Goal of this chapter

To provide a summary of existing and new evidence-based clinical recommendations outlining a public health approach to diagnosing HIV infection and providing ARV drugs for prevention in the context of the broad continuum of HIV care, with a focus on settings with limited health system capacity and resources.
5. CLINICAL GUIDELINES ACROSS THE CONTINUUM OF CARE: HIV DIAGNOSIS AND ARV DRUGS FOR HIV PREVENTION

5.1 HIV testing and counselling

5.1.1 Introduction

People access HIV treatment, care and prevention through the gateway of HIV testing and counselling. It is currently estimated globally that about half of the people living with HIV do not know their HIV status. The people who do know often test late, and poor linkages from HIV testing and counselling to care – including failure to assess rapidly for ART eligibility – mean that many people start treatment when they are already significantly immunocompromised, resulting in poor health outcomes and ongoing HIV transmission. The overall HIV testing and counselling goal for a national HIV programme should be to identify as many people living with HIV as early as possible after acquiring HIV infection, and link them appropriately and in a timely manner to prevention, care and treatment services. The people tested who are not infected should be linked to appropriate prevention services, such as voluntary male medical circumcision in the priority countries in sub-Saharan Africa, or harm reduction services for those who use drugs, and encouraged to retest at a later time.

Diverse models of HIV testing and counselling services are available to increase access to HIV diagnosis, including testing services in health care facilities, freestanding sites and a wide range of community-based approaches. These are described in detail in the WHO 2012 strategic HIV testing and counselling framework (1). The use of rapid HIV diagnostic tests that can be used at point of care has become an important strategy to expand access, increase the return of same-day results and enable appropriate referral and follow-up. Countries should choose a strategic mix of service delivery models to achieve equitable access to HIV testing and counselling, based on the local context, the nature of the epidemic, cost–effectiveness and available resources. The mix should facilitate diagnosing as many people living with HIV as early as possible to enable timely linkage to ART. Strategies should be able to reach the people who are most vulnerable, most-at-risk and marginalized (Box 5.1).

The use of a single HIV test to diagnose HIV infection is not sufficient; it must be confirmed by following the steps outlined in the updated WHO 2012 HIV testing strategies (algorithms) (1). Quality assurance systems should be put in place to minimize false-positive and false-negative results. Failure to do this will lead to people being given incorrect test results, with potential serious adverse long-term consequences. Quality assurance and quality improvement measures are also important for the counselling process to ensure that HIV testing and counselling is always conducted in an acceptable and effective manner.
Box 5.1 HIV testing and counselling: guiding principles

All forms of HIV testing and counselling should be voluntary and adhere to the five C’s: consent, confidentiality, counselling, correct test results and connections to care, treatment and prevention services.

Mandatory or coerced testing is never appropriate, whether that coercion comes from a health care provider or from a partner or family member.

The following key principles apply to all models of HIV testing and counselling and in all circumstances.

- People receiving HIV testing and counselling must give informed consent (verbal consent is sufficient and written consent is not required) to be tested and counselled. They should be informed of the process for HIV testing and counselling and their right to decline testing.

- HIV testing and counselling services are confidential, meaning that what the HIV testing and counselling provider and the person discuss will not be disclosed to anyone else without the expressed consent of the person being tested. Although confidentiality should be respected, it should not be allowed to reinforce secrecy, stigma or shame. Counsellors should raise, among other issues, whom else the person may wish to inform and how they would like this to be done. Shared confidentiality with a partner or family members and trusted others and with health care providers is often highly beneficial.

- HIV testing and counselling services must be accompanied by appropriate and high-quality pre-test information (which can be provided as group pre-test information in some settings) and post-test counselling. Quality assurance mechanisms and supportive supervision and mentoring systems should be in place to ensure the provision of high-quality counselling.

- HIV testing and counselling providers should strive to provide high-quality testing services, and quality assurance mechanisms should be in place to ensure the provision of correct test results. Quality assurance may include both internal and external measures and should include support from the national reference laboratory as needed.

- Connections to prevention, care and treatment services should include the provision of effective referral to appropriate follow-up services as indicated, including long-term prevention and treatment support.

