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Ministère de la Santé Publique

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REPUBLIC OF CAMEROON

Ministry of Public Health

# NATIONAL GUIDELINES FOR HIV/AIDS PREVENTION AND MANAGEMENT IN CAMEROON 2024

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# Foreword

It is with deep conviction and a firm commitment that I preface this guide to HIV/AIDS prevention and care, a valuable tool for all those involved in the fight against HIV.

Cameroon will have **490,484 people living with HIV (PLHIV)** in 2023, including 27,960 children under the of 15. While significant progress has been made, with a 55% drop in new infections and a 43% drop in HIV-related deaths since 2019, the epidemic remains a public health concern, particularly among at-risk children, women, key populations and in certain regions of the country.
This guide, which is aimed at healthcare providers, is an essential easier to manage HIV.

The major innovations in this edition of the guide are:

- **Integration of a 3-test algorithm for HIV screening and diagnosis** in line with WHO recommendations
- **Introduction of the Duo Test for HIV/AIDS** in pregnant women and key populations.
- **The integration of principles fundamental principles for the change social and behavioural change** to guide providers in promoting healthy behaviours
- **The adoption of optimised dolutegravir-based treatment protocols**.
- **Implementing a differentiated approach to services** to provide care that is person-centred.
- **Taking account of advanced disease** through early detection and optimal patient care.
- **Taking into account the mental health and psychological well-being of people living with HIV**.
- **Addressing the issue of HIV in the elderly** by integrating chronic illnesses
- **Taking human rights into account** to meet the needs of PLHIV

The widespread adoption and use of this guide by all those involved will undoubtedly help to improve the quality of life of PLHIV and accelerate the achievement of the goals of eliminating HIV/AIDS by 2030.
I would like to express my deep gratitude to the national and international experts who contributed to the development of this valuable guide. Their commitment and expertise have made it possible to create an indispensable tool for improving health care and services for people living with HIV in Cameroon.
Together, let us continue our commitment to an effective response to HIV/AIDS, based on scientific evidence, human rights, community mobilisation and equitable access to care through universal health coverage in Cameroon.

The Minister for Public Health, Dr

Manaouda Malachie

# Acknowledgements

The Ministry of Public Health would like to express its gratitude to the Technical and Financial Partners, as well as to all the resource persons who made a significant and participatory contribution to the revision of this new HIV/AIDS prevention and care guide. Our sincere thanks go to CDC/PEPFAR, WHO, UNAIDS, UNICEF, USAID, EGPAF, CARE-Cameroon, GHSS, GEORGETOWN UNIVERSITY, ICAP and CBCHB for their support.

The implementation of this document throughout the country will contribute to better HIV prevention, optimised care for people living with HIV and improved retention on antiretroviral treatment, both in health facilities and in the community.

Our gratitude also goes to national and international experts who took part in the workshops to draft, review and validate this document.

The revision these guidelines was carried out under distinguished coordination of the CNLS in collaboration with the technical departments of the Ministry of Health. Putting this guide into practice will help to build the capacity of healthcare workers in the fight against HIV/AIDS.

The Permanent Secretary

Dr FOKAM Joseph

# List of abbreviations

| | |
|---|---|
| 3TC | Lamivudine |
| ABC | Abacavir |
| AEG | Impaired general condition |
| AELB | Accident involving exposure to biological fluids |
| ARV | Antiretrovirals |
| ATV/r | Atazanavir boosted by ritonavir |
| AZT | Zidovudine |
| CBCHS | Cameroon Baptist Convention Health Services |
| CCC | Communication for Social and Behavioural Change |
| CDC | Community Screening Council |
| CDIP | Provider-initiated screening advice |
| CDV | Voluntary Screening Advice |
| CIRCB | Chantal Biya International Reference Centre |
| CM | Cryptococcal meningitis |
| CNLS | National Committee for the Fight against HIV/AIDS |
| CPN | Prenatal consultation |
| CTA | Outpatient Treatment Centre |
| CTX | Cotrimoxazole |
| VL | Viral load |
| DIC | Drop in Center |
| DLMEP | Department of Disease Control, Epidemics and Pandemics |
| DPS | Health Promotion Department |
| DROS | Operational Health Research Department |
| DFS | Family Health Department |
| DRV | Darunavir |
| DTG | Dolutegravir |
| EGPAF | Elizabeth Glaser Pediatric Aids Fundation |
| EFV | Efavirenz |
| FTE | Therapeutic Education |
| FAP | Women of childbearing age |
| FEC | Pregnant Woman |
| FTC | Emtricitabine |
| HF | Health training |
| HCY | Yaoundé Central Hospital |
| HGD | Douala General Hospital |
| MSM | Men having sex with other men |
| INI | Integrase inhibitor |
| INH | Isoniazid |
| NNIT | Non-nucleoside reverse transcriptase inhibitor |
| INTI | Nucleoside reverse transcriptase inhibitor |
| IP | Protease inhibitor |
| IP/r | Ritonavir-boosted protease inhibitor |
| STI | Sexually Transmitted Infections |
| LPV/r | Lopinavir boosted by ritonavir |
| NVP | Nevirapine |
| OVC | Organisation and Vulnerable Children |
| CBO | Community-based Organisation |
| WHO | World Health Organisation |
| UNAIDS | United Nations Organisation against HIV/AIDS |
| PCR | Polymerase Chain Reaction |
| PCP | Pulmonary Pneumocystis |
| PDS | Differentiated service provision |
| PEC | Care and Support |

| | |
|---|---|
| FP | Family Planning |
| PNLT | National Tuberculosis Control Programme |
| PNTS | National Blood Transfusion Programme |
| PEP | Post-exposure prophylaxis |
| PrEP | Prophylaxis PrE Exposure |
| TFP | Technical and financial partners |
| PSM | Procurement and Supply Management |
| PMTCT | Prevention of mother-to-child transmission |
| PLHIV | People living with HIV |
| RIF | Rifampicin |
| RTV | Ritonavir |
| AIDS | Acquired Immune Deficiency |
| MNCAH | Maternal, newborn child and adolescent health |
| DSD | Differentiated Service Delivery |
| ART | Antiretroviral treatment |
| TasP | Treatment as Prevention |
| TDF | Tenofovir |
| MTCT | Mother-child transmission |
| TB | Tuberculosis |
| IPT | Intermittent preventive treatment |
| FSW | Female Sex worker |
| IDU | Injectable drug user |
| UNICEF | United Nations of International Children's Emergency Fund |

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# CHAPTER 1: HIV/AIDS PREVENTIVE APPROACHES

Cameroon has opted for a combined HIV prevention programme combining Communication for Social and Behavioural Change (CSBC), correct condom use, Treatment as Prevention (TAP), Pre-Exposure Prophylaxis (PrEP), Post-Exposure Prophylaxis (PEP) and STI screening and management.

## I. GENERAL HIV PREVENTION METHODS

### I.1. Types of prevention

There are 3 types of prevention:

- **Primary:** Aims to reduce the incidence of HIV, i.e. the number of new infections, by acting on individual, cultural or environmental behaviour. The various methods are: CSBC, condoms, abstinence, fidelity, post-exposure prophylaxis (PEP) and pre-exposure prophylaxis (PreP).
- **Secondary:** Aims to reduce the prevalence, i.e. the number of people carrying the virus, by combating its development or by tackling the risk factors. It involves two essential actions :
  - Screening: the only effective way of finding out your status.
  - Treatment: the only way to achieve viral suppression.
- **Tertiary:** This is provided over the long term, once the disease has been declared. Its aim is to act on complications, the risks of superinfection and social reintegration.

### I.2. Combined prevention

Combined prevention is a strategy for combating HIV and other STIs (Sexually Transmitted Infections) which involves combining several tools or approaches (simultaneously or sequentially) depending on the specific needs of each individual.

The combined prevention package includes:

- Demand creation Use of condoms and lubricating gel;
- HIV and STI screening (conventional screening, rapid test, self-test);
- Use of PreP and PEP (in emergencies);
- Comprehensive Sexuality Education (CSE) and other sexual and reproductive health (SRH) services;
- Male circumcision ;
- Risk reduction services for injecting drug users;
- The use of ARV treatment (ART) as a prevention tool for HIV-positive partners.

## II. COMMUNICATION FOR SOCIAL AND BEHAVIOURAL CHANGE

Communication for social and behavioural change (CSBC) aims to apply techniques from marketing, social and community mobilisation, social marketing and social marketing.

mass media, entertainment, advocacy, interpersonal communication, social networks and other communication approaches to contribute to positive social and individual change. The main objectives of the CSBC are to :

- Encourage and facilitate changes in the knowledge, attitudes, norms, beliefs and behaviour of individuals and communities.
- Promote healthy, positive behaviours that improve individual and collective well-being.

CSBC interventions target the whole population, taking into account their specificities. The priority groups are: people living with HIV, key populations, adolescents and young people, vulnerable populations, health professionals, policy-makers and community leaders.
A person's behaviour is generally influenced by many factors, both at individual level and beyond. There are four circles of influence (individual, interpersonal, community and social). Behaviour change can be achieved through activities targeting these different levels.

- **Individual**: At the individual level, interventions will be centered on the client. In particular, knowledge, skills, habits, self-confidence and desires.
- **Interpersonal**: At an interpersonal level, individuals are influenced by their family, friends and other people in their local communities as well as support group.
- **Community**: At community level, individuals are influenced by the presence of organisations and other structures, services and norms that regulate daily life.
- **Structural**: at the structural or societal level, social factors such as social norms as well as politcial, economic and environmental conditions influence behaviour. Interventions at this level will primarily be advocacy, policy change, strengthening the community system, and so on.

## III. CONDOM USE PROMOTION

Condom distribution is a strategic approach aimed at ensuring that sexually active people at risk of contracting HIV and STIs have access to quality condoms and can use them consistently and correctly. Condoms should be promoted at every opportunity where prevention services are offered, particularly to populations at greatest risk of HIV infection. Both female and male condoms should be distributed at every CSBC session, advice and guidelines on correct use should be providedto participants.

**Advice on using condoms**

- Check the manufacturing or expiry date of the condom when you buy or receive it;
- Do not double the condom;
- Never open the packaging with a sharp object (blades, scissors or teeth);
- Do not expose the condom to heat;
- Never use ointments, oil, vaseline, shea butteŕ, cocoa butter, saliva, etc., to lubricate the condom,
- If necessary, use a latex-compatible gel silicone water-based);
- Use a new condom every time you have sex;
- Never use the same condom for chain sex (several partners at the same time);
- Never use male and female condoms at the same time;
- Store the condom properly so as not to alter its qualitý

# IV. PRE-EXPOSURE PROPHYLAXIS

Pre-exposure prophylaxis (PrEP) is the use of antiretroviral (ARV) drugs in uninfected people to reduce the risk of acquiring HIV. PrEP prevents the HIV virus from attaching and replicating as soon as it enters the body, enabling the exposed person to remain HIV-negative. PrEP is recommended for people at high risk of HIV infection (key populations) aged 18 and over. Adherence to PreP is crucial if the protective benefits are to be achieved.

## IV.1 Options in PrEP Prescription

There are two options for administering PreP; oral and injectable PrEP.

Oral PreP can be prescribed either continuously or on demand depending on the duration of exposure of the person at risk.

- **Continuous PrEP** is indicated for people who have been exposed to HIV for a long time because of their sexual activities or practices. This requires the person at risk taking 1 tablet every day at the same time until exposure stops.
- **On-demand PrEP** is recommended for people who occasionally have risky sex (men only). These people should take two tablets at least 2 hours and no more than 24 hours before intercourse, then take another tablet at the same time the next day and a second 24 hours later.

