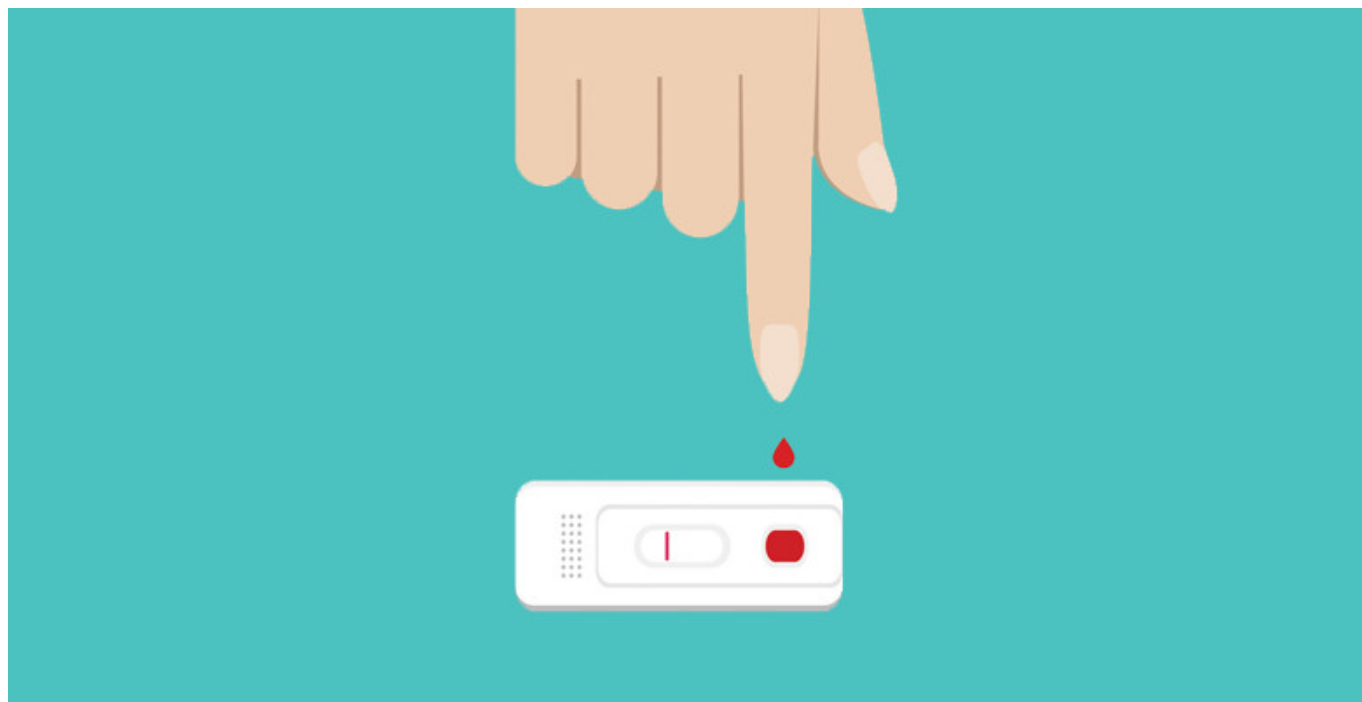


HIV testing programmes



KEY POINTS:

- HIV testing programmes are designed to get people who are unaware of their status, or those at risk of HIV, testing and linked to HIV prevention, treatment and care services.
- Testing pregnant women has been the great success story of the HIV response, but gaps remain in reaching men and key populations.
- New testing technologies have revolutionised the HIV response, by getting HIV tests to the community and out of the health facility.
- HIV self-testing and other innovative testing approaches can increase uptake of HIV testing among populations who do not engage with traditional health services.

Explore this page to find out more about testing [targets](#), [barriers](#), [populations who do not test](#), [approaches](#), [rights](#) and the [future](#).