Quality assurance of both testing and counselling is essential in all approaches used.

5.1.2 HIV testing and counselling in health facilities

Background

WHO recommends routinely offering HIV testing and counselling in clinical settings (known as provider-initiated testing and counselling) as an efficient and effective way to identify people with HIV who could benefit from treatment.

Source for recommendations:

5.1.3 Community-based HIV testing and counselling

In addition to providing HIV testing and counselling in clinical settings, HIV testing and counselling can be offered in a variety of settings in the community.

**New recommendations (2013)**

- In generalized HIV epidemics, community-based HIV testing and counselling with linkage to prevention, care and treatment services is recommended, in addition to provider-initiated testing and counselling (*strong recommendation, low-quality evidence*).

- In all HIV epidemic settings, community-based HIV testing and counselling for key populations, with linkage to prevention, care and treatment services is recommended, in addition to provider-initiated testing and counselling (*strong recommendation, low-quality evidence*).

**Background**

These guidelines include expanded criteria for eligibility for ART for children, adolescents, adults and pregnant and breastfeeding women living with HIV. To maximize the individual and public health benefits of these recommendations, people living with HIV must be diagnosed and linked to care early in the course of HIV infection. Although facility-based testing is a key approach, people living with HIV are often identified late in the course of HIV disease in clinical settings, and some populations, including men and adolescents, and especially key populations, have low utilization of health care services. Community-based
testing approaches may reach people with HIV earlier in the course of HIV disease than provider-initiated testing and counselling, as well as reaching populations that may not normally attend health services.

The use of rapid HIV diagnostic tests using blood from a finger-prick sample taken by trained lay counsellors and community health workers has facilitated the expansion of HIV testing and counselling in community settings including homes, transport stations, religious facilities, schools, universities, workplaces and venues frequented by key populations. Continued expansion of community-based testing to complement facility-based testing is an important consideration in achieving universal knowledge of HIV status and earlier diagnosis linked to care and treatment. Community-based HIV testing and counselling includes using mobile, door-to-door, index, campaign, workplace and school-based HIV testing and counselling approaches (1).

**Rationale and supporting evidence**

The recommendations are based on evidence and on operational and programmatic considerations. The systematic review identified four randomized studies (3,4) and eight observational studies (5–10) comparing community-based testing to facility-based testing in generalized epidemics (Web Annex: www.who.int/hiv/pub/guidelines/arv2013/annexes). Overall, community-based approaches had increased rates of people testing for the first time and adults diagnosed with CD4 counts exceeding 350 cells/mm³. However, the frequency of positive test results was higher in health facility–based testing than in many community settings. The systematic review found that HIV testing and counselling coverage at the district level increased as a result of offering community-based HIV testing and counselling (using either door-to-door or mobile approaches) in combination with facility-based HIV testing and counselling.

An additional review covering key populations identified three studies comparing community-based testing to facility-based testing in key populations (11–13). Although increased uptake was observed in community-based approaches, the rate of participants receiving their first HIV test was comparable in both the community- and facility-based approaches.

Fifteen studies examined potential negative consequences of community-based testing (10,14–25). These studies discussed both the clients’ positive testing experiences and their fears. Eight articles reported that a minority of participants refused HIV testing and counselling because of fear of status disclosure or stigma (10,14–17,21,23,25). The studies did not demonstrate that community-based approaches either reduced stigma or fear or increased them or other harms.

The few studies comparing the cost per person tested using facility- and community-based testing found that the cost per person tested was similar in both approaches (Web Annex: www.who.int/hiv/pub/guidelines/arv2013/annexes).

Although the review provided low-quality evidence overall, there was consensus that the critical programmatic advantages of community-based HIV testing and counselling and an assessment of values, preferences, costs and feasibilities provided sufficient basis for the Guideline Development Group to propose strong recommendations.

