PREVENTION GAP REPORT

SUMMARY

UNAIDS | 2016

PREVENTION GAP REPORT

SUMMARY

UNAIDS | 2016

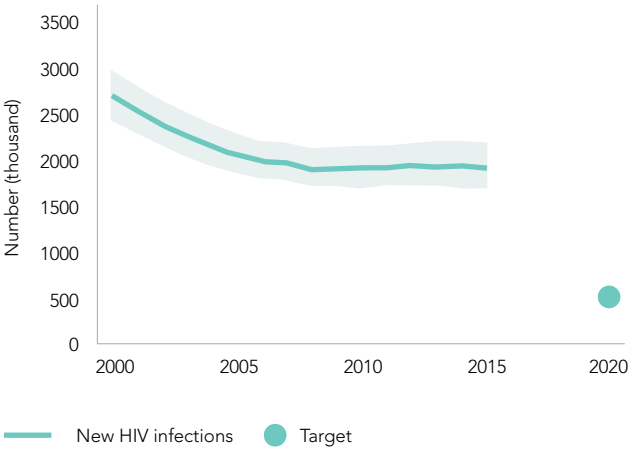
SUMMARY

The full report, including 2016 UNAIDS estimates and other data by country, is available at http://www.unaids.org/en/resources/documents/2016.

Tremendous progress against AIDS over the last 15 years has inspired a global commitment to end the epidemic by 2030. Remarkable scale up of antiretroviral therapy has put the world on track to reach the target on AIDS-related deaths. Intensive efforts to eliminate mother-to-child transmission of HIV have achieved steep declines in the annual number of new HIV infections among children, from 290 000 [250 000–350 000] in 2010 to 150 000 [110 000–190 000] in 2015.

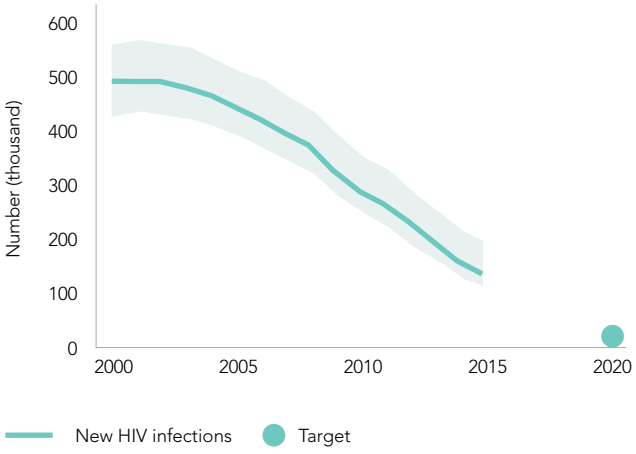
However, problems remain with HIV prevention among adults. Declines in new HIV infections among adults have slowed, threatening further progress towards the end of the AIDS epidemic. Since 2010, the annual number of new infections among adults (15+) has remained static at an estimated 1.9 million [2015 range of 1.7 million–2.2 million].

New HIV infections among adults (aged 15 years and older), global, 2000–2015



Source: UNAIDS 2016 estimates.

New HIV infections among children (aged 0–14 years), global, 2000–2015



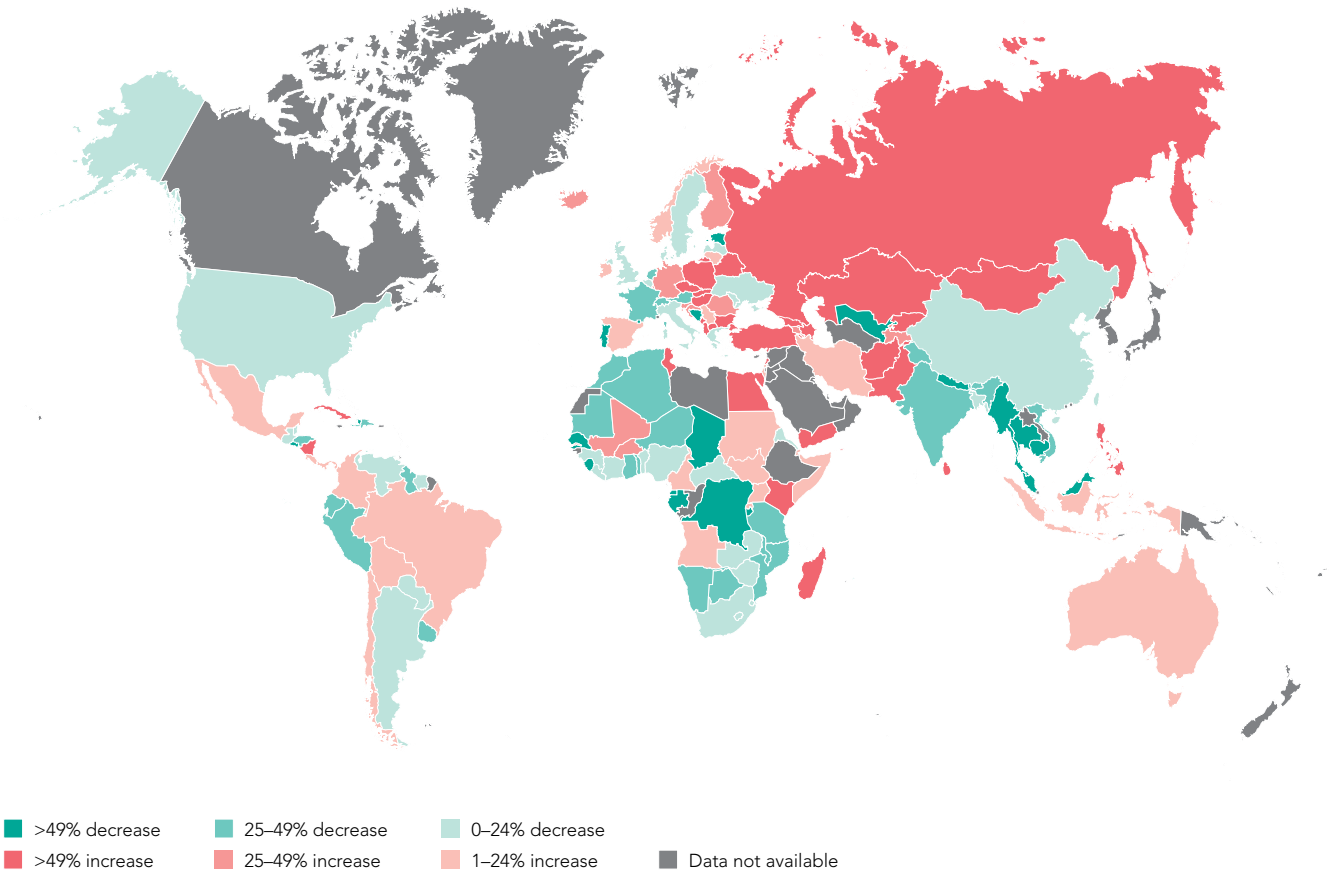
Source: UNAIDS 2016 estimates.

The United Nations General Assembly agreed in June 2016 that ending AIDS by 2030 requires a Fast–Track response to reach three milestones by 2020:

- Reduce new HIV infections to fewer than 500 000 globally by 2020.
- Reduce AIDS-related deaths to fewer than 500 000 globally by 2020.
- Eliminate HIV-related stigma and discrimination by 2020.

Efforts to reach fewer than 500 000 new HIV infections by 2020 are off track. This simple conclusion sits atop a complex and diverse global tapestry. Data from 146 countries show that some have achieved declines in new HIV infections among adults of 50% or more over the last 10 years, while many others have not made measurable progress, and yet others have experienced worrying increases in new HIV infections.

Percent change in new HIV infections among adults (aged 15 years and older), from 2005 to 2015



Sources: UNAIDS 2016 estimates; European Centre for Disease Prevention and Control (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden, United Kingdom, Albania, Andorra, Bosnia and Herzegovina, Macedonia, Israel, Montenegro, San Marino, Serbia, Switzerland and Turkey); Centers for Disease Control and Prevention. HIV Surveillance Report, 2014; vol. 26. http://www.cdc.gov/hiv/library/reports/surveillance/. Published November 2015. Accessed [10 July 2016]. Russian Federation 2016 Global AIDS Response Progress Reporting submission. China 2016 Global AIDS Response Progress Reporting submission.

Prevention gaps in coverage of key prevention services

Programmatic progress is also varied. The scale-up of services to prevent mother-to-child transmission of HIV has not been matched in other key prevention areas, leaving sizable gaps in services. Progress in the provision and use of condoms has largely stalled; the gap in sub-Saharan Africa alone is more than 3 billion male condoms a year, over 50% of the estimated need. Voluntary medical male circumcision has been rapidly expanded—reaching almost 11.7 million men in 14 priority countries in just a few years—but the annual numbers of circumcisions performed within these countries declined in 2015 compared to 2014. Key harm reduction services are unavailable in most of the countries where injecting drug use has been documented. The promise of one of the newest tools in the HIV prevention arsenal—pre-exposure prophylaxis (PrEP)—is only just beginning to be seen as a handful of countries move forward from successful demonstration projects to full regulatory approval and programme rollout.

Meanwhile, the preventative effect of antiretroviral therapy has been limited because 40% [35–44%] of people living with HIV do not know their HIV status and 62% [59–65%] of people living with HIV are not virally suppressed—well shy of the 90–90–90 target. In other words, nearly two thirds of people living with HIV could transmit the virus unless they are provided with prevention tools and empowered to use them. In the past, present and far into the future, primary prevention is an essential component of the response.

Populations and locations in greatest need

The heterogeneity of the HIV epidemic underscores the importance of a location–population approach to efficient planning and programming of HIV prevention services.

