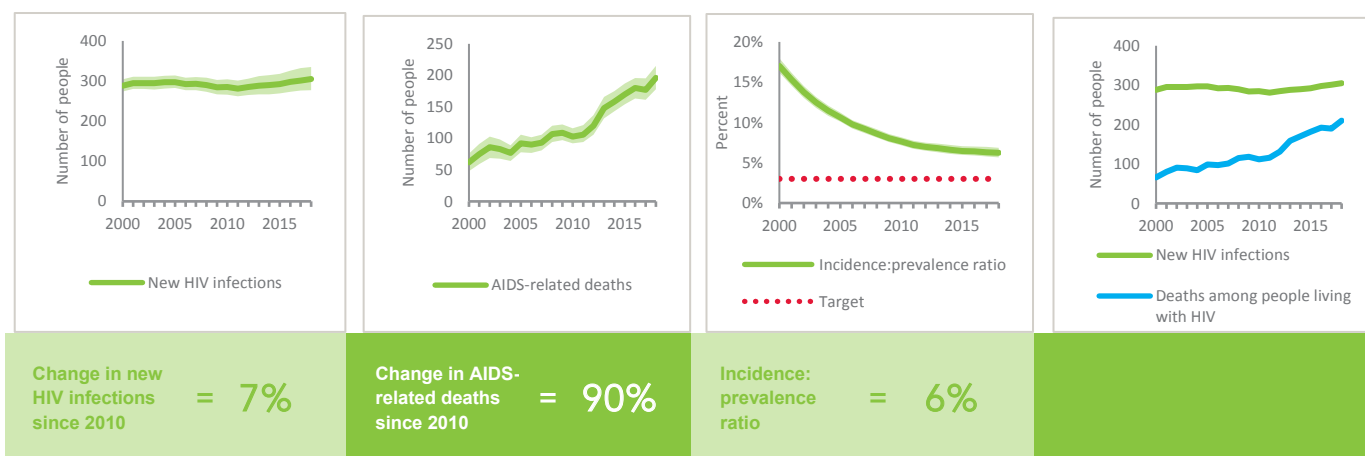
VIOLENCE

Proportion of ever-married or partnered women aged 15–49 years who experienced physical or sexual violence from a male intimate partner in the past 12 months

EXPENDITURES

| | Financing sources | | | | | Total |
|-----------------------------|-------------------|-----------------|-----------------------|----------------------------|---------------------------|-------------|
| | Domestic private | Domestic public | International: PEPFAR | International: Global Fund | International: all others | |
| Last available report: 2012 | \$118 050 | \$832 345 | \$555 482 | \$517 357 | \$640 356 | \$2 836 772 |

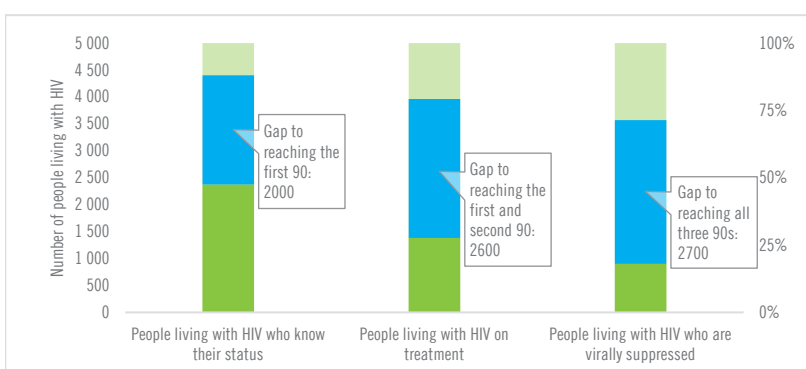
EPIDEMIC TRANSITION METRICS



KEY POPULATIONS

| | Sex workers | Gay men and other men who have sex with men | People who inject drugs | Transgender people | Prisoners |
|---|-------------|---|-------------------------|--------------------|-----------|
| Estimated size of population | ... | ... | ... | ... | ... |
| HIV prevalence | ... | ... | ... | ... | 5.8% |
| Know their HIV status | 62.2% | 44.3% | ... | ... | ... |
| Antiretroviral therapy coverage | ... | ... | ... | ... | ... |
| Condom use | 84.8% | 81.4% | ... | ... | ... |
| Coverage of HIV prevention programmes | ... | ... | ... | ... | ... |
| Avoidance of health care because of stigma and discrimination | ... | ... | ... | ... | ... |
| Expenditures (0) | ... | ... | ... | ... | ... |

HIV TESTING AND TREATMENT CASCADE



| | 49% [44–53%] | 28% [26–31%] 1400 | 18% [17–20%] |
|-----------------|--------------|----------------------|--------------|
| All ages | | | |
| Children (0–14) | 34% [31–38%] | 34% [31–38%] 60 | 14% [12–15%] |
| Women (15+) | 51% [45–56%] | 29% [26–32%] 650 | 19% [17–21%] |
| Men (15+) | 48% [42–53%] | 27% [24–30%] 670 | 18% [16–20%] |

ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION

| | 2010 | 2018 |
|---|-----------------------|--------------------|
| Percentage of pregnant women living with HIV accessing antiretroviral medicines | 58% [49–67%] | 44% [39–49%] |
| Early infant diagnosis | 59.3% [51.4–71.1%] | ...% [...–...%] |

HIV COMORBIDITIES

| | |
|---|---------------|
| Estimated number of incident tuberculosis cases among people living with HIV (2017) | 32 [21–46] |
| People living with HIV who started TB preventive therapy (2017) | ... |
| Cervical cancer screening of women living with HIV | ... |
| People coinfecting with HIV and hepatitis B virus receiving combined treatment | ... |
| People coinfecting with HIV and hepatitis C virus starting hepatitis C treatment | ... |

HIV PREVENTION

| | |
|--|----------------|
| Adults aged 15+ years with unsuppressed viral load | 1.4% |
| Knowledge of HIV prevention among young people aged 15–24 years (2016) | |
| — Women | 41.4% |
| — Men | 45% |
| Condom use at last sex with a non-marital, non-cohabiting partner | |
| — Women | ... |
| — Men | ... |
| Women aged 15–49 years who have their demand for family planning satisfied by modern methods | ... |
| Men aged 15–49 years who are circumcised | Not applicable |
| Voluntary medical male circumcisions performed according to national standards | Not applicable |
| People who received PrEP at least once during the reporting period | ... |
| Harm reduction | |
| — Use of sterile injecting equipment at last injection | ... |
| — Needles and syringes distributed per person who injects | ... |
| — Coverage of opioid substitution therapy | ... |
| — Naloxone available (2019) | ... |
| — Safe injection rooms available (2019) | ... |

EPIDEMIC ESTIMATES

| | 2010 | 2015 | 2018 |
|-------------------------------------|---------------------------|---------------------------|---------------------------|
| New HIV infections | | | |
| New HIV infections (all ages) | 2200 [1700–2700] | 2200 [1700–2700] | 1700 [1300–2100] |
| New HIV infections (0–14) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| New HIV infections (women, 15+) | <500 [<500– <500] | <500 [<500–540] | <500 [<500– <500] |
| New HIV infections (men, 15+) | 1800 [1400–2200] | 1700 [1300–2100] | 1300 [1000–1600] |
| HIV incidence per 1000 population | 0.2 [0.15–0.25] | 0.2 [0.15–0.24] | 0.15 [0.12–0.19] |
| AIDS-related deaths | | | |
| AIDS-related deaths (all ages) | <500 [<200– <500] | <500 [<500–540] | <500 [<500–580] |
| AIDS-related deaths (0–14) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| AIDS-related deaths (women, 15+) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| AIDS-related deaths (men, 15+) | <500 [<200– <500] | <500 [<200– <500] | <500 [<500– <500] |
| People living with HIV | | | |
| People living with HIV (all ages) | 17 000 [13 000–21 000] | 27 000 [21 000–32 000] | 31 000 [24 000–37 000] |
| People living with HIV (0–14) | <100 [<100– <100] | <100 [<100– <200] | <100 [<100– <200] |
| People living with HIV (women, 15+) | 2800 [2200–3500] | 4700 [3600–5800] | 5600 [4200–6800] |
| People living with HIV (men, 15+) | 14 000 [11 000–17 000] | 22 000 [17 000–26 000] | 25 000 [19 000–30 000] |
| HIV prevalence (15–49) | 0.2 [0.2–0.3] | 0.4 [0.2–0.5] | 0.4 [0.3–0.5] |

LAWS AND POLICIES

| | |
|---|--|
| Laws criminalizing the transmission of, non-disclosure of or exposure to HIV transmission | Yes |
| Criminalization of sex work among consenting adults | Sex work is not subject to punitive regulations or is not criminalized |
| Criminalization of same-sex sexual acts | Laws penalizing same-sex sexual acts have been decriminalized or never existed |
| Drug use or possession for personal use is an offence | ... |
| Criminalization of transgender people | Neither criminalized nor prosecuted |
| Laws or policies restricting the entry, stay and residence of people living with HIV | Yes |
| Parental consent for adolescents to access HIV testing | Yes, for adolescents younger than 18 years |
| Spousal consent for married women to access sexual and reproductive health services | Yes |
| Mandatory HIV testing for marriage, work or residence permits or for certain groups | Yes |

STIGMA AND DISCRIMINATION

| Percentage of women and men aged 15–49 years who report discriminatory attitudes towards people living with HIV (2006 refers to women only) | 2006 | 2014 |
|--|------|------|
| | 22.4 | 16.4 |

Percentage of people living with HIV denied health services because of their HIV status in the last 12 months

Percentage of people living with HIV who reported a health-care professional told others about their HIV status without their consent

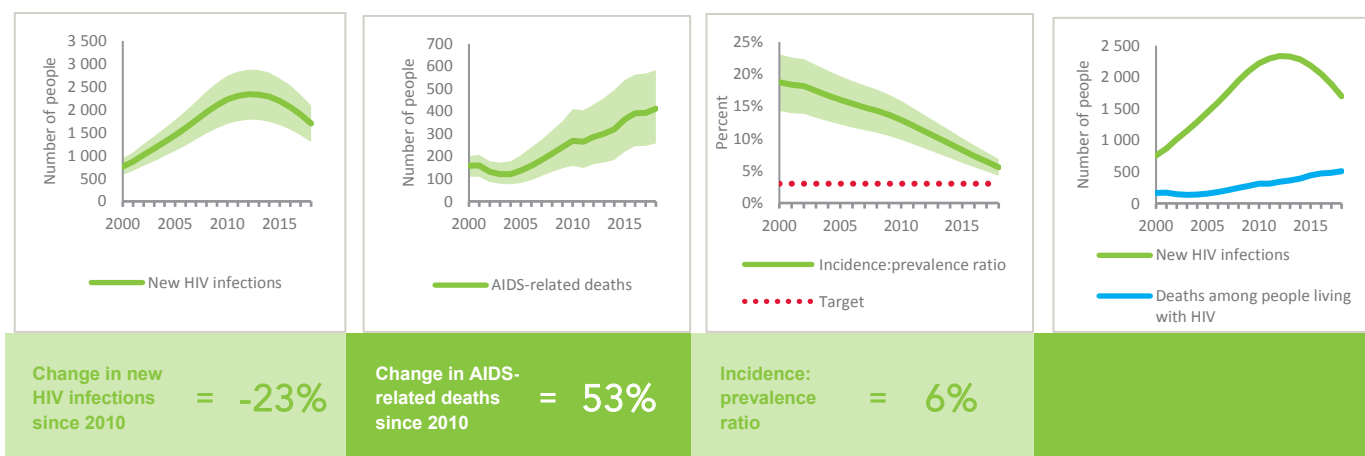
VIOLENCE

| Proportion of ever-married or partnered women aged 15–49 years who experienced physical or sexual violence from a male intimate partner in the past 12 months | 2017 |
|---|------|
| | 6.8 |

EXPENDITURES

| | Financing sources | | | | | Total |
|-----------------------------|-------------------|-----------------|-----------------------|----------------------------|---------------------------|--------------|
| | Domestic private | Domestic public | International: PEPFAR | International: Global Fund | International: all others | |
| Last available report: 2013 | ... | \$63 807 290 | ... | \$5 927 082 | ... | \$69 734 372 |

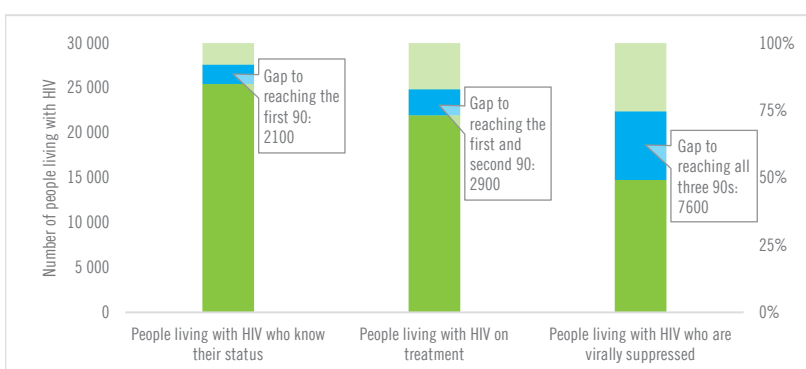
EPIDEMIC TRANSITION METRICS



KEY POPULATIONS

| | Sex workers | Gay men and other men who have sex with men | People who inject drugs | Transgender people | Prisoners |
|---|-------------|---|-------------------------|--------------------|-----------|
| Estimated size of population | ... | ... | ... | ... | ... |
| HIV prevalence | 0.8% | 1.1% | ... | 3.1% | ... |
| Know their HIV status | ... | ... | ... | ... | ... |
| Antiretroviral therapy coverage | 87.3% | 86.2% | ... | 90.2% | ... |
| Condom use | 78.1% | 63.9% | ... | 65.8% | ... |
| Coverage of HIV prevention programmes | ... | ... | ... | ... | ... |
| Avoidance of health care because of stigma and discrimination | 1.9% | ... | ... | ... | ... |
| Expenditures (0) | ... | ... | ... | ... | ... |