HIV testing programmes focus on reaching people living with HIV who are unaware of their status, or those at a heightened risk of acquiring HIV, and are critical to an effective HIV response.¹

HIV testing marks the first step of the 'HIV treatment cascade' – that is, the route from testing and diagnosis, through to treatment access and viral suppression (when HIV levels in the body are very low). If someone is able to become and remain virally suppressed, they will be able to enjoy long-term good health and will not pass HIV on to anyone else.² This is the main aim of HIV treatment programming.

One of the great success stories of the HIV response has been increased access to HIV testing through prevention of mother-to-child transmission services (PMTCT) – enabling millions of children to be born HIV negative through effective testing and treatment for them and their mothers.³

Rapid tests, or point-of-care tests for HIV have also revolutionised the response, by increase task-

sharing, enabling HIV testing to be delivered by trained lay providers in more settings, ranging from routine testing in facilities to community-based outreach, to in the home.

But still, for a number of reasons – from simply not understanding the risks, to fear of criminalisation or stigmatisation for belonging to a certain group – many people do not test. There is now a growing awareness that innovative approaches are needed to increase the numbers of people testing for HIV.

Updated World Health Organization (WHO) guidelines now recommend HIV self-testing, which enables people to test in private, without fear. This is in addition to a broad array of other initiatives and strategies to increase demand for testing services, which is hoped to ultimately lessen the number of people currently unaware of their status.⁴

HIV testing targets and progress

HIV testing goals call for 90% of all people living with HIV to know their status by 2020, as described in the UNAIDS 90-90-90 Fast-Track Targets. Yet just 70% of all HIV infections were diagnosed in 2016. ⁵

Globally, HIV testing levels are poorest in the Middle East and North Africa (MENA) and in West and Central Africa. In both these regions, respectively, just 58% and 42% of people living with HIV were aware of their status in 2016.⁶

Western Europe, Central Europe and North America are the closest to achieving 90% testing coverage, with 86% of people living with HIV aware of their status in 2016, followed by Latin America (81%), East and Southern Africa (76%), Asia and the Pacific (71%), the Caribbean (64%) and Eastern and Central Europe (63%).⁷

Despite gaps, the global scale-up of HIV testing has been substantial over the past decade. In 2005, just 12% of people who wanted to test for HIV were able to do so globally, but in 2015 the proportion of people testing for HIV in Africa had risen from 10% to 55%.⁸

Data taken from East and Southern Africa show that knowledge of status has increased two-fold from 2012-2016 compared to 2007-2011, and four-fold in West and Central Africa.⁹

Barriers to HIV testing uptake

While there are many reasons to test, significant amounts of people report never having had an HIV test. There are many reasons why people do not test for HIV, including the perception that they are at a low-risk of infection and that there is little benefit from knowing their status if they do not have any symptoms.

Fear of stigmatisation, being badly treated by health care workers, or fears over HIV test confidentiality are also major barriers to getting people testing. The criminalisation and stigmatisation of certain identities and behaviours such as people who are lesbian, gay, bisexual, transgender or intersex (LGBTI), people who use drugs, other men who have sex with men, people who sell sex and sexually active young people, also deter these groups from testing – for fear of identifying themselves, which may lead to coerced treatment, arrest, violence or extortion.^{10 11}

There is also a discrepancy in testing between genders, with men less likely to test for HIV than women, across all regions.¹² But women who experience intimate partner violence are also less likely to seek out voluntary HIV testing and counselling.¹³

As a result, there is growing awareness that innovative approaches are needed to increase HIV

testing, particularly among those populations who feel unable to come forward for regular testing.

Which populations are not testing for HIV?

Men

Nearly 70% of adult HIV tests reported in 76 low- and middle-income countries in 2014 were conducted for women – largely because of the successful integration of HIV testing into sexual and reproductive health (SRH) services, including antenatal care.¹⁴ But HIV testing is not consistently integrated into other relevant settings where men may be reached.