Many populations continue to be left behind. Young women aged 15–24 years are at particularly high risk of HIV infection, accounting for 20% of new HIV infections among adults globally in 2015, despite accounting for just 11% of the adult population. In sub-Saharan Africa, young women accounted for 25% of new HIV infections among adults and women accounted for 56% of new HIV infections among adults. Gender inequalities, including gender-based violence, exacerbate women's and girls' physiological vulnerability to HIV and block their access to HIV services. Young people are denied the information and the freedom to make free and informed decisions about their sexual health, with most lacking the knowledge required to protect themselves from HIV. The impact of these barriers is strongest in high-prevalence settings, predominantly in eastern and southern Africa.

Key populations—including sex workers, people who inject drugs, transgender people, prisoners and gay men and other men who have sex with men—remain at much higher risk of HIV infection. Recent studies suggest that key populations are between 10 and 24 times more likely to acquire HIV than adults in the general population *(1)*.

Globally, new infections among key populations and their sexual partners are estimated to account for 36% of all new HIV infections in 2015. Criminalization and stigmatization of same-sex relationships, cross-dressing, sex work and drug possession and use block access to HIV prevention services and increases risky behaviours. Homophobia drives gay men and other men who have sex with men away from HIV prevention activities and HIV testing, and it is associated with lower adherence to treatment. Women in key populations face specific challenges and barriers, including violence and violations of their human rights.

The people in greatest need vary by location. Key populations tend to migrate to cities in search of safer and more secure communities *(2)*. The incidence of HIV among adolescent girls and young women in eastern and southern Africa is highest in parts of South Africa and southern Mozambique, plus the whole of Swaziland and Lesotho.

The location–population approach also means that local stakeholders—including local government, local civil society organizations and local communities—are at the centre of their own local responses. Analysis of local data on the level and trends in the epidemic, on the coverage of local programmes, and on bottlenecks created by local policies and practices, is critical to efficient and effective service delivery.

Combination HIV prevention

Continued HIV testing and treatment scale up must be accompanied by a much stronger primary prevention response. Individual countries have shown that barriers to services can be removed and that prevention programmes can be brought to scale within a few years. South Africa built the world's largest condom programme in just a few years and doubled the amount of condoms distributed per male, per year in at least seven of nine provinces *(3)*. Mozambique has increased the number of voluntary medical male circumcision performed from just 100 in 2009 to almost 200 000 in 2015, and India has showed the world how location–population approaches that engage beneficiaries, such as sex workers, in their design and implementation can result in a marked decrease in new infections when brought to scale *(4)*.

However, few countries have consistently applied a combination HIV prevention approach, which provides packages of services—including behavioural, biomedical and structural components—tailored to priority population groups within their specific local contexts. For example, young people in high prevalence countries need more than condoms and behaviour change communications. They also require comprehensive sexuality education and access to effective HIV and sexual

and reproductive health services without economic barriers, such as prohibitive costs, or structural barriers, such as parental consent laws. A combination package for gay men and other men who have sex with men should include easy access to condoms, lubricant and PrEP, as well as efforts to address homophobia; a package for people who inject drugs should feature comprehensive harm reduction services, including needle-syringe programmes and opioid substitution therapy *(5)*.

All programmes require a strong community empowerment element and specific efforts to address legal and policy barriers, as well as the strengthening of health systems, social protection systems and actions to address gender inequality and stigma and discrimination.

Five pillars for achieving less than 500 000 new infections by 2020

Getting back on track to reducing new infections to 500 000 by 2020 requires continued progress towards the 90–90–90 target and intensive focus on five prevention pillars delivered through a people-centred, combination approach:

1. Combination prevention, including comprehensive sexuality education, economic empowerment and access to sexual and reproductive health services for young women and adolescent girls and their male partners in high-prevalence locations.
2. Evidence-informed and human rights-based prevention programmes for key populations, including dedicated services and community mobilization and empowerment.
3. Strengthened national condom programmes, including procurement, distribution, social marketing, private-sector sales and demand creation.
4. Voluntary medical male circumcision in priority countries that have high levels of HIV prevalence and low levels of male circumcision, as part of wider sexual and reproductive health service provision for boys and men.
5. Pre-exposure prophylaxis for population groups at higher risk of HIV infection.

These pillars are reflected in the bold prevention targets for 2020 set by the United Nations General Assembly within the 2016 Political Declaration on HIV and AIDS to ensure that 90% of people at risk of HIV infection access comprehensive prevention services, including harm reduction; to reduce below 100 000 per year the number of adolescent girls and young women aged 15–24 years newly infected with HIV globally; to make 20 billion condoms available annually in low- and middle-income countries; to reach 25 million additional young men in high HIV incidence areas with voluntarily medical male circumcision and to provide three million people at higher risk of HIV infection with PrEP.

FIVE PREVENTION PILLARS

1. Young women and adolescent girls and their male partners
2. Key populations
3. Condoms
4. Voluntary medical male circumcision
5. Pre-exposure prophylaxis

United Nations General Assembly prevention targets

1	2	3	4	5
Ensure that **90%** of people at risk of HIV infection access comprehensive prevention services by 2020. Reduce **below 100 000** per year the number of adolescent girls and young women aged 15–24 years old newly infected with HIV globally by 2020.	Ensure that **90%** of people at risk of HIV infection access comprehensive prevention services, including harm reduction, by 2020.	Make **20 billion** condoms annually available in low- and middle-income countries by 2020.	Reach **3 million** people at higher risk of HIV infection with pre-exposure prophylaxis by 2020.	Reach **25 million** additional young men in high HIV incidence areas with voluntarily medical male circumcision by 2020.

Structural change

Within the response to AIDS, leaving no one behind is both a moral and human rights imperative and a public health necessity. HIV-related vulnerabilities are fuelled by inequalities and prejudices entrenched within the legal, social and economic structures of society. Harmful cultural and social gender norms, criminalization of same-sex relationships, cross-dressing, sex work, and drug use, and laws that require third-party authorization for sexual and reproductive health services block HIV prevention and increase risky behaviour. Homophobia drives gay men and other men who have sex with men away from HIV testing and HIV prevention activities, and is associated with lower adherence to treatment.

PREVENTION GAPS

- Gender inequalities, including gender-based violence, exacerbate women and girls' vulnerability to HIV and block their access to HIV services.
- Third-party authorization requirements remain an important barrier to uptake of HIV and sexual and reproductive health services among adolescents and young people.
- Key populations face specific challenges and barriers, including violence and violations of their human rights, with women in key populations particularly affected.
- Homophobia is a barrier to HIV services for gay men and other men who have sex with men.
- Criminalization and stigmatization of same-sex relationships, cross-dressing, sex work and drug use block HIV prevention services and increase risky behaviours.
- Stigma and discrimination related to HIV and towards key populations in health-care settings undermine access to HIV prevention and other health services.

In the past 15 years, global progress against HIV and AIDS has been significant, thanks to scientific advancements, treatment access, human rights activism, global solidarity and the mobilization and activism of civil society. These gains, however, have been uneven. Throughout the world, stigma, discrimination and exclusion—as well as power imbalances and unequal gender relations—continue to make women and girls, young people and key populations vulnerable to HIV, hindering access to HIV prevention, treatment and care services. As HIV cannot be addressed only through bio-medical approaches, the response requires simultaneous advancements in terms of sexual and reproductive health and rights, access to education and employment, social justice and gender equality. Moving forward, isolated successes require replication, and small-scale programmes that have been proven to work need to be scaled up with sustainable funding and political commitment.

Empowering women and girls, young people and key populations with the agency to claim their rights, receive a quality education, enjoy healthy lives and take measures to protect themselves from HIV is a requisite component of combination HIV prevention—structural change that reflects the interconnected nature of the Sustainable Development Goals.

WAY FORWARD

- Strengthen legislation, law enforcement and programmes to end intimate partner violence.
- Increase girls' access to secondary education.
- Use cash transfers to empower women economically, to keep them in school and to enable them to make healthy partner choices.
- Remove third-party authorization requirements and other barriers to women and young people's access to HIV and sexual and reproductive health services.
- Decriminalize same-sex relationships, cross-dressing, sex work and drug possession and use for personal consumption.
- Bring to scale community empowerment and other programmes that have been proven to reduce stigma, discrimination and marginalization, including in health-care settings.

Condoms

Condoms are at the centre of a combination HIV prevention approach; they are cost-effective tools for preventing other sexually transmitted infections and unintended pregnancies. An estimated 45 million HIV infections have been averted through condom use globally since 1990 *(6)*. Achieving the global condom target for 2020 would avert 3.4 million new infections *(6)*. The cost per infection averted would be approximately $450, well below the lifetime cost of providing antiretroviral treatment *(6)*

PREVENTION GAPS

- Stagnation of international and domestic funds for condom procurement and programming, including demand generation and distribution.
- An annual gap of more than 3 billion male condoms in sub-Saharan Africa.
- Inconsistent condom use within many populations and locations in greatest need, including challenges for women to negotiate condom use.
- Insufficient availability of lubricants and female condoms.

In 2015, an estimated 1.9 million [1.7 million–2.2 million] adults (15+) were newly infected with HIV—the vast majority through sexual transmission—and an estimated 357 million people acquired chlamydia, gonorrhoea, syphilis or trichomoniasis *(7)*. Every year, more than 200 million women have unmet needs for contraception, leading to approximately 80 million unintended pregnancies. Condoms effectively prevent all of these conditions.

Optimal condom programming is a key part of the ambitious global targets to provide access to comprehensive prevention services to 90% of people at risk of HIV infection and to reduce new HIV infections to fewer than 500 000 globally. In recognition of this, countries agreed in the 2016 Political Declaration on HIV and

AIDS to increase the annual availability of condoms to 20 billion by 2020. This includes approximately seven billion condoms for sub-Saharan Africa annually and 30–50 condoms per male, per year in high-prevalence countries.

The challenge ahead is to invest in, and scale up, a new generation of data-driven and people-centred comprehensive condom programmes, including demand creation, community mobilization, supply chain management, planning, programme management and monitoring and evaluation. Comprehensive condom programmes should use a total market approach that includes the public and private sectors and social marketing.