HIV TESTING AND TREATMENT CASCADE



| | 83% [64– >95%] | 72% [55–85%] 21 900 | 48% [37–57%] |
|-----------------|----------------|------------------------|--------------|
| All ages | | | |
| Children (0–14) | 35% [24–48%] | 34% [23–46%] 30 | 23% [15–31%] |
| Women (15+) | 90% [69– >95%] | 80% [61– >95%] 4400 | 54% [41–66%] |
| Men (15+) | 82% [63– >95%] | 70% [54–83%] 17 500 | 47% [36–56%] |

ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION

| | 2010 | 2018 |
|---|-----------------------|---------------------|
| Percentage of pregnant women living with HIV accessing antiretroviral medicines | 91% [67– >95%] | >95% [86– >95%] |
| Early infant diagnosis | 89.2% [71.0– >95%] | >95% [>95– >95%] |

HIV COMORBIDITIES

| | |
|---|----------------|
| Estimated number of incident tuberculosis cases among people living with HIV (2017) | 98 [63–140] |
| People living with HIV who started TB preventive therapy (2017) | 71.3% |
| Cervical cancer screening of women living with HIV | ... |
| People coinfectd with HIV and hepatitis B virus receiving combined treatment (2018) | 90.5% |
| People coinfectd with HIV and hepatitis C virus starting hepatitis C treatment (2018) | 73.7% |

HIV PREVENTION

| | |
|--|----------------|
| Adults aged 15+ years with unsuppressed viral load | 0.2% |
| Knowledge of HIV prevention among young people aged 15–24 years (2014) | |
| — Women | 60.9% |
| — Men | 58.6% |
| Condom use at last sex with a non-marital, non-cohabiting partner (2017) | |
| — Women | 75.5% |
| — Men | 80.2% |
| Women aged 15–49 years who have their demand for family planning satisfied by modern methods | ... |
| Men aged 15–49 years who are circumcised | Not applicable |
| Voluntary medical male circumcisions performed according to national standards | Not applicable |
| People who received PrEP at least once during the reporting period | ... |
| Harm reduction | |
| — Use of sterile injecting equipment at last injection | ... |
| — Needles and syringes distributed per person who injects | ... |
| — Coverage of opioid substitution therapy | ... |
| — Naloxone available (2019) | No |
| — Safe injection rooms available (2019) | No |

EPIDEMIC ESTIMATES

| | 2010 | 2015 | 2018 |
|-------------------------------------|---------------------------|---------------------------|---------------------------|
| New HIV infections | | | |
| New HIV infections (all ages) | 3200 [2200–4400] | 2900 [1700–4600] | 2700 [1200–6500] |
| New HIV infections (0–14) | <500 [<200– <500] | <200 [<100– <200] | <100 [<100– <200] |
| New HIV infections (women, 15+) | 1300 [900–1800] | 1100 [620–1600] | 920 [<500–2200] |
| New HIV infections (men, 15+) | 1600 [1100–2300] | 1700 [1000–2900] | 1700 [750–4200] |
| HIV incidence per 1000 population | 0.33 [0.22–0.47] | 0.28 [0.17–0.45] | 0.26 [0.11–0.61] |
| AIDS-related deaths | | | |
| AIDS-related deaths (all ages) | 3000 [2100–4300] | 2100 [1500–3000] | 1200 [750–1900] |
| AIDS-related deaths (0–14) | <200 [<100– <500] | <100 [<100– <200] | <100 [<100– <200] |
| AIDS-related deaths (women, 15+) | 1300 [870–1700] | 900 [610–1300] | 530 [<500–810] |
| AIDS-related deaths (men, 15+) | 1600 [1100–2200] | 1100 [760–1600] | 620 [<500–930] |
| People living with HIV | | | |
| People living with HIV (all ages) | 72 000 [54 000–91 000] | 69 000 [54 000–85 000] | 70 000 [54 000–92 000] |
| People living with HIV (0–14) | 2600 [1900–3600] | 1800 [1400–2500] | 1400 [1000–1900] |
| People living with HIV (women, 15+) | 34 000 [26 000–43 000] | 33 000 [27 000–42 000] | 34 000 [26 000–44 000] |
| People living with HIV (men, 15+) | 35 000 [26 000–45 000] | 34 000 [26 000–42 000] | 35 000 [26 000–49 000] |
| HIV prevalence (15–49) | 1.2 [0.9–1.5] | 1 [0.8–1.3] | 0.9 [0.7–1.3] |

LAWS AND POLICIES

| | |
|---|--|
| Laws criminalizing the transmission of, non-disclosure of or exposure to HIV transmission | Yes |
| Criminalization of sex work among consenting adults | Sex work is not subject to punitive regulations or is not criminalized |
| Criminalization of same-sex sexual acts | Laws penalizing same-sex sexual acts have been decriminalized or never existed |
| Drug use or possession for personal use is an offence | Possession of drugs for personal use or drug use and/or consumption are specified as criminal offences |
| Criminalization of transgender people | Neither criminalized nor prosecuted |
| Laws or policies restricting the entry, stay and residence of people living with HIV | Yes |
| Parental consent for adolescents to access HIV testing | Yes, for adolescents younger than 16 years |
| Spousal consent for married women to access sexual and reproductive health services | No |
| Mandatory HIV testing for marriage, work or residence permits or for certain groups | Yes |

STIGMA AND DISCRIMINATION

| Percentage of women and men aged 15–49 years who report discriminatory attitudes towards people living with HIV | 2007 | 2013 |
|---|------|------|
| | 54.1 | 49.3 |

Percentage of people living with HIV denied health services because of their HIV status in the last 12 months

Percentage of people living with HIV who reported a health-care professional told others about their HIV status without their consent

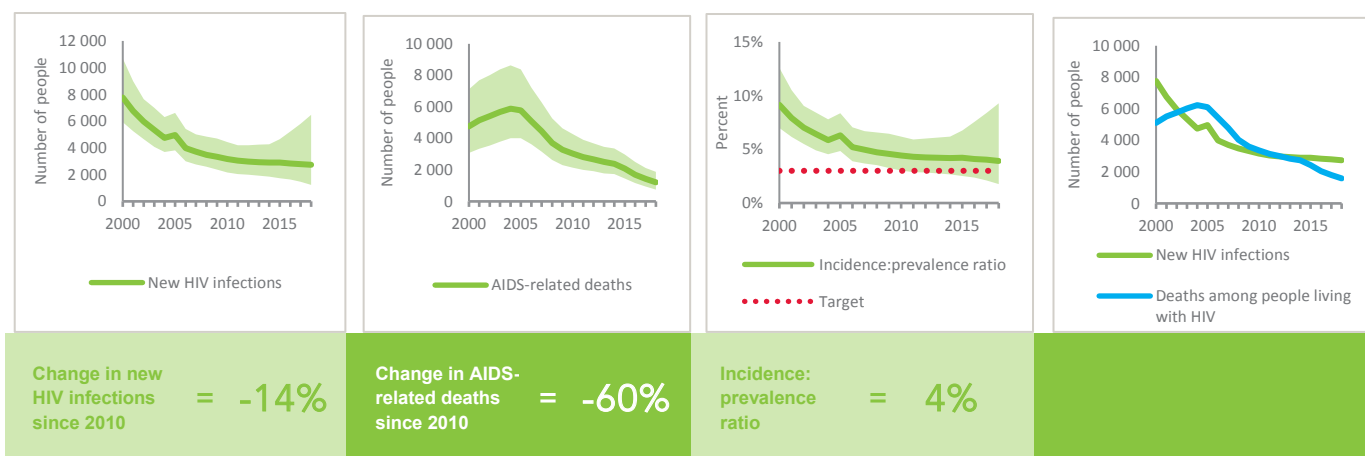
VIOLENCE

| Proportion of ever-married or partnered women aged 15–49 years who experienced physical or sexual violence from a male intimate partner in the past 12 months | 2007 | 2013 |
|---|------|------|
| | 11.7 | 16 |

EXPENDITURES

| | Financing sources | | | | | Total |
|-----------------------------|-------------------|-----------------|-----------------------|----------------------------|---------------------------|--------------|
| | Domestic private | Domestic public | International: PEPFAR | International: Global Fund | International: all others | |
| Last available report: 2017 | ... | \$14 743 318 | ... | \$6 230 084 | ... | \$20 973 402 |

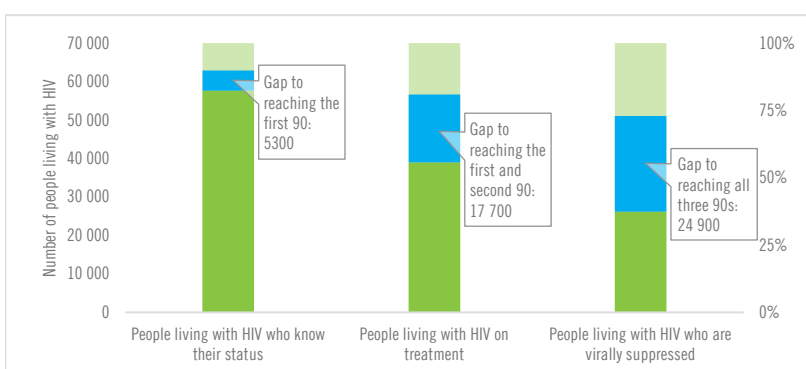
EPIDEMIC TRANSITION METRICS



KEY POPULATIONS

| | Sex workers | Gay men and other men who have sex with men | People who inject drugs | Transgender people | Prisoners |
|---|-------------|---|-------------------------|--------------------|-----------|
| Estimated size of population | ... | 130 000 | ... | 9400 | 20 000 |
| HIV prevalence | 4.2% | 4.0% | ... | 27.7% | ... |
| Know their HIV status | 90.8% | 63.3% | ... | 83.3% | ... |
| Antiretroviral therapy coverage | ... | ... | ... | ... | ... |
| Condom use | 83.7% | 42.0% | 45.4% | 20.2% | ... |
| Coverage of HIV prevention programmes | 16.8% | 30.4% | ... | 37.1% | ... |
| Avoidance of health care because of stigma and discrimination | ... | 1.9% | ... | 65.1% | ... |
| Expenditures (2017) | \$705 643 | \$811 102 | \$0 | ... | ... |

HIV TESTING AND TREATMENT CASCADE



| | 82% [64– >95%] | 56% [43–73%] 39 000 | 37% [29–49%] |
|-----------------|----------------|------------------------|--------------|
| All ages | | | |
| Children (0–14) | 76% [55– >95%] | 55% [39–74%] 780 | 29% [21–39%] |
| Women (15+) | 91% [71– >95%] | 60% [47–78%] 20 300 | 40% [31–51%] |
| Men (15+) | 75% [56– >95%] | 51% [38–72%] 17 800 | 36% [27–50%] |

ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION

| | 2010 | 2018 |
|---|---------------------|-----------------------|
| Percentage of pregnant women living with HIV accessing antiretroviral medicines | 56% [44–74%] | 84% [64– >95%] |
| Early infant diagnosis | 9.6% [7.3–12.3%] | 67.7% [52.0–89.1%] |

HIV COMORBIDITIES

| | |
|---|--------------------|
| Estimated number of incident tuberculosis cases among people living with HIV (2017) | 1200 [880–1500] |
| People living with HIV who started TB preventive therapy (2017) | 25.5% |
| Cervical cancer screening of women living with HIV | ... |
| People coinfecting with HIV and hepatitis B virus receiving combined treatment | ... |
| People coinfecting with HIV and hepatitis C virus starting hepatitis C treatment | ... |

HIV PREVENTION

| | |
|--|----------------|
| Adults aged 15+ years with unsuppressed viral load | 0.6% |
| Knowledge of HIV prevention among young people aged 15–24 years (2014) | |
| — Women | 46.4% |
| — Men | ... |
| Condom use at last sex with a non-marital, non-cohabiting partner | |
| — Women | ... |
| — Men | ... |
| Women aged 15–49 years who have their demand for family planning satisfied by modern methods | ... |
| Men aged 15–49 years who are circumcised | Not applicable |
| Voluntary medical male circumcisions performed according to national standards | Not applicable |
| People who received PrEP at least once during the reporting period (2018) | 195 |
| Harm reduction | |
| — Use of sterile injecting equipment at last injection | ... |
| — Needles and syringes distributed per person who injects (2015) | 2 |
| — Coverage of opioid substitution therapy | ... |
| — Naloxone available (2019) | No |
| — Safe injection rooms available (2019) | No |