In addition, male partner testing is not widely implemented or, where offered, taken up. As of June 2014 only half of 58 low- and middle-income countries surveyed had policies supporting couples testing for HIV.¹⁵

As a result, many men remain untested, and those who are HIV-positive continue to be undiagnosed and access treatment and care late. Consequently, men perform poorly along the treatment cascade.¹⁶

Harmful gender norms are also thought to fuel men's lack of engagement with health services. Studies from sub-Saharan Africa show that some men equate manliness with being dominant, having multiple sexual partners, not wanting to wear condoms and alcohol and substance abuse – behaviours which increase HIV risk.¹⁷ Cultural factors and worries around being seen as less masculine also contribute to low testing and treatment levels in men.¹⁸

Adolescents and young people

Despite the proportion of adolescents (10-19 years) living with HIV rising by 28% between 2005 and 2015,¹⁹ this age group is less likely to get tested than older people.

For example, in 19 low- and middle-income countries (mostly in sub-Saharan Africa) between 2011 and 2015, only 50% of people aged 15 to 19 years reported testing for HIV and receiving the results.²⁰

Despite the need for HIV testing among adolescents and young people, coverage and uptake remains poor for many reasons. It is estimated that only 31.5% of young people have accurate basic knowledge of how HIV is transmitted, suggesting they may be unaware of their personal HIV risk.²¹ Across the WHO Africa Region in 2015 it was estimated that fewer than one in every five adolescent girls aged 15-19 were aware of their HIV status.²²

Other challenges include testing services that are unwelcoming or inappropriate for younger people, HIV-related stigma, age-related stigma and discrimination from health workers, and problematic parental consent laws that limit young people's ability to access HIV testing and other health care services on their own.²³

As of 2015, at least 79 countries required young people to seek the consent of parents or legal guardians to access SRH services, and in many countries the age of consent for HIV testing is 18 or 21 years.²⁴

CASE STUDY: Reaching young people in East Africa

The Sustainable East Africa Research in Community Health (SEARCH) programme tracked 77,774 young people (ages 15 to 24) from 16 rural Kenyan and Ugandan communities for two

years. In response to young people's identified needs, HIV tests were given annually at participant's homes and social events where testing took place for hypertension and diabetes as well as HIV. All of those testing positive for HIV were immediately linked to care and offered treatment and participants received transportation vouchers, appointment reminders and flexible hours.²⁵

After two years of community-based HIV testing and treatment, 93.4% of those testing positive were on antiretroviral treatment, of whom 89.5% had achieved viral suppression. Overall, HIV viral suppression nearly doubled, from 44.7% to 80.2%.²⁶

Key affected populations

Although countries are increasingly including people most affected by HIV – such as people who use drugs, sex workers, people who are LGBTI or men who have sex with men (sometimes referred to as key populations) – in their national HIV testing guidelines, services remain limited in most settings.²⁷

The People Living with HIV Stigma Index indicates that members of key populations commonly experience disapproval, rejection and below standard services in health care settings, and this stigma and discrimination deters them from learning their HIV status.²⁸ This is echoed by findings of the 2014 Global Men's Health and Rights Study among men who have sex with men which found that only half (50%) of those surveyed reported HIV testing to be easily accessible, with experiences or fear of homophobia cited as a reason for its inaccessibility.²⁹

In addition, punitive laws and practices that criminalise behaviours such as sex work, same sex practices and drug use discourage people living with, and most affected by, HIV to access HIV testing for fear of coerced treatment, arrest, violence, punishment and incarceration.³⁰ For example, in Bangkok, 25% of drug users surveyed reported avoiding health care due to the fear of compulsory treatment.³¹