Community-based testing should be implemented in addition to provider-initiated testing and counselling. Multiple approaches are needed, which may include stand-alone sites, home-based testing, mobile outreach (including in workplaces, schools, universities, special testing campaigns and events) and multi-disease campaigns tailored to epidemiological and social contexts.
5.1.4 HIV testing and counselling in specific populations

5.1.4.1 Couples

Background

Studies in several countries have shown that couples HIV testing and counselling is acceptable, feasible and effective. It can identify seroconcordant positive couples who can be linked to treatment and receive treatment adherence support. It also identifies couples with serodiscordant HIV test results who can benefit from HIV prevention interventions. Services should be offered to married and cohabiting couples, premarital couples, polygamous unions and any other partnerships. As with all HIV testing and counselling approaches, couples HIV testing and counselling should be voluntary. Health providers must be aware of the potential for intimate partner-based violence and should support individuals when they do not want to test with their partners. Couples HIV testing and counselling can be offered in all settings where HIV testing and counselling is provided, including antenatal care and TB services. Support to encourage the testing of the partners of people living with HIV is also an efficient and effective way of identifying additional people living with HIV, who then can benefit from treatment. Further, couples HIV testing and counselling can be an important intervention to increase access to earlier ART and reach more men with treatment. Offering family counselling and testing to couples where one or both are living with HIV can identify children, adolescents and other household members who have not previously been diagnosed.

Source for recommendations:


Existing recommendations (26)

- Couples and partners should be offered voluntary HIV testing and counselling with support for mutual disclosure (strong recommendation, low-quality evidence).

- Couples and partners in antenatal care settings should be offered voluntary HIV testing and counselling with support for mutual disclosure (strong recommendation, low-quality evidence).

- Couples and partner voluntary HIV testing and counselling with support for mutual disclosure should be offered to individuals with known HIV status and their partners (strong recommendation, low-quality evidence for all people with HIV in all epidemic settings; conditional recommendation, low-quality evidence for HIV-negative people depending on the country-specific HIV prevalence).
5.1.4.2 Pregnant and postpartum women

Background

Provider-initiated testing and counselling for pregnant women and linkage to prevention and care are needed to promote the mother’s health and prevent new paediatric infections and can contribute to a strategy for couples testing.

Source for recommendations:


Existing recommendations (2)

**Generalized epidemics**

- Provider-initiated testing and counselling is recommended for women as a routine component of the package of care in all antenatal, childbirth, postpartum and paediatric care settings.
- Re-testing is recommended in the third trimester, or during labour or shortly after delivery, because of the high risk of acquiring HIV infection during pregnancy.

**Low-level and concentrated epidemics**

- Provider-initiated testing and counselling should be considered for pregnant women. Many countries prioritize provider-initiated testing and counselling in antenatal care as a key component of their effort to eliminate the mother-to-child transmission of HIV and are effectively bundling HIV testing with syphilis screening, hepatitis testing or other key tests relevant to the setting as well as strengthening the underlying maternal and child health system.

5.1.4.3 Infants and children

Background

HIV-exposed infants and children younger than 18 months should be tested within four to six weeks of birth so that those already infected with HIV can start ART. Mortality is very high among untreated infants infected with HIV in the first year of life, making early HIV testing, prompt return of results and rapid initiation of treatment essential. In this population, HIV infection can only be definitively confirmed using virological tests because of the presence of persisting maternal HIV antibody in the child up to 15–18 months of age. Virological tests include assays to detect viral nucleic acid (HIV DNA, RNA or total nucleic acid) or p24 antigen. Currently, virological testing is most commonly performed on dried blood spot (DBS) specimens, with collection at local sites and transport and testing at centralized laboratories. While early testing is increasing, there are ongoing challenges of access, return of results and initiation of early treatment in infants testing positive. Point-of-care virological testing, in development, is expected to greatly improve early diagnosis and treatment. Because some infants are not identified as HIV-exposed or are lost to postpartum follow-up, provider-initiated...
testing and counselling should be implemented in infant care settings for additional case-finding. Final diagnosis (or definitive diagnosis) at the end of the risk period for mother-to-child transmission (breastfeeding period) should be ensured. A negative HIV antibody test in a known HIV-exposed infant can be useful to exclude HIV infection if there is no ongoing exposure. (See Annex 5 for the algorithm on HIV diagnosis in children less than 18 months of age.)