EPIDEMIC ESTIMATES

| | 2010 | 2015 | 2018 |
|-------------------------------------|----------------------|----------------------|----------------------|
| New HIV infections | | | |
| New HIV infections (all ages) | <500 [<500–600] | <500 [<500–560] | <500 [<500–530] |
| New HIV infections (0–14) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| New HIV infections (women, 15+) | <200 [<200– <500] | <200 [<200– <500] | <200 [<200– <500] |
| New HIV infections (men, 15+) | <500 [<200– <500] | <500 [<200– <500] | <200 [<200– <500] |
| HIV incidence per 1000 population | 0.66 [0.55–0.87] | 0.58 [0.42–0.8] | 0.51 [0.36–0.75] |
| AIDS-related deaths | | | |
| AIDS-related deaths (all ages) | <100 [<100– <200] | <100 [<100– <200] | <200 [<100– <200] |
| AIDS-related deaths (0–14) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| AIDS-related deaths (women, 15+) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| AIDS-related deaths (men, 15+) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| People living with HIV | | | |
| People living with HIV (all ages) | 6700 [6000–7400] | 7800 [7000–8700] | 8200 [7200–9400] |
| People living with HIV (0–14) | <500 [<500– <500] | <500 [<500– <500] | <500 [<500– <500] |
| People living with HIV (women, 15+) | 3300 [2900–3700] | 3600 [3200–4100] | 3800 [3400–4300] |
| People living with HIV (men, 15+) | 3200 [2700–3600] | 3800 [3300–4500] | 4100 [3500–4800] |
| HIV prevalence (15–49) | 1.5 [1.4–1.7] | 1.5 [1.4–1.6] | 1.4 [1.3–1.6] |

LAWS AND POLICIES

| | |
|---|--|
| Laws criminalizing the transmission of, non-disclosure of or exposure to HIV transmission | No |
| Criminalization of sex work among consenting adults | Any criminalization or punitive regulation of sex work |
| Criminalization of same-sex sexual acts | Yes, imprisonment (14 years - life) |
| Drug use or possession for personal use is an offence | Possession of drugs for personal use or drug use and/or consumption are specified as criminal offences |
| Criminalization of transgender people | Neither criminalized nor prosecuted |
| Laws or policies restricting the entry, stay and residence of people living with HIV | No |
| Parental consent for adolescents to access HIV testing | ... |
| Spousal consent for married women to access sexual and reproductive health services | No |
| Mandatory HIV testing for marriage, work or residence permits or for certain groups | No |

STIGMA AND DISCRIMINATION

| Percentage of women and men aged 15–49 years who report discriminatory attitudes towards people living with HIV | 2009 | 2014 |
|---|------|------|
| | 35.4 | 29.4 |

Percentage of people living with HIV denied health services because of their HIV status in the last 12 months

Percentage of people living with HIV who reported a health-care professional told others about their HIV status without their consent

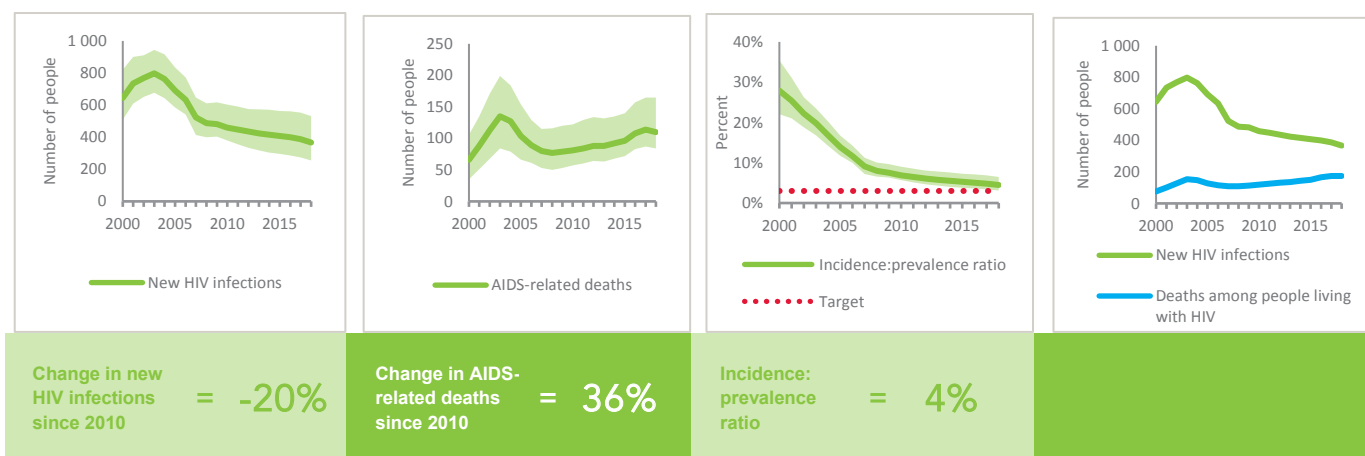
VIOLENCE

Proportion of ever-married or partnered women aged 15–49 years who experienced physical or sexual violence from a male intimate partner in the past 12 months

EXPENDITURES

| | Financing sources | | | | | Total |
|-----------------------------|-------------------|-----------------|-----------------------|----------------------------|---------------------------|--------------|
| | Domestic private | Domestic public | International: PEPFAR | International: Global Fund | International: all others | |
| Last available report: 2012 | \$1 142 925 | \$3 347 064 | ... | ... | ... | \$21 921 471 |

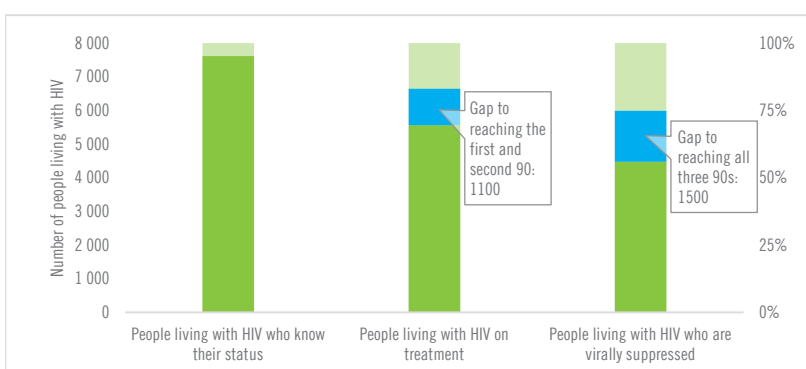
EPIDEMIC TRANSITION METRICS



KEY POPULATIONS

| | Sex workers | Gay men and other men who have sex with men | People who inject drugs | Transgender people | Prisoners |
|---|-------------|---|-------------------------|--------------------|-----------|
| Estimated size of population | ... | ... | ... | ... | ... |
| HIV prevalence | 6.1% | 4.9% | ... | 8.4% | 1.7% |
| Know their HIV status | ... | ... | ... | ... | ... |
| Antiretroviral therapy coverage | ... | ... | ... | ... | 81.3% |
| Condom use | 75.7% | 64.4% | ... | ... | ... |
| Coverage of HIV prevention programmes | ... | ... | ... | ... | ... |
| Avoidance of health care because of stigma and discrimination | ... | ... | ... | ... | ... |
| Expenditures (0) | ... | ... | ... | ... | ... |

HIV TESTING AND TREATMENT CASCADE



| | 93% [82- >95%] | 68% [60-78%] 5600 | 55% [48-63%] |
|-----------------|-----------------|----------------------|--------------|
| All ages | | | |
| Children (0-14) | 38% [31-44%] | 38% [31-44%] 110 | 29% [25-35%] |
| Women (15+) | 95% [84- >95%] | 78% [68-88%] 3000 | 63% [55-71%] |
| Men (15+) | >95% [81- >95%] | 61% [52-71%] 2500 | 49% [42-57%] |

ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION

| | 2010 | 2018 |
|---|-----------------------|-----------------------|
| Percentage of pregnant women living with HIV accessing antiretroviral medicines | 50% [43-58%] | 89% [67- >95%] |
| Early infant diagnosis | 22.2% [18.8-25.9%] | 61.2% [47.2-81.3%] |

HIV COMORBIDITIES

| | |
|---|------------------|
| Estimated number of incident tuberculosis cases among people living with HIV (2017) | 180 [140-230] |
| People living with HIV who started TB preventive therapy (2017) | 14.2% |
| Cervical cancer screening of women living with HIV | ... |
| People coinfecting with HIV and hepatitis B virus receiving combined treatment | ... |
| People coinfecting with HIV and hepatitis C virus starting hepatitis C treatment | ... |

HIV PREVENTION

| | |
|--|----------------|
| Adults aged 15+ years with unsuppressed viral load | 0.7% |
| Knowledge of HIV prevention among young people aged 15-24 years (2014) | |
| — Women | 51.5% |
| — Men | 40% |
| Condom use at last sex with a non-marital, non-cohabiting partner | |
| — Women | ... |
| — Men | ... |
| Women aged 15-49 years who have their demand for family planning satisfied by modern methods | ... |
| Men aged 15-49 years who are circumcised | Not applicable |
| Voluntary medical male circumcisions performed according to national standards | Not applicable |
| People who received PrEP at least once during the reporting period | ... |
| Harm reduction | |
| — Use of sterile injecting equipment at last injection | ... |
| — Needles and syringes distributed per person who injects | ... |
| — Coverage of opioid substitution therapy | ... |
| — Naloxone available (2019) | No |
| — Safe injection rooms available (2019) | No |

EPIDEMIC ESTIMATES

| | 2010 | 2015 | 2018 |
|-------------------------------------|------------------------------|------------------------------|------------------------------|
| New HIV infections | | | |
| New HIV infections (all ages) | 8800 [7300–11 000] | 8000 [6300–10 000] | 7300 [5400–11 000] |
| New HIV infections (0–14) | 1500 [1200–1800] | 960 [670–1200] | 850 [550–1100] |
| New HIV infections (women, 15+) | 4000 [3300–5100] | 3900 [2900–5000] | 3600 [2600–5100] |
| New HIV infections (men, 15+) | 3300 [2600–4300] | 3200 [2400–4400] | 2900 [2100–4500] |
| HIV incidence per 1000 population | 0.92 [0.76–1.17] | 0.78 [0.61–1.01] | 0.69 [0.5–0.99] |
| AIDS-related deaths | | | |
| AIDS-related deaths (all ages) | 4900 [3800–6600] | 3700 [3000–5000] | 2700 [2200–3600] |
| AIDS-related deaths (0–14) | 1100 [830–1300] | 590 [<500–760] | 520 [<500–680] |
| AIDS-related deaths (women, 15+) | 1900 [1400–2600] | 1400 [1000–1800] | 970 [760–1300] |
| AIDS-related deaths (men, 15+) | 1900 [1500–2700] | 1800 [1400–2500] | 1200 [920–1800] |
| People living with HIV | | | |
| People living with HIV (all ages) | 140 000 [130 000–160 000] | 150 000 [140 000–170 000] | 160 000 [140 000–180 000] |
| People living with HIV (0–14) | 12 000 [10 000–14 000] | 9700 [7900–11 000] | 8700 [7000–9900] |
| People living with HIV (women, 15+) | 72 000 [65 000–81 000] | 81 000 [74 000–90 000] | 87 000 [79 000–98 000] |
| People living with HIV (men, 15+) | 55 000 [49 000–64 000] | 59 000 [54 000–68 000] | 62 000 [56 000–72 000] |
| HIV prevalence (15–49) | 2.1 [2–2.3] | 2.1 [1.9–2.2] | 2 [1.8–2.3] |

LAWS AND POLICIES

| | |
|---|--|
| Laws criminalizing the transmission of, non-disclosure of or exposure to HIV transmission | No |
| Criminalization of sex work among consenting adults | ... |
| Criminalization of same-sex sexual acts | Laws penalizing same-sex sexual acts have been decriminalized or never existed |
| Drug use or possession for personal use is an offence | Possession of drugs for personal use or drug use and/or consumption are specified as criminal offences |
| Criminalization of transgender people | Neither criminalized nor prosecuted |
| Laws or policies restricting the entry, stay and residence of people living with HIV | No |
| Parental consent for adolescents to access HIV testing | Yes, for adolescents younger than 16 years |
| Spousal consent for married women to access sexual and reproductive health services | No |
| Mandatory HIV testing for marriage, work or residence permits or for certain groups | No |

STIGMA AND DISCRIMINATION

| | | |
|---|-------------|-------------|
| Percentage of women and men aged 15–49 years who report discriminatory attitudes towards people living with HIV | 2012 | 2017 |
| | 57.7 | 71.7 |

Percentage of people living with HIV denied health services because of their HIV status in the last 12 months

Percentage of people living with HIV who reported a health-care professional told others about their HIV status without their consent