Delivering HIV testing programmes

Traditionally, HIV testing has been carried out in a health facility using a voluntary counselling and testing (VCT) approach, in which someone actively seeks HIV testing and receives counselling before and after the test is carried out. However, the need to increase the proportion of people living with HIV who know their status has seen new testing approaches being adopted that do not rely on people recognising their own risk and coming forward on their own to learn their status – in addition to providing more means for people who do know their risk to get tested.³²

Good practice in HIV testing programmes

Improving the quality and efficiency of HIV testing services can be achieved through programming good practices which include:

Integration

Integrating HIV testing with other health services, particularly those for tuberculosis (TB), STIs and other sexual reproductive health services can increase people's ability to access and take up HIV testing.³³ As a result, a move towards greater integration of these services has been seen over the last decade. The rate of HIV testing among people with TB has increased 18-fold since 2004. Coverage is highest in Africa, where 81% of all TB patients had a documented HIV test result, but this varies between countries.³⁴ However, gaps still remain; globally, as of 2015, only 55% of registered TB patients had a documented HIV test.³⁵ In 2013, International Planned Parenthood

Federation assessed the integration of SRH and HIV services in 49 countries. It found that, whilst SRH and HIV services were being integrated, there was a strong need for better coordination between programmes, improved health provider training and strengthened supply systems.³⁶

Task sharing

While integration is integral to reaching those who may not consider testing, other mixed HIV care models are also used, including task shifting within the health sector – where tasks are redistributed between cadres of health care workers. Community health workers, or trainer lay providers, are those from and deployed by the community itself, who need far less training than doctors, but can deliver health services when other human resources are limited. Much research has been conducted showing that community health workers increase uptake of health services, reduce inequalities, provide a high quality of services and improve overall health outcomes.³⁷

Decentralisation

Where necessary, HIV testing can be shifted out of the facility and away from health care providers – such as in workplaces, schools, and places of worship.³⁸ Decentralised programmes can decrease travel time to hospitals and overcrowding, which may increase uptake of HIV testing. Although these types of programmes are useful, some people still prefer the anonymity of testing outside the community.³⁹

Approaches to HIV testing programmes

Broadly speaking, there are four main approaches to delivering HIV testing programme: facility-based, in the community, via self-testing and partner testing.

Facility testing

Examples of these types of programmes include:

- Standalone voluntary counselling and testing (VCT) centres
- HIV drop-in clinics
- Provider-initiated testing and counselling
- Ante- and postnatal care
- Tuberculosis (TB) screening
- Sexually transmitted infections screening
- Opioid substitution treatment (OST)/ needle and syringe exchange programmes (NSP)
- Primary care

While drop-in and client-initiated programmes were certainly the norm for testing in the past, and in the pre-antiretroviral treatment era, there is also a move towards more proactive, rights-based, provider-initiated testing and counselling, in which people are offered an HIV test which they have to actively ‘opt out’ of or decline after being given information and counselling about it.⁴⁰ A study comparing voluntary testing with opt-out testing in the United States of America (USA) found 65.9% of people who were offered an HIV test accepted it, compared to 38% for opt-in patients..⁴¹

Prevention of mother-to-child transmission (PMTCT) services

Preventing mother-to-child transmission (PMTCT) services, which integrate HIV testing, treatment and care with ante- and postnatal services, have enabled millions of women to test for HIV. As of 2013 (when the last statistic exists) an estimated 46% of pregnant women were tested for HIV as part of PMTCT services globally.⁴²

Although there are huge variations between regions and countries, current coverage levels mean

the majority of pregnant women are still not accessing HIV testing through this route. To close this gap, increasingly PMTCT services are adopting provider-initiated HIV testing.[43](#)

Despite a move towards provider-initiated testing, the final decision as to whether or not to test must always be voluntary. Studies suggest that coercion and insufficient counselling around HIV testing for pregnant women results in women being less likely to learn the result of their test. Consequently they will be less likely to initiate treatment that will prevent them from transmitting HIV to their baby or to improve their health.[44](#) The provision of confidential testing is also important to protect women who wish to be tested through PMTCT services, but who are afraid of their partner finding out without proper information and counselling.[45](#)