For children 18 months of age and older (who are not breastfeeding or who stopped breastfeeding at least six weeks earlier), standard HIV serological tests such as rapid diagnostic tests can be used to reliably determine HIV infection status. WHO recommends provider-initiated testing and counselling for all children who are malnourished, have TB, are admitted to hospital or have other signs or symptoms of HIV infection. Other approaches such as testing all children in childhood vaccination programmes have been implemented in some settings to increase chances of finding HIV-infected children. The recommendations on diagnosis of HIV infection in infants and children will be reviewed in the coming year.

**Table 5.1 Summary of recommended testing approaches for infants (27)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Test required</th>
<th>Purpose</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well, HIV-exposed infant</td>
<td>Virological testing at 4–6 weeks of age</td>
<td>To diagnose HIV</td>
<td>Start ART if HIV-infected</td>
</tr>
<tr>
<td>Infant – unknown HIV exposure</td>
<td>Maternal HIV serological test or infant HIV serological test</td>
<td>To identify or confirm HIV exposure</td>
<td>Need virological test if HIV-exposed</td>
</tr>
<tr>
<td>Well, HIV-exposed infant at 9 months</td>
<td>HIV serological test (at last immunization, usually 9 months)</td>
<td>To identify infants who have persisting HIV antibody or have seroreverted</td>
<td>Those HIV seropositive need virological test and continued follow up; those HIV negative, assume uninfected, repeat testing required if still breastfeeding</td>
</tr>
<tr>
<td>Infant or child with signs and symptoms suggestive of HIV infection</td>
<td>HIV serological test</td>
<td>To confirm exposure</td>
<td>Perform virological test if &lt;18 months of age</td>
</tr>
<tr>
<td>Well or sick child seropositive &gt;9 months and &lt;18 months</td>
<td>Virological testing</td>
<td>To diagnose HIV</td>
<td>Reactive – start HIV care and ART</td>
</tr>
<tr>
<td>Infant or child who has completely discontinued breastfeeding</td>
<td>Repeat testing six weeks or more after breastfeeding cessation – usually initial HIV serological testing followed by virological testing for HIV-positive child and &lt;18 months of age</td>
<td>To exclude HIV infection after exposure ceases</td>
<td>Infected infants and children &lt;5 years of age, need to start HIV care, including ART</td>
</tr>
</tbody>
</table>
5. Clinical guidelines across the continuum of care: HIV diagnosis and ARV drugs for HIV prevention

5.1 HIV testing and counselling in specific populations

Source for recommendations:


Existing recommendations (27)

- It is strongly recommended that all infants with unknown or uncertain HIV exposure being seen in health care facilities at or around birth or at the first postnatal visit (usually 4–6 weeks), or other child health visit, have their HIV exposure status ascertained (strong recommendation – high-quality evidence).

- It is strongly recommended that all HIV-exposed infants have HIV virological testing at four to six weeks of age or at the earliest opportunity thereafter (strong recommendation, high-quality evidence).

- For infants with an initial positive virological test result, it is strongly recommended that ART be started without delay and, at the same time, a second specimen be collected to confirm the initial positive virological test result. Do not delay ART. Immediate initiation of ART saves lives and should not be delayed while waiting for the results of the confirmatory test (strong recommendation, high-quality evidence).

- It is strongly recommended that infants with signs or symptoms suggestive of HIV infection undergo HIV serological testing and, if positive (reactive), virological testing (strong recommendation – low-quality evidence).

- It is strongly recommended that well, HIV-exposed infants undergo HIV serological testing at around nine months of age (or at the time of the last immunization visit). Infants who have reactive serological assays at nine months should have a virological test to identify HIV-infected infants who need ART (strong recommendation, low-quality evidence).

- It is strongly recommended that children 18 months of age or older with suspected HIV infection or HIV exposure, have HIV serological testing performed according to the standard diagnostic HIV serological testing algorithm used in adults (strong recommendation, high-quality evidence).