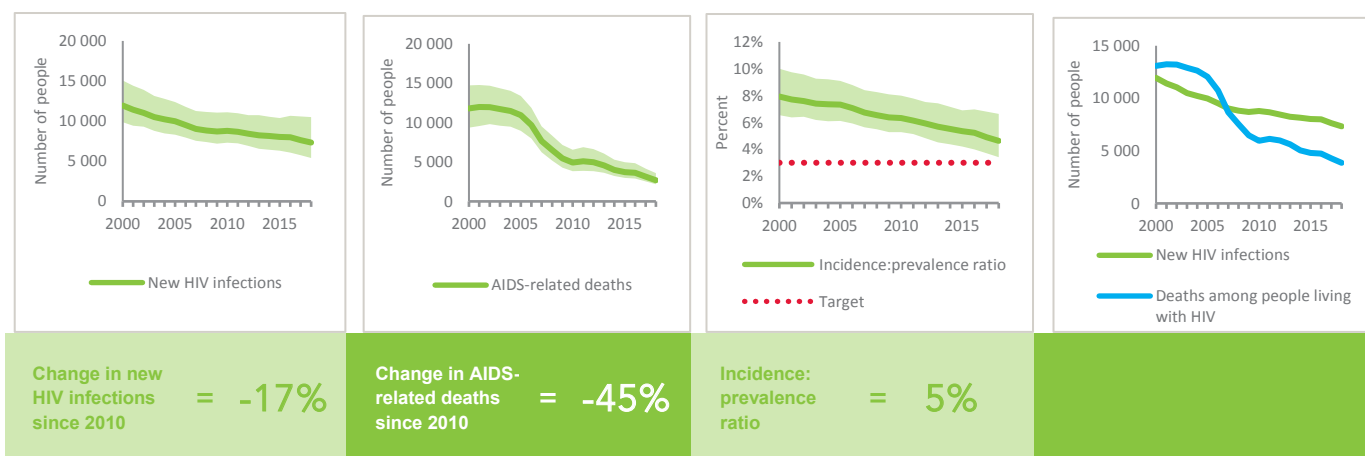
VIOLENCE

| | | |
|---|-------------|-------------|
| Proportion of ever-married or partnered women aged 15–49 years who experienced physical or sexual violence from a male intimate partner in the past 12 months | 2012 | 2017 |
| | 14.9 | 13.9 |

EXPENDITURES

| | Financing sources | | | | | Total |
|-----------------------------|-------------------|-----------------|-----------------------|----------------------------|---------------------------|---------------|
| | Domestic private | Domestic public | International: PEPFAR | International: Global Fund | International: all others | |
| Last available report: 2016 | ... | \$3 968 260 | ... | ... | ... | \$111 563 836 |

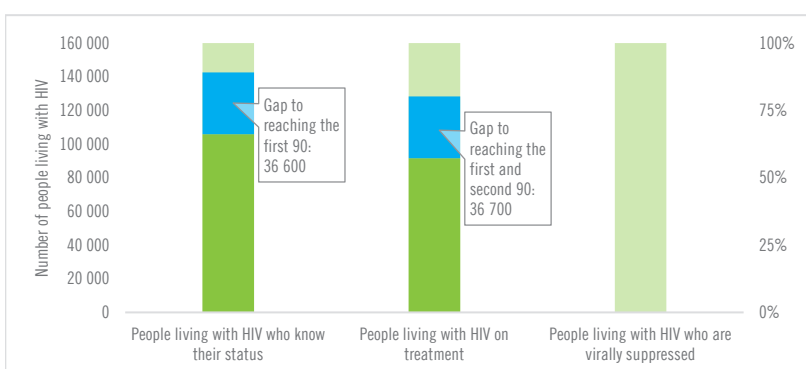
EPIDEMIC TRANSITION METRICS



KEY POPULATIONS

| | Sex workers | Gay men and other men who have sex with men | People who inject drugs | Transgender people | Prisoners |
|---|-------------|---|-------------------------|--------------------|-----------|
| Estimated size of population | ... | ... | ... | ... | 11 000 |
| HIV prevalence | 8.7% | 12.9% | ... | ... | 2.7% |
| Know their HIV status | ... | 69.5% | ... | ... | ... |
| Antiretroviral therapy coverage | ... | ... | ... | ... | 100% |
| Condom use | 89.1% | 75.1% | ... | ... | ... |
| Coverage of HIV prevention programmes | ... | ... | ... | ... | ... |
| Avoidance of health care because of stigma and discrimination | ... | ... | ... | ... | ... |
| Expenditures (2016) | \$0 | \$0 | \$0 | ... | ... |

HIV TESTING AND TREATMENT CASCADE



| | 2010 | 2018 |
|-----------------|------------------------|------------------------|
| All ages | 67% [60–75%] 91 500 | 58% [52–65%] 91 500 |
| Children (0–14) | 40% [32–45%] 3400 | 40% [32–45%] 3400 |
| Women (15+) | 74% [66–83%] 55 500 | 63% [57–71%] 55 500 |
| Men (15+) | 61% [55–70%] 32 600 | 52% [47–61%] 32 600 |

ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION

| | 2010 | 2018 |
|---|------------------|-----------------------|
| Percentage of pregnant women living with HIV accessing antiretroviral medicines | 39% [32–45%] | 83% [67– >95%] |
| Early infant diagnosis | <1% [<1– <1%] | 46.1% [40.0–57.4%] |

HIV COMORBIDITIES

| | |
|---|---------------------|
| Estimated number of incident tuberculosis cases among people living with HIV (2017) | 2900 [2200–3700] |
| People living with HIV who started TB preventive therapy (2017) | ... |
| Cervical cancer screening of women living with HIV | ... |
| People coinfectd with HIV and hepatitis B virus receiving combined treatment | ... |
| People coinfectd with HIV and hepatitis C virus starting hepatitis C treatment | ... |

HIV PREVENTION

| | |
|---|----------------|
| Adults aged 15+ years with unsuppressed viral load | ... |
| Knowledge of HIV prevention among young people aged 15–24 years (2017) | ... |
| — Women | 38.3% |
| — Men | 36.2% |
| Condom use at last sex with a non-marital, non-cohabiting partner (2016) | ... |
| — Women | 49.7% |
| — Men | 70.2% |
| Women aged 15–49 years who have their demand for family planning satisfied by modern methods (2017) | 45.4% |
| Men aged 15–49 years who are circumcised | Not applicable |
| Voluntary medical male circumcisions performed according to national standards | Not applicable |
| People who received PrEP at least once during the reporting period | ... |
| Harm reduction | ... |
| — Use of sterile injecting equipment at last injection | ... |
| — Needles and syringes distributed per person who injects | ... |
| — Coverage of opioid substitution therapy | ... |
| — Naloxone available (2019) | No |
| — Safe injection rooms available (2019) | No |

EPIDEMIC ESTIMATES

| | 2010 | 2015 | 2018 |
|-------------------------------------|---------------------------|---------------------------|---------------------------|
| New HIV infections | | | |
| New HIV infections (all ages) | 2400 [2100–2800] | 2400 [2000–2900] | 2400 [1900–2900] |
| New HIV infections (0–14) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| New HIV infections (women, 15+) | 740 [630–870] | 740 [610–860] | 730 [590–890] |
| New HIV infections (men, 15+) | 1600 [1400–2000] | 1600 [1300–2000] | 1600 [1300–2100] |
| HIV incidence per 1000 population | 0.87 [0.74–1.01] | 0.85 [0.68–1] | 0.83 [0.66–1.02] |
| AIDS-related deaths | | | |
| AIDS-related deaths (all ages) | 1800 [1500–2100] | 1600 [1400–1900] | 1500 [1300–1800] |
| AIDS-related deaths (0–14) | <100 [<100– <100] | <100 [<100– <100] | <100 [<100– <100] |
| AIDS-related deaths (women, 15+) | <500 [<500– <500] | <500 [<500– <500] | <500 [<500– <500] |
| AIDS-related deaths (men, 15+) | 1400 [1200–1700] | 1300 [1100–1600] | 1300 [1100–1500] |
| People living with HIV | | | |
| People living with HIV (all ages) | 37 000 [32 000–42 000] | 39 000 [34 000–44 000] | 40 000 [35 000–46 000] |
| People living with HIV (0–14) | <500 [<500– <500] | <500 [<500– <500] | <500 [<500– <500] |
| People living with HIV (women, 15+) | 12 000 [11 000–14 000] | 14 000 [12 000–15 000] | 15 000 [13 000–16 000] |
| People living with HIV (men, 15+) | 24 000 [21 000–28 000] | 25 000 [21 000–29 000] | 25 000 [22 000–29 000] |
| HIV prevalence (15–49) | 2.1 [1.8–2.3] | 1.9 [1.7–2.2] | 1.9 [1.6–2.1] |

LAWS AND POLICIES

| | |
|---|---|
| Laws criminalizing the transmission of, non-disclosure of or exposure to HIV transmission | No, but prosecutions exist based on general criminal laws |
| Criminalization of sex work among consenting adults | Any criminalization or punitive regulation of sex work |
| Criminalization of same-sex sexual acts | Yes, imprisonment (up to 14 years) |
| Drug use or possession for personal use is an offence | The law allows possession of a certain amount of drugs |
| Criminalization of transgender people | Neither criminalized nor prosecuted |
| Laws or policies restricting the entry, stay and residence of people living with HIV | No |
| Parental consent for adolescents to access HIV testing | Yes, for adolescents younger than 16 years |
| Spousal consent for married women to access sexual and reproductive health services | No |
| Mandatory HIV testing for marriage, work or residence permits or for certain groups | No |

STIGMA AND DISCRIMINATION

Percentage of women and men aged 15–49 years who report discriminatory attitudes towards people living with HIV **2017**
66.8

Percentage of people living with HIV denied health services because of their HIV status in the last 12 months

Percentage of people living with HIV who reported a health-care professional told others about their HIV status without their consent

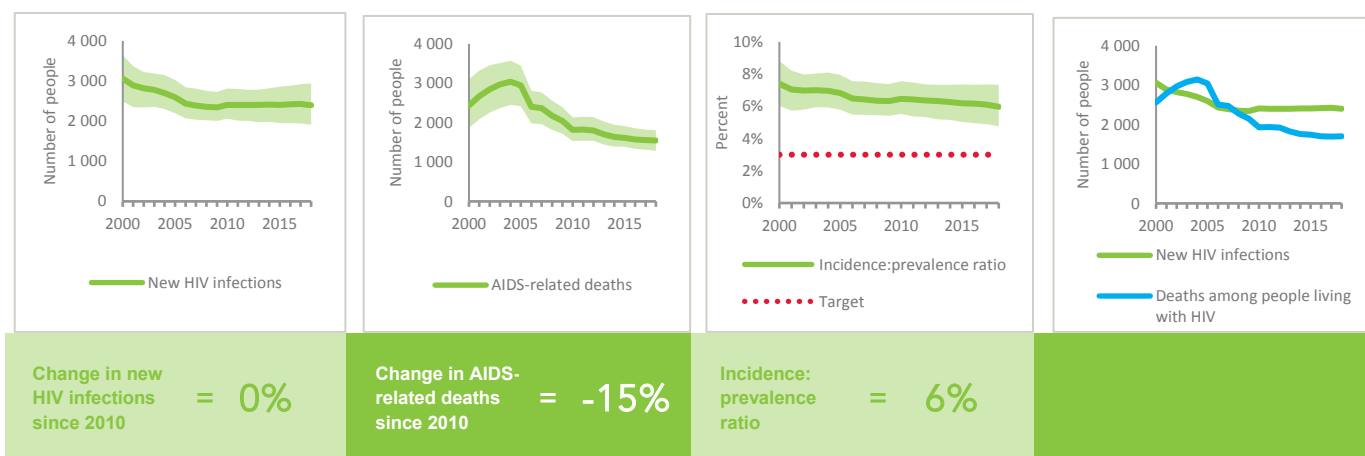
VIOLENCE

Proportion of ever-married or partnered women aged 15–49 years who experienced physical or sexual violence from a male intimate partner in the past 12 months

EXPENDITURES

| | Financing sources | | | | | Total |
|-----------------------------|-------------------|-----------------|-----------------------|----------------------------|---------------------------|--------------|
| | Domestic private | Domestic public | International: PEPFAR | International: Global Fund | International: all others | |
| Last available report: 2016 | \$1 456 785 | \$2 750 285 | \$3 119 936 | \$11 301 865 | \$858 868 | \$19 487 739 |

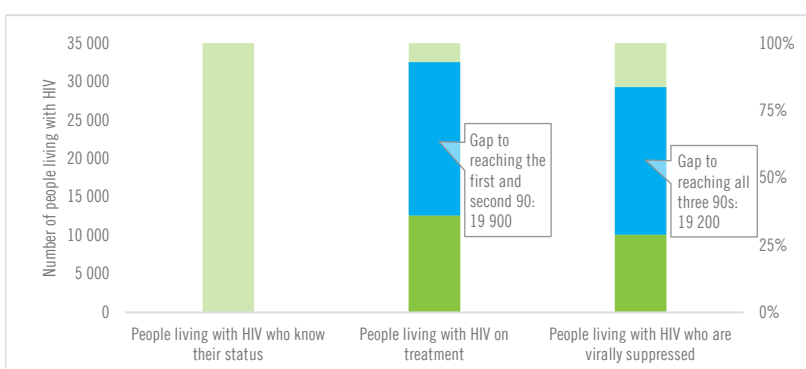
EPIDEMIC TRANSITION METRICS



KEY POPULATIONS

| | Sex workers | Gay men and other men who have sex with men | People who inject drugs | Transgender people | Prisoners |
|---|-------------|---|-------------------------|--------------------|-----------|
| Estimated size of population | ... | 42 000 | ... | 3800 | ... |
| HIV prevalence | 2.0% | 29.8% | ... | 51.0% | ... |
| Know their HIV status | 92.8% | 88.2% | ... | ... | ... |
| Antiretroviral therapy coverage | ... | ... | ... | ... | ... |
| Condom use | 95.0% | 68.8% | ... | ... | ... |
| Coverage of HIV prevention programmes | ... | ... | ... | ... | ... |
| Avoidance of health care because of stigma and discrimination | ... | ... | ... | ... | ... |
| Expenditures (2014) | \$101 247 | \$521 502 | \$0 | | |

