The following table summarizes the new WHO recommendations formulated for the 2013 guidelines on HIV testing and counselling, antiretroviral therapy (ART) and HIV service delivery. It also summarizes the guidance provided in Chapter 10 for programme managers. Where the recommendations remain unchanged from 2010 ART guidelines, this is clearly stated in the table.

The table is not comprehensive and does not include all WHO recommendations referred to in these guidelines, specifically recommendations that have been drawn from other, already existing WHO guidelines. The existing WHO recommendations referred to can be found in: Chapter 5 on HIV testing and counselling and HIV prevention, Chapter 6 on general care for people living with HIV, Chapter 8 on the management of common coinfections and other comorbidities and in section 7.4 on monitoring and management of drug toxicities.

### HIV testing and counselling

<table>
<thead>
<tr>
<th>Topic and population</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| Community-based testing                      | • 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)*. |
| HIV testing and counselling of adolescents<sup>a</sup> | • 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)*. |
## When to start ART in people living with HIV

<table>
<thead>
<tr>
<th>Topic and population</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| **When to start ART in adults and adolescents**<sup>a</sup> | - As a priority, ART should be initiated in all individuals with severe or advanced HIV clinical disease (WHO clinical stage 3 or 4) and individuals with CD4 count ≤350 cells/mm³ (*strong recommendation, moderate-quality evidence*).  
- ART should be initiated in all individuals with HIV with CD4 count >350 cells/mm³ and ≤500 cells/mm³ regardless of WHO clinical stage (*strong recommendation, moderate-quality evidence*).  
- ART should be initiated in all individuals with HIV regardless of WHO clinical stage or CD4 cell count in the following situations:  
  - Individuals with HIV and active TB disease (*strong recommendation, low-quality evidence*).  
  - Individuals coinfected with HIV and HBV with evidence of severe chronic liver disease (*strong recommendation, low-quality evidence*).  
  - Partners with HIV in serodiscordant couples should be offered ART to reduce HIV transmission to uninfected partners (*strong recommendation, high-quality evidence*). |
| **When to start ART in pregnant and breastfeeding women** | - All pregnant and breastfeeding women with HIV should initiate triple ARVs (ART), which should be maintained at least for the duration of mother-to-child transmission risk. Women meeting treatment eligibility criteria should continue lifelong ART (*strong recommendation, moderate-quality evidence*).  
- For programmatic and operational reasons, particularly in generalized epidemics, all pregnant and breastfeeding women with HIV should initiate ART as lifelong treatment (*conditional recommendation, low-quality evidence*).  
- In some countries, for women who are not eligible for ART for their own health, consideration can be given to stopping the ARV regimen after the period of mother-to-child transmission risk has ceased (*conditional recommendation, low-quality evidence*). |

<sup>a</sup>An adolescent is a person aged 10 to 19 years inclusive.
### ARVs and duration of breastfeeding

The key principles and recommendations established in 2010 remain, including:

National or subnational health authorities should decide whether health services will mainly counsel and support mothers known to be infected with HIV to either breastfeed and receive ARV interventions or avoid all breastfeeding given their particular context.

In settings where national authorities have decided that maternal and child health services will mainly promote and support breastfeeding and ARV interventions as the strategy that will most likely give infants born to mothers known to be infected with HIV the greatest chance of HIV-free survival:

- Mothers known to be infected with HIV (and whose infants are HIV uninfected or of unknown HIV status) should exclusively breastfeed their infants for the first 6 months of life, introducing appropriate complementary foods thereafter, and continue breastfeeding for the first 12 months of life. Breastfeeding should then only stop once a nutritionally adequate and safe diet without breast-milk can be provided *(strong recommendation, high-quality evidence for the first 6 months; low-quality evidence for the recommendation of 12 months)*.