Condom programming needs to be predicated on sexual and reproductive health and rights and gender equality. It must integrate—and be integrated into—comprehensive sexuality education and efforts to promote respect for the right to the enjoyment of sex and to the expression of sexual identity. In order to be responsive to individual and context-specific needs, young people, people living with HIV, sex workers, men who have sex with men and people who inject drugs—alongside other vulnerable populations—will need to be involved in the planning and implementation of condom programming. These populations should also contribute to efforts to improve data and increase innovation through programme science, market research, needs estimates, costing and monitoring and evaluation. National and community leadership will be essential to increasing domestic funding and ownership of national condom strategies and to moving away from programmes that are primarily funded and managed by international donors.

WAY FORWARD

- Increase resources for condom procurement, distribution and promotion.
- Provide male and female condoms in combination prevention packages, including programmes that provide HIV testing, antiretroviral treatment, PrEP and male circumcision.
- Diversify condom products, including provision of female condoms alongside male condoms and lubricants.
- Develop new approaches to increase condom use and to enhance the positive perception of condoms among the various populations in need.
- Engage communities in condom provision and use innovative service provision mechanisms.

Voluntary medical male circumcision

Voluntary medical male circumcision is a cost-effective, one-time intervention that provides lifelong partial protection against female-to-male HIV transmission. Modelling studies have suggested that achieving 80% circumcision prevalence among men aged 15 to 49 years by 2015—and then sustaining it—would avert 3.4 million HIV infections by 2025 *(8)*.

PREVENTION GAPS

- Following years of rapid increase, annual numbers of circumcisions performed declined across the 14 priority countries in 2015.
- The annual number of circumcisions performed in the 14 priority countries must more than double to reach the 2020 target of 25 million additional young men in high-prevalence settings being circumcised.
- Voluntary medical male circumcision needs to be integrated within programmes that aim to address the broader sexual reproductive and health needs of adolescent boys and men.

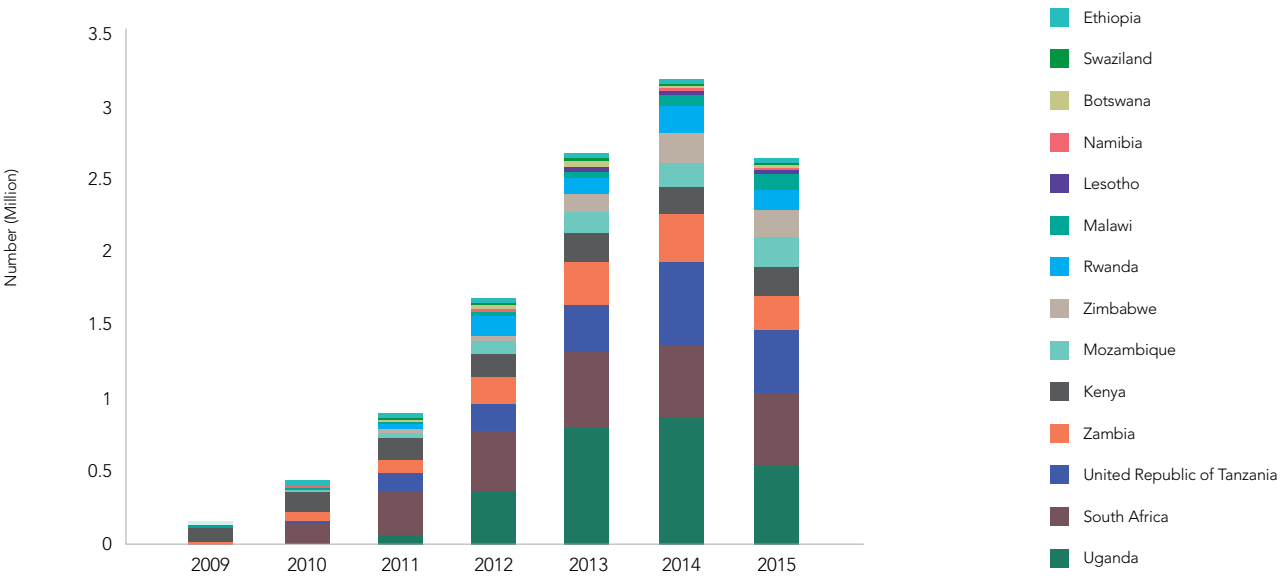
Since 2007, tremendous efforts have been made to scale up voluntary medical male circumcision in 14 priority countries in eastern and southern Africa that have high levels of HIV prevalence and low levels of male circumcision.[1] By the end of 2015, nearly 11.6 million men in these countries had been medically circumcised.

Progress among priority countries varied widely between 2009 and 2015. Ethiopia, Kenya and the United Republic of Tanzania had surpassed their national coverage targets, and Mozambique, South Africa, Uganda and Zambia had achieved between 50% and 70% of their coverage targets by the end of 2015. In Botswana and Swaziland, however, coverage was around 45%, and in Lesotho, Malawi, Namibia, Rwanda and Zimbabwe, coverage was under 35% in 2015.

A steady increase in the annual number of men voluntarily circumcised between 2008 and 2014 was followed in 2015 by a worrying decline in annual circumcisions within some of the 14 priority countries. The annual number of circumcisions among all 14 priority countries dropped to 2.6 million in 2015 (compared to 3.2 million in 2014). In Ethiopia, South Africa and Swaziland, however, the number of circumcisions remained stable in 2015; in Kenya, Malawi and Namibia, the annual number of circumcisions increased.

[1] The 14 priority countries include Botswana, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, Swaziland, United Republic of Tanzania, Uganda, Zambia, Zimbabwe. The 2020 target also includes South Sudan.

Annual number of voluntary medical male circumcisions, 14 priority countries, 2009–2015



Sources: 2016 Global AIDS Response Progress Reporting.

The United Nations General Assembly set an ambitious target in the 2016 Political Declaration on HIV and AIDS to provide voluntary medical male circumcision to an additional 25 million young men in high HIV incidence areas between 2016 and 2020. Achieving the 2020 target will require continued increases in the scale of programmes in the priority countries. Instead of less than 3 million male circumcisions annually, more than 5 million will need to be performed. In some countries, this will require the integration of vertical programmes within national health systems and the strengthening of the capacity of public health systems to manage these programmes at both the national and local levels. In addition, voluntary medical male circumcision should be part of a core package of sexual and reproductive health services for men and boys, using approaches that are tailored for various age groups and locations. Similarly, increases in domestic funding will be required to ensure the sustainability of programmes in countries that currently rely on international funding for the majority of their programme budgets.

WAY FORWARD

- Increase domestic funding to ensure sustainability.
- Promote voluntary medical male circumcision as part of a core package of health services for men and boys, using approaches that are tailored for various age groups and locations.
- Integrate vertical programmes within national health systems.
- Develop new approaches for adolescent and early infant circumcision.
- Break down myths and misconceptions about circumcision.

Harm reduction

People who inject drugs are among the key populations most at risk to acquire or transmit HIV. Yet they are also among those with the least access to HIV prevention, care and treatment services because their drug use is often stigmatized and criminalized.

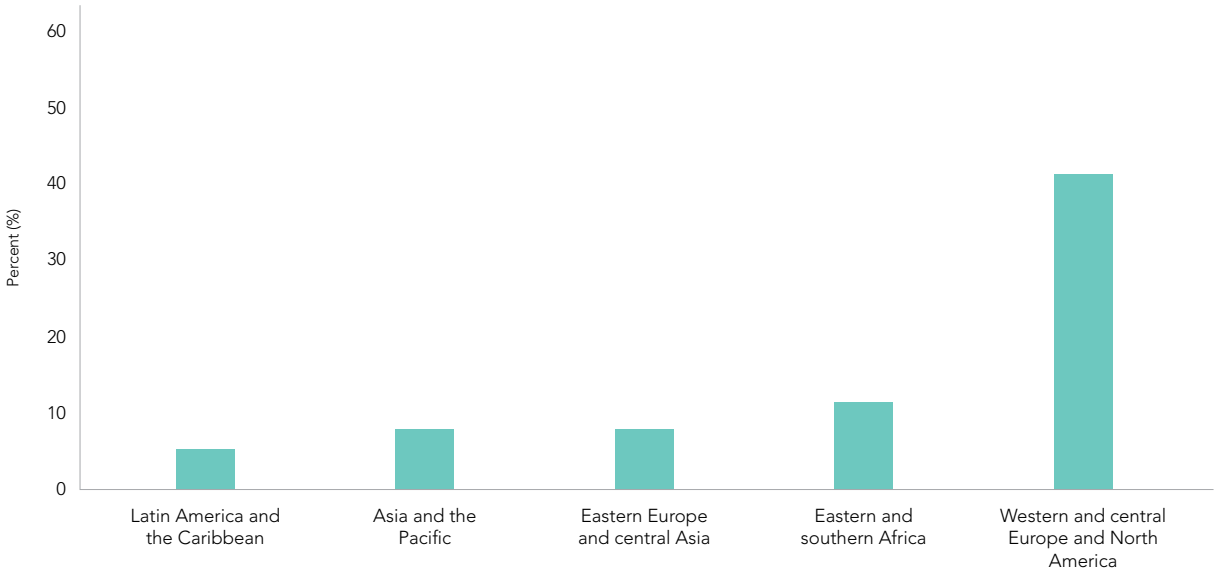
The tools and strategies required to improve the health and lives of people who use drugs are well known and readily available. Needle–syringe programmes reduce the spread of HIV, hepatitis C and other blood-borne viruses. Opioid substitution therapy and other evidence-informed forms of drug dependence treatment curb drug use, reduce vulnerability to infectious diseases, and improve uptake of health and social services.