HIV TESTING AND TREATMENT CASCADE



| | ... | 31% [27–36%] 12 600 | 25% [22–29%] |
|-----------------|-----------------|------------------------|--------------|
| All ages | ...% [...–...%] | | |
| Children (0–14) | ...% [...–...%] | 51% [46–57%] 140 | 23% [21–26%] |
| Women (15+) | ...% [...–...%] | 47% [42–52%] 6800 | 38% [34–43%] |
| Men (15+) | ...% [...–...%] | 22% [19–26%] 5600 | 18% [15–21%] |

ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION

| | 2010 | 2018 |
|---|--------------------|--------------------|
| Percentage of pregnant women living with HIV accessing antiretroviral medicines | >95% [>95–>95%] | >95% [>95–>95%] |
| Early infant diagnosis | ...% [...–...%] | ...% [...–...%] |

HIV COMORBIDITIES

| | |
|---|---------------|
| Estimated number of incident tuberculosis cases among people living with HIV (2017) | 38 [29–48] |
| People living with HIV who started TB preventive therapy (2017) | ... |
| Cervical cancer screening of women living with HIV | ... |
| People coinfecting with HIV and hepatitis B virus receiving combined treatment | ... |
| People coinfecting with HIV and hepatitis C virus starting hepatitis C treatment | ... |

HIV PREVENTION

| | |
|--|----------------|
| Adults aged 15+ years with unsuppressed viral load | 1.3% |
| Knowledge of HIV prevention among young people aged 15–24 years | |
| — Women | ... |
| — Men | ... |
| Condom use at last sex with a non-marital, non-cohabiting partner | |
| — Women | ... |
| — Men | ... |
| Women aged 15–49 years who have their demand for family planning satisfied by modern methods | ... |
| Men aged 15–49 years who are circumcised | Not applicable |
| Voluntary medical male circumcisions performed according to national standards | Not applicable |
| People who received PrEP at least once during the reporting period | ... |
| Harm reduction | |
| — Use of sterile injecting equipment at last injection | ... |
| — Needles and syringes distributed per person who injects | ... |
| — Coverage of opioid substitution therapy | ... |
| — Naloxone available (2019) | No |
| — Safe injection rooms available (2019) | No |

EPIDEMIC ESTIMATES

| | 2010 | 2015 | 2018 |
|-------------------------------------|----------------------|----------------------|----------------------|
| New HIV infections | | | |
| New HIV infections (all ages) | <500 [<200- <500] | <500 [<200-520] | <500 [<200-500] |
| New HIV infections (0-14) | <100 [<100- <100] | <100 [<100- <100] | <100 [<100- <100] |
| New HIV infections (women, 15+) | <200 [<100- <200] | <200 [<100- <500] | <200 [<100- <500] |
| New HIV infections (men, 15+) | <200 [<200- <500] | <200 [<200- <500] | <200 [<100- <500] |
| HIV incidence per 1000 population | 0.57 [0.34-0.9] | 0.58 [0.33-0.97] | 0.49 [0.25-0.91] |
| AIDS-related deaths | | | |
| AIDS-related deaths (all ages) | <200 [<100- <500] | <200 [<100- <500] | <100 [<100- <200] |
| AIDS-related deaths (0-14) | <100 [<100- <100] | <100 [<100- <100] | <100 [<100- <100] |
| AIDS-related deaths (women, 15+) | <100 [<100- <100] | <100 [<100- <100] | <100 [<100- <100] |
| AIDS-related deaths (men, 15+) | <100 [<100- <200] | <100 [<100- <200] | <100 [<100- <200] |
| People living with HIV | | | |
| People living with HIV (all ages) | 4600 [3300-6200] | 5100 [3600-7200] | 5600 [3700-8100] |
| People living with HIV (0-14) | <200 [<100- <200] | <100 [<100- <200] | <100 [<100- <100] |
| People living with HIV (women, 15+) | 1800 [1300-2500] | 2200 [1500-3000] | 2400 [1600-3400] |
| People living with HIV (men, 15+) | 2600 [1900-3600] | 2900 [2000-4100] | 3100 [2100-4500] |
| HIV prevalence (15-49) | 1.4 [1-1.9] | 1.4 [0.9-1.9] | 1.4 [0.9-2] |

LAWS AND POLICIES

| | |
|---|--|
| Laws criminalizing the transmission of, non-disclosure of or exposure to HIV transmission | ... |
| Criminalization of sex work among consenting adults | ... |
| Criminalization of same-sex sexual acts | Laws penalizing same-sex sexual acts have been decriminalized or never existed |
| Drug use or possession for personal use is an offence | ... |
| Criminalization of transgender people | ... |
| Laws or policies restricting the entry, stay and residence of people living with HIV | No |
| Parental consent for adolescents to access HIV testing | ... |
| Spousal consent for married women to access sexual and reproductive health services | ... |
| Mandatory HIV testing for marriage, work or residence permits or for certain groups | ... |

STIGMA AND DISCRIMINATION

| | |
|---|--|
| Percentage of women and men aged 15-49 years who report discriminatory attitudes towards people living with HIV | |
| Percentage of people living with HIV denied health services because of their HIV status in the last 12 months | |
| Percentage of people living with HIV who reported a health-care professional told others about their HIV status without their consent | |

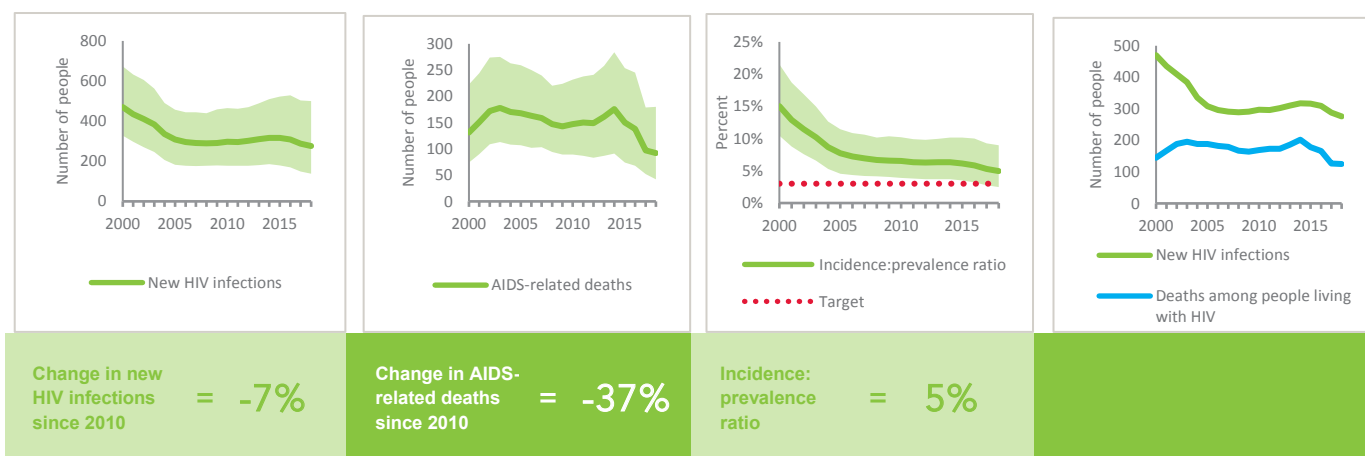
VIOLENCE

| | |
|---|--|
| Proportion of ever-married or partnered women aged 15-49 years who experienced physical or sexual violence from a male intimate partner in the past 12 months | |
|---|--|

EXPENDITURES

| | Financing sources | | | | | Total |
|-----------------------------|-------------------|-----------------|-----------------------|----------------------------|---------------------------|-------------|
| | Domestic private | Domestic public | International: PEPFAR | International: Global Fund | International: all others | |
| Last available report: 2011 | \$81 800 | \$2 249 605 | ... | \$1 009 894 | \$1 265 510 | \$4 674 508 |

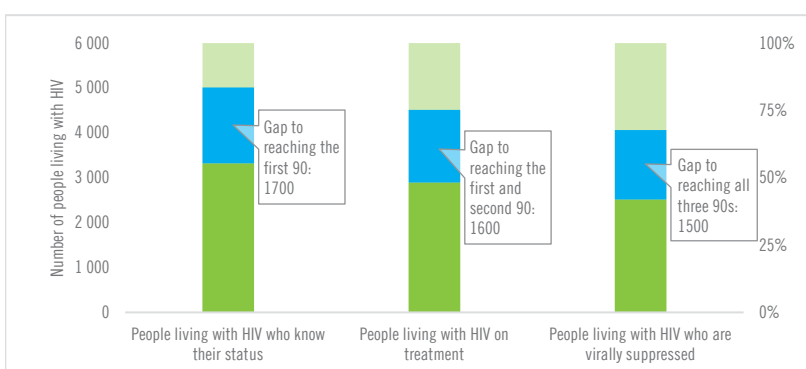
EPIDEMIC TRANSITION METRICS



KEY POPULATIONS

| | Sex workers | Gay men and other men who have sex with men | People who inject drugs | Transgender people | Prisoners |
|---|-------------|---|-------------------------|--------------------|-----------|
| Estimated size of population | ... | ... | ... | ... | ... |
| HIV prevalence | 10.3% | 16.6% | ... | ... | ... |
| Know their HIV status | 51.0% | 97.5% | ... | ... | ... |
| Antiretroviral therapy coverage | ... | ... | ... | ... | ... |
| Condom use | 90.8% | 63.8% | ... | ... | ... |
| Coverage of HIV prevention programmes | 64.1% | ... | ... | ... | ... |
| Avoidance of health care because of stigma and discrimination | ... | ... | ... | ... | ... |
| Expenditures (0) | ... | ... | ... | ... | ... |

HIV TESTING AND TREATMENT CASCADE



| | 60% [40–86%] | 52% [35–75%] 2900 | 45% [30–65%] |
|-----------------|----------------|----------------------|--------------|
| All ages | | | |
| Children (0–14) | 82% [51– >95%] | 72% [45– >95%] 50 | 57% [36–82%] |
| Women (15+) | 71% [48– >95%] | 62% [41–89%] 1500 | 54% [36–78%] |
| Men (15+) | 50% [34–73%] | 44% [30–63%] 1400 | 38% [26–55%] |

ELIMINATION OF MOTHER-TO-CHILD TRANSMISSION

| | 2010 | 2018 |
|---|-----------------------|--------------------|
| Percentage of pregnant women living with HIV accessing antiretroviral medicines | >95% [89– >95%] | >95% [84– >95%] |
| Early infant diagnosis | 14.3% [10.1–20.5%] | ...% [...–...%] |

HIV COMORBIDITIES

| | |
|---|---------------|
| Estimated number of incident tuberculosis cases among people living with HIV (2017) | 27 [17–38] |
| People living with HIV who started TB preventive therapy (2017) | ... |
| Cervical cancer screening of women living with HIV | ... |
| People coinfectd with HIV and hepatitis B virus receiving combined treatment | ... |
| People coinfectd with HIV and hepatitis C virus starting hepatitis C treatment | ... |

HIV PREVENTION

| | |
|--|----------------|
| Adults aged 15+ years with unsuppressed viral load | 0.7% |
| Knowledge of HIV prevention among young people aged 15–24 years | |
| — Women | ... |
| — Men | ... |
| Condom use at last sex with a non-marital, non-cohabiting partner | |
| — Women | ... |
| — Men | ... |
| Women aged 15–49 years who have their demand for family planning satisfied by modern methods | ... |
| Men aged 15–49 years who are circumcised | Not applicable |
| Voluntary medical male circumcisions performed according to national standards | Not applicable |
| People who received PrEP at least once during the reporting period | ... |
| Harm reduction | |
| — Use of sterile injecting equipment at last injection | ... |
| — Needles and syringes distributed per person who injects | ... |
| — Coverage of opioid substitution therapy | ... |
| — Naloxone available (2019) | ... |
| — Safe injection rooms available (2019) | ... |

KEY POPULATIONS

| | Sex workers | Gay men and other men who have sex with men | People who inject drugs | Transgender people | Prisoners |
|---|-------------|---|-------------------------|--------------------|-----------|
| Estimated size of population | ... | ... | ... | ... | ... |
| HIV prevalence | ... | 26.6% | ... | ... | ... |
| Know their HIV status | ... | ... | ... | ... | ... |
| Antiretroviral therapy coverage | ... | ... | ... | ... | ... |
| Condom use | ... | 53.3% | ... | ... | ... |
| Coverage of HIV prevention programmes | ... | ... | ... | ... | ... |
| Avoidance of health care because of stigma and discrimination | ... | ... | ... | ... | ... |
| Expenditures (0) | ... | ... | ... | ... | ... |