The recommended protocol for oral PrEP is: **TDF + FTC (or 3TC).** The tables below summarise the procedures for prescribing PrEP

**Special cases for indication of PreP:**

- At-risk adolescents over the age of 18;
- Emancipated girls (over 15 years of age) according to article 476-487 of the Cameroon Civil Code
- Key populations aged 18 and over

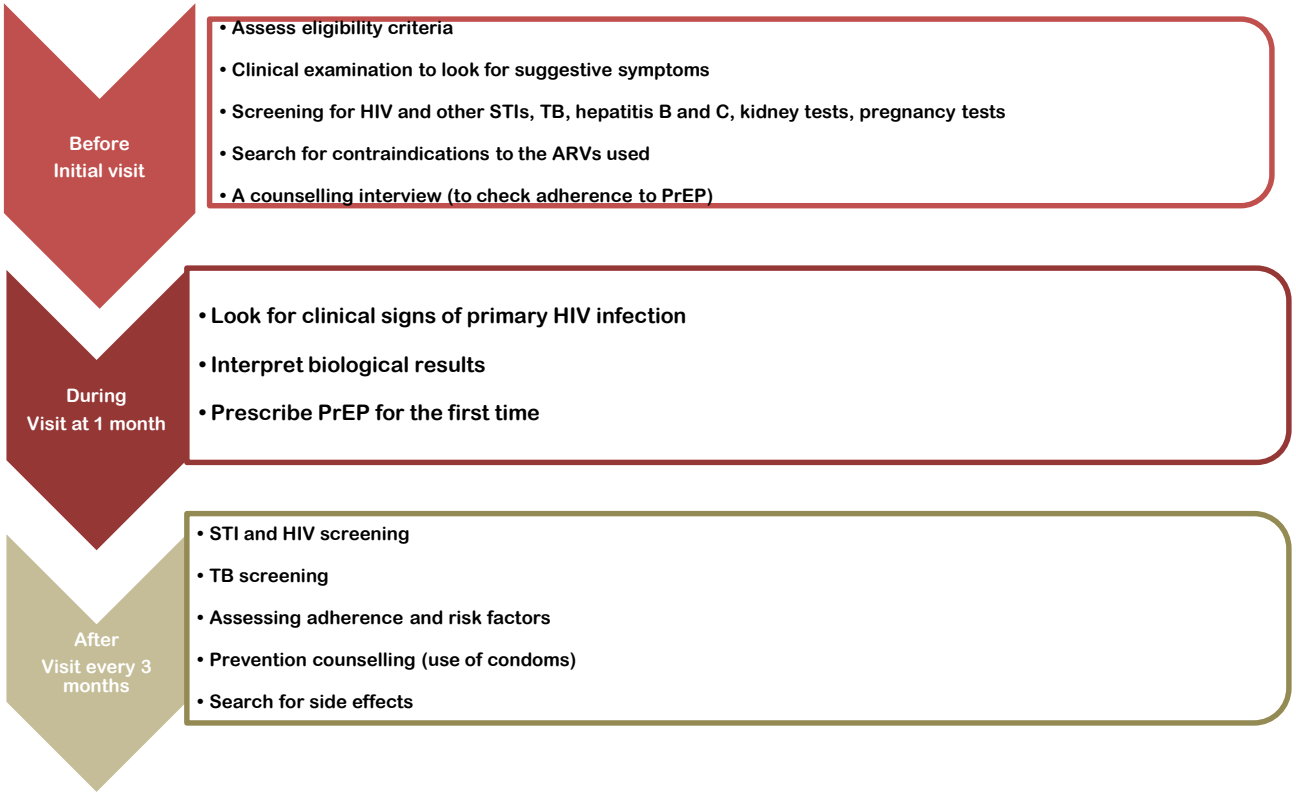
*Table 1: PrEP prescription protocols*

| Type | Product | Frequency | Complete PreP package |
|---|---|---|---|
| **Continuous oral PreP (indicated for women and MSM)** | TDF+ FTC (or 3TC) | Every day | - Screening for HIV, STIs and hepatitis<br>- Partner notification<br>- Promotion and supply of condoms/lubricants<br>- Contraception and STI services |
| **Oral PreP discontinued (Only for MSM)** | TDF+ FTC (or 3TC) | If there is only one risky sex, management :<br>2 tablets (2-24h before)<br>+1 (24 hours after the Sexual intercourse)<br>+1 (24 hours later)<br>Add in case of Several at-risk sexual intercourse | |
| **Injectable PreP** | CAB LA(Cabotegravir Long Acting ) | The first two<br><br>injections are administered at 4 weeks apart, followed by an injection every 8 weeks. | |

*Table 2: PrEP prescription procedures*

| Recommendations | |
|---|---|
| **Eligibility criteria** | ● Have a negative HIV test (less than 3 months old);<br>● Belong to a group of key populations;<br>● History of several episodes STI, **or**<br>● Unprotected sex with at least two different partners in the last 6 months, **or**<br>● Use of psychoactive substances during sex. |
| **Prescription procedures** | ● Risk assessment and eligibility criteria<br>● Prescription by a doctor or trained provider (recommended protocol: **TDF+ FTC (**or **3TC)**<br>● Taking ARVs continuously (every day) or discontinuously (i.e. on demand, in anticipation of a specific period of sexual activity).<br>○ If taken continuously optimal ARV activity is achieved after 7 days in men and 21 days in women.<br>○ Discontinuous intake only in MSM |
| **Contraindication** | ● HIV-positive people<br>● Kidney problems (creatinine clearance< 60 ml/min);<br>● Hypersensitivitý to one of the active ingredients or excipients of the product.<br>● No exposure to risk |
| **Duration** | ● Until cessation of risk or immediately if seroconversion or,<br>● Presence of a kidney disorder.<br>● Seroconversion (test for resistance and initiate ART). |
| **Where** | • Health facilities (HF) ;<br>• Approved community-based organisations |
| **Follow-up** | ● HIV screening : every 3 months<br>● Biological check-up: Renal check-up every 6 months (TDF is contraindicated if creatinine clearance <60 ml/min).<br>● Remind users of the effective dose of PreP and the importance of adherence.<br>● During these latency periods, safe sex practices should be encouraged |

## IV.2 PreP initiation procedures




# V. POST-EXPOSURE PROPHYLAXIS (PEP)

Post-exposure prophylaxis (PEP) is a way of preventing the transmission of HIV to an HIV-negative person who may recently have been exposed to the virus. It consists of taking a treatment (ARV) as soon as possible after potential exposure to the virus. It must be started as soon as possible (within 72 hours) after exposure for it to be effective. PEP consists of a combination of three ARV drugs and is different from pre-exposure prophylaxis.

## V.1 PEP administration information

Before administering PEP, the provider must assess the risk of contamination in order to offer the exposed person appropriate treatment and follow-up. It is important to know the type and circumstances of exposure. The different types of exposure are

- Sexual intercourse with a partner at risk;
- Potentially infectious accident involving exposure to biological fluids;
- Sexual violence (vaginal, anal).

The elements to be taken into consideration are presented in the table below:

*Table 3: Exposure characterisation*

| Type exposure | Characterisation exposure |
|---|---|
| **Needle** | • Type of needle ;<br>• Depth of the puncture ;<br>• Type of biological fluid involved;<br>• Source puncture site (blood vessel or others);<br>• Potential needle contamination ;<br>• Time interval between needle contact and exposure |
| **Puncture wound** | • Depth of the wound;<br>• Potential contamination of the intrument |
| **Exposure through contact with mucous membranes or non-healthy skin** | • Quantity and type of liquid involved |
| **Human bite** | • Presence of blood in the mouth of biter.<br>• Skin lesion and presence of blood in the wound of the bitten |
| **Unsafe sex or sexual violence** | • Condom breakage<br>• Risky sexual intercourse with a positive partner or partner of unknown HIV status:<br>• Sexual intercourse during menstruation |

## V.2 Recommendations for the administration of PEP

The general guidelines for Post-Exposure Prophylaxis are summarised in the table below.

*Table 4: General recommendations for administering PEP*

| Considerations | Recommendations |
|---|---|
| **Eligibility** | • HIV-negative or unknown status,<br>• Presentation within 72 hours from time of exposure,<br>• High-risk exposure (type and material),<br>• Contact person with positive or unknown HIV status.<br>• **If the exposed individual is a breastfeeding woman, continue breastfeeding as directed. However, the child will not receive ARV prophylaxis.** |
| **Initial visit** | • Assess the appropriateness of prescribing PEP:<br>○ **Serological status of the exposed individual** (rapid HIV screening test). If the result is positive, PEP will not be prescribed, but rather ART.<br>○ **Serological status of the contact if possible.** If the source is seropositive or of unknown HIV status, PEP is recommended.<br>○ **The time** after the exposure (the assessment should be carried out within 72 hours of exposure - ideally within two hours);<br>○ The level of risk involved (type needle, sexual route, etc.). |

| | |
|---|---|
| **ARV protocol** | • **TDF (300 mg) /3TC (300 mg) /DTG (50 mg) or TLD.**<br>• **If TDF** contraindicated **(child< 10 years or less than 35 kg, in case of renal insufficiency** replace with **ABC).** |
| **Initiation** | • As soon possible after exposure: **within 2 hours, and not after 72hours.** |
| **Duration** | • **30 days** (give the full course of treatment on the first visit) |
| **Dosage** | • Same dosage as for ART, in children, adapt doses according to weight. |
| **Follow-up (4 visits): W2, W4, M3 and M6** | • 2nd and 3rd visits (W2 and W4 after the 1st visit): clinical and biological assessment of adherence and tolerance to ARVs (side-effects). **At each visit, treatment can be adjusted, continued or stopped**.<br>• Other visits: HIV test at W4, M3 and M6 after exposure. |
| **Counselling** | • Adherence, risk reduction, psychosocial, sexual relations protected, |
| **Other services** | • Screening and treatment for HBV, HVL and other STIs.<br>• The morning-after pill for contraception (after a pregnancy test).<br>• Support and care for victims/survivors of GBV. |

### V.2.1 Recommendations in case of sexual violence

*Table 5: Procedures for administering Post-Exposure Prophylaxis*

| **Recommendations in the event of sexual exposure** | |
|---|---|
| **Counselling** | • Risk of transmission of HIV and other STIs.<br>• It is important to have an HIV test and to start PEP as soon as possible.<br>• The importance of adherence to treatment must be stressed.<br>• The common side effects of medicines must be explained.<br>• Survivors must be informed of the precautions to be taken to prevent possible secondary transmission (for example to their sexual partner or from mother to child) until they are confirmed HIV-negative six months after exposure. |
| **Tests recommended** | • HIV, Syphilis, Hepatitis, other STIs<br>• Pregnancy, etc. |
| **Treatment** | • Within 72 hours :<br>  ○ **TDF/3TC/DTG (TLD) for 30 days**<br>  ○ **Emergency contraception**<br>• Presumptive prophylaxis against STIs**: Cefixime 400 mg (or Ceftriaxone 250 mg) IM plus Metronidazole 2 g plus Azithromycin 1g**. *Adjust antibiotics if the victim is pregnant or a child.*<br>• Hepatitis B vaccination should be initiated as soon as possible if the patient is not immune, and no later than 21 days after the incident.<br>  ○ HBsAg negative, vaccinate at 0, 1 and 3 to 6 months.<br>• A tetanus booster must be administered. |
| **Psychological Support** | Throughout the care and on request. |
| **Follow-up visits** | • At D3<br>• HIV test: W6, M3 and M6 |

### V.2.2 Recommendations for Accidental Exposure to blood and body fluids (AEBF)

An accident involving exposure to biological fluids is defined as contact with contaminated blood or biological fluids, through a break in the skin (puncture or cut), or contact by splashing onto a wound, injured skin or mucous membrane. There is also a risk of viral transmission (HIV, HBV, HVL, etc.). On average, the risk of transmission after an AEBF is 0.3% for HIV, 1.8% for hepatitis C and 30% for hepatitis B, especially if the source of the liquid is untreated. In the event of an HIV exposure accident, the exposed person should seek medical attention immediately, and appropriate and systematic action should be taken. This involves the following steps: (1) immediate prophylactic measures; (2) risk assessment; (3) ARV prophylaxis.

***Table 6**: Management of an AEBF*

| **Immediate prophylactic measures** | |
|---|---|
| **Accidental skin puncture or wound, or contact with injured skin** | • Allow the wound to bleed without applying pressure, do not rub<br>• Clean immediately with running water and mild soap;<br>• Rinse thoroughly and dry, then<br>• Apply an antiseptic (for at least 5 minutes) by soaking the injured area (if soaking is not possible, apply a dressing soaked in an antiseptic product).<br>**Antisepsis: Dakin's solution, bleach, diluted chlorhexidine 1:10, alcohol, povidone-iodine dermal solution.** |
| **Eye projection** | • **Rinse the eye** thoroughly, preferably with serum or water for 5 to 10 minutes. |
| **If the eyes, mouth and mucous membranes are involved** | • Rinse the exposed area immediately with isotonic saline for **10 minutes**.<br>• Antiseptics eye drops can also be used in cases of exposure affecting the eyes.<br>• If none of these solutions are available, use clean water to rinse thoroughly.<br>• Early consultation with a clinician (less than 4 hours if possible) |
| **Information to the exposed person** | • Reassure, relieve guilt...<br>• Inform: HIV, HBV and HVL risks....<br>• Prophylaxis : means and limits (TPE, Immunoglobulins, etc.)<br>• Use condoms and do not donate blood (until the client knows his/her HIV status definitively) |
| **Assessment of transmission risks** | This assessment depends on the severity of accident:<br>• Depth of injury (deep or superficial)<br>• Risk depending on the type of object: hollow **sampling** needle, hollow needle **for injection**, **full** needle**,** contaminated or not<br>• Wearing gloves<br>• Exposure time<br>• Consultation period<br>• Exposure status for HIV, HBV<br>• ARV prophylaxis is decided on the basis of the severity of accident. |
| **Follow-up for 6 months with or without prophylactic ARV treatment** | |

### Contraindication for PEP

The PEP is not indicated:

- If the exposed person is HIV-positive;
- In case of chronic exposure;
- If the exposure does not involve a risk of transmission, either after:
    - Exposure to potentially infectious body fluids when there are no skin lesions;
    - Sexual intercourse with an undamaged condom;
    - Exposure to non-infectious body fluids (such as faeces, saliva, urine, perspiration);
    - Exposure to body fluids from a person of known HIV-negative status, unless that person has been identified as being at high risk of recent infection (known as the window period);
- If exposure took place more than 72 hours previously.