The overwhelming body of evidence on the effectiveness of harm reduction, including in prisons and other closed settings, is the basis for a comprehensive package of interventions recommended by the World Health Organization (WHO), the United Nations Office on Drugs and Crime (UNODC) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) for preventing the spread of HIV and reducing other harms associated with drug use. Few countries have achieved sufficient coverage of harm reduction services, however.

PREVENTION GAPS

- Needle–syringe programmes are available in only 90 of the 158 countries where injecting drug use has been documented. Only 8 countries have at least one programme in prisons.
- Only 12 countries provide the recommended threshold of 200 clean needles per person who injects per year.
- Coverage of opioid substitution therapy is low in most countries. At least one opioid substitution therapy site is available in only 80 of the 158 countries where injecting drug use has been documented. Only 43 countries have programmes in prisons.
- HIV prevalence among women who inject drugs is often greater than their male peers, highlighting a need for gender-sensitive harm reduction interventions. Criminalization of drug possession and use perpetuates risky forms of drug use, increases HIV risk, discourages people who use drugs from seeking health care, and reinforces the marginalization of people who use drugs.

Median percent of people with opioid dependence use receiving opioid substitution therapy, 2015



Source: 2016 Global AIDS Response Progress Reporting; UNODC. World Drug Report 2016.

The exclusion and marginalization of people who use drugs has been acknowledged as one of several unfortunate consequences of the international drug control system *(9)*. Judgemental feelings among health-care providers have been linked to lower-quality health care and lower health outcomes *(10,11)*. In many countries, laws, policies, practices and other structural barriers facilitate discrimination of people with a history of drug use and create barriers to HIV prevention services. Criminal justice systems that use possession of drug paraphernalia or drug residue within injecting equipment as evidence of illegal drug possession or use are particularly disruptive to needle–syringe programmes *(12)*. Laws and policies that make drug use a criterion for loss of child custody, forced or coerced sterilization or abortion, and denial of welfare benefits have a disproportionate impact on women who use drugs *(13,14)*. In some countries, such as the Russian Federation, opioid substitution therapy is unavailable or illegal, and in other countries, even though it may be available, police reportedly target people accessing treatment for drug arrests *(15)*.

Legislation that criminalizes possession and use of drugs for personal consumption is one of the most formidable barriers to the provision of large-scale harm-reduction services. Criminalization has been shown to perpetuate risky forms of drug use, to increase the risk of illness (including from HIV infection) among people who use drugs, to discourage people who use drugs from seeking health care, and to reinforce the marginalization by society of people who use drugs *(16)*. A large body of evidence shows that alternatives to incarceration such as community-based drug dependence treatment are more

cost effective at reducing health, social and economic harms of drug use *(17)*. Several countries are moving away from criminalization of drug use. Armenia, Belgium, Chile, the Czech Republic, Estonia, Mexico and Portugal are among the countries that have adopted some form of decriminalization policy since 2000 *(17)*.

WAY FORWARD

- Scale up harm-reduction services to prevent HIV infection for all people who inject drugs, including people in prisons and other closed settings.
- Ensure that all people who inject drugs and are living with HIV and/or hepatitis C have access to lifesaving treatment.
- Adapt and reform laws to ensure people who use drugs do not face punitive sanctions for the use of drugs or possession of drugs for personal consumption.
- Ensure widespread, community-based availability of naloxone as a lifesaving public health measure.
- Support and empower community and civil society organizations, including organizations and networks of people who use drugs, in the design and delivery of HIV prevention services.
- Combine treatment with other combination prevention approaches, e.g. pre-exposure prophylaxis and condom promotion for serodiscordant couples.

Viral suppression

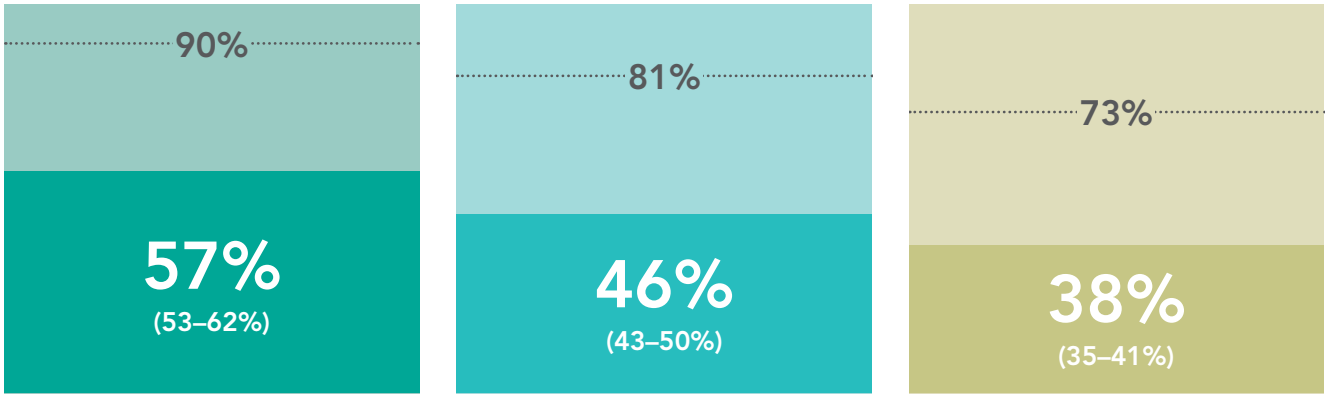
Strong adherence to antiretroviral therapy suppresses viral load to undetectable levels within people living with HIV, greatly reducing the risk of transmitting the virus to others *(18–20)*. When large proportions of people living with HIV within a community are on treatment, it has been shown to have a preventive effect within that community *(21, 22)*. This preventive effect of treatment has been heralded as a game-changer within the global response to HIV. Achievement of the 90–90–90 target by 2020 alongside high coverage of other HIV prevention interventions can make the end of the AIDS epidemic a reality by 2030 *(23)*.

PREVENTION GAPS

- Only an estimated 38% [35–41%] of people living with HIV worldwide are virally suppressed.
- More than 14.5 of the 36.7 million people living with HIV do not know their HIV status.
- Access to treatment and viral suppression levels are much lower among key populations compared to the general population in many countries, and lower among men compared to women.
- Prevention gaps in access to HIV testing and treatment are largest in western and central Africa and the Middle East and North Africa.

- Stigma, discrimination and other human rights violations deter people from seeking testing and treatment and compromise sustained adherence to antiretroviral treatment.
- The preventative benefits of treatment are not being realized fully due to failure to reach people soon after infection, when viral load levels are high.
- Disruptions of viral suppression of those on treatment, due to lack of adherence or viral resistance, limit the potential prevention gains of treatment.

Progress towards 90–90–90 target, global, 2015



Percentage of people living with HIV who know their HIV status[1]

Percentage of people living with HIV who are on antiretroviral treatment

Percentage of people living with HIV who are virally suppressed[2]

[1] 2015 measure derived from data reported by 87 countries, which accounted for 73% of people living with HIV worldwide.
[2] 2015 measure derived from data reported by 86 countries. Worldwide, 22% of all people on antiretroviral therapy were reported to have received a viral load test during the reporting period.

Source: UNAIDS special analysis, 2016; for more details, see annex on methods.

The scale-up of treatment is among the greatest successes of the global AIDS response to date. In the past two years the number of people living with HIV on antiretroviral therapy has increased by about a third, reaching 17.0 million people. These gains are largely responsible for a 26% decline in AIDS-related deaths globally since 2010, from an estimated 1.5 million [1.3 million–1.7 million] in 2010 to 1.1 million [940 000–1.3 million] in 2015. In the world's most affected region, eastern and southern Africa, the number of people on treatment has more than doubled since 2010, reaching nearly 10.3 million people, and AIDS-related deaths have decreased by 36% since 2010.

Analysis of the available data validated by UNAIDS in partnership with UNICEF and WHO[2], however, suggests that much greater progress in the areas of testing and treatment is required to reach the 2020 target of fewer than 500 000 new HIV infections in 2020. In 2015, of the 36.7 million [34.0 million–39.8 million] people living with HIV globally, an estimated 60% [56–65%] knew their HIV status, 46% [43–50%] were on antiretroviral therapy, and 38% [35–41%] had achieved viral suppression.

[2] A full description of the methods for deriving the 90–90–90 measures are provided in the annex to the full *Prevention gap report*.

The global gap to achieving the 90–90–90 target in 2015 was around 10.9 million people living with HIV who did not know their status, 12.7 million people in need of antiretroviral therapy, and 13.0 million people living with HIV who were not virally suppressed. Studies indicate that access to antiretroviral therapy coverage among key populations compared to the general population continues to be lower in many countries, with uptake hampered by punitive legal environments, the stigma surrounding HIV testing and fear that a diagnosis of HIV may be disclosed to others without consent.

Rapidly increasing in the proportion of people living with HIV who have been diagnosed requires expansion of innovative testing strategies. Self-testing kits are both discreet and convenient for people who may be reluctant to take a test at a health facility or who live in places where health facilities are inaccessible. Self-tests are a screening tool, however, and results need to be confirmed by a health worker *(24)*.

Earlier initiation of treatment could be made through wider adoption of World Health Organization (WHO) treatment guidelines that call for the immediate offer of antiretroviral therapy following diagnosis, but operational difficulties of reaching and motivating large numbers of otherwise healthy people to enrol and adhere are considerable.

The goal of antiretroviral therapy is viral suppression—a viral load that is so low that it cannot be detected by viral load tests. A person living with HIV who is virally suppressed is not only less prone to HIV-related illness but also much less likely to transmit the virus. Periodic viral load tests are the most accurate way of determining whether antiretroviral therapy is working to suppress replication of the virus. Unfortunately, the cost and complexity of currently available technologies limit the availability of viral load testing in resource-poor settings. Greater political will and funding are needed to scale up capacity in low- and middle-income countries, and civil society has a major role to play in advocacy—for the scale-up of viral load testing, affordable testing systems, and research and development.