Existing recommendation (28)

- Children of school age should be told their HIV-positive status and their parents or caregiver’s status; younger children should be told their status incrementally to accommodate their cognitive skills and emotional maturity, in preparation for full disclosure (strong recommendation, low-quality evidence).
5.1.4.4 Adolescents

Background

Adolescents are often underserved and given insufficient priority in many HIV programmes, with poor access to and uptake of HIV testing and counselling and linkage to prevention and care. Adolescents with HIV include those surviving perinatal infection and those newly acquiring infection as they become sexually active or are exposed through injecting drug use, other unsafe injections and blood transfusions. In generalized epidemic settings, many vertically infected infants are not diagnosed through programmes for PMTCT and would benefit from earlier HIV diagnosis and treatment. In many settings, adolescent girls and adolescents from key populations are also vulnerable to HIV infection and would benefit from access to acceptable and effective HIV services, including HIV testing and counselling. Consent issues may pose a barrier to access for adolescents in some settings and are discussed in detail in the WHO 2013 guidelines for adolescents (29).

Source for recommendations:


New recommendations (2013) (29)

- HIV testing and counselling, with linkages to prevention, treatment and care, is recommended for adolescents from key populations in all settings (generalized, low and concentrated epidemics) (strong recommendation, very-low-quality evidence).

- HIV testing and counselling with linkage to prevention, treatment and care is recommended for all adolescents in generalized epidemics (strong recommendation, very-low-quality evidence).

- We suggest that HIV testing and counselling with linkage to prevention, treatment and care be accessible to all adolescents in low and concentrated epidemics (conditional recommendation, very-low-quality evidence).

- We suggest that adolescents be counselled about the potential benefits and risks of disclosure of their HIV status and empowered and supported to determine if, when, how and to whom to disclose (conditional recommendation, very-low-quality evidence).
5. Clinical guidelines across the continuum of care: HIV diagnosis and ARV drugs for HIV prevention

5.1.4 HIV testing and counselling in specific populations

Rationale and supporting evidence

These recommendations were developed as part of new HIV guidelines for adolescents from WHO, UNESCO, UNFPA, UNICEF and GNP+ published in 2013 and are based on systematic reviews of the evidence, community consultations to assess values and preferences of adolescents and health providers and consideration by the respective Guideline Development Group. For the most part, published evidence for adolescent-specific recommendations is lacking; for these guidelines, considerable weight is given to expert opinion, values and preferences of adolescents and their health care providers, and to the field experience of practitioners. Further details are provided in the summary of evidence in the full Guidance on HIV testing and counselling for adolescents and care for adolescents living with HIV (29).

5.1.4.5 Key populations

Background

HIV testing and counselling has been provided to key populations since HIV tests were first developed. WHO produced guidance for testing people who inject drugs in 2006, for prisoners and refugees in 2009, for men who have sex with men and for transgender people in 2011 and for sex workers in 2012.

For key populations, especially those who are criminalized, HIV testing and counselling services are sometimes used in punitive or coercive ways. Both existing and new recommendations for HIV testing and counselling for these most-at-risk and vulnerable groups therefore emphasize consent and confidentiality as well as ensuring that HIV testing and counselling is part of a comprehensive prevention, care and treatment programme.

The 2012 WHO HIV testing and counselling strategic framework (1) summarizes HIV testing and counselling for all of these groups and populations (Tables 5.2 and 5.3).

Additional guidance:


Table 5.2 Summary of HIV testing and counselling recommendations for generalized epidemics