## VI. PREVENTION AND MANAGEMENT OF GENDER-BASED VIOLENCE

Gender-based violence (GBV) is a generic term for any harmful act perpetrated against a person's will and based on socially ascribed differences between men and women. It can increase the risk of HIV transmission and have a negative effect on retention and adherence among victims already on ART. Consequently, screening, prevention and rapid response to GBV reduce the risk of HIV infection and could improve treatment outcomes for people at risk of GBV. Healthcare providers and social workers should have the necessary skills in their day-to-day practice to manage situations related to GBV.

### VI.1 Management of GBV

- **Medical treatment and follow-up for victims/survivors of sexual violence:**

Treatment varies according to the time that has elapsed since the attack, and has three components: (i) psychological support; (ii) preventive treatment; and (iii) curative treatment (STIs).

*Table 7: Summary of prevention measures in the event of GBV*

| Time limit for presentation after the attack | < 72h | >72 h -< 120 h (5 days) | >120 h (5 days) |
|---|---|---|---|
| Preventing HIV transmission (PEP) | X | | |
| Preventing pregnancy | X | X | |
| STI prevention | X | X | X |
| Hepatitis B vaccination | X | X | X |
| Tetanus vaccine | X | X | X |

PEP will be prescribed for a 4-weeks period, regardless of the aggressor's serology.
Prevention of STIs (gonorrhoea, syphilis and chlamydia)

- Administer available effective treatments that are short and easy to take according to the national protocol, e.g. **Cefixime 400 mg plus azithromycin 1g orally.**
- Adapt antibiotics if the victim is pregnant or a child.

- **Follow-up visits depend on whether or not the PEP has been initiated**

***Table 8:*** *Follow-up visits for GBV with or without PEP*

| | PEP monitoring period | | | | |
|---|---|---|---|---|---|
| | **D1-2** | **W2** | **W4** | **M3** | **M6** |
| HIV screening | | | X | X | X |
| Screening for STIs and treatment if necessary | | X | X | X | X |
| Pregnancy testing and counselling | X | | X | | |
| Assessment of side effects and adherence | X | X | X | | |
| Mental health assessment | X | X | X | X | X |
| Assessment of vaccination status | X | | | | |

The role of care providers is to create a healthy, human and supportive environment for people receiving services. Poor reception can lead to re-victimisation, which can exacerbate existing psychological distress and delay recovery. This major form of harm to a survivor is entirely avoidable.

**Interventions in response to GBV:**

- Conducting identification interviews in safe and friendly areas that respect the five C: **consent, confidentiality, counseling, correct results (information) and connection**
- Offering support, the "**LIVES"** concept;
- Accompany the survivor so that he/she receives the appropriate services;
- Refer the survivor to organisations with more specialised services, using the updated mapping of GBV services in the locality;
- Follow up to ascertain whether services are being offered to survivors.
- Complete the dedicated documentation
- Document and report periodically

LIVES intervenes at the time of first contact with the survivor. This is immediate care, and its stages are as follows:

| | |
|---|---|
| **L**isten | **Listen carefully, with empathy and without judgement.** |
| **I**nquire about needs and concerns | Assess and respond to the survivor's needs and concerns (emotional, physical, social and practical). |
| **V**alidate | Show that you believe and understand the survivor. Assure the survivor that he/she is not to blame. |
| **E**nsure safety | Discuss a protection plan for the survivor in the event of additional damage for other violence |

| | |
|---|---|
| **S**upport | Helping the survivor to get the right information, make the right choice and access care and support services. |

- **Service package for survivors of GBV**

*Table 9 : Survivor GBV service packages*

| Forms of GBV Response | Physical violence | Sexual violence | Emotional/Psychological violence | Economic violence |
|---|---|---|---|---|
| **Counselling** | X | X | X | X |
| **LIVES** | X | X | X | X |
| **Psychosocial support** | X | X | X | X |
| **Medical consultation** | X | X | | |
| **Legal support** | X | X | | |
| **Screening and treatment of STIs** | X | X | X | X |
| **HIV test** | X | X | X | X |
| **PEP (within 72 hours)** | | X | | |
| **Methods of emergency contraception (within 120 hours)** | X | X | | |
| **Mediation** | X | X | X | X |
| **Referral to reception centers** | X | X | X | X |
| **Empowerment mechanisms** | X | X | X | X |

Psychosocial support, legal support and shelters are all part of the **LIVES approach**, which is taken into account after discussing the violence mitigation plan with the patient.

## VII. DIAGNOSIS AND MANAGEMENT OF STI

HIV infection and other STI are frequently found in the same patient. Screening, diagnosis and treatment of STIs should be offered to all HIV-positive, sexually active people at the time of HIV diagnosis, and then once a year or when there are symptoms of an STI and during pregnancy.

The following syndromes should be universally investigated in HIV-positive individuals and their sexual partner(s): Male urethral discharge, Inguinal bubo (large inguinal lymph node), Scrotal swelling, Genital ulcerations, Vaginal discharge, Lower abdominal pain, Anorectal syndrome, Oropharyngeal syndrome, Condylomas.

**The objectives of STIs management are:**

- Reducing the duration of STI contagiousness;
- Avoiding the complications and after-effects of STI;
- Interrupting the chain of transmission of STI;

- Helping clients with STI to change their behaviour;
- Reduce the risk HIV infection.

For anyone consulting for an STI, appropriate care includes the following elements:

- **Background**: including behavioural, geographical and mental risk assessment;
- **Physical examination**: of the genital area in particular, which in some cultures may require tact and understanding;
- **Patient education and counselling**: the nature of the infection, adherence with treatment, the importance of notifying partners and their treatment, reducing and preventing the risk of spreading the STI, perception and assessment of the risk of HIV infection, etc.

***Table 10**: Main STI syndromes and corresponding diseases*

| *Syndromes* | *Symptoms* | *Signs* | *Diseases* |
|---|---|---|---|
| **VAGINAL DISCHARGE** | - Vaginal discharge<br>- Vaginal itching<br>- Nauseating<br>- Vaginal odour<br>- Burning while urinating<br>- Dyspareunia (pain during sexual intercourse) | - Vaginal discharge<br>- Scratch marks<br>- Nauseating<br>- Vaginal odour | **Vaginitis :**<br>- Trichomoniasis<br>-Candidiasis<br>- Bacterial<br>- Vaginosis<br>- -Cervicitis,<br>- Gonorrhoea<br>- Chlamydia |
| **URETHRAL DISCHARGE** | - Urethral discharge<br>- Itching<br>- Tingling<br>- Urinary burning Pollakiuria (frequent urination) | - Urethral discharge (milk the urethra if necessary) | **Uretritis**<br>- Gonorrhoea<br>- Chlamydia<br>- Mycoplasma infections<br>- Trichomonas |
| **GENITAL ULCERS** | - Genital wounds | - Genital ulceration<br>- Vesicles<br>- Inguinal nodes | - Genital herpes<br>- Syphilis<br>- Soft canker<br>- Donovanose<br>- Lymphogranulomatosis venereum (Venereal disease) Nicolas Favre) |
| **LOWER ABDOMINAL (PELVIC) PAIN** | - Lower abdominal (pelvic) pain and pain during sexual intercourse sexual intercourse (dyspareunia) | - Vaginal discharge<br>- Low abdominal tenderness on palpation<br>- Temperature> 38°C | - Gonorrhoea<br>- Chlamydia<br>- Mycoplasma infections |
| **SWELLING OF THE SCROTUM** | - Pain and swelling of the bursa (testicles) | - Scrotal swelling<br>- Pain on palpation | - Gonorrhoea<br>- Chlamydia |

| Syndromes | Symptoms | Signs | Diseases |
|---|---|---|---|
| **OPHTHALMIA NEONATORUM** | - Swollen eyelids<br>- Difficulty opening eyes | - Eyelid oedema<br>- Purulent discharge | - Gonorrhoea<br>- Chlamydia |
| **BUBON** | - Swelling, pain in inguinal lymph nodes | - Enlarged inguinal adenopathy, purulent ulceration, watering-head ulceration,<br>- Tissue necrosis | - Soft canker<br>- Lymphogranulomatosis venereum (Nicolas Favre disease) |
| **SYNDROME ano-rectal** | - Anal discharge<br>- Anal pain<br>- Anal growths<br>- Anal ulceration<br>- Anal itching<br>- Tenesmus (painful contractures of the anal sphincter)<br>- Fingerprints (false in life) to have a bowel movement) | - Anal discharge<br>- Lateral anal fissure<br>- Vegetation<br>- Anal bleeding<br>- Anal ulceration | - Condylomata<br>- Gonorrhoea<br>- Chlamydia<br>- Genital herpes<br>- Donovanose<br>- Syphilis |
| **Oropharyngeal syndrome (urogenital intercourse)** | - Oral wounds<br>- Purulent discharge,<br>- Oral growths<br>- Pain on swallowing | - Oropharyngeal ulcers<br>- Erythematous throat<br>- Oral wounds<br>- Vegetation<br>- Flow | - Syphilis<br>- Condylomata<br>- Gonorrhoea<br>- Herpes<br>- Chlamydia |

# CHAPTER 2: HIV TESTING AND LINKAGE TO CARE

HIV testing is the initial step towards combined prevention and access to appropriate care. Cameroon has adopted differentiated HIV testing, which is based on the preferences of target groups, locations and high-impact interventions and/or a combination of these strategies to facilitate the early identification of a greater number of people living with HIV.


***Figure 1**: Objectives of the screening service*

## I. SCREENING PROCEDURES

### I.1. Principles

HIV testing must be voluntary and carried out ethically in strict adherence with the five principles recommended by the WHO **(5C**): informed consent, confidentiality, counselling, correct results and links (Connexion) with healthcare services.

***Table 11**: Principles for screening*

| Principles for effective screening: the 5 C | |
|---|---|
| **Informed Consent** | clients must be informed of the process and the service provider must obtain their informed consent. |
| **Confidentiality** | The content of discussions between the service provider and the clients must not be disclosed to a third party. |
| **Counselling** | Before carrying out the test, the service provider must offer appropriate advice to the client. |

| Principles for effective screening: the 5 Cs | |
|---|---|
| **Correct results** | The service provider must ensure strict adherence with screening procedures<br>according to the national algorithm while respecting quality assurance |
| **Connection (linkage)** | Depending on the result of the test, the service provider must ensure the client is linked to the<br>prevention services (for negative cases) or HIV care and treatment services (for positive cases) |

## I.2. Screening protocol

The provision of screening services must follow the steps described in the table below

***Table 12**: Screening stages*

| Steps | Messages/Recommendations |
|---|---|
| **Before performing test** | • Ensuring client's confidentiality ;<br>• Pre-test counselling<br>  ○ The person's knowledge of HIV/AIDS;<br>  ○ The person's risk of having been exposed to HIV and the possibility of a risk reduction plan;<br>  ○ Advantages of having or not having an HIV test<br>  ○ The significance of HIV serology tests;<br>  ○ The implications of the screening results for the person's life;<br>  ○ The person's ability to cope with being HIV-positive and its consequences<br>  ○ The person's informed consent to the screening test;<br>  ○ Possibly, the concept of PMTCT; |
| **Performing the test** | • perform the test according to the national algorithm<br>• Ensure adherence with quality assurance procedures throughout the testing process |
| **After performing the test** | • Check if the client is ready for the results<br>• Post-test counselling. **Address the following points:**<br>  ○ Check client 's identity ;<br>  ○ Reassure them of the confidentiality of the interview;<br>  ○ Congratulate the client on coming back;<br>  ○ Briefly review the initial interview and ask about the client 's feelings during the waiting time;<br>  ○ Give the client the envelope in which to see the results;<br>  ○ Giving people time to express their emotions<br>  ○ Ensure that the client understands the result;<br>  ○ Encourage questions and give exhaustive answers;<br>  ○ Explain the meaning clearly ;<br>• Deliver the results in a sealed envelope to the client<br>• Check that the client has a clear understanding of the result<br>• Allow the client to share their initial reactions and express their initial feelings<br>• Explore and recognise the client's immediate concerns<br>• Offering the necessary support |

| Negative result | Positive result | No results conclusive |
|---|---|---|
| • Examine the implications of being HIV-negative<br>• Helping the client to draw up a risk reduction plan<br>• Link with HIV and STI prevention programmes | • Examine the implications of being HIV positive<br>• Helping the client to draw up a risk reduction plan<br>• Encourage disclosure ( approach | • Provide psychosocial support in the same way as after an HIV-positive person has been diagnosed.<br>• Make an appointment after 14 days |

| | | | |
|---|---|---|---|
| | • Give the client specific recommendations for the next test<br>• Encourage disclosure of HIV-negative status to partner(s) sexual. | Notification partners)<br>• Ensure the link to ART<br>• Get the information on contact cases | |

## I.3. Priority populations for screening services

As HIV prevalence continues to decline, it is becoming increasingly difficult to detect new cases. To improve efficiency of screening, a targeted screening approach needs to be adopted. Populations at high risk of HIV infection should be targeted for screening as a matter of priority. These include :

- ***Vulnerable populations***: armed forces and other men and women in uniform; pregnant women; truck drivers; refugees and Internally displaced persons; people with disabilities; workers in economic centres; transgenders; orphans and vulnerable children (OVC); TB-positive patients.
- ***Contacts of known people living with HIV***: sexual partners of people living with HIV, children of women living with HIV, etc.
- ***Key populations***: sex workers; men who have sex with men; injectable drug users (IDUs); prisoners;

## I.4. Screening sites

HIV screening can be carried out in healthcare establishments or in the community. In health establishments, HIV screening must be carried out at all entry points. Arrangements must be made to ensure that tests are available at all entry points.