Community testing

Examples of these types of programmes include:

- Mobile clinics/ vans
- Door-to-door outreach
- Home-based testing
- Event-based testing
- Campaigns
- Testing in the workplace

Strategies to increase demand for HIV testing services often utilise peer outreach and include door-to-door testing - where HIV testing is systematically offered at people's homes, particularly in areas where HIV prevalence is high - and mobile testing in various settings including in places where people socialise, live and work, as well as churches, schools and universities.[46](#) [47](#)

The development of rapid diagnostic testing has enabled HIV testing to be conducted in these various community settings.[48](#)

Health workers will also go into communities and enrol people to test for HIV through referral or voucher schemes. Community-based testing is extremely flexible as it can be conducted outside of normal health clinic hours, a process referred to as 'moonlight testing'.

This approach has found to be particularly effective with people from criminalised and highly stigmatised populations, who may mistrust health care providers. For example, a study of 2,705 female sex workers in Bengaluru, India between 2008 and 2012 found participants were more likely to regularly visit health clinics to test for HIV and other sexually transmitted infections (STIs) after being approached by a peer outreach worker.[49](#)

Community testing has also been found to increase rates of people testing for HIV, especially among people who have not tested for HIV before, and among key populations.[50](#) A systematic evidence review of community-based testing carried out in 2013 found mobile testing resulted in 87% of people reached taking an HIV test, door-to-door testing reached 80%; workplace testing reached 67%, and school-based testing reached 62%. Mobile testing uptake among men who have sex with men, people who inject drugs, female sex workers, and adolescents ranged from 9% to 100%.[51](#)

Project Accept, a study comparing community-based with facility-based HIV testing, took place in Tanzania, Zimbabwe, and Thailand a over-three year period. The proportion of people receiving their first HIV test was found to be higher among those reached with community-based testing compared to those accessing clinic-based testing in all three countries (Tanzania: 37% vs 9%, Zimbabwe 51% vs 5% and Thailand 69% vs 23%). Overall, community-based testing diagnosed almost four times more people with HIV than clinic-based testing.[52](#)

CASE STUDY: Peer outreach and community-based testing

In 2015, the LINKAGES project introduced a number of innovative approaches to their community-based testing in order to improve HIV testing, care and treatment services for gay men, other men who have sex with men and transgender women in four high-prevalence provinces of Thailand.

People were paid to act as peer mobilisers and asked to recruit and refer their friends and sexual partners for rapid HIV testing at community-led drop-in HIV service delivery centres. People who tested positive received an immediate CD4 count test to establish their stage of HIV infection and were referred for immediate treatment, with ongoing support and follow-up by community-based supporters and case managers. People who tested negative but were at high risk of infection were offered free pre-exposure prophylaxis, and contacted regularly for repeat HIV testing.

Data from the first nine months of the project in Chiang Mai indicated it had led to significantly higher rates of HIV testing uptake compared with traditional group-based outreach (77% vs 31%). A relatively small number of motivated peer mobilisers contributed significantly to the project's reach as 115 peer motivators successfully recruited 608 new clients. Clients reached via this method were more likely to receive an HIV test (94%) than those reached with traditional 'hot-spot' recruitment (54%). In addition, among clients who tested positive for HIV, those reached via social network recruitment were more likely to initiate treatment (77% compared with 38%).⁵³

Special health events, whereby people come to somewhere in their community or local area to get tested for a number of things, sometimes as part of a wider social event, has also been shown to be a successful community-based approach. Studies in Kenya and Uganda suggest that inclusion of HIV testing in multi-disease health campaigns has already driven HIV testing coverage levels up to 86% and 72% respectively.⁵⁴

Increasingly, community-based HIV testing is being integrated with other community-based services. In Uganda, Village Health Teams, which have long-established relationships with rural communities through the provision of family planning services, have been piloting offering HIV testing as part of their outreach work.⁵⁵