HIV TESTING AND TREATMENT CASCADE



EXPENDITURES

| | Financing sources | | | | | Total |
|-----------------------------|-------------------|-----------------|-----------------------|----------------------------|---------------------------|--------------|
| | Domestic private | Domestic public | International: PEPFAR | International: Global Fund | International: all others | |
| Last available report: 2009 | \$277 991 | \$11 415 268 | ... | ... | \$1 408 776 | \$13 810 965 |

HIV COMORBIDITIES

| | |
|---|------------|
| Estimated number of incident tuberculosis cases among people living with HIV (2017) | 31 [26-36] |
| People living with HIV who started TB preventive therapy (2017) | 0.5% |
| Cervical cancer screening of women living with HIV | ... |
| People coinfecting with HIV and hepatitis B virus receiving combined treatment | ... |
| People coinfecting with HIV and hepatitis C virus starting hepatitis C treatment | ... |

HIV PREVENTION

| | |
|--|----------------|
| Adults aged 15+ years with unsuppressed viral load | ... |
| Knowledge of HIV prevention among young people aged 15-24 years | ... |
| — Women | ... |
| — Men | ... |
| Condom use at last sex with a non-marital, non-cohabiting partner | ... |
| — Women | ... |
| — Men | ... |
| Women aged 15-49 years who have their demand for family planning satisfied by modern methods | ... |
| Men aged 15-49 years who are circumcised | Not applicable |
| Voluntary medical male circumcisions performed according to national standards | Not applicable |
| People who received PrEP at least once during the reporting period | ... |
| Harm reduction | ... |
| — Use of sterile injecting equipment at last injection | ... |
| — Needles and syringes distributed per person who injects | ... |
| — Coverage of opioid substitution therapy | ... |
| — Naloxone available (2019) | ... |
| — Safe injection rooms available (2019) | ... |

Note: HIV epidemiological estimates were not available at the time of publication.

LAWS AND POLICIES

Laws criminalizing the transmission of, non-disclosure of or exposure to HIV transmission ...

Criminalization of sex work among consenting adults ...

Criminalization of same-sex sexual acts ...
Laws penalizing same-sex sexual acts have been decriminalized or never existed

Drug use or possession for personal use is an offence ...

Criminalization of transgender people ...

Laws or policies restricting the entry, stay and residence of people living with HIV No

Parental consent for adolescents to access HIV testing ...

Spousal consent for married women to access sexual and reproductive health services ...

Mandatory HIV testing for marriage, work or residence permits or for certain groups ...

STIGMA AND DISCRIMINATION

Percentage of women and men aged 15–49 years who report discriminatory attitudes towards people living with HIV

Percentage of people living with HIV denied health services because of their HIV status in the last 12 months

Percentage of people living with HIV who reported a health-care professional told others about their HIV status without their consent

VIOLENCE

Proportion of ever-married or partnered women aged 15–49 years who experienced physical or sexual violence from a male intimate partner in the past 12 months



ANNEX ON METHODS



METHODS FOR DERIVING UNAIDS HIV ESTIMATES

INTRODUCTION

UNAIDS annually provides revised global, regional and country-specific modelled estimates using the best available epidemiological and programmatic data to track the HIV epidemic. Modelled estimates are required because it is impossible to count the exact number of people living with HIV, people who are newly infected with HIV or people who have died from

AIDS-related causes in any country: doing so would require regularly testing every person for HIV and investigating all deaths, which is logistically impossible and ethically problematic. Modelled estimates—and the lower and upper bounds around these estimates—provide a scientifically appropriate way of describing HIV epidemic levels and trends.

PARTNERSHIPS IN DEVELOPING METHODS FOR UNAIDS ESTIMATES

Country teams use UNAIDS-supported software to develop estimates annually. The country teams are primarily comprised of demographers, epidemiologists, monitoring and evaluation specialists, and technical partners.

The software used to produce the estimates is Spectrum, which is developed by Avenir Health, and the Estimates and Projections Package, which is developed by the East–West Center.¹ The UNAIDS Reference Group on Estimates, Modelling and Projections provides technical guidance on the development of the HIV component of the software.²

1 More information on Avenir Health can be found at www.avenirhealth.org. The East–West Center website can be found at www.eastwestcenter.org.

2 For more on the UNAIDS Reference Group on Estimates, Modelling and Projections, please visit www.epidem.org.

A BRIEF DESCRIPTION OF METHODS USED BY UNAIDS TO CREATE ESTIMATES³

For countries where HIV transmission is high enough to sustain an epidemic in the general population, available epidemiological data typically consist of HIV prevalence results from pregnant women attending antenatal clinics and from nationally representative population-based surveys. Many countries have historically conducted HIV sentinel surveillance among women attending antenatal clinics, which requires collecting data from a selection of clinics for a few months every few years. More recently, a number of countries have stopped conducting sentinel surveillance among pregnant women and are now using the data from the routine HIV tests conducted when pregnant women attend antenatal clinics and are tested for HIV. These data avoid the need to conduct a separate surveillance effort, and they provide a complete set of data from all clinics across the country instead of samples from specific sites.

The trends from pregnant women at antenatal clinics, whether done through surveillance or routine data, can be used to inform estimates of national prevalence trends, whereas data from population-based surveys—which are conducted less frequently but have broader geographical coverage and also include men—are more useful for informing estimates of national HIV prevalence levels. Data from these surveys also contribute to estimating age- and sex-specific HIV prevalence and incidence levels and trends. For a few countries in sub-Saharan Africa that have not conducted population-based surveys, HIV prevalence levels are adjusted based on comparisons of antenatal clinic surveillance and population-based survey data from other countries in the region. HIV prevalence trends and numbers of people on antiretroviral therapy are then used to derive an estimate of HIV incidence trends.

Historically, countries with high HIV transmission have produced separate HIV prevalence and incidence trends for rural and urban areas when there are well-established geographical differences in prevalence. To better describe and account for further geographical heterogeneity, an increasing number of countries have produced subnational estimates (e.g., at the level of the province or state) that, in some cases, also account for rural and urban differences. These subnational or

rural–urban estimates and trends are then aggregated to obtain national estimates.

In the remaining countries, where HIV transmission occurs largely among key populations at higher risk of HIV and the epidemic can be described as low-level, the estimates are derived from either surveillance among key populations and the general, low-risk population, or from HIV case reporting data, depending on which data are most reliable in a particular country. In countries with high-quality HIV surveillance data among the key populations, the data from repeated HIV prevalence studies that are focused on key populations are used to derive national estimates and trends. Estimates of the size of key populations are increasingly derived empirically in each country; when studies are not available, they are derived based on regional values and consensus among experts. Other data sources—including HIV case reporting data, population-based surveys and surveillance among pregnant women—are used to estimate the HIV prevalence in the general, low-risk population. The HIV prevalence curves and numbers of people on antiretroviral therapy are then used to derive national HIV incidence trends.

For most countries in western and central Europe and North America—and many countries in Latin America, the Caribbean, and the Middle East and North Africa that have insufficient HIV surveillance or survey data, but that have robust disease reporting systems—HIV case reporting and AIDS-related mortality data from vital registration systems are directly used to inform trends and levels in national HIV prevalence and incidence. These methods also allow countries to take into account evidence of underreporting or reporting delays in HIV case report data, as well as the misclassification of deaths from AIDS-related causes.

In all countries where UNAIDS supports the development of estimates, assumptions about the effectiveness of HIV programme scale-up and patterns of HIV transmission and disease progression are used to obtain the following age- and sex-specific estimates of people living with HIV, people newly infected with HIV, people dying from AIDS-related illness and other important indicators (including treatment programme coverage statistics). These assumptions are based on

³ A full description of the methods used for the 2019 estimates is available in the July 2019 supplement of the journal AIDS.

systematic literature reviews and analyses of raw study data by scientific experts. Demographic population data, including fertility estimates, are derived from the United Nations Population Division's World Population Prospects 2017 data files.

Selected inputs into the model—including the number of people on antiretroviral therapy and the number of women accessing services for the prevention of mother-to-child transmission of HIV by type of regimen—are reviewed and validated in partnership with the United Nations Children's Fund (UNICEF), the World Health Organization (WHO), the Government of the United States of America, the Global Fund to Fight AIDS, Tuberculosis and Malaria, and other partners.

Final country-submitted files containing the modelled outputs are reviewed at UNAIDS to ensure that the results are comparable across regions and countries and over time.

In 2019, sub-national estimates were created and used by more than 25 countries for internal planning purposes. The methods for producing robust sub-national estimates varies by country and depends primarily on the availability of sub-national data. Four methods were used (Mathematical modelling, Model-based geo-statistics, small area estimation and direct estimates from prevalence surveys) to derive the sub-national estimates. The methods to generate robust sub-national estimates are still being refined.

UNCERTAINTY BOUNDS AROUND UNAIDS ESTIMATES

The estimation software calculates uncertainty bounds around each estimate. These bounds define the range within which the true value lies (if it can be measured). Narrow bounds indicate that an estimate is precise, while wide bounds indicate greater uncertainty regarding the estimate.

In countries using HIV surveillance data, the quantity and source of the data available partly determine the precision of the estimates: countries with more HIV surveillance data have smaller ranges than countries with less surveillance data or smaller sample sizes. Countries in which a national population-based survey has been conducted generally have smaller ranges around estimates than countries where such surveys have not been conducted. Countries producing subnational estimates at the provincial level have wider ranges. In countries using HIV case reporting and AIDS-related mortality data, the number of years of data and the magnitude of the cases reported or AIDS-related

deaths observed will contribute to determining the precision of the estimate.

The assumptions required to arrive at the estimate also contribute to the extent of the ranges around the estimates: in brief, the more assumptions, the wider the uncertainty range, since each assumption introduces additional uncertainties. For example, the ranges around the estimates of adult HIV prevalence are smaller than those around the estimates of HIV incidence among children, which require additional data on prevalence among pregnant women and the probability of mother-to-child HIV transmission that have their own additional uncertainty.

UNAIDS is confident that the actual numbers of people living with HIV, people who are newly infected with HIV or people who have died from AIDS-related causes lie within the reported ranges. Over time, more and better data from countries will steadily reduce uncertainty.

IMPROVEMENTS INCLUDED IN THE 2019 UNAIDS ESTIMATES MODEL

Country teams create new Spectrum files every year. The files may differ from one year to the next for two reasons. First, new surveillance and programme data are entered into the model; this can change HIV prevalence and incidence trends over time or antiretroviral therapy coverage rates, including for past years. Second, improvements are incorporated into the model based on the latest available science and statistical methods, which leads to the creation of more accurate trends in

HIV incidence. Due to these improvements to the model and the addition of new data to create the estimates, the results from previous years cannot be compared with the results from this year. A full historical set of estimates are created each year, however, enabling a description of trends over time.

Between the 2018 estimates and the 2019 estimates, the following changes were applied to the model

under the guidance of the UNAIDS Reference Group on Estimates, Modelling and Projections and based on the latest scientific evidence.

New incidence estimation model for generalized epidemics

In 2019, a new model (R-hybrid) was introduced that uses an improved function to estimate the rate of HIV infection during different phases of the HIV epidemic. For estimating infections early in the epidemic, when data were relatively sparse, the new model has a simple structure that follows the consistent pattern across countries of exponential growth, peak and decline. For more recent years the model has more flexibility to follow the increased amount of data to shape the trends in new infections. This new model improves the fit to existing prevalence data, especially for recent routine testing data from antenatal clinics.

The previous incidence estimation model used in generalized epidemics assumed HIV prevalence stabilized at the last observed value. The impact of adopting the R-hybrid model will be minimal in countries with substantial historical surveillance data and recent surveys, but in countries with few data points early in the epidemic or in recent years, the R-hybrid model should improve the fit to available data.

Mortality among people not receiving treatment

Assumptions of the risk of mortality among people not receiving treatment were reduced based on high quality vital registration data where fewer AIDS-related deaths among the untreated HIV positive adults were recorded than predicted by Spectrum.

The impact of this change is lower mortality rates among people not receiving treatment and fewer AIDS-related deaths overall.

Mortality among people receiving antiretroviral therapy

Previously, the model assumed that mortality rates following antiretroviral therapy initiation are constant over time, conditional on age, sex, baseline CD4 count and duration on treatment. However, recent studies have shown that these rates have declined over time,

even after controlling for temporal changes in baseline CD4 count and treatment duration. A temporal reduction in mortality was included in the model as estimated from the leDEA cohort data.

leDEA data were also reanalysed for Latin America, North America, and Asia and the Pacific with improved assumptions about mortality among those lost to follow-up. This resulted in substantially lower mortality rates than previously estimated. In countries with high-quality mortality data, on- and off-treatment mortality were adjusted to match AIDS-related deaths. An option to specify allocation of treatment disproportionately to either those with low CD4 counts or according to eligibility criteria was introduced to better match the low number of AIDS-related mortality data observed in western and central Europe.