### *I.4.1. HIV screening in healthcare establishments*

***Table 13:*** *HIV screening in health facilities for target populations*

| **HIV screening in health facilities** | |
|---|---|
| **Where ?** | • Laboratory,<br>• Pre-natal consultation (ANC),<br>• Maternity ward,<br>• Vaccination service,<br>• Paediatrics,<br>• Tuberculosis Care Service (CDT),<br>• Family planning service,<br>• Emergency department,<br>• Consultation,<br>• Nutrition department,<br>• HIV care service,<br>• Other... |

| | |
|---|---|
| **How do we do it?** | • Provider-initiated counselling and screening (PICT),<br>• Screening of contacts of index cases,<br>• Voluntary Counselling and Testing (VCT) |
| **By who ?** | • Healthcare staff,<br>• Trained non-medical providers |
| **For who ?** | • Children, teenagers, young people, adults<br>• Key or vulnerable populations<br>• TB patients<br>• Contacts of index cases |

### *I.4.2. Community-based HIV screening*

Community-based HIV testing refers to testing services offered at community level out of health facilities. The aim of this approach is to offer testing to the populations least likely to be tested in health facilities, such as key populations, young people and other people vulnerable to HIV. Community-based testing services can be offered in a variety of ways and locations. These include fixed locations in the community, such as community-based organisations, hotspots and other community venues. Community-based screening can also be offered in the homes of targeted individuals. Community-based services can be delivered by trained lay providers. In the case of community-based testing, care should be taken to ensure that all clients who tested positive for HIV are referred to the health facility for confirmation of diagnosis.

***Table 14**: HIV screening in the community*

| **HIV screening in the community** | |
|---|---|
| **Where ?** | • CBO/DIC,<br>• Hot spots<br>• Multifunctional Youth Promotion Centre<br>• Places for cultural, sporting or religious gatherings,<br>• Gathering points (markets, chiefdoms...)<br>• At home (family screening) |
| **How do we do it?** | • Carry out HIV screening for all eligible admitted to community services (are there any eligibility criteria): Educational talks, Home visits, counselling<br>• Link/referral to health facility if HIV test positive/reactive for confirmation |
| **By who ?** | • Mobile medical teams (mobile unit medical staff)<br>• Trained non-medical providers |
| **For Who ?** | • Children, adolescents, young people, adults<br>• Key populations (MSM, TG, DU/IDU) or vulnerable populations (truck drivers, refugees, etc.)<br>• Patients with pulmonary TB<br>• The family of an index case |

## I.5. Recommendation on frequency of testing by type of population

***Table 15:** Test recommendation by population category*

| | **When to test** |
|---|---|
| **General population** | Once a year for negative cases |

| | |
|---|---|
| **PW and BFW** | ○ Take an HIV test on first contact.<br>○ If the test is negative, repeat the HIV test every three months until delivery.<br>○ First HIV test carried out in the labour/delivery room, if HIV test result available or negative HIV test more than 3 months old.<br>○ BFW should have an HIV test every 3 months until the child is weaned.<br>○ Then follow the testing recommendations for the general population. |
| **HIV Exposed Infants (HEI)** | ○ Carry out the 1st PCR (PCR1) at 6-8 weeks or at the first contact with the hospital after birth.<br>○ If PCR1 result is negative:<br>▪ If the child is breastfed, carry out a 2nd PCR (PCR2) 6 weeks after weaning if the child is seen before 9 months, then carry out serology at 18 months.<br>▪ If the child is not breastfed, DO NOT repeat a PCR at 9 months, follow up with serology at 18 months;<br>▪ If there is any clinical suspicion before the age of 18 months, a PCR should be carried out immediately.<br>▪ If breast-feeding is prolonged after 18 months, serology should be carried out 6 weeks after the end of breast-feeding?<br>○ If the PCR result is indeterminate, repeat the PCR within 4 weeks. |
| **HIV-negative partners of the serodiscordant couple,** | ○ Every 3 months until the HIV patient on ART is virally suppressed (VL less than 1000 copies/ml),<br>○ Have an HIV test once a year if the positive partner has a suppressed viral load |
| **Tuberculosis patients** | ○ Initiate HIV testing as soon as TB is diagnosed |
| **Key populations**<br>**Symptomatic STIs** | ○ Repeat the test every 3 months if negative.<br>○ Carry out an initial test as soon as the STI is diagnosed,<br>○ Retest 4 weeks later if the first test is negative |
| **Recent exposure to risk (AEBF, sexual violence, etc.)** | ○ At 1 month, 3 months and six months after stopping the PEP. |

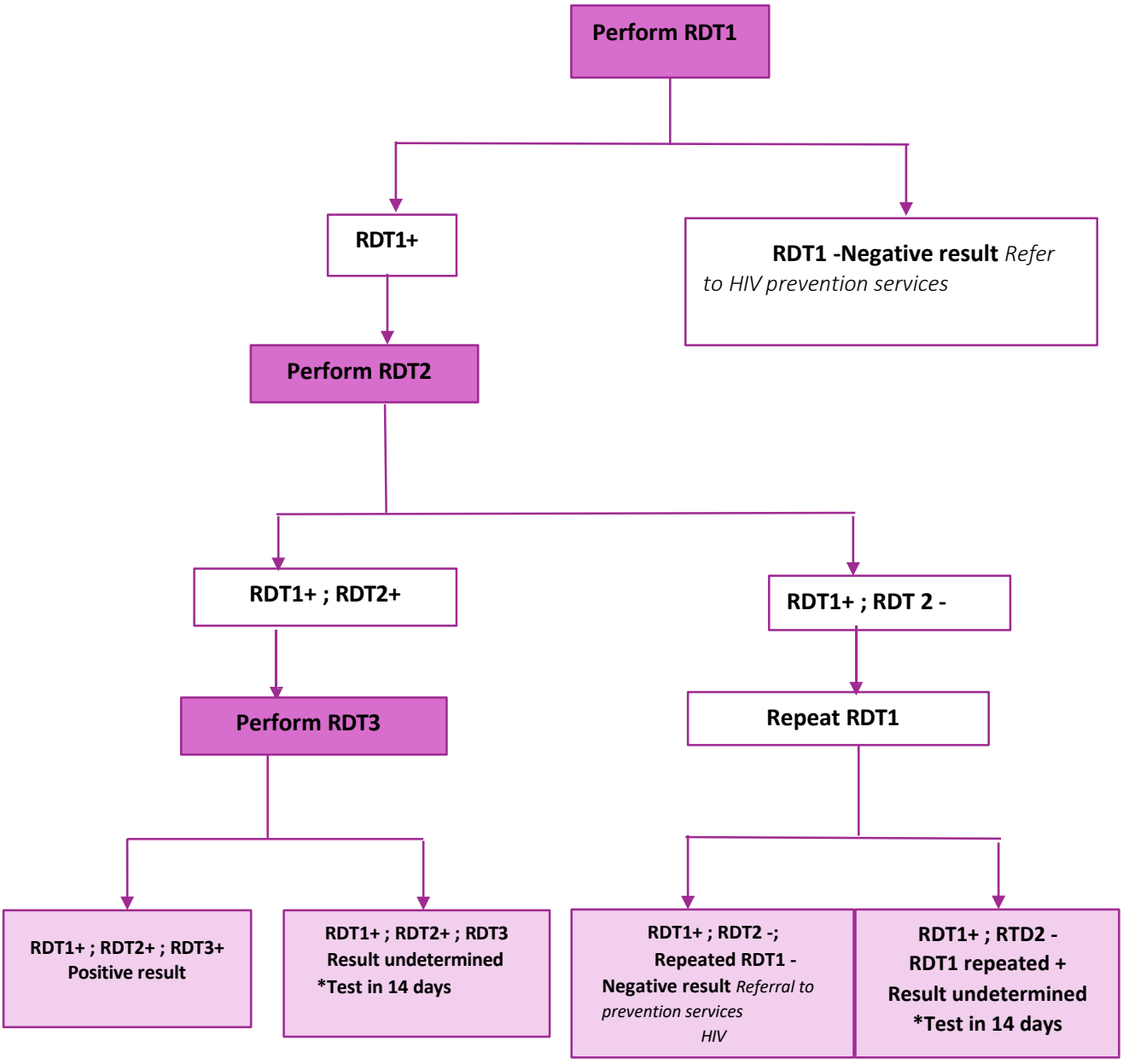
## II. TESTING ALGORITHM

WHO recommends that countries with a low disease burden (prevalence of less than 5%) use three consecutive positive tests to establish an HIV-positive diagnosis, in order to maintain a positive predictive value of at least 99%. Cameroon has aligned itself with this recommendation since 2022 by adopting a three-test HIV testing algorithm. In the specific case of pregnant women and key populations, the country has adopted a testing algorithm with a dual HIV/Syphilis test as the first line.

## II.1. Algorithm for HIV testing in the general population

Before carrying out an HIV test, the provider must ensure that the three rapid tests recommended by the algorithm are available

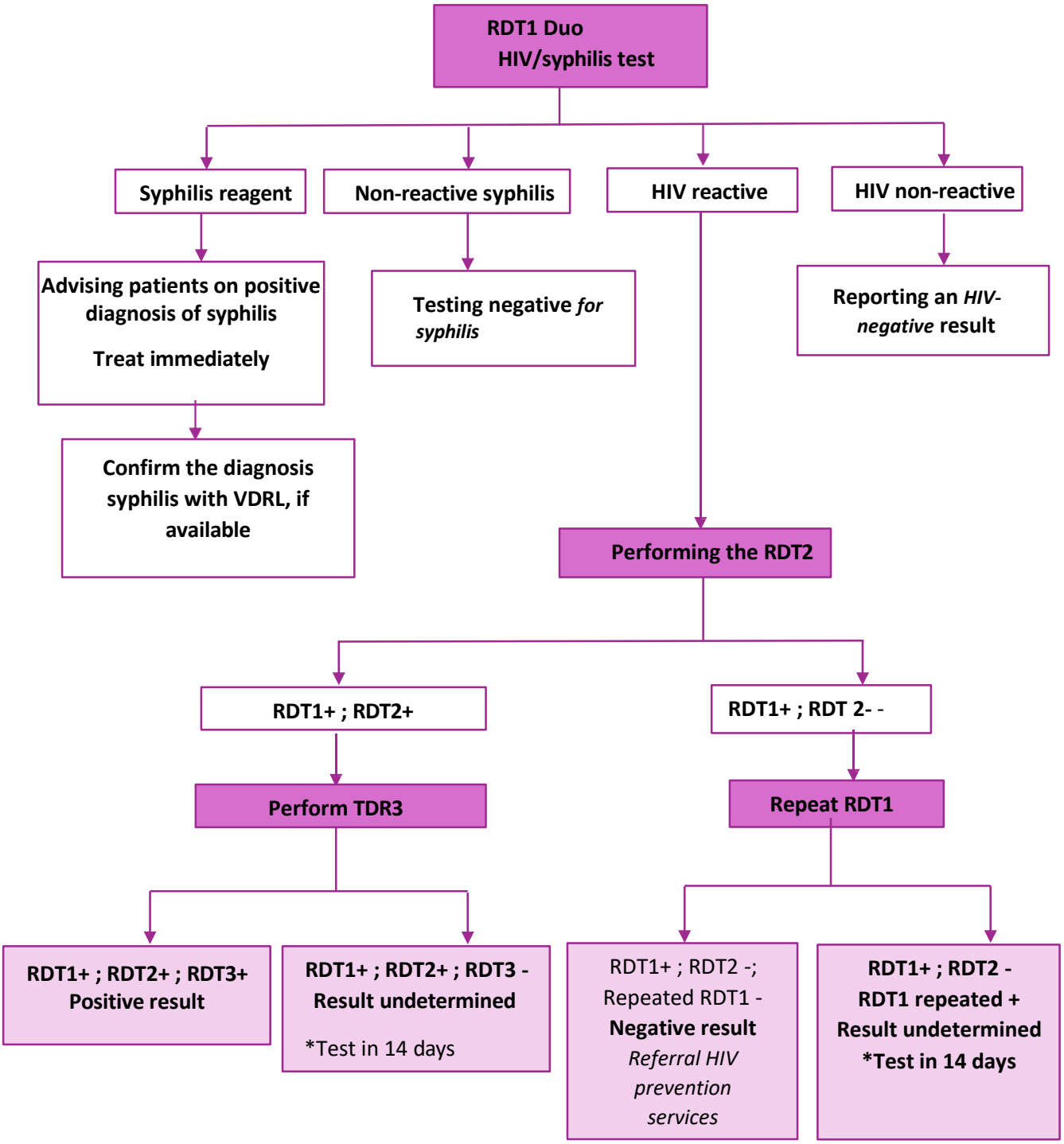
***Figure 2:*** *Screening algorithm for HIV in the general population*