WAY FORWARD

- Expand innovative HIV testing strategies, such as self-testing and partner-supported testing services.
- Increase community engagement in HIV testing and treatment programmes.
- Implement human rights programmes to remove structural barriers to testing and treatment.
- Adopt the 2015 WHO guidelines that call for the immediate offer of antiretroviral therapy following diagnosis, and strengthen programmes accordingly.
- Reduce cost and increase coverage of viral load testing.
- Combine treatment with other combination prevention approaches, including condom promotion and pre-exposure prophylaxis for serodiscordant couples.

Pre-exposure prophylaxis

Pre-exposure prophylaxis (PrEP) is the latest addition to efforts to expand combination prevention options for people at high risk of HIV infection. The number and scope of PrEP activities is increasing globally, while the scale and coverage outside the United States of America remain limited. In June 2016 an estimated 60 000 people were enrolled on PrEP, the majority of whom were in the United States. A significant but unquantifiable number of people are accessing PrEP through less regulated means, for example via the internet. The rapid establishment of government-regulated programmes will improve the monitoring and evaluation of PrEP's use and its impact on the epidemic. Considerable additional effort will be needed to attain the new global target of reaching three million people at substantial risk of HIV infection with PrEP by 2020.

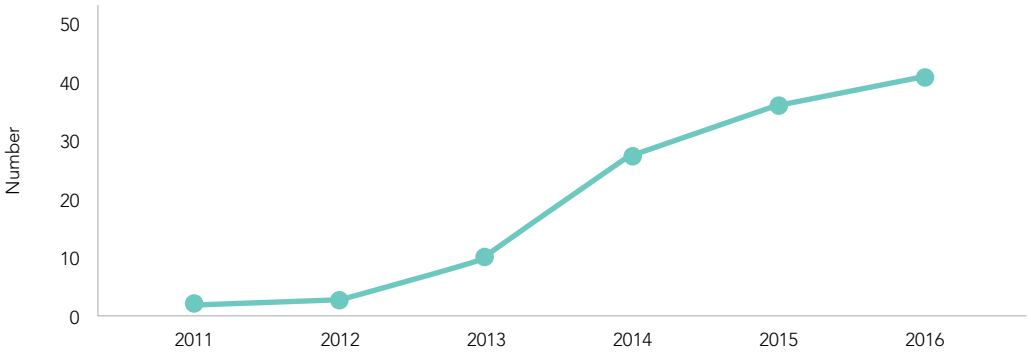
PREVENTION GAPS

- PrEP is just getting off the ground: progress towards the 2020 PrEP target stands at 2%.
- Availability and awareness is limited.
- Regulatory approval was limited to seven countries in June 2016.
- PrEP provision should be sensitive to the context of the populations at risk including stigmatization, criminalization and intimate partner violence.

PrEP empowers individuals with limited personal prevention options to discreetly take control of their own HIV risk. Randomized control trials have confirmed the efficacy of daily oral PrEP. Demonstration projects, offering PrEP as a choice through user-friendly services, have shown its potential value in diverse settings, as well as strong demand and adherence among people at high risk of HIV infection, including HIV-negative partners within serodiscordant couples, gay men and other men who have sex with men, and some young women and female sex workers.

Based on the evidence, the World Health Organization (WHO) recommends offering the use of daily oral PrEP containing tenofovir disoproxil fumarate (TDF) as an additional prevention choice for all population groups at substantial risk of HIV infection as part of a combination HIV prevention programme. Priority populations for PrEP rollout should be people at substantial risk of HIV infection, broadly identified as populations with an HIV incidence of about 3 per 100 person-years or higher *(25)*.

Cumulative number of completed, ongoing and planned PrEP open-label, demonstration and implementation projects, 2011–2016



Source: AVAC, Ongoing and Planned PrEP Open Label, Demonstration and Implementation Projects, as of June 2016 (http://www.avac.org/sites/default/files/resource-files/PrEP_Trials_Demonstration_Projects_June_2016.pdf).

The United States approved the use of PrEP in 2012 and clinical guidelines were issued in 2014 *(26)*. France began offering PrEP within its national health-care system in January 2016, following the issue of a temporary recommendation for use in November 2015 *(27)*. By mid-2016, 60 clinics were offering the service in France and 437 people had started taking PrEP through the public health system *(28)*. In December 2015 South Africa became the first country in sub-Saharan Africa to issue full regulatory approval of PrEP *(29)* and to include PrEP in the national HIV programme followed swiftly by Kenya *(30)*. Regulatory authorities in Australia and Canada have also approved PrEP. At least 27 countries have planned or ongoing demonstration projects for PrEP *(31)*, and in some countries "off-label use"[3] is facilitated by the health system or individual health-care providers.

The cost of PrEP is an important concern, even in high-income countries. PrEP is expected to be cost-effective where the incidence of HIV is greater than 3 per 100 person-years and perhaps also at lower incidences *(25)*. Ultimately the cost-effectiveness of PrEP will be determined by the cost of PrEP medication, how efficiently it can be delivered to the people in greatest need, and its impact.

[3] The use of a medicine for a purpose other than what is indicated on its label—in this case, the use of tenofovir disoproxil fumarate-based pills labelled for antiretroviral therapy for PrEP.

WAY FORWARD

- Regulatory approval in all countries with optimal use of TRIPS flexibilities and price negotiation to improve access.
- National guidelines and roll-out of national programmes.
- Awareness-raising among populations at higher risk of HIV
- Advocacy for PrEP in collaboration with the priority populations and sensitive to their legislative environment and health seeking options.
- Integration of PrEP provision to strengthen combination prevention programmes.

Social and behaviour change communication and demand generation

Behaviour change communication and demand generation form a basic component of combination prevention. They are an inclusive way of addressing the cultural contexts within which risk behaviours occur, and of stimulating uptake of HIV prevention services. These programmes entail a range of activities, from individual counselling to community awareness-raising to communications through mass media. They also feature intensive approaches involving a combination of activities to address multiple outcomes, including knowledge, risk perception, norms, skills, sexual behaviours and HIV service demand.

Multi-media, school-based and broader community mobilization activities complement the delivery of HIV services such as condom distribution, voluntary medical male circumcision, HIV testing and PrEP. As new biomedical tools are rolled out, effective social-behavioural and structural programmes help maximize their efficacy, for example by mitigating the potential emergence of risk compensation.

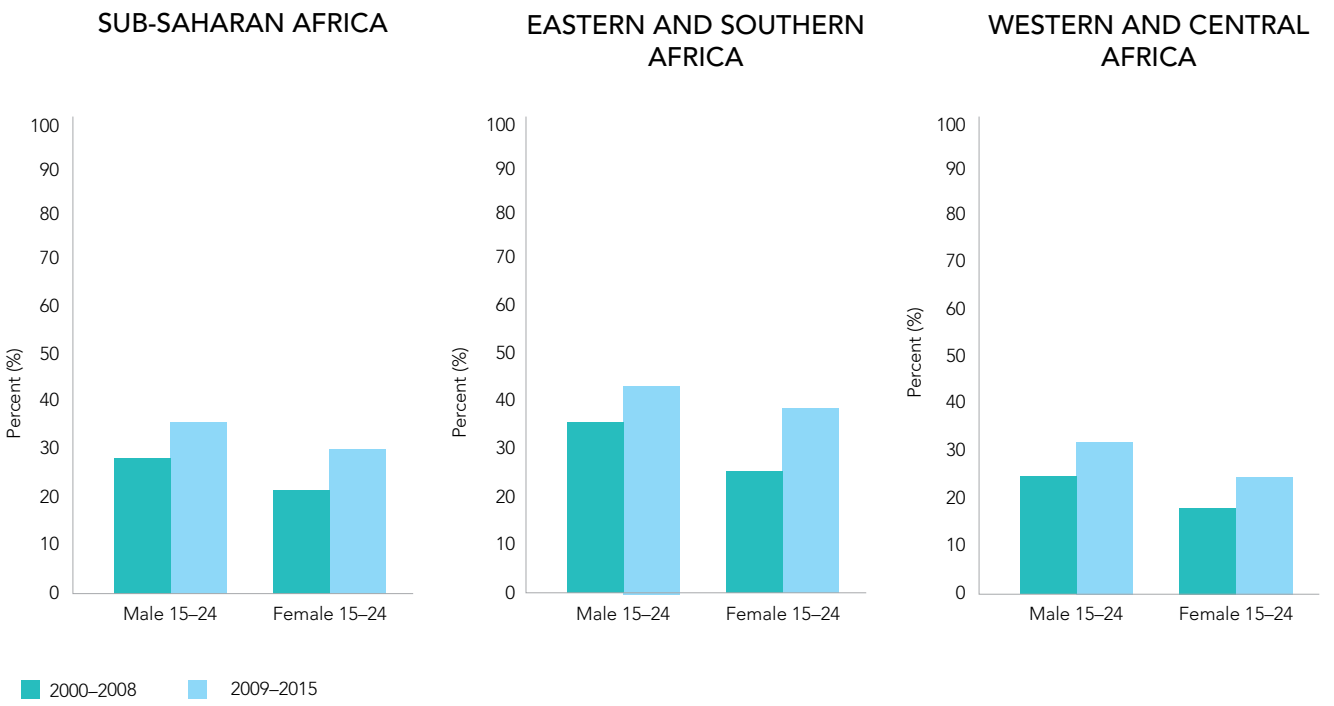
PREVENTION GAPS

- Most young people lack the knowledge required to protect themselves from HIV.
- There has been little progress on partner reduction in sub-Saharan Africa, except in a few locations.
- Investments in programmes that promote abstinence and faithfulness are not cost effective.
- Systematic implementation of behaviour and social change communication and demand generation has not taken place.