Fertility among women living with HIV

The 2019 Spectrum model included updated parameters about the fertility of women living with HIV who were not receiving antiretroviral therapy. The new parameters led to higher fertility among women living with HIV early in the epidemic, before treatment was provided to HIV-positive pregnant women. This adjustment increased historical estimates of children living with HIV.

In the 2019 model, HIV prevalence data from routine testing among pregnant women at antenatal clinics were used to calibrate the estimated births to women living with HIV. This increased the estimates in some countries and decreased the values in others. There is still some work to be done to ensure the country programme data used for this calibration are robust.

Breastfeeding among women living with HIV

New analysis of survey data done in early 2019 found that women who were living with HIV before widespread HIV testing and treatment had shorter breastfeeding duration. The model previously assumed that women who did not know their HIV status had similar breastfeeding patterns as women who were HIV-negative.

In 2019, eight high-burden countries in eastern southern Africa with household surveys from the early 2000s adjusted the breastfeeding duration among

undiagnosed women living with HIV to reflect the new analysis. The impact of this change is reduced mother-to-child transmission during breastfeeding.

Probability of mother-to-child transmission

Analysis conducted for the UNAIDS Reference Group on Estimates, Modelling and Projections found minor updated transmission probabilities based on the latest published literature about the impact of different antiretroviral regimens on mother-to-child transmission. This had minimal impact on the child HIV estimates.

Updated age at initiation of antiretroviral therapy for children

The average age of children starting antiretroviral therapy has changed over the years as children are diagnosed earlier. Data from the IeDEA and CIPHER networks provide data on the average age of children starting antiretroviral therapy in multiple regions around the world. These data are available for each calendar year from 2002 through 2016. The most recent update of these data suggested an increase in the proportion of children under two years of age starting on treatment and a small reduction to the proportion of children older than 10 years of age starting on treatment. This has a small impact on both the number of children living with HIV and on AIDS-related deaths among children.

Retention on treatment of pregnant women

Many countries do not have robust data available on the retention of women on treatment during pregnancy. An analysis conducted for the UNAIDS Reference Group on Estimates, Modelling and Projections suggested that at the time of delivery, only 80% of women were retained on treatment. This estimate was used as a default value for women already on treatment before the pregnancy and for those women who started treatment during the pregnancy. Most of the high-burden countries in eastern and southern Africa updated this assumption to reflect available data. Previously, the default assumption was that 75% of women were retained on treatment at delivery before the pregnancy.

Changes to case surveillance and vital registration model

The age range of requested model inputs of new diagnoses, CD4 count at diagnosis and AIDS-related mortality was changed from all ages to 15 years and older. It was recommended that AIDS-related death estimates (adjusted for incomplete reporting and misclassification) rather than raw AIDS-related deaths from the vital registration system be used in the fitting process. A new function was added to estimate new diagnosis based on age, sex and year. Also, a new r-logistic fitting approach was added. Complementing this new model is another function that provides the user with the ability to determine which model best fits the inputs.

Surveillance data entered into the model

In 2018, Nigeria conducted a large household survey to improve the precision of the estimate of HIV prevalence in the country. The Nigeria AIDS Indicator and Impact Survey (NAIIS) found lower HIV prevalence than previous household surveys. The new survey estimates were included in the Nigeria Spectrum models and previous survey data were removed, resulting in a shift in HIV prevalence to a lower level over the full history of the epidemic. This change also shifted the estimated prevalence in western and central Africa to slightly lower levels.

At the global level, trends in new HIV infections, AIDS-related deaths and people living with HIV are similar to previous estimates, although there are shifts within regions. The number of AIDS-related deaths has shifted downward in all regions due to changes in the models. New HIV infections are slightly flatter than estimated in 2018 in Asia and the Pacific and in eastern Europe and central Asia. Lower estimates of people living with HIV in western and central Africa were offset by higher estimates in Asia and the Pacific.

More detailed information on revisions to the 2019 model and Spectrum generally can be found at www.epidem.org.

PUBLICATION OF COUNTRY-SPECIFIC ESTIMATES

UNAIDS aims to publish estimates for all countries with populations of 250 000 or more (according to the United Nations Population Division 2017 World Population Prospects). For the countries with populations of 250 000 or more that did not submit estimates, UNAIDS developed estimates using the Spectrum software based on published or otherwise available information. These estimates contributed to regional and global totals but were not published as country-specific estimates.

In countries with low-level epidemics, the number of pregnant women living with HIV is difficult to estimate. Many women living with HIV in these countries are sex workers or people who use drugs—or they are the sexual partners of people who use drugs or gay men and other men who have sex with men—making them likely to have different fertility levels than the general population. UNAIDS does not present estimates of mother-to-child HIV transmission, including estimates related to children in some countries that have concentrated epidemics, unless adequate data are available to validate these estimates. UNAIDS also does not publish estimates related to children for countries where the estimated number of pregnant women living with HIV is less than 50.

With regard to reporting incidence trends, if there are not enough historical data to state with confidence whether a decline in incidence has occurred, UNAIDS will only publish data for the most recent year. This is done to prevent users from making inaccurate inferences about trends. Specifically, incidence trends are not published if there are fewer than four data points for the key population or if there have been no data for the past four years for countries using repeated survey or routine testing data. Trends prior to 2000 are not published for countries using case surveillance models if there are no early case surveillance or mortality data available.

Finally, UNAIDS does not publish country estimates when further data or analyses are needed to produce justifiable estimates. More information on the UNAIDS estimates and the individual Spectrum files for most countries can be found in the UNAIDS website. Data from the estimates can be found in the AIDSinfo section of the UNAIDS website (<http://aidsinfo.unaids.org>). ■

METHODS FOR DERIVING THE 90–90–90 TARGETS

INTRODUCTION

Since 2015, UNAIDS has reported estimates of global, regional and country-specific progress against the 90–90–90 targets. Progress toward these targets is monitored using three basic indicators:

- ▶ Indicator 1 (the first 90): The percentage of people living with HIV who know their HIV status.
- ▶ Indicator 2 (the second 90): The percentage of people living with HIV who know their status and are accessing treatment.

- ▶ Indicator 3 (the third 90): The percentage of people living with HIV on treatment who have suppressed viral loads.

Indicators 2 and 3 can also be expressed as a percentage of all people living with HIV. When numbers or coverage of the treatment target are expressed relative to the total number of people living with HIV, this is called “the HIV testing and treatment cascade.”—therapy Annual estimates of antiretroviral therapy coverage among people living with HIV are available from the time when treatment was first introduced in countries.

DATA SOURCES FOR CONSTRUCTING COUNTRY MEASURES

Country-level progress against the 90–90–90 targets was constructed using reported data from Spectrum, the Global AIDS Monitoring tool and (for selected countries in western and central Europe) the Dublin Declaration monitoring process. Estimates are published for all people and separately, by sex, for children (0 to 14 years) and for adults (15 years and older). Upper and lower ranges of uncertainty for country-level estimates were calculated from the range of estimated numbers of people living with HIV. This range may not fully capture uncertainty in the reported estimates.

A description of the target-related indicators that countries report against is provided in the UNAIDS 2019 Global AIDS Monitoring guidelines (1). Data sources are also briefly described. A summary of the number of countries that are publicly reporting on each measure is provided in Table 18.1, organized by region.

The final set of country measures of progress against the 90–90–90 targets for 2015 through 2018 are available at <http://aidsinfo.unaids.org>. Not all countries were able to report against all three prongs of the 90–90–90 targets: complete treatment cascades are published for 60 countries in 2018, up from 23 in 2015.

Estimates of people living with HIV

All progress measures in this report are based on UNAIDS global, regional and country-specific modelled estimates from Spectrum of the numbers of people living with HIV. Estimates of people living with HIV in 2018 were available for 170 of 193 countries and territories and published for 137. Estimates of people living with HIV are developed for all countries with populations above 250 000.

More details about how UNAIDS derives estimates and uncertainty bounds around the number of people living with HIV can be found in Part 1 of this annex. Published country estimates of people living with HIV (available <http://aidsinfo.unaids.org>) represent 79% of the total global estimated number of people living with HIV in 2018.

Knowledge of HIV status among people living with HIV

Estimates of the number of people living with HIV who know their status were derived using the most recent HIV surveillance, programme data and nationally representative population-based survey data, and from modelled 2018 estimates for 102 countries. Where data were available separately for children (aged 0–14 years) and adults (aged 15 years and older, by sex), the age- and sex-specific measures were first calculated and then aggregated to produce a national measure.

For 74 countries in 2018—primarily outside of eastern and southern Africa and western and central Africa—the number of people living with HIV who knew their HIV status is based on HIV surveillance case notification data, programme registers or modelled estimates derived from case surveillance data. If the estimate from these sources was lower than the number of people accessing antiretroviral therapy, the reported value was excluded. For countries using HIV surveillance or programme data, a country should have included this measure only if the HIV surveillance system had been functioning since at least 2013 and people who have died, emigrated or who otherwise have been lost to follow-up are removed.

Although HIV surveillance systems, including those based on programme registers, can be a reasonably robust source of data to estimate the number of people living with HIV who know their status, biases in the reported numbers may still exist. For example, a country's measure of the knowledge of status may be underestimated if not all people diagnosed are reported to the surveillance system in a timely manner;

the measure also may be overestimated if people are reported to the system or included on a register more than once and these duplicates are not detected. Similarly, if people die or emigrate but are not removed from the system, the number of people living with HIV who are reported to know their HIV status also will be overstated.

For 28 countries in eastern and southern Africa and western and central Africa, estimates of the numbers of people living with HIV who knew their status were derived using a new UNAIDS-supported mathematical model called the First 90 model. This model uses population-based survey and HIV testing service program data—together with country-specific HIV epidemic parameters from the standard UNAIDS Spectrum model—to produce outputs of knowledge of HIV status for adults, by sex. More details on the modelling approach are available in a forthcoming article (currently in press) (2).

Knowledge of HIV status from the First 90 model for eastern and southern Africa and western and central Africa has a number of strengths compared with UNAIDS' previously recommended approach to estimating knowledge of status relying on population survey data and programme treatment coverage data. Most importantly, the new model differentiates in the population survey data those who are aware of their HIV status and those who likely seroconverted after their last HIV-negative test based on national incidence trends. This approach constrains the upper bound of the proportion of people living with HIV ever tested in the survey who likely knew their HIV status at the time of the survey, thus producing a more accurate estimate of the first 90. Results of the proportion of people who know their HIV status from the model are also available by sex, assuming male-to-female testing ratios have remained relatively constant over time. Estimates of knowledge of status by sex for adults are also available since 2010.

An important model limitation, similar to the previously recommended approach, is that caution should be used in interpreting results when the last population-based survey was conducted more than five years ago or if there are concerns about the accuracy of self-reported testing history in the survey. Model results also are only for those aged 15 years and older. UNAIDS continues to recommend that countries conservatively estimate knowledge of status among children as the proportion of children living with HIV on treatment (unless other information from case surveillance data are available). Additional strengths and limitations of the model are described in the forthcoming article referenced earlier in this section.

People accessing antiretroviral therapy

Global and regional measures of antiretroviral therapy numbers are abstracted from country-reported programme data through the UNAIDS-supported Spectrum software, the Global AIDS Monitoring reporting tool, and the Dublin Declaration reporting process. In 2018, 143 countries had publicly available estimates of the number of people on treatment, representing 85% of all people on treatment. For the small number of countries where reported numbers of people on treatment are not available in selected years—primarily in western and central Europe and North America, and in China, India and the Russian Federation—estimates of the number of people on treatment are developed either in consultation with the public health agency responsible for monitoring the national treatment programme or based on published sources.

In partnership with UNICEF, WHO, the Government of the United States, the Global Fund and other partners that support treatment service delivery in countries, UNAIDS annually reviews and validates treatment numbers reported by countries through Global AIDS Monitoring and Spectrum. UNAIDS staff also provide technical assistance and training to country public health and clinical officers to ensure the quality of the treatment data reported. Nevertheless, this measure may overestimate the number of people on treatment if people who transfer from one facility to another are reported by both facilities. Similarly, coverage may be overestimated if people who have died, disengaged from care or emigrated are not identified and removed from treatment registries. Treatment numbers also may be underestimated if not all clinics report the numbers on treatment completely or in a timely manner.

In 2016, UNAIDS completed a triangulation of data to verify the UNAIDS global estimate of people accessing antiretroviral therapy at the end of 2015. Since early 2017, UNAIDS and other international partners have supported more than 15 countries, primarily in sub-Saharan Africa, to verify that the number of people reported to be currently on treatment is accurate. For more details about how confident UNAIDS is in reported treatment numbers, please see *How many people living with HIV access treatment?*⁴

People who have achieved viral suppression

Progress towards the viral suppression target among people on treatment and as a proportion of all people living with HIV was derived from data reported in Spectrum and through the online Global AIDS Monitoring reporting tool and the Dublin Declaration reporting process. For the purposes of reporting, the threshold for suppression is a viral load of less than 1000 copies per ml, although some countries may set lower thresholds or require persons to achieve an undetectable viral load. This guidance also specifies only a person's last test result from the reporting year be submitted, so the reported number suppressed among those tested should represent people and not tests performed.