**(*) If the retest result is still undetermined, refer to the nearest laboratory.**

## II.2. HIV testing algorithm for pregnant women and key populations

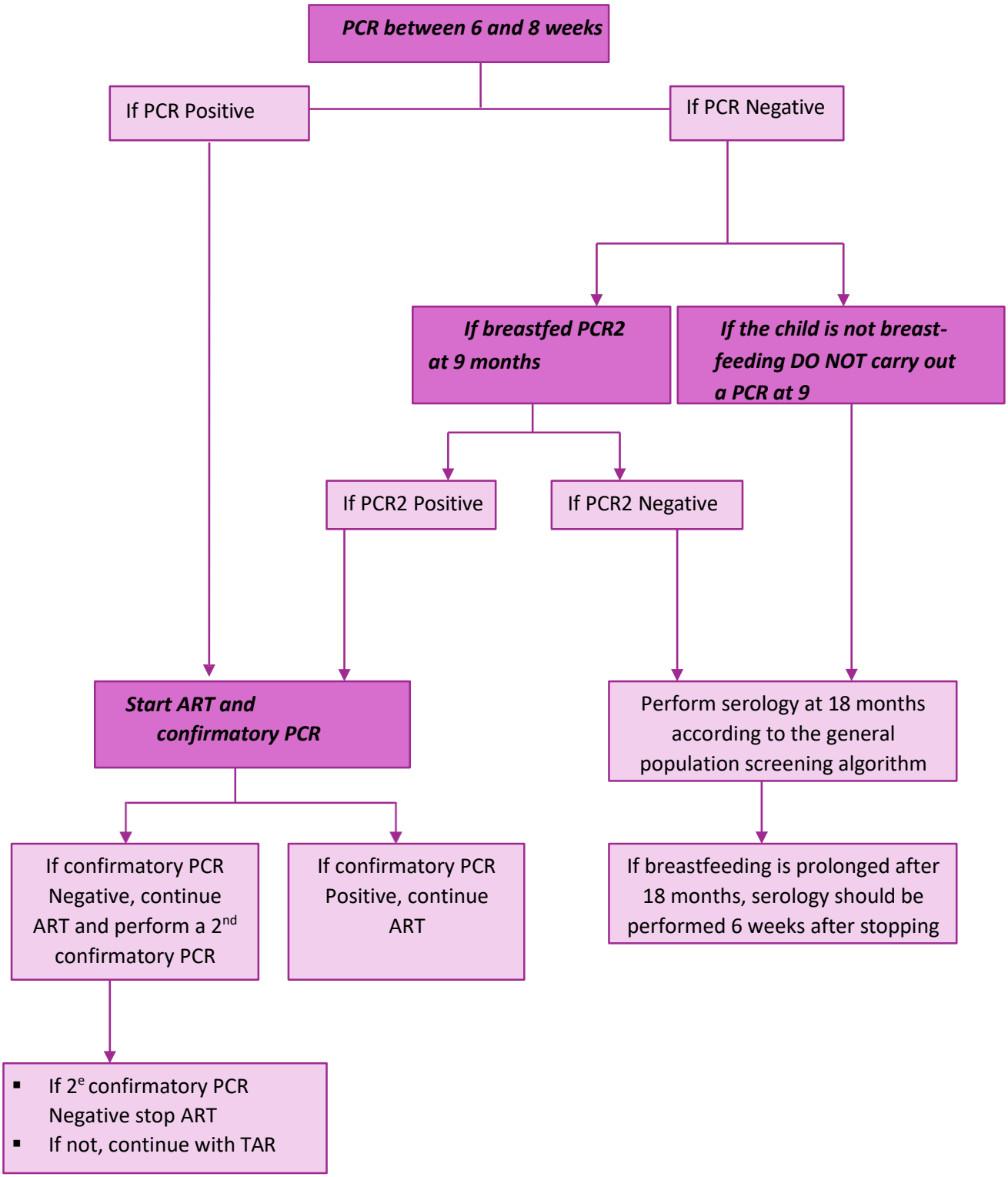
***Figure 3:*** *HIV and syphilis screening algorithm for pregnant women and key populations*




**(*) If the retest result is still undetermined, refer to the nearest laboratory.**

## II.3. Testing algorithm for HIV exposed infants

***Figure 4**: Algorithm for early detection of HIV in exposed infants*



## II.4. HIV Testing for adolescents

Create adolescent-friendly spaces in health facilities and communities that take into account the specific needs of adolescents. These are adapted spaces that provide a safe environment in a convenient location with a pleasant atmosphere, accessible opening hours to offer services that guarantee privacy, avoid stigmatisation while providing information and educational material.
The provider must provide screening advice to the parent/guardian, and screen adolescents under the age of 15 who provide written consent signed by their parents or legal guardian. Adolescents can receive pre-test counselling and screening with parental consent using age-appropriate communication tools and media (film, image box, leaflets). Testing of adolescents over 15 years of age after obtaining written consent form. If accompanied by a parent or guardian, this parent or guardian may only be present during the counselling and screening session with the teenager's consent. Teenagers may be tested directly for HIV if they are sexually active or the head of their household.

## II.5. Recommendations for re-testing

- All newly diagnosed HIV-positive individuals should be re-tested by a second provider to confirm serology prior initiation of ARVs using the same sample and following the testing algorithm as during the initial diagnosis.
- For people who have been exposed to the risk of HIV infection and are newly diagnosed as HIV-negative, it is recommended that they be re-tested after one month, taking into account the serological window in the absence of any new risk-taking.
- If the result is indeterminate, the test should be repeated after 14 days.
- For pregnant women **known to be HIV positive**, the rapid HIV/Syphilis diagnostic test duo should always be used, **but *only the syphilis test result* should be interpreted and disclosed to the client.**

## II.6. HIV self-testing

In order to increase HIV testing coverage, particularly by reaching populations that are not easily accessible through traditional testing strategies, self-testing has been designed to serve as an entry point for HIV testing. This approach has the advantage of enabling people who avoid health facilities to anonymously get an idea of their serological status. It is a process whereby a person takes their own sample (oral fluid or blood), performs an HIV test and interprets the result, often in a private setting, alone or with a trusted person (WHO 2015). The target populations for HIV self-testing are: key populations, partners and clients of key populations; partners of PLHIV, partners of pregnant women, young people 18 to 24 in vulnerable situations, men in vulnerable situations (uniformed men, foresters, truck-drivers). Self-testing for HIV can be done **alone** or **with the help** of a service provider or trained person.

Once HIV self-testing has been carried out, if the result is **reactive, it is essential to confirm the serological status by having the test performed according to the national algorithm by qualified personnel**. The figure below shows the steps involved in carrying out HIV screening using a self-test.

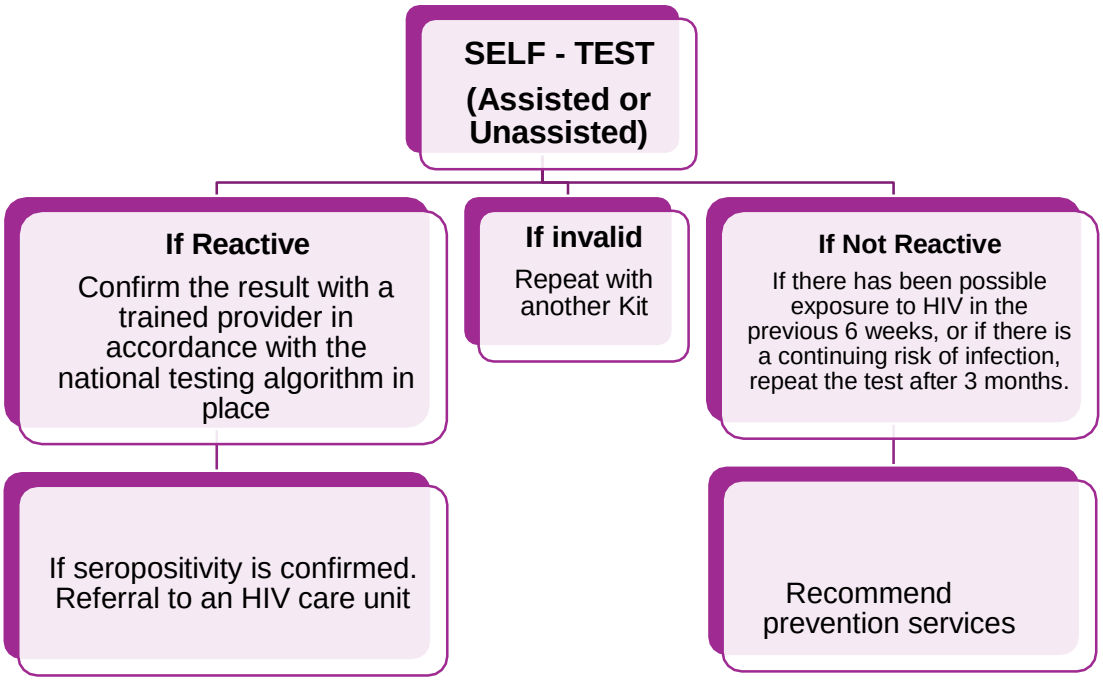



***Figure 5**: HIV self-testing algorithm*

## III. QUALITY ASSURANCE FOR TESTING

Quality assurance in HIV testing is crucial to ensure reliable and accurate results, minimise errors and maximise confidence in the results. All sites carrying out HIV testing must have a quality assurance system based on written procedures and operating methods covering the various stages of the test and the conditions under which it is carried out. The quality of the test depends on the general organisation of the site, the qualifications and motivation of the staff and adherence with operating procedures at the various stages of the test: pre-analytical, analytical and post-analytical. To this end, the laboratories or sites involved in the screening must apply the ISO 15189 standard applicable to medical analysis laboratories. A quality assurance system must be permanent and must keep a record of the checks carried out and the effectiveness of corrective actions. Without this traceability, it is difficult, and sometimes impossible, to trace an error and/or analyse its causes to avoid repeating it.

### III.1. Stages in the test quality assurance process

The key steps in ensuring that HIV testing is carried out accurately, reliably and in accordance with quality standards, while offering adequate support to those tested, must be observed before, during and after the test.

***Table 16**: Different stages in the testing process*

| Before the test | During the test | After the test |
|---|---|---|
| • Check storage and room temperatures daily<br>• Check the availability of SOPs and jobs aids on site.<br>• Make an inventory and check the validity date of the kits<br>• Check availability of tests<br>• Provide information about HIV/AIDS and the test<br>• Label the test strip<br>• Carry out external quality control in accordance with the manufacturer's and site's instructions.<br>• Record all the necessary data, such as the kit batch number and the identity of the operator. | • Follow safety precautions relating to biological risks.<br>• Identify the client<br>• Collect the specimen<br>• Perform the test according to the national algorithm<br>• Interpret test results | • Clean up and dispose of biohazardous waste<br>• Report results in accordance with SOP<br>• Document results<br>• Collect, process and transport the Samples for confirmation of the result<br>• Manage confirmatory test results<br>• Participate in an external quality control (periodically) |

## III.2. Practical steps to be taken to monitor the quality of test results

- All staff involved in testing must first receive full training on the test and the HIV testing algorithm;
- The assessment of personnel involved in testing must be carried out in accordance with current standards;
- All healthcare staff at HIV testing sites must be trained and take part in an external quality assessment (proficiency test) with an independent accredited body twice a year;
- Sites should consider retesting and inter-laboratory comparisons to ensure the reliability of results;
- Testing results should be recorded in the relevant quality assurance registers and all data (patient and quality control) should be regularly reviewed by the Quality Manager or Site Manager;
- On-site assessments must be organised to evaluate the performance of staff using a standard checklist and to assess the test conditions. Direct observation of interaction with a client and performance of all phases of the test should be carried out;
- Site visits should be informative and offer a mentoring experience, and the frequency should be based on initial results and the need for corrective action.

## IV. LINKAGE BETWEEN HIV TESTING , PREVENTION TO CARE AND TREATMENT

This is a continuous process that begins with counselling and continues with therapeutic education and psychosocial support. Staff can use a referral form, physical support or a combination of these. It is strongly recommended that the linkage is made within a maximum of seven days in the health facility where the person was tested, and within 30 days if the person tested positive has been referred to another health facility or from the community to the health facility.

The steps to be observed for the linkage to the treatment are:

- Follow the procedure for the linkage through the reference sheet;
- Call the focal point in charge of the linkage of HIV+ people in the HIV care service where the person is referred to make an appointment for them and follow up on the link;
- Follow up the referred person's linked to care through telephone calls, text messages and community contacts. Phone calls will be made to these people on a weekly basis, once a week for 2 weeks, and after 2 calls, the contact person(s) will be called.
- After one month of fruitless searching, organise a home visits or search by community health workers (CHWs, village delegates, members of dialogue structures, etc.) based on the location information provided during testing;
- Enter the patient's unique identification in the testing register;
- Carry out a weekly review of patients referred for care and archive the information, passing it on to the health facility, district, RTG and national levels so that action can be taken.