<table>
<thead>
<tr>
<th>Who to test</th>
<th>When to test</th>
<th>Where to test</th>
<th>Relevant WHO guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everyone attending health facilities</td>
<td>Integrate in all health care encounters</td>
<td>All settings, including primary health care, outpatient medical and surgical wards, antenatal care and maternal and child health, TB, family planning and sexually transmitted infection clinics</td>
<td>Guidance on provider-initiated HIV testing and counselling in health facilities (2)</td>
</tr>
<tr>
<td>Partners and couples</td>
<td>Premarital, pregnancy, after separations, new partnerships and at the start of care and ART. For the HIV-negative person in serodiscordant couples, offer re-testing every 6–12 months</td>
<td>Primary health care settings, voluntary counselling and testing sites, ART clinics, antenatal care, family planning clinics, sexually transmitted infection clinics, community and mobile outreach, home</td>
<td>Couples HIV testing and counselling including antiretroviral therapy for treatment and prevention in serodiscordant couples (26) Delivering HIV test results and messages for re-testing and counselling in adults (30)</td>
</tr>
<tr>
<td>Families of index cases</td>
<td>As soon as possible after the family member is diagnosed</td>
<td>Primary health care settings, ART clinics, maternal and child health and antenatal care settings, homes and community and mobile outreach</td>
<td>Service delivery approaches to HIV testing and counselling (HTC): a strategic HTC programme framework (1) Planning, implementing and monitoring home-based HIV testing (31)</td>
</tr>
<tr>
<td>Key populations: people who inject drugs, men who have sex with men, transgender people, sex workers, prisoners, and partners of people who inject drugs</td>
<td>Every 6–12 months</td>
<td>Primary health care settings, sexually transmitted infections clinics and outreach services, including harm reduction and other sites providing services to key populations</td>
<td>Prevention and treatment of HIV and other sexually transmitted infections for sex workers in low- and middle-income countries: recommendations for a public health approach (32) Prevention and treatment of HIV and other sexually transmitted infections among men who have sex with men and transgender people: recommendations for a public health approach (33) Service delivery approaches to HIV testing and counselling (HTC): a strategic HTC programme framework (1) Delivering HIV test results and messages for re-testing and counselling in adults (30)</td>
</tr>
<tr>
<td>Who to test</td>
<td>When to test</td>
<td>Where to test</td>
<td>Relevant WHO guidance</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Pregnant women and male partners</td>
<td>At first antenatal care visit</td>
<td>Antenatal care, delivery, postpartum</td>
<td>Guidance on provider-initiated HIV testing and counselling in health facilities (2)</td>
</tr>
<tr>
<td></td>
<td>Re-test in third trimester or peripartum</td>
<td></td>
<td>Delivering HIV test results and messages for re-testing and counselling in adults (30)</td>
</tr>
<tr>
<td></td>
<td>Offer partner testing</td>
<td></td>
<td>Couples HIV testing and counselling including antiretroviral therapy for treatment and prevention in serodiscordant couples (26)</td>
</tr>
<tr>
<td>Infants and children &lt;18 months old</td>
<td>Early infant diagnosis at 4–6 weeks for all infants whose mothers are living with HIV or if maternal HIV status is unknown; determine the final infant HIV infection status after 18 months and/or when breastfeeding ends</td>
<td>Maternal and child health services, Paediatric clinics, Immunization clinics</td>
<td>WHO recommendations on the diagnosis of HIV infection in infants and children (27)</td>
</tr>
<tr>
<td>Children</td>
<td>Establish HIV status for all health contacts</td>
<td>Child inpatients and outpatients, immunization clinics</td>
<td>Guidance on provider-initiated HIV testing and counselling in health facilities (2)</td>
</tr>
<tr>
<td>Adolescents</td>
<td>Integrate into all health care encounters</td>
<td>Primary health care, outpatients, inpatients, voluntary counselling and testing sites, youth-friendly services, family planning and sexually transmitted infections clinics</td>
<td>Delivering HIV test results and messages for re-testing and counselling in adults (30)</td>
</tr>
<tr>
<td></td>
<td>Annually if sexually active; with new sexual partners</td>
<td></td>
<td>Guidelines on HIV testing and counselling for adolescents and care and treatment for adolescents living with HIV (29)</td>
</tr>
</tbody>
</table>
Table 5.3 Summary of HIV testing and counselling recommendations for low-level and concentrated epidemics