### When to start ART in children

- **ART should be initiated in all children infected with HIV below five years of age, regardless of WHO clinical stage or CD4 cell count.**
  - Infants diagnosed in the first year of life *(strong recommendation, moderate-quality evidence)*
  - Children infected with HIV one year to less than five years of age *(conditional recommendation, very-low-quality evidence)*.

- **ART should be initiated in all children infected with HIV five years of age and older with CD4 cell count ≤ 500 cells/mm³, regardless of WHO clinical stage.**
  - CD4 count ≤ 350 cells/mm³ *(strong recommendation, moderate-quality evidence)*
  - CD4 count between 350 and 500 cells/mm³ *(conditional recommendation, very-low-quality evidence)*.

- **ART should be initiated in all children infected with HIV with severe or advanced symptomatic disease (WHO clinical stage 3 or 4) regardless of age and CD4 cell count *(strong recommendation, moderate-quality evidence)*.

- **ART should be initiated in any child younger than 18 months of age who has been given a presumptive clinical diagnosis of HIV infection *(strong recommendation, low-quality evidence)*.
## What ART regimens to start

<table>
<thead>
<tr>
<th>Topic and population</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| **First-line ART regimens for adults** | • First-line ART should consist of two nucleoside reverse-transcriptase inhibitors (NRTIs) plus a non-nucleoside reverse-transcriptase inhibitor (NNRTI).  
  • TDF + 3TC (or FTC) + EFV as a fixed-dose combination is recommended as the preferred option to initiate ART (strong recommendation, moderate-quality evidence).  
  • If TDF + 3TC (or FTC) + EFV is contraindicated or not available, one of the following options is recommended:  
    • AZT + 3TC + EFV  
    • AZT + 3TC + NVP  
    • TDF + 3TC (or FTC) + NVP (strong recommendation, moderate-quality evidence).  
  • Countries should discontinue d4T use in first-line regimens because of its well-recognized metabolic toxicities (strong recommendation, moderate-quality evidence). |
| **First-line ART for pregnant and breastfeeding women and their infants** | • A once-daily fixed-dose combination of TDF + 3TC (or FTC) + EFV is recommended as first-line ART in pregnant and breastfeeding women, including pregnant women in the first trimester of pregnancy and women of childbearing age. The recommendation applies both to lifelong treatment and to ART initiated for PMTCT and then stopped (strong recommendation, low- to moderate-quality evidence: moderate-quality evidence for adults in general but low-quality evidence for the specific population of pregnant and breastfeeding women and infants).  
  • Infants of mothers who are receiving ART and are breastfeeding should receive six weeks of infant prophylaxis with daily NVP. If infants are receiving replacement feeding, they should be given four to six weeks of infant prophylaxis with daily NVP (or twice-daily AZT). Infant prophylaxis should begin at birth or when HIV exposure is recognized postpartum (strong recommendation, moderate-quality evidence for breastfeeding infants; strong recommendation, low-quality evidence for infants receiving only replacement feeding). |
### What ART regimens to start (continued)

<table>
<thead>
<tr>
<th>Topic and population</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| **First-line ART for children younger than 3 years of age** | - A LPV/r-based regimen should be used as first-line ART for all children infected with HIV younger than three years (36 months) of age, regardless of NNRTI exposure. If LPV/r is not feasible, treatment should be initiated with an NVP-based regimen (strong recommendation, moderate-quality evidence).
- Where viral load monitoring is available, consideration can be given to substituting LPV/r with an NNRTI after virological suppression is sustained (conditional recommendation, low-quality evidence).
- For infants and children infected with HIV younger than three years, ABC + 3TC + AZT is recommended as an option for children who develop TB while on an ART regimen containing NVP or LPV/r. Once TB therapy has been completed, this regimen should be stopped and the initial regimen should be restarted (strong recommendation, moderate-quality evidence).
- For infants and children infected with HIV younger than three years, the NRTI backbone for an ART regimen should be ABC + 3TC or AZT + 3TC (strong recommendation, low-quality evidence). |

