Annex 12. Comprehensive list of HTS approaches and considerations by epidemic setting

12.1 Standard approaches to HIV testing for all epidemic settings

Certain groups of population and some special contexts should have a standard approach to HIV testing.

1. **Pregnant women in antenatal clinics**
   High prevalence settings prioritize routinely offered HIV testing for pregnant women, with emphasis on offering HIV testing to all couples and male partners and to HIV-exposed infants.

   In all other settings, with current high ANC coverage, countries should consider routinely offered HIV testing for pregnant women, and emphasize the offering HIV testing to male partners of women with HIV and HIV-exposed infants.

   Countries with low prevalence, limited resources and both low ANC coverage and HIV testing coverage can consider geographic prioritization based on HIV prevalence.

   Repeat testing of HIV-negative pregnant women is recommended in the third trimester or early in the postnatal and breastfeeding period only in high prevalence settings.

   Other country-specific considerations
   - Offer one HIV test per pregnancy in low prevalence settings or more than one, including in the postpartum/breastfeeding period, in high prevalence settings.
   - Prioritize HIV and syphilis testing for dual elimination of these infections.
   - Explore acceptable and effective ways of facilitating HIV testing for all male partners in high prevalence settings and the partners of women with HIV in low prevalence settings (see section 6.4.2 on the Consolidated Guidelines of HIV testing services http://www.who.int/hiv/pub/guidelines/hiv-testing-services).

2. **Key populations and other priority groups at risk**
   HIV testing among people from key populations and their partners is critical, as the HIV prevalence in these groups is usually significantly higher than in the general population. Focused HTS for other priority populations -with high prevalence or incidence groups, may be considered according to local epidemiology, such as adolescent females and young women in hyperendemic settings (1), military personnel and migrant workers in sub-Saharan Africa (4). Special consideration should be given to migrant populations originating from high prevalence countries; ensuring that this is offered in accordance with the WHO 5Cs.

   Country-specific considerations
   - Offer HIV testing at least annually to people from key populations and other vulnerable groups with ongoing HIV risk depending on HIV prevalence and incidence in specific populations.
   - Develop HTS to respond to the needs, preferences and values of key populations (for example, flexible or evening hours and combine HIV testing with HBV and HCV testing and screening for STIs and TB, as coinfection is common.

3. **Partners and family members of individuals with HIV-infection**
   Index case-based HIV testing (testing partners and/or family members of individuals with HIV) approximately half of primary sexual partners of people with HIV will also have HIV-infection, and rates of HIV in children of infected adults will exceed those in the general population. The proportion of HIV-positive cases identified and cost-effectiveness of this approach are high (5), yet gaps remain almost everywhere in implementing this approach.

Country-specific considerations

- In some settings, with the consent of the person, consider the use of contact tracing or partner notification services or facilitation of *voluntary* partner testing (6, 7).

4. TB patients

In high HIV prevalence settings prioritize HIV testing with an emphasis on finding coinfected patients and facilitating referral for immediate TB treatment followed within two weeks by ART, which can significantly reduce mortality. WHO also recommends HIV testing of TB patients' partners (8). Also, index case-based testing of other family members of TB patients is likely to have a high yield for its cost.

Where HIV prevalence is low but the prevalence of TB and HIV coinfection is high, HIV testing in integrated TB/HIV services has been a key way to reduce loss to follow-up and improve care. This approach may be most appropriate where **HIV prevalence in the general population is <1% and among TB patients >5%**. Even in settings such as Bangladesh, where HIV prevalence is very low (<0.1%), offering HIV testing to all TB patients may improve HIV surveillance among TB patients.

5. STI clinics

Countries should prioritize HIV testing in STI services, where they exist. STI services are a good entry point for reaching men and key populations and increasing coverage in a population at high risk of HIV-infection (9, 10).

6. Harm reduction services

Countries should routinely offer HIV testing in drug treatment, needle and syringe programmes and opioid substitution therapy programmes(11).

7. Patients with HIV indicator conditions

HIV testing guided by indicator conditions (12), for example, malnutrition in children(13). Recent European guidance recommends offering routine HIV testing for a number of indicator conditions in which HIV prevalence is significantly higher than in the general population (4, 12).