The latest available data show that most young people lack the knowledge required to protect themselves from HIV. In sub-Saharan Africa, survey data from 35 countries show that only 36% of young men and 30% of young women correctly identified ways of preventing the sexual transmission of HIV and rejected major misconceptions about HIV transmission *(32)*. In 23 countries outside of sub-Saharan Africa, just 13.8% of young men and 13.6% of young women had correct and comprehensive knowledge about HIV *(32)*. Furthermore, there are gaps in personal risk perception. In one survey, a significant proportion of young adults living with HIV who did not yet know their HIV status, said they did not perceive themselves at high risk of HIV *(33)*.

Systematic implementation of behaviour and social change communication and demand generation has not taken place. However, the evidence from recent successful initiatives like SHARE, SASA! and Stepping Stones has rekindled interest in these programmes, with critical elements being incorporated into new, large-scale programmes, such as DREAMS[4], which provides HIV services to young women and girls and addresses structural drivers that increase their

Correct and comprehensive knowledge about HIV among young people (aged 15–24 years), sub-Saharan Africa, 2000–2008 compared to 2009–2015



Source: Population-based surveys, 2000–2015.

HIV risk, including poverty, gender inequality, sexual violence and a lack of education, in 10 countries of eastern and southern Africa[5].

Comprehensive sexuality education is a specific form of social and behaviour change communication programme involving young people in the school setting. There is clear evidence that comprehensive sexuality education can facilitate the adoption of safer sexual behaviours, such as delayed sexual debut and increased condom use, and thereby contribute to reducing sexually transmitted infections, HIV transmission and unintended pregnancy *(34, 35–37)*. By 2015 many countries had embraced the concept of comprehensive sexuality education and were engaged in strengthening its implementation at the national level *(38, 39)*. Despite this, a major gap remains between global and regional policies and the actual implementation of comprehensive sexuality education on the ground.

WAY FORWARD

- Ensure that the design and implementation of behaviour change programmes are based on solid evidence of what works.
- Widely disseminate objective, comprehensive information on sexuality, including through comprehensive sexuality education.
- Leverage the global revolution in information and communications technology to improve behaviour change communications and link people at risk of HIV infection to services.

Eliminating new HIV infections among children

The world has committed to establishing an AIDS-free generation. This commitment follows unprecedented achievements driven by the Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive (the Global Plan)[6].

The dramatic declines in new child infections and AIDS-related deaths over the past five years were primarily due to the wide-spread expansion of antiretroviral medicines for mothers living with HIV, both during and after their pregnancies. The provision of these services has averted 1.6 million HIV infections among children since 2000. As of June 2016, four countries have been certified by the World Health Organization to have eliminated mother to child transmission: Armenia, Belarus, Cuba, and Thailand.

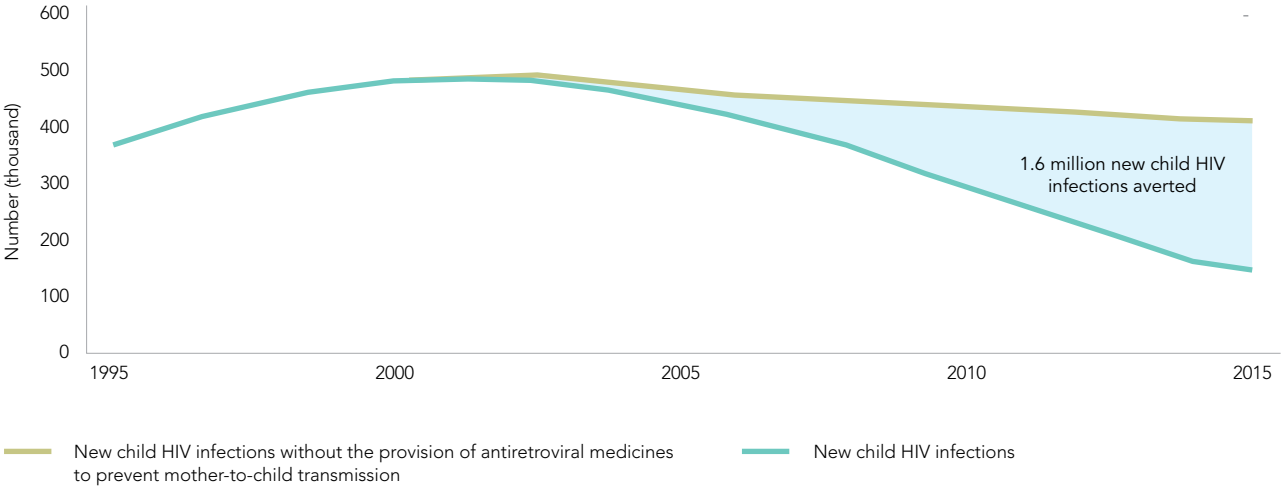
PREVENTION GAPS

- The number of new infections among women of reproductive age (aged 15 to 49 years) has not declined over the past five years.
- A widespread unmet need for family planning exists in many countries.

[4] Determined, Resilient, Empowered, AIDS-free, Mentored and Safe women
[5] Kenya, Lesotho, Malawi, Mozambique, South Africa, Swaziland, Uganda, United Republic of Tanzania, Zambia and Zimbabwe.
[6] For more information, see the final progress report of the Global Plan—On the Fast-Track to an AIDS-free generation—on the UNAIDS website (www.unaids.org).

- Over 300 000 women did not receive antiretroviral medicines to prevent mother to-child transmission in 2015.
- Treatment drop-out rates among women who are pregnant and breastfeeding remain high, leading to increased risk of transmission to their children.

New HIV infections among children (aged 0–14 years) with and without the provision of anti-retroviral medicines to prevent mother-to-child transmission, global, 1995–2015



Source: UNAIDS 2016 estimates.

Less progress, however, was made in other areas. There has been little change in the rate of new HIV infections among women, and there is still a widespread unmet need for family planning in many countries *(40)*. Globally, new infections among young women aged 15 to 24 years decreased by 6% between 2010 and 2015, and by 2% among women of reproductive ages (15 to 49 years). There were an additional 5.2 million women of reproductive age newly infected between 2010 and 2015, including 1.2 million in South Africa. The burgeoning cohort of adolescents about to commence their reproductive careers means that these numbers are likely to continue growing unless intensive primary prevention efforts succeed. As a result, the substantial need for services for preventing mother-to-child transmission among women of reproductive age will continue for the foreseeable future.

The situation was particularly challenging in Nigeria, which in 2015 had the second largest HIV epidemic in the world. Nigeria had the greatest number of new HIV infections among children in the world—an estimated 41 000 [28 000–57 000]—roughly equivalent to the next eight countries combined. There has only been a 21% decline in new paediatric HIV infections in Nigeria since 2009, compared to the 60% average among the other Global Plan priority countries *(40)*.

Moving forward, the Start Free, Stay Free, AIDS Free initiative, which was launched in 2016 and is led by UNAIDS and PEPFAR, aims to build on the progress achieved under the Global Plan through a super Fast-Track approach to the scale up of HIV prevention, treatment, care and support services for children, adolescents and young women *(41)*. The initiative aims to elevate and amplify efforts that are already accelerating progress, including the DREAMS Partnership, the Accelerating Children's HIV/AIDS Treatment (ACT) Initiative and ALL-IN.

WAY FORWARD

- Focus combination HIV prevention initiatives on women and girls in high-prevalence settings, including primary prevention among young women and identification and treatment for serodiscordant couples.
- Help women living with HIV avoid unintended pregnancies by ensuring they have access to sexual and reproductive health services, including contraception.
- Scale up programmes and initiatives that support and advocate for male and intimate partner engagement in the prevention of mother-to-child transmission.
- Strengthen community engagement, community service-delivery models and community support as well as rights-based approaches to prevention of mother-to-child transmission.
- Scale up the provision of early diagnosis, treatment and care for infants and children.

Investment in effective prevention

Strengthened global political commitment to HIV prevention must be followed by strengthened financial commitment. The successes of the global AIDS response to date have been fuelled by extraordinary investment. The total amount of financial resources for AIDS responses in low- and middle-income countries[7] reached an estimated US$ 19 billion in 2015, double the amount of resources available in 2006. However, international funding for in-country services in 2015 declined for the second year in a row to US$ 8.2 billion—a 7% reduction from the US$ 8.7 billion in 2014[8]. Public and private domestic investment increased by US$ 0.4 billion over the same period, resulting in approximately similar total resource availability in 2014 and 2015.

Available data show that investments in HIV prevention (including prevention of mother-to-child transmission) have slightly increased over time in a number of countries. However, more rapid increases in expenditures for HIV treatment translate to a declining trend in the percentage of total resources dedicated for a wide range of prevention services, including the prevention of mother-to-child

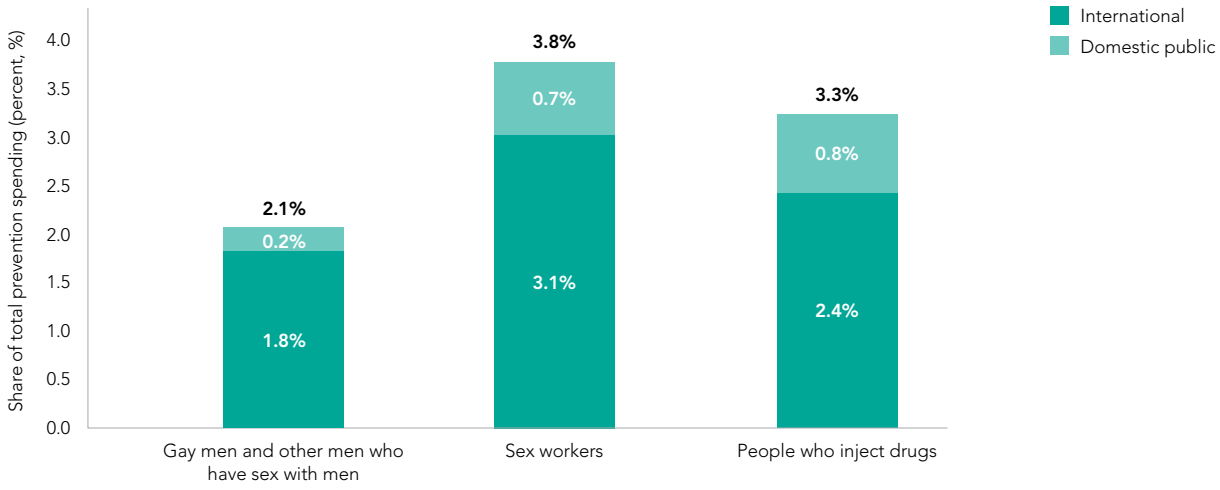
[7] Excluding the following countries that recently transitioned into high-income brackets and remaining classified as high income at the time of this report: Argentina, Equatorial Guinea, Chile, Hungary, Latvia, Lithuania, Russian Federation, St. Kitts and Nevis, Seychelles, Uruguay and Venezuela, The domestic and international investments in the AIDS responses of these countries have been included in previous UNAIDS estimates and global targets. Updates are expected pending the annual revisions by the World Bank on the income level classification of countries.