UNAIDS 2019 Global AIDS Monitoring guidelines were revised from those of 2018 to clarify that countries should report viral load suppression outcomes, regardless of testing coverage. However, viral load testing results will only be published in countries where access to testing is for all or nearly all (>90%) people on treatment or nationally representative (typically 50–90% testing coverage). Table 1 shows the increase in the number of countries able to report on viral load suppression compared to previous years. In 2015, only 26 countries had reliable estimates; in 2018, there were 76 countries with reported data.

For countries with nationally representative but not universally accessible access to treatment, the estimate of viral suppression among those tested (i.e., the third 90) was multiplied by the number of people on treatment to obtain overall viral suppression levels in the country. Countries where testing coverage was 90% or higher reported only the number suppressed among all people on treatment.

A number of challenges exist in using country-reported data to monitor the viral load suppression target. First, routine viral load testing may not be offered at all treatment facilities, and those facilities that do offer it may not be representative of the care available at facilities without viral load testing. By assuming that the percentage of people suppressed among those accessing viral load testing is representative of all people on treatment countries that do not have complete access to testing, the measure may be overestimated or underestimated (depending on the characteristics of the reporting clinics).

4 The document is available at <http://www.unaids.org/en/resources/documents/2016/how-many-people-living-with-HIV-access-treatment>.

TABLE 1 Data availability for constructing UNAIDS measures of progress against the 90–90–90 treatment targets

| | | Asia and the Pacific | Caribbean | Eastern Europe and central Asia | Eastern and southern Africa | Latin America | Middle East and North Africa | Western and central Africa | Western and central Europe and North America | Global |
|---|------|----------------------|-----------|---------------------------------|-----------------------------|---------------|------------------------------|----------------------------|--|--------|
| Number of countries | | 38 | 16 | 16 | 21 | 17 | 20 | 25 | 40 | 193 |
| Number of countries in UNAIDS global estimates | | 28 | 10 | 16 | 20 | 17 | 19 | 24 | 36 | 170 |
| Number of countries with publicly available data on estimates of people living with HIV | 2015 | 20 | 9 | 12 | 20 | 16 | 15 | 24 | 23 | 139 |
| | 2016 | 20 | 9 | 12 | 20 | 16 | 15 | 24 | 24 | 140 |
| | 2017 | 20 | 9 | 12 | 20 | 16 | 15 | 24 | 23 | 139 |
| | 2018 | 20 | 9 | 12 | 20 | 16 | 15 | 24 | 21 | 137 |
| Number of countries with publicly available data on knowledge of HIV status | 2015 | 8 | 6 | 7 | 20 | 6 | 6 | 18 | 9 | 80 |
| | 2016 | 9 | 6 | 8 | 20 | 8 | 6 | 18 | 18 | 93 |
| | 2017 | 12 | 7 | 9 | 20 | 8 | 6 | 18 | 18 | 98 |
| | 2018 | 15 | 6 | 12 | 20 | 9 | 9 | 18 | 13 | 102 |
| Number of countries with publicly available data on treatment | 2015 | 20 | 9 | 13 | 20 | 16 | 15 | 24 | 21 | 138 |
| | 2016 | 20 | 9 | 13 | 20 | 16 | 15 | 24 | 23 | 140 |
| | 2017 | 21 | 9 | 13 | 20 | 16 | 15 | 24 | 24 | 142 |
| | 2018 | 22 | 9 | 14 | 20 | 16 | 17 | 24 | 21 | 143 |
| Number of countries with publicly available data on people with suppressed viral load | 2015 | 5 | 0 | 5 | 3 | 4 | 4 | 1 | 4 | 26 |
| | 2016 | 5 | 2 | 5 | 8 | 7 | 4 | 1 | 13 | 45 |
| | 2017 | 7 | 4 | 8 | 7 | 8 | 6 | 3 | 12 | 55 |
| | 2018 | 9 | 7 | 11 | 13 | 11 | 9 | 6 | 10 | 76 |

Source: UNAIDS special analysis, 2019.

Another challenge in measuring the accuracy of viral load suppression estimates is that UNAIDS guidance requests routine (i.e., annual) viral load testing results only for people who are on treatment and eligible for testing. If people newly initiated on treatment achieve viral suppression but have not yet been offered viral load testing, they will be incorrectly counted as not suppressed, and the resulting viral suppression estimate will be understated. UNAIDS also requests countries to only report results from routine viral load testing: if countries report test results primarily

performed because of suspected treatment failure, the number of people virally suppressed in these countries will be underestimated. UNAIDS validates country submissions for quality, but it is not always possible to identify cases where both routine and other types of testing are occurring. Finally, UNAIDS guidance recommends reporting viral load test results only for people on antiretroviral therapy; persons who are not on treatment and naturally suppress the virus will not be included in this measure.

METHODS FOR CONSTRUCTION THE 90–90–90 TREATMENT TARGET AT THE REGIONAL AND GLOBAL LEVELS

All programme data submitted to UNAIDS were validated by UNAIDS and its partners prior to publication. Country-submitted data that did not meet the required validation checks for quality either at the indicator level or across the treatment cascade were not included in the composite regional or global measures.

To estimate regional and global progress against the 90–90–90 targets, UNAIDS imputed missing country data for the first and third 90 targets using a Bayesian hierarchical model with uncertainty based on regional trends, sex differences and country-specific data for those countries reporting data for some but not all years. Additional details on the modelling approach are available in a forthcoming article (4). The proportion of data on knowledge of status and viral load suppression that was imputed by region from 2015 to 2018 are shown in Table 18.2.

Due to large differences in the proportion of people virally suppressed in western and central Europe and the United States for the years in which data were available, sub-regional estimates for North America and western and central Europe were separately calculated and then combined to estimate the western and central Europe and North America regional results at large. Upper and lower ranges of uncertainty around the global and regional estimates of the HIV testing and treatment cascade are provided that reflect uncertainty in the number of people living with HIV and uncertainty (from missing country data) in the number of people who know their HIV status and the number of people who are virally suppressed. Based on reports from data quality reviews prior to 2017, uncertainty from possible overreporting or underreporting of treatment numbers of 0.88 and 1.04 for the lower and upper bounds, respectively, was added to the bounds of treatment

coverage among people living with HIV and the second and third 90s. Upper and lower ranges of uncertainty for the 90s do not capture uncertainty in the reported or missing programme data on the numbers of people who know their HIV status or the number of people on treatment who are virally suppressed.

As in previous years, results of global and regional progress towards the 90–90–90 treatment target presented in this report supersede all previously published estimates. The new approach to modelling the global and regional estimates of the first and third 90s builds on the previous UNAIDS approach, which was to calculate missing -data for countries using the ratio of knowledge of status and treatment for the first 90 and the ratio of the number of people suppressed among those on treatment in the region for countries where data were available. One of the benefits of the new approach is that it can use reported data when they are available to estimate trends in and across the region. Also, it is now possible to measure progress separately among adults by sex.

As with the previous approach, one primary drawback to the model is that it is difficult to quantify the extent to which progress in countries that reported data to UNAIDS is similar to that of countries without data in the region. This is particularly true for viral load suppression estimates, where reported data in some regions—especially in 2015 and 2016—are limited. For example, no countries in the Caribbean in 2015 were able to meet the threshold coverage of 50% testing coverage for reporting estimates of viral load suppression. In Asia and the Pacific, national-level estimates of viral load suppression are not available in any year for India and prior to 2018 for China. As access to viral load testing improves over time, the accuracy of the estimates of the third 90 will improve. ■

TABLE 2 Proportion of imputed data used to estimate the regional and global measures of the percentage of people living with HIV who know their HIV status and the percentage of people living with HIV on treatment who are virally suppressed

| | Estimates of people living with HIV where knowledge of status is imputed (%) | | | | People living with HIV on treatment where viral suppression is imputed (%) | | | |
|--|--|------|------|------|--|------|------|------|
| | 2015 | 2016 | 2017 | 2018 | 2015 | 2016 | 2017 | 2018 |
| Asia and the Pacific | 12 | 8 | 10 | 51 | 83 | 84 | 85 | 56 |
| Caribbean | 7 | 5 | 5 | 18 | 100 | 96 | 63 | 51 |
| Eastern Europe and central Asia | 65 | 69 | 68 | 5 | 77 | 76 | 75 | 4 |
| Eastern and southern Africa | 0 | 0 | 0 | 0 | 58 | 33 | 46 | 21 |
| Latin America | 24 | 21 | 20 | 22 | 33 | 29 | 28 | 28 |
| Middle East and North Africa | 21 | 25 | 19 | 28 | 63 | 63 | 46 | 37 |
| Western and central Africa | 2 | 2 | 0 | 2 | 99 | 99 | 98 | 47 |
| Western and central Europe and North America | 29 | 4 | 82 | 95 | 33 | 6 | 87 | 98 |
| Global | 8 | 6 | 10 | 15 | 62 | 46 | 60 | 35 |

Source: UNAIDS special analysis, 2019.

DATA ON KEY POPULATIONS

DISTRIBUTION OF NEW HIV INFECTIONS BY SUBPOPULATION

The distribution of new HIV infections among subpopulations globally and by region was estimated based on data for 177 countries using five data sources.

For countries that model their HIV epidemic based on data from subpopulations, including key populations, the numbers of new infections were extracted from Spectrum 2019 files. This source provided data for sex workers from 59 countries, for people who inject drugs from 37 countries, for gay men and other men who have sex with men from 61 countries, and for transgender people from 19 countries (all of which were located in Latin America, the Caribbean and Asia and the Pacific). Additionally, 22 countries (mostly from Asia and the Pacific) had data from clients of sex workers.

The second source was mode of transmission studies conducted in countries between 2006 and 2012. The proportions of new infections estimated for each subpopulation, calculated by modes of transmission analyses, were multiplied by the number of total new gender-specific adult infections (among those aged 15–49 years) to derive an estimated number of new infections by subpopulation. This source provided data for sex workers from 18 countries, for people who inject drugs from 25 countries, and for gay men and other men who have sex with men from 22 countries.

New HIV infections for European countries with neither of the aforementioned data sources were derived from the European Centre for Disease Prevention and

Control (ECDC) and WHO Regional Office for Europe HIV/AIDS surveillance in Europe 2017–2018 data (4). The proportions of new diagnoses for each region in Europe (western, central and eastern) were applied to UNAIDS estimates of new infections in each country for people who inject drugs, gay men and other men who have sex with men, and transgender people. Data for sex workers were not available from the ECDC report. New HIV infections in China, India, the Russian Federation and the United States were taken from the most recent available national reports of new diagnoses.

New HIV infections among countries without a direct data source were calculated from regional benchmarks. The benchmarks were set by the median proportion of new infections in the specific subpopulation in all available countries in the same region. The majority of these countries were located in sub-Saharan Africa. There were 112 countries that used benchmark values for the sex work estimate, 92 countries for the people who inject drugs estimate, 69 countries for the gay men and other men who have sex with men estimate, and 82 countries for the transgender people estimate.

The calculated proportions of infections for each key population include the sex partners of members of key populations. New infections among sex partners of key populations were estimated using the number of sex partners and transmission probabilities from the literature.

QUALITY OF POPULATION SIZE ESTIMATES

The regional sections of this report include tables on the estimated size of key populations. These data are based on values reported through Global AIDS Monitoring in 2018. A comprehensive review of the data was conducted during this reporting round and therefore estimates should not be compared with data presented in previous UNAIDS' reports. As a result of this process, the estimates reported can be categorized as follows:

- ▶ “National population size estimate” refers to estimates that are empirically derived using one of the following methods: multiplier, capture-recapture, mapping/enumeration, network scale up method (NSUM) or population-based survey, or respondent driven sampling–successive sampling (RDS-SS). Estimates had to be national or a combination of multiple sites with a clear approach to extrapolating to a national estimate.
- ▶ “Local population size estimate” refers to estimates that are empirically derived using one of the before mentioned methods but only for a subnational group of sites that are insufficient for national extrapolation.
- ▶ “Insufficient data” refers either to estimates derived from: expert opinions, Delphi, wisdom of crowds, programmatic results or registry, regional benchmarks or unknown methods or estimates derived prior to 2010. Estimates may or may not be national. ■

REFERENCES

1. Global AIDS monitoring 2019: indicators for monitoring the 2016 United Nations Political Declaration on HIV and AIDS. Geneva: UNAIDS; 2017 (https://www.unaids.org/sites/default/files/media_asset/global-aids-monitoring_en.pdf, accessed 7 July 2019).
2. Maheu-Giroux M, Marsh K, Doyle C, Godin A, Delauney CL, Johnson LF et al. National HIV testing and diagnosis coverage in sub-Saharan Africa: a new modeling tool for estimating the “first 90” from program and survey data. AIDS. 2019. [in press]
3. Johnston LG, Sabin ML, Prybylski D, Sabin K, McFarland W, Baral S et al. Policy and practice: the importance of assessing self-reported HIV status in bio-behavioural surveys. Bull World Health Organ. 2016;94:605-12.
4. HIV infection and AIDS. Annual epidemiological report for 2017. Stockholm: European Centre for Disease Prevention and Control (ECDC); 2019 (https://ecdc.europa.eu/sites/portal/files/documents/AER_for_2017-hiv-infection-aids_1.pdf, accessed 7 July 2019).

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