***Table 17**: Types of linkages*

| Types | Recommendations |
|---|---|
| **Intra-HF linkage** | The agent responsible for the referral or physical escort must ensure that clients are registered in the ART register and that they are on ARVs or benefiting from the prevention package |
| **Inter health facilities linkage** | Follow the combined procedure (referral form for the HIV-positive person and telephone calls to the treatment centers) to ensure linkage. |
| **Community - health facility linkage** | • Linkage providers need to be involved in campaigns and follow up to link all those who test positive or<br>• Follow the combined procedure (HIV person reference sheet positive and telephone calls from the management service) to link people with or without HIV to care and prevention. |
| **Linkage from blood transfusion to health facilities** | • In the health facility, apply the "intra-HF" linkage procedure;<br>• In the event of a community blood donation campaign, apply the "Community - health facility" linkage procedure described above. |

# CHAPTER 3: ELIMINATING VERTICAL TRANSMISSION OF HIV (eVT or eMTCT)

## ❖ INTERVENTIONS

### ➢ Prevention of new HIV infections

In the community and health facilities

| Who is concerned | What can be done ? |
|---|---|
| **-PW**<br>**-BFW and their partners**<br>**-Discordant couples** | -Social and behavioural change<br>- Use of condoms<br>- Family planning<br>- Nutrition and supplements<br>- Vaccination |

### ➢ Screening and links to services

In the community and in health facilities

| Who is concerned | What can be done ? |
|---|---|
| **-PW and their partners**<br>**-BFW**<br>**-Discordant couples** | - Integrated screening for HIV, syphilis and viral hepatitis B at all entry points<br>- Screening for other STIs<br>- Screening for index cases, including family screening<br>- Self-testing for the partner<br>- Link to prevention/care services |

### ➢ Care, support and treatment

In the community and in health facilities

| Who is concerned | What can be done ? |
|---|---|
| **-PW their partners and children**<br>**-BFW**<br>**-Discordant couples** | - Clinical and biological evaluation, including the search signs and symptoms of TB<br>- Initiation of ARV treatment<br>- Assessment of needs and services (diet counselling, adherence support, VT and promotion assisted childbirth/Family Planning/EPI) |

### ➢ Management of co-infections/comorbidities

In the community and in health facilities

| Who is concerned | What can be done ? |
|---|---|
| **-PW**<br>**-BFW, their partners and children**<br>**-discordant couples** | - Cotrimoxazole chemoprophylaxis<br>- Preventive treatment of tuberculosis<br>- Treatment of tuberculosis<br>- Treatment of viral hepatitis B, syphilis and other STIs<br>- Child immunisation at birth: HVB, BCG, Polio 0 |

➢ **Monitoring pregnant and breastfeeding women on ARV treatment**

In the community and in health facilities

| Who is concerned | What can be done ? |
|---|---|
| **-PW**<br>**-BFW**<br>**-discordant couples** | - Clinical and biological monitoring and treatment of co-morbidities<br>- Nutritional monitoring<br>- Monitoring drug toxicity (pharmacovigilance)<br>- Monitoring ARV resistance and drug interactions<br>-Retention in care |

# I. PREVENTING TRANSMISSION FROM HIV POSITIVE MOTHER TO HER CHILD

## I.1. General information on vertical transmission of HIV

Cameroon has adopted the triple elimination of vertical transmission of HIV, syphilis and hepatitis B. PMTCT is a set intervention designed to prevent children born to HIV+, syphilis+ and hepatitis B-positive mothers from becoming infected. It comprises four pillars:

1. Prevention of HIV infection, syphilis and hepatitis B in women of childbearing age;
2. Prevention of unwanted pregnancies in women infected with HIV, syphilis and hepatitis B;
3. Prevention of mother-to-child transmission of HIV, syphilis and hepatitis B;
4. Treatment, care and support for infected women, their partners, children and families.

In the absence of any intervention, the risk of vertical transmission (VeT) of HIV varies from 15% to 45% in developing countries (WHO). Risk of HIV transmission is higher during labour and delivery.

Viral load is the primary factor in HIV transmission. Breastfeeding transmission depends on the duration of exposure: the longer the child is breastfed, the higher the risk of HIV transmission, even in the absence of ART. Factors increasing the risk of HIV transmission can be grouped into five categories:

(i) viral, (ii) maternal, (iii) obstetric, (iv) foetal and infant, and (v) breastfeeding. The table below summarises the risk factors and mechanisms of mother-to-child transmission of HIV by period.

***Table 18**: Factors influencing VeT*

| Pregnancy | Labour and delivery | Breastfeeding between 0-6 months | Breastfeeding 0-12 months | Without breastfeeding |
|---|---|---|---|---|
| 10-20% | 30-40% | 25-35% | 25-45% | 15-25% |
| **Nursery** | **Obstetrics** | **Fetus/Child** | **Breastfeeding arrangements** | **Viral** |
| • High VL<br>• Low CD4<br>• Advanced stage HIV infection (AIDS)<br>• Primary infection<br>• Malnutrition<br>• Anemia<br>• Presence STIs<br>• Malaria<br>• Other infections (viral or microbial) | • Episiotomy<br>• Early artificial rupture of the membranes<br>• Amniocentesis<br>• Prolonged rupture of membranes (> 4 hours)?<br>• Instrumental delivery (e.g. forceps or vacuum)<br>• Prolonged labour (non-use of partogram)<br>• External version or internal | • Prematurity<br>• First-born (twin pregnancy)<br>• Oral disorders (candidiasis, stomatitis, ulcerations)<br>• Malnutrition | • Unprotected breastfeeding (with ARVs)<br>• Prolonged breastfeeding beyond 6 months<br>• Mixed breastfeeding<br>• Breast lesions, cracked nipples, breast abscesses | • Type of virus (25% HIV1 and 1% HIV2)<br>• Presence of a resistant virus<br>• Coinfection (HVB, etc.) |

## I.2. Strategies to prevent vertical transmission (VeT) of HIV

In Cameroon, the PMTCT strategy for HIV, syphilis and hepatitis B focuses on four main areas to optimise results. These are :

- ***Integration of PMTCT in maternal, neonatal, child and adolescent reproductive health (MNCARH).*** The aim here is to use all the entry points of MNCARH (ANC, maternity, vaccination service, postnatal follow-up service, family planning service, adolescent reproductive health unit, etc.) to identify all the women who need PMTCT services in order to meet their needs.
- ***The family approach to the management of HIV infection, syphilis and hepatitis B.*** PMTCT service providers must use the HIV-infected person already identified (the woman, her partner or her child) as the index case to access other family members (sexual partner and/or other children) in order to offer them all the health services they need (HIV testing, ARV treatment, any other health services). The advantage of this approach is that it can be used for both clinical and psychological care.

The overall psychosocial needs of all family members for which each member can provide mutual support.

- ***Delegation of tasks and decentralisation of services.*** This strategy brings health services closer to the population and compensates for the lack of quality and quantity of human resources. It also ensures that no PW or breast-feeding HIV-positive woman sees the start of her ARV treatment delayed simply because a prescriber is unavailable at the monitoring centre. In this way, care and services are transferred to the health care workers with the least technical qualifications (task delegation) and to lower-level technical structures (decentralisation). Tasks are delegated from doctors to nurses, then to community workers (PSA, CBO) and other non-health actors. Decentralisation takes place from hospitals to Sub-divisional hospitals(CMA), Integrated health centers (IHC), operational sector departments and finally to communities.

## I.3. The minimum package of services for Pregnant and Breastfeeding Women

According to the WHO recommendations adopted by Cameroon for antenatal care, the recommended number of antenatal consultations (ANC) during pregnancy has been increased from four to eight. This increases the chances of detecting problems that may arise during pregnancy, improves communication between healthcare providers and PWs and increases the likelihood of a positive pregnancy outcome. The aim of pregnancy monitoring is to help women carry a pregnancy to term under the best possible conditions and to ensure a smooth delivery and post-partum period.

### *I.3.1 Minimum package in ANC*

The 2016 WHO recommendations on antenatal care for a positive experience suggest a minimum of eight contacts:

- Initial contact during the first trimestre (up to 12 weeks of pregnancy);
- Two contacts during the second trimestre (at 20 and 26 weeks);
- Five contacts during the third trimestre (at 30, 34, 36, 38 and 40 weeks).

At each visit, the PW receives education on the clinical signs of danger and must return if there is a sign of danger or if necessary.

***Table 19:*** *Package of services to be offered to pregnant women during prenatal consultations*

| Interventions | ANC 1 | ANC 2 | ANC 3 | ANC 4 | ANC 5 | ANC 6 | ANC 7 | ANC 8 |
|---|---|---|---|---|---|---|---|---|
| **Visiting periods** | **During the First 12 weeks or at first contact** | **20 Weeks** | **26 Weeks** | **30 Weeks** | **34 Weeks** | **36 Weeks** | **38 Weeks** | **40 Weeks** |
| **Clinical examination** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| **Assessment of basin** | | | | | | | **X** | |
| **Laboratory tests** | | | | | | | | |
| **HIV/AIDS test** | PWand partner if HIV status unknown | PW and its partner if they are not yet tested | Repeat the test every 3 months if the HIV test was negative or do the HIV-Syphilis test if not done previously. | | | | | |
| **Viral hepatitis** | Systematic HBsAg testing of all pregnant women during the 1st ANC (or 1st contact with the ANC)<br>**If HBsAg positive**, prescribe the hepatitis B vaccine to be given to the newborn - at birth. | | | | | | | |
| **Blood Group , Rh** | Determining the ABO group and HR factor at the first consultation | | | | | | | |
| **CBC or Hb** | • If the patient shows sign of anaemia (especially pallor), have a blood count.<br>• **If Hb <10 g/l**, PW is anaemic: double the dose of iron and folates and provide nutritional advice. | | | | | | | |
| **Transaminases** | **X** | | | | | | | |
| **Fasting blood glucose** | | | Systematically to all pregnant women during the 3rd ANC (or 1st contact after 20th week) | | | | | |
| **Urine** | Carry out a sugar test (diabetes test) and albumin test at each visit | | | | | | | |
| **CD4 lymphocytes(for diagnosis of advanced HIV disease)** | At each visit if there are signs of advanced HIV disease | | | | | | | |
| **Viral load** | • Search for the most recent VL if already on ART<br>• If VL> 3 months redo VL at first contact with HIV+ PW | • Do VL at 3 months ART initiation and then every 3 months until breastfeeding ends<br>• **The last VL during pregnancy should be carried out between 32 and 36 weeks.** | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | • VL> 1000, reinforce adherence then repeat VL after 3 months | | | | | | | |
| **Treatment and prophylaxis** | | | | | | | | |
| **Vaccination** | Administer Tetanus-Diphtheria (Td) as soon as possible, then continue according to the PW vaccination schedule. | | | | | | | |
| **Supplements** | Iron/folic acid: administer 1 tablet of iron (200 mg) and 1 tablet of folic acid (5 mg) daily. In the event anaemia, double the dose. | | | | | | | |
| **Mebendazole** | Do not give during the 1st trimester | Administer 1 tablet of 500 mg in the 2nd or 3rd trimester of pregnancy | | | | | | |
| **IPT** | Do not administer before the 14th week of pregnancy, recommend the use of LLINs | Give SP 500 mg/25 mg. **If PWHIV+, administer CTX instead of IPT Advise use of LLINs** | | | | | | |
| **CTX** | • If PW newly tested HIV+, administer CTX from week 14 and then at each visit<br>• If PW already known to be HIV+ on CTX, continue to give at each visit | | | | | | | |
| **ARV** | Give ARV as soon as possible after diagnosis regardless of the term of pregnancy, CD4 count or WHO clinical classification | | | | | | | |
| **Support adherence** | At each ANC visit | | | | | | | |
| **Counseling on feeding practices** | X | X | X | X | X | X | X | X |
| **Family planning** | At each ANC visit | | | | | | | |
| **Preparation for childbirth** | X | X | X | X | X | X | X | X |
| **INH** | INH if TB screening negative in newly detected HIV+ PW or known HIV+ PW who have not received INH | | | | | | | |

### *I.3.1. Care for women in the labour/delivery room*

Labour and delivery is a time of great vulnerability for all PW, especially those who are HIV-positive, with a greater risk of HIV transmission from mother to child. Consequently, special precautions must be taken by healthcare providers working in the maternity to minimise this risk.