<table>
<thead>
<tr>
<th>Who to test</th>
<th>When to test</th>
<th>Where to test</th>
<th>Relevant WHO guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>People with signs or symptoms of HIV infection</td>
<td>Integrate in health care encounter</td>
<td>Sexually transmitted infection clinics, TB clinics, medical wards, other clinics</td>
<td>Guidance on provider-initiated HIV testing and counselling in health facilities (2)</td>
</tr>
<tr>
<td>Partners of people with HIV</td>
<td>As soon after partner diagnosis as possible</td>
<td>Clinical settings including primary health care settings, ART, TB, sexually transmitted infection clinics, voluntary counselling and testing</td>
<td>Couples HIV testing and counselling including antiretroviral therapy for treatment and prevention in serodiscordant couples (26)</td>
</tr>
<tr>
<td></td>
<td>For the negative person in serodiscordant couples, offer re-testing every 6–12 months</td>
<td></td>
<td>Delivering HIV test results and messages for re-testing and counselling in adults (30)</td>
</tr>
<tr>
<td>Families of index cases</td>
<td>As soon as possible after the family member is diagnosed</td>
<td>ART clinics, maternal and child health and antenatal care settings, homes, community outreach</td>
<td>Service delivery approaches to HIV testing and counselling (HTC): a strategic HTC programme framework (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Planning, implementing and monitoring home-based HIV testing (32)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Couples HIV testing and counselling including antiretroviral therapy for treatment and prevention in serodiscordant couples (26)</td>
</tr>
<tr>
<td>Key populations: people who inject drugs, men who have sex with men, transgender people and sex workers</td>
<td>Every 6–12 months</td>
<td>Sexually transmitted infection clinics, outreach services for key populations and harm-reduction services</td>
<td>Prevention and treatment of HIV and other sexually transmitted infections for sex workers in low- and middle-income countries: recommendations for a public health approach (32)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Service delivery approaches to HIV testing and counselling (HTC): a strategic HTC programme framework (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Delivering HIV test results and messages for re-testing and counselling in adults (30)</td>
</tr>
<tr>
<td>Pregnant women</td>
<td>At the first antenatal care visit</td>
<td>Antenatal care</td>
<td>Guidance on provider-initiated HIV testing and counselling in health facilities (2)</td>
</tr>
</tbody>
</table>
### Table 5.3 (continued)

<table>
<thead>
<tr>
<th>Who to test</th>
<th>When to test</th>
<th>Where to test</th>
<th>Relevant WHO guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants and children &lt;18 months old</td>
<td>Early infant diagnosis at 4-6 weeks for all infants whose mothers are living with HIV or if maternal HIV status is unknown; determine the final infant HIV infection status after 18 months and/or when breastfeeding ends</td>
<td>Maternal and child health services, Paediatric clinics, Immunization clinics</td>
<td>WHO recommendations on the diagnosis of HIV infection in infants and children (27)</td>
</tr>
<tr>
<td>Children with signs or symptoms of HIV infection or who have a family member living with HIV</td>
<td>Integrate in health care encounter</td>
<td>In all health settings</td>
<td>Guidance on provider-initiated HIV testing and counselling in health facilities (2)</td>
</tr>
<tr>
<td>Adolescents from key populations</td>
<td>Every 6–12 months</td>
<td>Youth-friendly services, sexually transmitted infection clinics, outreach</td>
<td>Delivering HIV test results and messages for re-testing and counselling in adults (30) Guidelines on HIV testing and counselling for adolescents and care and treatment for adolescents living with HIV (29)</td>
</tr>
</tbody>
</table>
5.2 HIV prevention based on ARV drugs

5.2.1 Oral pre-exposure prophylaxis

Background

Oral pre-exposure prophylaxis of HIV (PrEP) is the daily use of ARV drugs by HIV-uninfected people to block the acquisition of HIV. Clinical trials of daily oral PrEP have shown evidence of effectiveness with serodiscordant heterosexual couples (35), men and transgender women who have sex with men (36), high risk heterosexual couples (37), people who inject drugs (38).

Source for recommendations:


Existing recommendations (39)

Existing WHO recommendations (39) are for the use of oral PrEP in demonstration projects for serodiscordant couples and men and transgender women who have sex with men.

- Serodiscordant couples. When serodiscordant couples are identified and where additional HIV prevention choices for them are needed, daily oral pre-exposure prophylaxis (either TDF or the combination of TDF + FTC) may be considered as a possible additional intervention for the uninfected partner (conditional recommendation, high-quality evidence).

If oral pre-exposure prophylaxis is to be provided for the HIV-negative partner in same-sex, male serodiscordant couples, the combination of TDF + FTC should be used, as evidence of effectiveness and safety in male-to-male penetrative sex is available for this regimen only.