Self-testing

In 2016, the WHO updated its HIV testing guidelines to include self-testing.⁵⁶ The update was made following the results of a systematic review, which found that HIV self-testing increases the number of people getting tested and the frequency they go for tests, resulting in more people with previously undiagnosed HIV becoming aware of their status.^{57 58}

Because self-testing is discreet and convenient, it may be particularly appealing for people who may fear HIV-related or behaviour-related stigma and discrimination in health care settings, as well as those who could benefit from more frequent testing or who live in places where health facilities are inaccessible.^{59 60}

Self-testing services are increasingly being used by countries throughout the world, including Australia, Brazil, France, Moldova, the United Kingdom, and the USA. In 2015, Kenya announced plans to introduce self-test kits and began evaluating distributors. A two-year project to scale up self-testing in Malawi, Zambia and Zimbabwe was launched by UNITAID and PSI in 2015, focused

on places and people where access to testing is restricted such as rural areas and among female sex workers and men who have sex with men.⁶¹

CASE STUDY: Reaching men with self-testing through PMTCT services

A pilot study in Kisumu, Kenya provided multiple HIV self-tests to pregnant women and women who had given birth, to distribute to their partners or to test with them. It found that 90.8% of male partners in the self-testing group tested for HIV compared to 51.7% of partners who were invited to clinics to test. Couples testing was also more likely in the self-test group than the comparison group (75.4% versus 33.2%). No participants reported intimate partner violence due to HIV testing.⁶²

However, there are a number of concerns relating to self-testing, namely that those who test positive without counselling support may be more likely to feel depressed and unable to cope with their result and may be less likely to access care.⁶³ However, the WHO systematic review mentioned above found that social harm such as suicide did not increase as a result of self-testing although it identified limited information on linkages to care.⁶⁴

Partner testing

It is estimated that up to half of people living with HIV who are in on-going relationships have HIV-negative partners (known as serodiscordant relationships). Yet many people living with HIV may be unaware of their status or, if they are aware, they may not feel they are able to negotiate safer sex or disclose their status. Consequently, a significant number of new infections occur within serodiscordant couples.⁶⁵ Couples HIV testing and counselling seeks to address this issue. Often, but not exclusively, partner testing is conducted through the provision of PMTCT services at antenatal clinics in which the male partners of pregnant women are also offered an HIV test.⁶⁶

Evidence suggests that people in couples who test together and can mutually disclose their status in an environment where support is provided are more likely than those testing alone to adopt behaviour to protect their partner.⁶⁷

Couples testing has also been shown to reduce risk behaviour. For example, a study in Lilongwe, Malawi found, in serodiscordant partnerships where the women had tested HIV positive after couples testing, safer sex behaviours (defined as abstinence or consistent condom use) increased by 75%.⁶⁸

Assisted partner notification

In 2016, WHO began recommending assisted voluntary partner notification as a way to increase the number of people testing for HIV.⁶⁹ HIV partner notification is a voluntary process whereby trained health workers, including lay providers, ask people diagnosed with HIV about their sexual partners or injecting partners, and with their consent, offer these partners VCT.⁷⁰

The WHO guidance update came after a systematic evidence review found more partners of people living with HIV came forward for HIV testing when notified by a health provider of their possible exposure to the virus, compared to 'passive referral' programmes, which put the onus on the person with HIV to notify sexual or injecting partners and encourage them to test. The review found assisted notification also resulted in higher proportions of partners being diagnosed with HIV and linked to treatment services.⁷¹

However, in some settings, medical secrecy laws may prohibit HIV partner notification. In other contexts, restrictive laws and policies may put people living with HIV and their partners at risk of stigmatisation, discrimination, criminalisation and punitive actions.⁷²