| **First-line ART for children 3 years of age and older (including adolescents)** | - For children infected with HIV three years of age and older (including adolescents), EFV is the preferred NNRTI for first-line treatment and NVP is the alternative (strong recommendation, low-quality evidence).
- For children infected with HIV three years to less than 10 years old (and adolescents weighing less than 35 kg), the NRTI backbone for an ART regimen should be one of the following, in preferential order:
  - ABC + 3TC
  - AZT or TDF + 3TC (or FTC) (conditional recommendation, low-quality evidence).
- For adolescents infected with HIV (10 to 19 years old) weighing 35 kg or more, the NRTI backbone for an ART regimen should align with that of adults and be one of the following, in preferential order:
  - TDF + 3TC (or FTC)
  - AZT + 3TC
  - ABC + 3TC (strong recommendation, low-quality evidence). |
### Monitoring ART response and diagnosis of treatment failure

<table>
<thead>
<tr>
<th>Topic and population</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| All populations      | ● Viral load is recommended as the preferred monitoring approach to diagnose and confirm ARV treatment failure (*strong recommendation, low-quality evidence*).  
● If viral load is not routinely available, CD4 count and clinical monitoring should be used to diagnose treatment failure (*strong recommendation, moderate-quality evidence*). |

### Second-line ART: what ARV regimen to switch to

<table>
<thead>
<tr>
<th>Topic and population</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| What ARV regimen to switch to in adults and adolescents *(includes pregnant and breastfeeding women)* | ● Second-line ART for adults should consist of two nucleoside reverse-transcriptase inhibitors (NRTIs) + a ritonavir-boosted protease inhibitor (PI).  
● The following sequence of second-line NRTI options is recommended:  
  • After failure on a TDF + 3TC (or FTC)-based first-line regimen, use AZT + 3TC as the NRTI backbone in second-line regimens.  
  • After failure on an AZT or d4T + 3TC-based first-line regimen, use TDF + 3TC (or FTC) as the NRTI backbone in second-line regimens.  
● Use of NRTI backbones as a fixed-dose combination is recommended as the preferred approach (*strong recommendation, moderate-quality evidence*).  
● Heat-stable fixed-dose combinations ATV/r and LPV/r are the preferred boosted PI options for second-line ART (*strong recommendation, moderate-quality evidence*). |
### Second-line ART: what ARV regimen to switch to (continued)

<table>
<thead>
<tr>
<th>Topic and population</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| **What ARV regimen to switch to in children** *(including adolescents)* | • After failure of a first-line NNRTI-based regimen, a boosted PI plus two NRTIs are recommended for second-line ART; LPV/r is the preferred boosted PI *(strong recommendation, moderate-quality evidence).*  
• After failure of a first-line LPV/r-based regimen, children younger than 3 years should remain on their first-line regimen, and measures to improve adherence should be undertaken *(conditional recommendation, very-low-quality evidence).*  
• After failure of a first-line LPV/r-based regimen, children 3 years or older should switch to a second-line regimen containing an NNRTI plus two NRTIs; EFV is the preferred NNRTI *(conditional recommendation, low-quality evidence).*  
• After failure of a first-line regimen of ABC or TDF + 3TC (or FTC), the preferred NRTI backbone option for second-line ART is AZT + 3TC *(strong recommendation, low-quality evidence).*  
• After failure of a first-line regimen containing AZT or d4T + 3TC (or FTC) the preferred NRTI backbone option for second-line ART is ABC or TDF + 3TC (or FTC) *(strong recommendation, low-quality evidence).* |