***Table 20**: Package of services to be offered to women during labour and delivery*

| Service packages for women during labour and birth | |
|---|---|
| **Visiting periods** | Labour and delivery and the first 72 hours post-partum |
| **Work supervision** | • Systematic use of partograms<br>  ○ Uterine height<br>  ○ Fœtal heart beats<br>  ○ Uterine contractions (2 to 5 every 10 minutes)<br>  ○ Cervical dilatation (1 cm every hour after 5 cm)<br>  ○ Descent of the foetal presenting part (by abdominal palpation) |
| **Conducting labour and delivery for HIV+ PW** | • Using the partogram<br>• Avoid artificial rupture of membranes<br>• Avoiding episiotomies<br>• Avoid instrumental deliveries (forceps, suction cups, etc.)<br>• Avoid fetal trauma (external and internal manoeuvres and cervical stripping)<br>• Making sure your baby is well looked after:<br>  ○ Avoid milking the cord<br>  ○ Suction if necessary<br>  ○ Establish the APGAR score<br>  ○ Wipe the baby with a clean, dry cloth. Avoid cooling (skin-to-skin contact, exposure on a radiation table, etc.).<br>  ○ Cord care<br>  ○ Administer prophylactic NVP within 72 hours (preferably the first 6 hours)<br>  ○ If the mother tested positive for syphilis during pregnancy: give a single dose (50,000IU/kg) of Benzathine Penicillin to the newborn.<br>  ○ If the mother is seropositive for hepatitis B, administer a dose of vaccine to the newborn at birth, ideally combined with specific immunoglobulins.<br>  ○ Immediate breastfeeding for HIV+ PW who have chosen to breastfeed |
| **Family Planning** | • Counselling on family planning and the methods available before returning home<br>• Offer the chosen method as soon as possible after delivery |
| **Assessing the baby's trophicity** | • Take the baby's weight, height and head circumference and compare them with those of a child of the same age.<br>• Give baby feeding counselling. |
| **Mother's HIV test** | • Offer HIV test if status unknown or 1st negative ANC test (more than 3 months old)<br>• If test positive, start ART and start prophylactic NVP for the baby |
| **Complete clinical examination of the baby** | • Before returning home<br>• **First vaccination (BCG, Polio 0 and HBV)**<br>• **BCG will be deferred if the baby shows signs of probable HIV infection** |

***NB: Give Counselling before leaving the hospital, specifying any danger signs, and ask the woman to return if necessary or following the appointment.***

### *I.3.2. Post-partum care for women*

Mother and child will be monitored in the following departments:

- Vaccination ;
- Postnatal consultation (follow-up of exposed infants);
- Family Planning (FP).

Follow-up appointments for the mother should be harmonised with those for the child in order to reduce the number and cost of visits to the health facility. The specific counselling that the HIV-infected mother should receive during visits to the health facility should include:

- Support in implementing the feeding method chosen for the baby
- Discussion about disclosing her HIV status to her partner, family and trusted friends.
- Encouragement to seek peer support.
- Discussion of the attitude to adopt in face of possible stigmatisation, especially if she is not breast-feeding.
- Emphasis that even if the PCR result is negative and the mother is still breast-feeding, this result is not definite and the child must continue on Cotrimoxazole until the risk of HIV positive has been completely ruled out.

***Table 21**: Package of services to be offered to HIV+ women during the post-partum period*

| **Postnatal monitoring of the mother** | | | |
|---|---|---|---|
| **Visiting periods** | **In the week following childbirth** | **From the 6th week to the 6th month** | **From the 6th to the 24th month** |
| **Follow-up** | 6 days after delivery | Once a month | Every 3 months |
| | ○ Identify and treat concomitant conditions in the mother<br>○ Health education on maternal and infant nutrition in the context of HIV, vaccinations, family planning, hygiene, prevention of STIs, etc.<br>○ Promote dialogue with partners, within the couple and responsible parenthood<br>○ Evaluation of ART adherence and support needed | | |
| **Family Planning** | ○ Provide counselling on FP and the methods available, and start contraception if necessary | | |
| **Physical examination** | ○ Examine the abdomen, vagina cervix<br>○ Examining the baby's anterior fontanel and the healing of the umbilicus | ○ Examine the abdomen, vagina and cervix<br>○ Taking a cervical smear | |
| **Danger signs** | ○ Inform the client about the danger signs to watch out for during the post-partum period, and encourage her to return to the health facility immediately if necessary.<br>○ **Mother:** vaginal bleeding, convulsions, breathing difficulties, fatigue, fever, abdominal pain, pallor, oedema, vaginal discharge, vulvar haematoma<br>○ **Baby**: cord red or draining pus, refusal to feed, eyes swollen, sticky or draining pus, baby cold to the touch when warm or baby hot when undressed, difficulty breathing, lethargy, pallor or Yellow colouring of the eyes, repeated vomiting, convulsions | | |
| **Nutritional assessment** | ○ Take the infant's weight, height, brachial circumference and head circumference and compare them with those of a child of the same age. If there are nutritional problems or signs of malnutrition, nutritional and/or physical support should be provided and/or refer | | |
| **Search for signs and symptoms of Tuberculosis** | Systematics | | |
| **Biological examination** | | | |
| **HIV test** | Test the mother and her partner if serology unknown or test negative for more than 3 months. | | |
| **Early Infant Diagnosis** | ○ Diagnose HIV infection in the baby by DBS/PCR or POC/EID at 6 - 8 weeks.<br>○ Continue the diagnostic process in line with the national algorithm<br>○ Introduce all children confirmed as HIV-positive to ART as soon as possible and ensure that they comply with their treatment. | | |

| | |
|---|---|
| **VL** | Every 3 months for duration of breast-feeding |
| **Treatment and prophylaxis** | |
| **Iron/folic acid** | Give 1 iron tablet (200 mg) + 1 folic acid tablet (5 mg) a day for 6 weeks. If anaemia, double the dose |
| **Mebendazole** | If the mother did not receive Mebendazole during pregnancy, give Mebendazole (single dose) at delivery. |
| **IPT** | Advise mothers on the use of LLINs |
| **Vitamin A** | Two doses of 200,000 IU spaced 24 hours apart within 30 days delivery |
| **CTX** | Administer CTX to HIV+ women<br>○ Administer CTX to HIV+ women<br>○ Administer CTX to exposed children from the 6th week of life until the diagnosis of non-infection |
| **ARV** | ○ Initiate or continue ARVs for the HIV+ mother and<br>○ Start the baby on Nevirapine as soon as he is born and no later than 72 hours after birth, and continue for the rest of his life.<br>6 to 12 weeks depending risk of exposure |

# II. CARE FOR PREGNANT AND BREASTFEEDING WOMEN LIVING WITH HIV

## II.1. The linkage to ART treatment

Once a pregnant woman has been tested HIV+ in ANC or at the maternity unit, she should receive appropriate post-test counselling and therapeutic education, and then ARV treatment should be started as soon as possible. If ARV are not available in HIV care units other than ANC, the HIV+ pregnant woman should be physically accompanied to the ARV care unit after post-test counselling, where therapeutic education should be continued and ARV treatment started. The same applies to breast-feeding mothers who have tested positive for HIV at any time during their postnatal care.

## II.2. ART initiation

***All pregnant or breastfeeding HIV+ women should be put on ART as soon as possible, regardless of their CD4 count or WHO clinical stage (Test and Treat). All providers must ensure the clinical and biological monitoring of HIV+ pregnant or breastfeeding women on ART.***

The aim of ART in HIV-positive pregnant and breast-feeding women is threefold: (i) to restore and maintain the mother's immune function and thereby improve her general health; (ii) to reduce the viral load and (iii) to prevent HIV vertical transmission.

***Table 22**: Criteria for initiation of ART in HIV+ PW*

| Criteria for initiating antiretroviral therapy (ART) in pregnant women HIV POSITIVE | |
|---|---|
| Pregnancy in women already on ART | Continuation of the same ART regime, |
| Pregnancy in a woman naïve to ART | Initiation to ART as early as possible according to the recommended protocol |
| Late management of PW (after 28 weeks, delivery room and breastfeeding) | Start ART immediately. |

***Table 23:** ARV protocols for is HIV positive Pregnant and breastfeeding mothers*

| Populations | Preferential treatment | Alternative treatment |
|---|---|---|
| **Pregnant and breast-feeding women** | **TDF/3TC/DTG** | **TDF/3TC/EFV400** |

## II.3. Monitoring of ART in HIV+ Pregnant and Breastfeeding Women

Monitoring of HIV+ pregnant and breastfeeding women is essential to achieve the objectives listed above.

***Table 24:*** *ART follow-up in HIV +pregnant or breastfeeding women*

| HIV+ PW already on ART | HIV+ breastfeeding women already on ART | Start of ART during pregnancy | Starting ART while breast-feeding |
|---|---|---|---|
| • Look for the most recent VL if already on ART<br>• If VL> 3 months, repeat VL at first contact with HIV+ PW<br>• VL> 1000, reinforce adherence then repeat VL after 3 months<br>• If control VL >1000 after 3 sessions of adherence reinforcement, switch to second-line treatment | Look for the most recent VL<br>• If VL> 3 months redo VL<br>• If VL>1000, reinforce adherence then repeat VL after 3 months | Collect VL 3 months after starting ART | Collect VL after 3 months |

At the end of breast-feeding, monitoring is the same as for non-pregnant adult women. ARV treatment is monitored both clinically and biologically, and the schedule should be linked to that for monitoring the child, as shown in the table below.

***Table 25:*** *Summary of biological monitoring of HIV+ pregnant and breastfeeding women*

| | Initiating ART | Post-initiation of ART | | | Post-partum | | | | | | Every years |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M1 | M3 | M6 | 6Weeks after delivery | **Every 3 months** | M12 | M15 | M18 | M21 | |
| **VL** | X* | | X** | X** | X** | X** | X** | X** | X** | X** | X |
| **Creatinine levels** | X | | | X | | | X | | | X | X |
| **Blood glucose** | X | | | | | | X | | | X | X |
| **Haemoglobin** | X | | | | X | | X | | | X | X |

*: Exclusively for pregnant women already on ART before ANC1 and with a VL of more than 3 months.

**: For pregnant women and breastfeeding mothers who have been tested HIV+ and initiated on ART during the current pregnancy.

## II.4. Nutritional care for HIV+ pregnant and breastfeeding women

During pregnancy and the post-partum period, nutrient requirements are high. The needs of pregnant and breastfeeding women depend on their state of health and nutritional status. Pregnant or breastfeeding women living with HIV/AIDS are at greater risk of mortality due to the additional energy and nutrient associated with pregnancy, lactation and HIV infection. To maintain their health and nutritional status, they need to increase their food intake, malnutrition and HIV increase their vulnerability. The adoption of health-promoting nutritional behaviours most often occurs when counselling is individualised and focused on the specific nutritional needs of each PLHIV (individual counselling).

## II.5. Management of co-infections in HIV+ pregnant and breastfeeding women

### *II.5.1. Tuberculosis*

TB should be investigated at all entry points and at each visit, through an active search for signs and symptoms. The presence of any of the following symptoms: ***cough, fever, night sweats***, ***weight loss*** should prompt a search for active tuberculosis. Antiretroviral treatment should be started two weeks after the administration of anti-tuberculosis drugs (see Chapter 9: on co-infections).

If the HIV+ PW is already on ART, she continues on ART and takes her anti-tuberculosis medication.

Cotrimoxazole (CTX) prophylaxis is recommended for HIV PW. However, HIV+ PW on IPT are exempted from CTX throughout pregnancy.

***CTX should be discontinued in the event of adverse reactions***

***NB: Do not give to pregnant HIV+ women on cotrimoxazole, Sulfadoxine Pyrimethamine (SP) as intermitent preventive treatment against malaria.***

### *II.5.1. HIV/hepatitis B co-infection*

All PWs must be tested viral hepatitis B (HBsAg).

Lamivudine (3TC) and Tenofovir (TDF) have an antiviral effect on HBV. The combination of these drugs reduces the development of HBV viral resistance in patients with HIV/hepatitis co-infection.

In the case of HIV/hepatitis co-infection, maintain TDF/3TC-based protocols: TDF/3TC/EFV (TLE) or TDF/3TC/DTG (TLD) fixed-dose tablets (1 tablet per day). In cases of HIV/hepatitis B co-infection, maintain TDF/3TC (Tenolam) even in cases of resistance.

Mothers who are hepatitis B carriers and have a positive antigen (HBsAg) should be tested for HBeAg. If HBeAg is positive, the risk of transmission to the newborn is particularly high.

**Hepatitis B prophylaxis to infants born from mothers with hepatitis B**

| | HBsAg+, HBeAg- | HBsAg+, HBeAg+, HBeAg+, HBeAg+, HBeAg+, HBeAg |
|---|---|---|
| **Immunization** | X | x |
| **Immunoglobulin** | | x |

**Immunisation against hepatitis B** can be divided into two types: passive and active immunisation. Passive immunisation is obtained using hepatitis B immunoglobulins. Immunity is temporary, lasting up to 3 months. Active immunisation, on the other hand, is achieved using vaccines that are capable of providing lifelong immunity, depending on the doses taken.

## III. HIV INFECTION AND FAMILY PLANNING

HIV-positive women must have equitable access to family planning services. The onset of pregnancy in these women is associated with higher maternal mortality, and with a variety of post-partum effects, including low birth weight and infant death. Women who have been initiated on ARV treatment must be able to access family planning (FP), and ARV treatment sites must offer voluntary contraception to this client.