- Men and transgender women. Where HIV transmission occurs among men and transgender women who have sex with men and additional HIV prevention choices for them are needed, daily oral pre-exposure prophylaxis (specifically the combination of TDF + FTC) may be considered as a possible additional intervention (conditional recommendation, high-quality evidence).

1 Chapter 7 covers other aspects of ARV drugs as prevention, including PMTCT.
5.2.2 ART for prevention among serodiscordant couples

Source for recommendations:

Existing recommendations (26)
- People with HIV in serodiscordant couples who start ART for their own health should be advised that ART is also recommended to reduce HIV transmission to the uninfected partner (strong recommendation, high-quality evidence).
- HIV-positive partners with a CD4 count ≥350 cells/mm³ in serodiscordant couples should be offered ART to reduce HIV transmission to uninfected partners (strong recommendation, high-quality evidence).

5.2.3 Post-exposure prophylaxis for occupational and non-occupational exposure to HIV

Background
Post-exposure prophylaxis is short-term ART to reduce the likelihood of acquiring HIV infection after potential exposure either occupationally or through sexual intercourse. Within the health sector, post-exposure prophylaxis should be provided as part of a comprehensive package of universal precautions that reduces the exposure of personnel to infectious hazards at work. WHO post-exposure prophylaxis guidelines for occupational exposure have not been reviewed since 2006 and will be updated by 2014. The current recommended duration of post-exposure prophylaxis for HIV infection is 28 days, and the first dose should be offered as soon as possible within 72 hours after exposure. The choice of post-exposure prophylaxis drugs should be based on the country’s first-line ART regimen for HIV. A recent recommendation (40) relates specifically to post-exposure prophylaxis in the case of sexual assault.

Source for recommendation:

Existing recommendation (2013) (40)
- Consider HIV post-exposure prophylaxis for women presenting within 72 hours of a sexual assault. Use shared decision-making with the survivor to determine whether HIV post-exposure prophylaxis is appropriate (strong recommendation, very-low-quality evidence).
5.2.4 Combination HIV prevention

Background

People’s HIV prevention needs change during their lifetime, and a combination approach helps people to access the types of interventions that best suit their needs at different times. Combining approaches may also result in synergies that have greater impact than single interventions alone. Although ARV drugs play a key role in HIV prevention, they should be used in combination with an appropriate mix of the following.

- **Other biomedical interventions** that reduce HIV risk practices and/or the probability of HIV transmission per contact event, including the following.
  - **Male and female condoms.** Male condoms reduce heterosexual transmission by at least 80% and offer 64% protection in anal sex among men who have sex with men (41), if used consistently and correctly. Fewer data are available for the efficacy of female condoms, but evidence suggests they can have a similar prevention effect (42).
  - **Needle and syringe programmes** are highly associated with a reduction in HIV transmission through injecting drug use (43).
  - **Opioid substitution therapy with methadone or buprenorphine** is the most effective form of treatment for opioid dependence and has the additional benefit of effectively reducing HIV risk behaviour and transmission through injecting drug use. Opioid substitution therapy also provides adherence support to people on ART (44-45).
  - **Voluntary medical male circumcision** reduces acquisition of infection and the risk of acquisition for men by up to 66% and offers significant lifelong protection (4).

- **Behavioural interventions** reduce the frequency of potential transmission events, including the following.
  - **Targeted information and education.** Programmes that use various communication approaches – for example, school-based sex education, peer counselling and community-level and interpersonal counselling – to disseminate behavioural messages designed to encourage people to reduce behaviour that increases the risk of HIV and increase the behaviour that is protective (such as safer drug use, delaying sexual debut, reducing the frequency of unprotected sex with multiple partners, using male and female condoms correctly and consistently and knowing your and your partner’s HIV status).

- **Structural and supportive interventions** affect access to, uptake of and adherence to behavioural and biomedical interventions. Such interventions address the critical social, legal, political and environmental enablers that contribute to HIV transmission, including legal and policy reform, measures to reduce stigma and discrimination, the promotion of gender equality and prevention of gender-based violence, economic empowerment, access to schooling and supportive interventions designed to enhance referrals, adherence, retention and community mobilization.