### Third-line ART

<table>
<thead>
<tr>
<th>Topic and population</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| **All populations** | • National programmes should develop policies for third-line ART *(conditional recommendation, low-quality evidence).*  
• Third-line regimens should include new drugs with minimal risk of cross-resistance to previously used regimens, such as integrase inhibitors and second-generation NNRTIs and PIs *(conditional recommendation, low-quality evidence).*  
• Patients on a failing second-line regimen with no new ARV options should continue with a tolerated regimen *(conditional recommendation, very low-quality evidence).* |

| Special considerations for children | Strategies that balance the benefits and risks for children need to be explored when second-line treatment fails. For older children and adolescents who have more therapeutic options available to them, constructing third-line ARV regimens with novel drugs used in treating adults such as ETV, DRV and RAL may be possible. Children on a second-line regimen that is failing with no new ARV drug options should continue with a tolerated regimen. If ART is stopped, opportunistic infections still need to be prevented, symptoms relieved and pain managed. |
## Operations and service delivery

<table>
<thead>
<tr>
<th>Topic</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interventions to optimize adherence to ART</strong></td>
<td>- Mobile phone text messages could be considered as a reminder tool for promoting adherence to ART as part of a package of adherence interventions (<em>strong recommendation, moderate-quality evidence</em>).</td>
</tr>
</tbody>
</table>

| Service integration and linkage | - In generalized epidemic settings, ART should be initiated and maintained in eligible pregnant and postpartum women and in infants at maternal and child health care settings, with linkage and referral to ongoing HIV care and ART, where appropriate (*strong recommendation, very-low-quality evidence*).  
- In settings with a high burden of HIV and TB, ART should be initiated for an individual living with HIV in TB treatment settings, with linkage to ongoing HIV care and ART (*strong recommendation, very-low-quality evidence*).  
- In settings with a high burden of HIV and TB, TB treatment may be provided for an individual living with HIV in HIV care settings where TB diagnosis has also been made (*strong recommendation, very-low-quality evidence*).  
- ART should be initiated and maintained in eligible people living with HIV at care settings where opioid substitution therapy (OST) is provided (*strong recommendation, very-low-quality evidence*). |

| Decentralization of treatment and care | The following options should be considered for decentralization of ART initiation and maintenance.  
- Initiation of ART in hospitals with maintenance of ART in peripheral health facilities (*strong recommendation, low-quality evidence*).  
- Initiation and maintenance of ART in peripheral health facilities (*strong recommendation, low-quality evidence*).  
- Initiation of ART at peripheral health facilities with maintenance at the community level (that is, outside health facilities in settings such as outreach sites, health posts, home-based services or community-based organizations) between regular clinical visits (*strong recommendation, moderate-quality evidence*). |
### Operations and service delivery (continued)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Task-shifting</strong></td>
<td>- Trained non-physician clinicians, midwives and nurses can <strong>initiate</strong> first-line ART <em>(strong recommendation, moderate-quality evidence).</em></td>
</tr>
<tr>
<td></td>
<td>- Trained non-physician clinicians, midwives and nurses can <strong>maintain</strong> ART <em>(strong recommendation, moderate-quality evidence).</em></td>
</tr>
<tr>
<td></td>
<td>- Trained and supervised community health workers can <strong>dispense</strong> ART between regular clinical visits <em>(strong recommendation, moderate-quality evidence).</em></td>
</tr>
</tbody>
</table>

### Guidance for programme managers

<table>
<thead>
<tr>
<th>Topic</th>
<th>Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Guidance for programme managers</strong></td>
<td>For deciding on the implementation of the clinical and operational recommendations, it is recommended that:</td>
</tr>
<tr>
<td></td>
<td>- The national authorities do so using a transparent, open and informed process. This process should have broad stakeholder engagement, including meaningful participation from the affected communities, and take into account the specifics of the recommendations under discussion.</td>
</tr>
<tr>
<td></td>
<td>- The decision-making process take into account data on the national and local HIV epidemiology, current ART programme performance and the socioeconomic, policy and legal context, including the budgetary, human resource requirements and other health system implications. The latter would identify which inputs and systems are currently available and which areas require additional investment.</td>
</tr>
<tr>
<td></td>
<td>- The decision-making process take into account the ethics, equity and human rights, the impact and cost-effectiveness and the opportunity and risk dimensions of alternative implementation options.</td>
</tr>
</tbody>
</table>