[8] The decline in international funds is partially driven by the appreciation of the US dollar. However, when assessed in the currencies of origin, most donors decreased their funding. On the other hand, the Global Fund for AIDS, Tuberculosis and Malaria partially recovered from a 2014 decrease attributable to the roll out of its new funding model. PEPFAR has noted that a portion of US funds that were initially expected to be available in 2015 were rescheduled during annual planning and are expected to be used in 2016 partially to fund the DREAMS project and other initiatives such as the recent commitment of US$ 100 million for services for key populations.

transmission, reaching about 20% in recent years—short of the commitment made within the 2016 Political Declaration on HIV and AIDS to ensure that financial resources for HIV prevention are adequate and constitute no less than a quarter of AIDS spending globally[9].

For example, HIV prevention services (including prevention of mother-to-child transmission) accounted for 20–23% of the total resources provided by the United States President's Emergency Plan for AIDS Relief (PEPFAR) from 2012 to 2014 *(42)*. If expenditures for the prevention of mother-to-child transmission and voluntary HIV testing and counselling are excluded, the prevention share was 13–16% of the total, including 4% for services focused on key populations *(43)*. Additional central funding for voluntary medical male circumcision or prevention among young women and girls through the DREAMS partnership is not fully accounted for in this analysis. PEPFAR remains the largest international donor of effective prevention.

Spending on programmes specifically for key populations as a percentage of total prevention spending by source, 2010–2014



Source: Global AIDS Response Progress Reporting, 2010-2014.

While a detailed expenditure analysis by the Global Fund to Fight AIDS, Tuberculosis and Malaria was not available, a preliminary analysis conducted by the Global Fund Secretariat for this report indicates that about 14% of Global Fund expenditure in 2014 was on primary prevention.

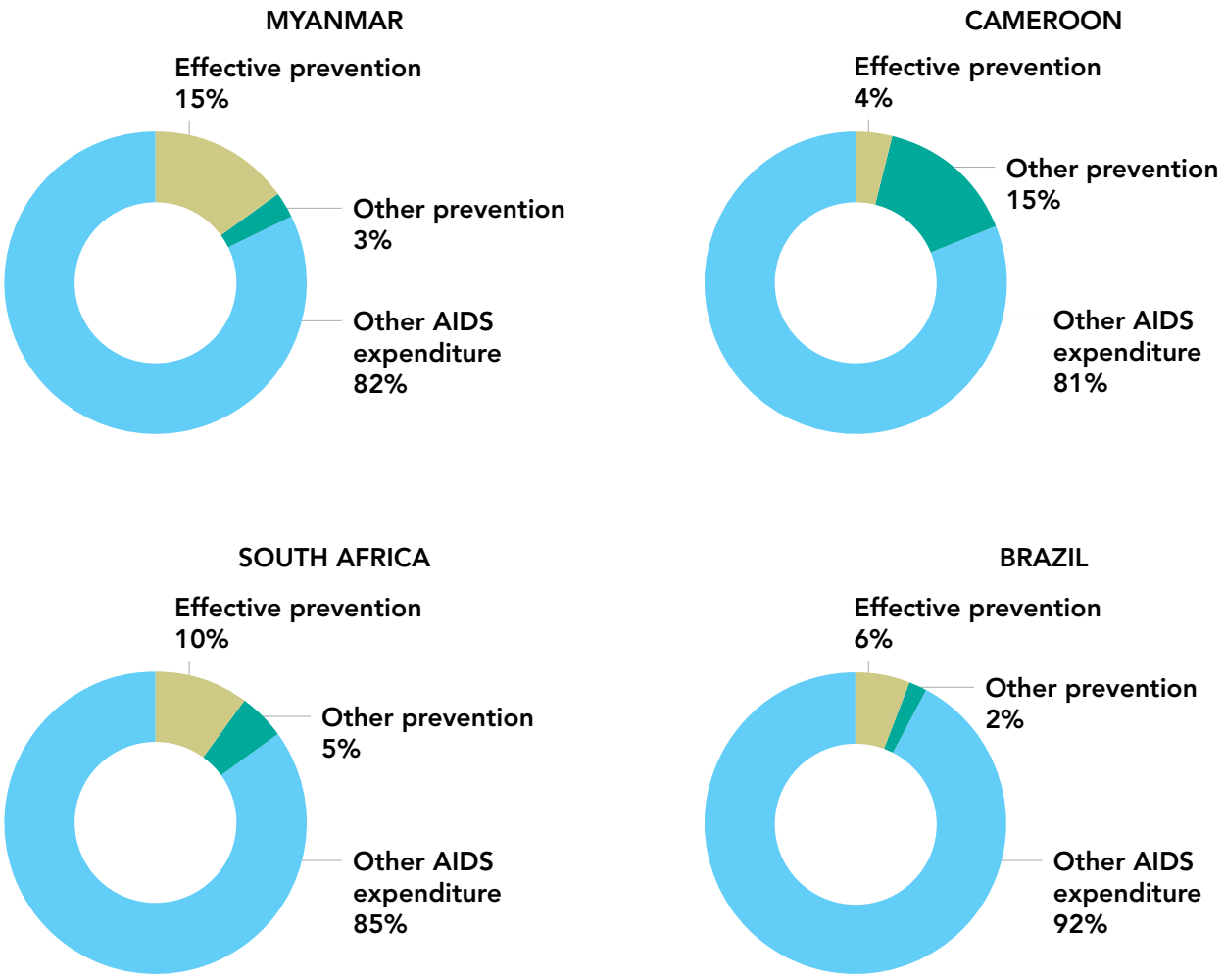
As well as increased, investments must be rebalanced to address the limited amount number of resources currently available for the five pillars of effective and proven primary prevention. For example, HIV prevention for key populations in low- and middle-income countries accounted for less than 2% of total HIV resources in 2015, or around 9% of the resources for prevention. The majority of resources for services focused on key

[9] The percentage required for prevention varies by country. It might be lower than 25% in high-prevalence countries with large numbers of people needing antiretroviral therapy, and higher than 25% in countries with epidemics highly concentrated among key populations and low treatment needs. (Stover J, Bollinger L, Izazola JA, Loures L, DeLay P, Ghys PD, et al. (2016) What Is Required to End the AIDS Epidemic as a Public Health Threat by 2030? The Cost and Impact of the Fast-Track Approach. PLoS ONE 11(5):e0154893).

populations come from international donors, barring exceptions such as Brazil, Mexico and a few countries in Asia and the Pacific. In June 2016, PEPFAR announced a special key populations investment fund of US$ 100 million that will help fill the funding gap, but not address the need for sustainable, country-owned financing sources.

An analysis of four countries from different regions, and with different epidemic patterns, found that funding of effective and focused primary prevention[10] was insufficient—6% in Brazil, 4% in Cameroon, 15% in Myanmar and 10% in South Africa.

Percentage of investments for effective prevention and other prevention categories, four countries, 2013–2014



Source: Global AIDS Response Progress Reporting.

[10] Effective prevention programmes were defined as those with proven efficacy and are included within five pillars: programmes for key populations (sex workers and their clients, gay men and other men who have sex with men, transgender people, prisoners and people who inject drugs, including harm reduction); condom promotion and provision; voluntary medical male circumcision; pre-exposure prophylaxis; and comprehensive HIV prevention programmes focused on young women and adolescent girls, including cash transfers.

Pulling together for prevention: translating global commitments into country action

Evidence from a diversity of countries shows that a combination approach to prevention—comprehensive packages of behavioural, biomedical and structural components, tailored to priority population groups within their specific local contexts—produces the strongest results. Research in South Africa has shown that combining cash transfers with free education and psychosocial support interventions boosted reductions HIV risk behaviours among adolescents *(44)*. In three countries of Central America, the combination of integrated prevention campaigns with biomedical and structural components improved condom use by sex workers with regular partners, in part by allowing sex workers to address deeper factors that influence their behaviours *(45)*.

Of critical importance for the future of the prevention response will be the relationship between government and community actors. Renewed prevention activism and a new compact between government and civil society organizations are needed. This partnership must go beyond grass-roots advocacy for risk awareness and "staying HIV free". Country compacts should include strengthened and clearly defined civil society roles in prevention programme planning, implementation and joint monitoring of progress against ambitious targets. Experience from Australia, India, South Africa and several countries in western and central Europe and North America shows that while government commitment and funding provide the foundation of successful prevention responses, prevention programme implementation, especially with regards to key populations, should be carried out in collaboration with civil society and peer organizations that have the trust and ear of the populations at greatest need of services. Formal contractual arrangements between government and civil society organizations, including supervision and mentoring, and capacity building, should be put in place across countries.

The targets and commitments in the 2016 Political Declaration on HIV and AIDS establish the basis for action. Global targets need to be translated into national and sub-national implementation plans that focus on the populations and locations in greatest need, and address the legal, social and economic barriers to prevention service access and uptake at national and local levels.