Yet the evidence review found low levels of social harm such as intimate partner violence following passive or assisted HIV partner notification. This has been a concern raised against the use of partner assisted notification, especially in situations where gender-based and intimate-violence and other forms of gender inequality are high.⁷³

CASE STUDY: Incentivising for testing

There is evidence that incentivising people, including with monetary incentives, for HIV and STI testing can lead to higher rates of uptake. In rural districts in Malawi the retrieval of test results was on average 43% higher among participants in a study who were offered door-to-door HIV testing and who received a voucher for up to US \$3 when they went to a clinic to collect their results. For every additional dollar of incentive provided, there was an increase of 9%. Similarly at an urban clinic in the USA, monetary incentives of US \$5 and US \$10 increased test acceptance rates by 12% and nearly 13%, respectively.⁷⁴

HIV testing and rights

A rights-based approach that rejects coercion and stigmatisation is essential to successful HIV testing.⁷⁵

The public health benefits must always outweigh the potential harm or risk. Moreover, the main reasons for testing must always be to both benefit the individuals being tested and to improve health outcomes at the population level.⁷⁶

To this end, programme approaches must adhere to the WHO '5 Cs' of HIV testing, namely:

- **Consent:** HIV testing should always be voluntary, never mandatory, or performed under coercion. A person should be informed about what's involved in an HIV test and their right to decline.
- **Confidentiality:** Results of an HIV test should not be disclosed to any other party without the explicit consent on the person being tested. Although confidentiality must be respected, healthcare workers can help support newly diagnosed individuals with information and advice on how to tell others.
- **Counselling:** All HIV tests must also be conducted with pre and post-test counselling depending on the results of the test – with anyone being tested having the ability to ask questions in private should they request it. In the context of self-testing, counselling can be provided in a number of ways, through leaflets, online information, etc.
- **Correct test results:** High-quality testing equipment should be used to ensure people receive a correct diagnosis. In the case of rapid testing, including self-testing, all reactive (positive) test results should be confirmed with further testing.
- **Connection:** All testers should be linked to HIV prevention, treatment and care services, and should be appropriately followed-up.⁷⁷

In addition to the 5 Cs, supportive policies are essential for successful and effective HIV testing programmes. This includes prohibiting mandatory or coercive

HIV testing or partner notification practices and revising laws and policies that stigmatise, criminalise and discriminate against people from key population groups and people with HIV.⁷⁸

Conclusion - bridging the HIV testing gap

In recent years, the 'Undetectable = Untransmittable' (U=U) Campaign has grown out of the evidence that, if someone living with HIV achieves viral suppression and their HIV becomes undetectable, the virus will be untransmittable to anyone else. For many people living with HIV and their partners, this is a message of freedom and hope. It provides an unprecedented opportunity to improve lives of people living with HIV, dismantle HIV stigma, and encourage people to start and stay on treatment for their health and to prevent them from passing it on to partners.⁷⁹

But the journey to viral suppression begins with HIV testing. Without further expansion of HIV testing and treatment services, this hugely positive development for people living with HIV, and the massive potential it holds for public health, will not be realised.

Innovative strategies for HIV testing must continue to expand and grow. Steps such as WHO's recommendation for self-testing and assisted partner notification services are important moves forward, as are increases in testing programmes that combine a wide range of approaches and tools to meet the specific needs of the populations they intend to serve.

The success in integrating HIV testing into antenatal and other SRH services has seen increases in the number of women testing. As men continue to lag behind in testing, programmes that look to integrate HIV testing with services that are specific to men must also be considered.

Greater efforts are also needed to improve access to HIV testing among adolescents where HIV incidence is high and among key populations in all settings.⁸⁰

The successes of community-based testing and peer outreach have been shown to be huge assets in expanding the reach and uptake of testing services, particularly for those most affected by HIV. Investments that strengthen these communities will be essential to further realise the promise of decentralised testing and open up the care continuum to all those who need it.⁸¹

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