8. HIVST

HIVST is an emerging mode of HIV testing that may be provided through either a focused approach (in a specific locale or to specific populations) or through open access to reach people who are reluctant or unable to access existing HTS. There may be both public- and private-sector applications and a range of delivery models (14) (see section 4.3.4 on the Consolidated Guidelines of HIV testing services http://www.who.int/hiv/pub/guidelines/hiv-testing-services). HIVST may most benefit key populations, other groups at high risk for HIV acquisition and those who require frequent retesting, such as serodiscordant couples(15). All reactive HIV self-test results should be confirmed at a health facility.

9. Geographic prioritization

In countries with regions of varying HIV prevalence and incidence, focusing HTS in areas of highest HIV burden, such as transport hubs, mining and fishing communities, may be efficient. In some countries, where overall HIV burden is low but highly concentrated, geographic prioritization of high burden areas has been used to introduce phased scale-up of HTS.

12.2 Approaches to HIV testing for generalized epidemic settings

1. **Primary care settings for adult, adolescents and paediatric populations**
   For high prevalence settings WHO recommends routine PITC for all adults, adolescents and children. This approach has increased the proportion of people who know their HIV status, but it is limited to those who seek care at health facilities.

2. **Facility prioritization**
   Recent evidence shows that the proportion of HIV-positive cases identified varies markedly among facilities and that some facilities (often in low prevalence areas) have low rates of identification of HIV-positive patients because they do not attract people from key populations (due to inappropriate hours of operation, long waits, stigma and discrimination). Prioritizing some facilities over others during the scale-up of HTS is an approach to consider.

3. **Multidisease campaigns**
   Multidisease campaigns may decrease stigma and discrimination and may reach populations who may otherwise not test for HIV (16). However, the proportion of HIV-positive cases identified in such campaigns can vary and should be assessed to determine efficiency.

   Country-specific considerations
   - Consider previous campaigns and prioritize locations with low HIV testing coverage.
   - Consider the proportion of HIV-positive cases identified in past campaigns and HIV prevalence among the population to be reached.

4. **Workplace testing**
   Non-coercive on-site workplace testing offered to employees in areas of high HIV prevalence and low testing coverage could reach men and women who may not utilize health services.

   Country-specific considerations
   - Consider the potential for stigma, discrimination, breach of confidentiality and other adverse events.
   - Consider how to provide post-test access to care and treatment.

5. **Educational institutions**
   Countries could consider HIV testing in educational institutions in hyperendemic settings. Experience with school-based approaches is limited, however. Before their implementation countries need to address issues of consent, confidentiality, stigma and linkage to prevention and care services that are acceptable to adolescents or young people.

   Country-specific considerations
   - Consider known prevalence and prioritizing older students, who are more likely to be sexually active.

6. **Standalone VCT**
   Traditional VCT approaches offered in standalone facilities associated with clinical settings or mobile sites may be useful in reaching undiagnosed people, especially when they focus on areas or populations underserved by health services.

   Country-specific considerations
   - Consider the proportion of HIV-positive diagnoses, cost and potential to increase access for those who do not attend health facilities, such as men and people who live a long distance from health facilities.

7. **Home-based/door-to-door services**
   In high prevalence settings where HIV testing has been low and a large proportion of the population remains undiagnosed, countries could consider door-to-door HIV testing for all households.

   Country-specific considerations
   - Consider cost, ease of access and linkage to care, treatment and prevention for those in rural or difficult-to-reach areas.
   - Consider delivery tactics such as weekend and evening visits to reach men who have limited time to visit facility-based HIV testing.

8. **Mobile testing services**
   Countries should consider implementing mobile testing approaches in communities and populations that are hard to reach, such as key populations, adolescents and those who are underserved by the formal health system.

   Country-specific considerations
   - Consider which population group to focus on and where to provide services based on HIV prevalence.
   - Consider ease of access and linkage to care, treatment and prevention for those who face barriers, such as rural populations and key populations.

9. **Family planning**
   Routine offer of HIV testing to those seeking family planning services will reach sexually active populations.

10. **Voluntary medical male circumcision in 14 priority countries**
    These countries should offer HIV testing to all clients presenting for voluntary medical male circumcision.

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