Key partners must pull together for prevention and ensure that sufficient technical capacity and financial resources are made available. A key catalyst for country action will be global guidance on how to define service reach, access or coverage within each of the five pillars. With countries and communities at the centre, a re-doubling of effort on combination prevention will put the world on track to achieving fewer than 500 000 new infections by 2020, and to ending the AIDS epidemic by 2020.

REFERENCES

1. UNAIDS. Special analysis, 2016; Baral SD, Poteat T, Strömdahl S, Wirtz AL, Guadamuz TE, Beyrer C. Worldwide burden of HIV in transgender women: a systematic review and meta-analysis. The Lancet Infectious Disease. 13(3): 214–222 March 2013.
2. United Nations Human Settlements Programme. Ending the urban AIDS epidemic. Nairobi. 2015.
3. UNAIDS. On the Fast–Track to end AIDS by 2030: Focus on location and population. Geneva. 2015.
4. Kumar R, Mehendale SM, Panda S, Venkatesh S, Lakshmi PVM, Kaur M et al. Impact of targeted interventions on heterosexual transmission of HIV in India. BMC Public Health. 2011;11:549.
5. World Health Organization, United Nations Office on Drugs and Crime and Joint United Nations Programme on HIV/ AIDS. Technical guide for countries to set targets for universal access to HIV prevention, treatment and care for injecting drug users. Geneva. 2012. Consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations. Geneva: World Health Organization; 2014.
6. Stover J. Avenir Health. The contribution of condoms to HIV prevention. Presentation made at Global Condom Steering Group meeting, 21–23 March 2016, Geneva.
7. Newman et al. Global Estimates of the Prevalence and Incidence of Four Curable Sexually Transmitted Infections in 2012 Based on Systematic Review and Global Reporting. Plos One, 8 December, 2015.
8. Njeuhemeli E et al. Voluntary medical male circumcision: modeling the impact and cost of expanding male circumcision for HIV prevention in eastern and southern Africa. PLOS Med. 2011;8(11).
9. Making drug control "fit for purpose": building on the UNGASS decade. Report by the Executive Director of the United Nations Office on Drugs and Crime as a contribution to the review of the twentieth special session of the General Assembly. E/CN.7/2008/ CRP.17. In: Fifty-first Commission on Narcotic Drugs session, Vienna, 7 May 2008. Vienna: Commission on Narcotic Drugs; 2008 (https://www.unodc.org/documents/ commissions/CND/CND_Sessions/CND_51/1_CRPs/E-CN7-2008-CRP17_E.pdf).
10. Skinner N, Feather NT, Freeman T, Roche AM. Stigma and discrimination in healthcare provision to drug users: the role of values, affect, and deservingness judgments. J Appl Soc Psychol. 2007;37:163–186.
11. Treloar C, Rance J, Backmund M. Understanding barriers to hepatitis C virus care and stigmatization from a social perspective. Clin Infect Dis. 2013;57 (Suppl. 2):S51–S55.
12. Strathdee SA, Beletsky L, Kerr T. HIV, drugs and the legal environment. Int J Drug Policy. 2015;26:S27–S32.
13. Pinkham S, Malinowska-Sempruch K. Women, harm reduction and HIV. Reprod Health Matters. 2008;16:168–181.
14. Policy brief: women who inject drugs and HIV—addressing specific needs. Vienna: United Nations Office on Drugs and Crime, UN Women, World Health Organization and International Network of People Who Use Drugs; 2014 (http://www.unodc.org/documents/ hiv-aids/publications/WOMEN_POLICY_BRIEF2014.pdf).
15. Pokrovsky VV, Ladnaya NN, Tushino OI, EV Buratsova. [HIV infection: newsletter no. 40.] Moscow: Federal Scientific and Methodological Center for Prevention and Control of AIDS; 2015.
16. Study on the impact of the world drug problem on the enjoyment of human rights. A/HRC/30/65. Geneva: United Nations Office of the High Commissioner for Human Rights; 2015.
17. Rosmarin A, Eastwood N. A quiet revolution: drug decriminalisation policies in practice across the globe. London: Release; 2012 (http://www.countthecosts.org/sites/default/files/release-quiet-revolution-drug-decriminalisation-policies.pdf).
18. Cohen MS, Chen YQ, McCauley M, Gamble T, Hosseinipour MC, Kumarasamy N, et al. Prevention of HIV-1 infection with early antiretroviral therapy. N Engl J Med. 2011;365:493–505.
19. Baeten JM, Donnell D, Ndase P, Mugo NR, Campbell JD, Wangisi J, et al. Antiretroviral prophylaxis for HIV prevention in heterosexual men and women. N Engl J Med. 2012;367:399–410.
20. Thigpen MC, Kebaabetswe PM, Paxton LA, Smith DK, Rose CE, Segolodi TM, et al. Antiretroviral preexposure prophylaxis for heterosexual HIV transmission in Botswana. N Engl J Med. 2012;367:423–434.
21. Solomon SS, Mehta SH, McFall AM, Srikrishnan AK, Saravanan S, Laeyendecker O, et al. Community viral load, antiretroviral therapy coverage, and HIV incidence in India: a cross-sectional, comparative study. Lancet HIV. 2016;3:183–190.

22. Das M, Chu PL, Santos GM, Scheer S, Vittinghoff E, McFarland W, Colfax GN. Decreases in community viral load are accompanied by reductions in new HIV infections in San Francisco. PLOS One. 2010;5:e11068

23. Fast-Track update on investments needed in the AIDS response. Geneva: Joint United Nations Programme on HIV/AIDS; 2016 (http://www.unaids.org/en/resources/ documents/2016/unaids_fast-track_update_investments_needed).

24. A short technical update on self-testing for HIV. Geneva: Joint United Nations Programme on HIV/AIDS; 2014 (http://www.unaids.org/sites/default/files/media_asset/JC2603_self-testing_en_0.pdf).

25. WHO expands recommendation on oral pre-exposure prophylaxis of HIV infection (PrEP). Geneva: World Health Organization; 2015 (http://www.who.int/hiv/pub/prep/policy-brief-prep-2015/en/).

26. FDA approves first drug for reducing the risk of sexually acquired HIV infection: July 16th 2012. (http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm312210.htm).

27. Cairns G. L'ANSM établit la RTU de Truvada dans la prophylaxie pré-exposition au VIH - Point d'information. ANSM, 1 December 2015 (http://ansm.sante.fr/S-informer/Points-d-information-Points-d-information/L-ANSM-etablit-la-RTU-de-Truvada-dans-laprophylaxie-pre-exposition-au-VIH-Point-d-information).

28. Cairns G. First data on PrEP programme in France. Aidsmap, 3 June 2016 (http://www.aidsmap.com/Cost-is-biggest-barrier-to-PrEP-in-Europe-ECDC-report-declares/page/3060924/).

29. Medicines Control Council approves fixed-dose combination of tenofovir disoproxil fumarate and emtricitabine for pre-exposure prophylaxis of HIV. Press release, 3 December 2015. Pretoria: Medicines Control Council; 2015 (http://www.mccza.com/documents/2e4b3a5310.11_Media_release_ARV_FDC_PrEP_Nov15_v1.pdf).

30. South Africa and Kenya approval of oral PrEP should spur rollout. Press release, 17 December 2015. Pretoria: Medicines Control Council; 2015 (http://www.avac.org/blog/south-africa-and-kenya-approval-oral-prep).

31. Ongoing and planned PrEP open label, demonstration and implementation projects, as of June 2016. New York: AVAC; 2016 (http://www.avac.org/sites/default/files/resourcefiles/PrEP_Trials_Demonstration_Projects_June_2016.pdf)

32. Population-based surveys, 2009–2015.

33. Zimbabwe National AIDS Council, UNFPA. National behavior change survey 2007/8. Harare, 2009.

34. Fonner VA, Armstrong KS, Kennedy CE, O'Reilly KR, Sweat MD (2014) School Based Sex Education and HIV Prevention in Low- and Middle-Income Countries: A Systematic Review and Meta-Analysis. PLoS ONE 9(3): e89692. doi:10.1371/journal.

35. UNFPA state of the world population 2013. Motherhood in childhood: facing the challenges of adolescent pregnancy. New York: UNFPA; 2013.

36. García-Moreno C et al. Addressing violence against women: a call to action. Lancet. 2015;385:1685–95.

37. International technical guidance on sexuality education: an evidence-informed approach for schools, teachers and health educators. Paris: UNESCO; 2009.

38. UNFPA. Emerging evidence, lessons and practice in comprehensive sexuality education. Paris: UNESCO; 2015.

39. Ministerial Declaration: prevention through education. First Meeting of Ministers of Health and Education to Stop HIV and STIs in Latin America and the Caribbean; 2010 (http://www.unesco.org/new/fileadmin/MULTIMEDIA/FIELD/Santiago/pdf/declaration-preventing-education-english.pdf, accessed 6 July 2016).

40. On the Fast-Track to an AIDS-free generation. Geneva: UNAIDS; 2016.

41. On the Fast-Track to end AIDS. In: free.unaids.org [website]. UNAIDS, PEPFAR and partners (http://free.unaids.org, accessed 7 July 2016).

42. UNAIDS analysis of data from the PEPFAR dashboard (https://data.pepfar.net/global; accessed 1 July 2016).

43. PEPFAR submission for GARPR 2016.

44. Cluver, L, Orkin, M, Yakubovich, A, Sherr, L (2016). Combination social protection for reducing HIV-risk behaviour amongst adolescents in South Africa. JAIDS. 72: 96-104.

45. J Rivas, S Lungo, S Ruether, et al. Are combination prevention interventions effective? The impact of combination prevention on increasing condom use among female sex workers in Central America. 20th International AIDS Conference. Melbourne, July 20-25 2014. Abstract ThAC0302.

Joint United Nations Programme on HIV/AIDS

20 Avenue Appia
1211 Geneva 27
Switzerland

+41 22 791 3666

unaids.org