Condom use should be encouraged to reduce the risks of re-infection and HIV transmission. The integration of FP services with HIV (VCT, PMTCT and ARV) and vice versa will be of vital importance and will enable the problems of unwanted pregnancies, reinfection and HIV transmission to be properly managed.

### Advantages of integrating FP and PMTCT services are as follows:

- Improved access to key sexual and reproductive health (SRH) and HIV services, and increased use of these services according to need;
- Reducing HIV-related stigma and discrimination;
- Increased support for dual protection;
- Reducing infant mortality ;
- Improving the quality of care;
- Better understanding and protection of people's rights;
- Improving effectiveness and efficiency of programmes.

***Table 26**: Drug interactions with contraceptives in various clinical situations*

| Options for Contraception | | NNRTI | NRTI | II | PI | Anticonvulsants | Antifungals Systemic |
|---|---|---|---|---|---|---|---|
| | | EFV | AZT, 3TC, ABC, TDF | DTG | LPV/r | | |
| **Condoms** | | * | * | * | * | * | * |
| **COC** | | ** | * | * | *** | *** | * |
| **Progestins** | | ** | * | * | *** | *** | * |
| **Implants** | | ** | * | * | ** | ** | * |
| **Injectables** | | * | * | * | * | ** | * |
| **IDU** | | * | ** | ** | * | * | * |

** : Appropriate method ; no interaction*

*** Possibility of reducing the contraceptive effect or increasing the side-effects of hormonal methods (adding a back-up method such as a condom to compensate for any reduction in contraceptive effect).*

## IV. VACCINATION OF PREGNANT WOMEN

- **Pregnant women who did not receive a dose of DTP/Penta during childhood**

| Doses | Administration | Duration of protection |
|---|---|---|
| **TT1** | On first contact or as soon as possible during pregnancy | None |
| **TT2** | At least 4 weeks after TT1 | 1 to 3 years |
| **TT3** | At least 6 months after TT2 or during the next pregnancy after TT2 | At least 5 years |
| **TT4** | At least 1 year after TT3 or during the next pregnancy after TT3 | At least 10 years |
| **TT5** | At least 1 year after TT4 or during pregnancy next after TT4 | All the fertile life and beyond |

- **Pregnant woman who received 3 doses of DTP/Penta during childhood**

| Doses | Administration | Route of administration | Duration of protection |
|---|---|---|---|
| **TT1** | On first contact or as soon as possible during pregnancy | **Intramuscular** | None |
| **TT2** | At least 4 weeks after TT1 | | 1 to 3 years |
| **TT3** | At least 6 months after TT2 or during the next pregnancy after TT2 | | The whole of fertile life and beyond |

## V. CARE OF HIV Exposed Infants (HEI)

A child exposed to HIV is a child born from an HIV-positive mother. He or she is said to be exposed as long as the risk factor for his or her exposure is still present i.e breastfeeding. The aims of treatment are to :

- Prevent transmission of HIV in the post-natal period,
- Determine the infant's HIV status as early as possible,
- Liaise with ART if the child is infected

### V.1. Monitoring schedule for exposed Infants

Follow-up of exposed children should begin at birth and continue until their final HIV status is determined.

This period should be an opportunity for the service provider to

- Reinforce advice feeding children in the context of HIV,
- Monitor the adopted feeding method,
- Monitor the mother-child relationship and
- Medical and psychosocial care (for the mother, the child and the whole family) as well as
- The psychomotor development of the child.

Every child born from an HIV-positive mother must have a file for systematic monitoring from birth until confirmation of his or her HIV status.

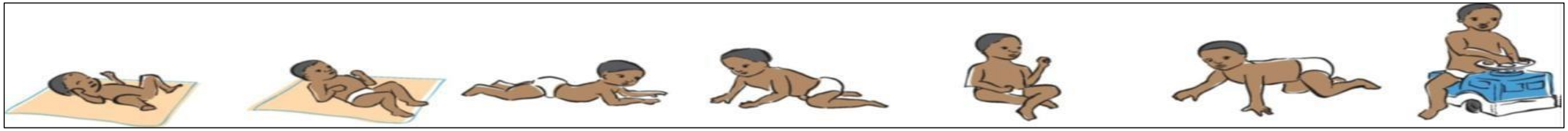
Follow-up will involve visits to the health facility at birth, at six weeks,10weeks, 14weeks, 5months and 6 months and then every three months until 18 to 24 months (see table 30).

## V.2. Service Package for exposed infants

Any child born from an HIV-positive mother should have a full examination at each visit up to 18 - 24 months. At each follow-up visit, the provider will offer to the exposed infant the package of services appropriate to his or her age, as shown in table 30. If the child presents an abnormality such as growth or neurological retardation or a sign of suspected infection (alteration in general condition, pallor or jaundice, state of hydration, etc.), he or she will be taken into care immediately or referred to the doctor.

.

***Table 27**: Timetable and package of follow-up services for children born to HIV-positive mothers*



| | At birth | W6 | From W6 to M6 (monthly visit) | | | | From M6 to M18-24 (quarterly visit) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | W10 | W14 | M5 | M6 | M9 | M12 | M15 | M18 | M21 | M24 |
| **ARV prophylaxis** | **X** | **Stop ARV prophylaxis*** | | | | | | | | | | |
| **Psychosocial support** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| **Growth monitoring** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| **Monitor the psychomotor development** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| **Full clinical examination** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| **Search for concomitant pathologies and them treat** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| **Nutritional counselling** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| **Vaccination (EPI)** | **X** | **X** | **X** | **X** | | **x** | **X** | | **x** | | | |
| **Initiate CTX** | | Start Cotrimoxazole 6 weeks of age and continue until confirmation of no infection. HIV infection | | | | | | | | | | |
| **Diagnosis of HIV in EI** | | **DNA PCR (between 6 and 8 weeks) or at any time before 9 months** | | | | | **DNA PCR at 9 months** | | | **Serology at** 18 months or 6 weeks complete cessation of breast-feeding | | |
| | **Linking positive cases to the ART service** | | | | | | | | | | | |

- ARV prophylaxis stopped at 6 or 12 weeks: see section on "post-natal prophylaxis for exposed children".

## V.3. Postnatal prophylaxis for HIV exposed infants (HEI)

### *V.3.1. Postnatal prophylaxis for HIV exposed infants(HEI)*

***Children at high risk of HIV infection, including those identified during post-partum within 72 hours, should continue prophylaxis for an an additional six weeks (for a total of 12 weeks). Exposed infants of mothers on ARVs for more than one month (low risk) and who are breastfeeding should receive six weeks of prophylaxis with NVP every day.***

***Table 28:*** *Duration of EI prophylaxis according to risk of MTCT*

| Risk classification | Criteria | Duration of EE prophylaxis |
|---|---|---|
| **HIGH risk of MTCT** | • EI born to an HIV+ woman **who received less than 4 weeks of ART** before delivery;<br>• EI born to an HIV+ mother whose **VL was> 1000 copies/ml after 32 weeks before delivery**;<br>• EI of which the mother was tested HIV positive during childbirth or breastfeeding. | NVP<br>12 weeks. |
| **Low risk of MTCT** | All other cases of HIV+ pregnant or breast-feeding women | NVP<br>6 weeks |

Prophylaxis must begin within 72 hours of birth at the latest.

***Table 29****: ARV prophylaxis for HIV exposed infants*

| Ages | Daily doses |
|---|---|
| **NVP every day from birth to 6 weeks (low risk of MTCT) or 12 weeks (high risk of MTCT).** | |
| • **Weight: 2000 to 2499 g**<br>• **Weight 2500g** | • 10 mg in a single dose (1 ml)<br>• 15 mg in a single dose (1.5 ml) |
| **NB: For newborns with a low birth weight (<2000g), start with 2 mg/kg (0.2 ml/kg) per day till the weight reaches 2000 g** | |
| ***1 ml = 10 mg NVP*** | |

### *V.3.2. Postnatal prophylaxis for opportunistic infections in exposed infants*

***Children exposed to HIV should receive cotrimoxazole from the 6th week of life, regardless of the duration of Nevirapine or the type feeding method chosen by the mother. This prophylaxis should be continued until the child's final diagnosis has been confirmed.***

Cotrimoxazole should be started at 6 weeks of life, at the time of the visit to collect the first PCR, according to the table below.

***Table 30**: Cotrimoxazole prophylaxis*

| COTRIMOXAZOLE PROPHYLAXIS (CTX) | |
|---|---|
| **From 1 to 4 kg in weight** | **2.5 ml** of the 240 mg/5 ml suspension **or** ¼ tablet containing 480 mg **or** 1 tablet containing 120 mg |
| **From 5 to 15 kg in weight** | **5 ml** of the 240 mg/5 ml suspension **or** ½ tablet containing 480 mg **or** 2 tablets containing 120 mg |
| ***In case of intolerant to cotrimoxazole, prescribe Dapsone 4 mg/kg per week or 2 mg/kg in a single dose daily; maximum dose is 100 mg.*** | |

As part of the triple elimination of HIV, viral hepatitis B and syphilis, immediate post-natal measures are included below if the pregnant woman is positive.

### *V.3.3. Postnatal hepatitis B prophylaxis*

All newborn babies born from viral hepatitis B positive mothers should receive their first dose of HBV vaccine as soon as possible after birth, preferably within 24 hours. This should be followed by three doses to complete the hepatitis B vaccination recommendations according to EPI guidelines.

### *V.3.4. Postnatal syphilis prophylaxis*

The best prophylaxis remains screening and treatment of pregnant women.

## V.4. Early infant diagnosis

HIV infection in children can occur in utero, during labour, delivery and breastfeeding. All children under the age of 18 months should be checked for exposure to HIV at first contact. A positive RDT in a child under 18 months born from a mother of unknown HIV status confirms exposure to HIV. The child's HIV status should therefore be checked by PCR as shown in table 31.

***Table 31**: Early diagnosis of HIV*

| When to do the test | To whom | How to interpret the result |
|---|---|---|
| **À 6 - 8 weeks** | • All EIs regardless of method of feeding | PCR 1 :<br>• If positive, confirm diagnosis of HIV infection (PMTCT failure):<br>- Initiate ART and<br>- Collect another sample for confirmatory PCR |

| | | |
|---|---|---|
| | | • If negative, continue clinical monitoring according to the national algorithm. |
| **At 9 months** | • EI still breastfeed | PCR 2 :<br>• If negative, continue follow-up for 18-24 months<br>• If positive, confirm diagnosis :<br>- Initiate ART and<br>- Collect another sample for confirmatory PCR |
| **At 18 months** | • EI regardless of method of feeding | HIV serology according to the national algorithm<br>- If positive, confirm diagnosis HIV infection and initiate ART<br>• If negative and no breast milk for at least 6 weeks<br>- Declare child uninfected (successful PMTCT) and<br>- Stop EI monitoring but continue to monitor uninfected infants<br>○ if negative and under breast milk or stopped breastfeeding less than 6 weeks,<br>- consider the child still exposed and continue monitoring, then<br>- serology 6 weeks after stopping breastfeeding - , |
| **At any time** | **All children with**<br>• Mothers tested positive during breastfeeding<br>• Clinical suspicion (presumption)<br>• Diagnosis of tuberculosis<br>• Malnutrition<br>**Family or social history**<br>• Parents' request, death of a parent<br>• Mother with unknown status | Test depends on age<br>• Under 18 months :<br>- HIV serology<br>- if serology positive, consider the exposed child and perform DNA PCR<br>• After 18 months: Serology according to the national algorithm |

## V.5. Nutrition of exposed infants

### *V.5.1. Guidelines for nutritional advice*

Advice on feeding should :

- Begin during ANC and continue during successive follow-up visits to the pregnant woman and then to the mother and child;

- Be adapted to the individual socioeconomic situation of the family and take into account the customs and beliefs;
- Include information on the various feeding options;
- Improve mother's ability to breastfeed without risk to the baby;
- Promote the involvement of the partner and/or any other family member in the choice of feeding method for the baby.

**NB :**

1) The choice of feeding is the sole responsibility of the mother and her family. They must make this decision in full knowledge of the facts, under the guidance of healthcare providers.
2) Healthcare providers must then support the mother and her family to implement the chosen feeding option appropriately.

### *V.5.2. The different infant-feeding options and assessing the feasibility of implementing them*

| Breastfeeding option | Artificial feeding option |
|---|---|
| • Explain exclusive breastfeeding<br>• Remind people of the advantages and disadvantages of breastfeeding<br>• Specify that the duration of exclusive breastfeeding is 6 months<br>• Point out the constraints that may prevent it from being properly implemented<br>• Define mixed feeding and explain its dangers<br>• Explain the dangers of mastitis or any infection of the breast<br>• Demonstrate the correct breastfeeding position<br>• Demonstrate the milk expression technique<br>• Express your willingness to support the implementation of the chosen feeding option. | • Ensure that the artificial feeding chosen is acceptable, affordable, feasible, sustainable and safe<br>• Acceptable: absence of pressure of any kind: from the partner, cultural, family, etc.<br>• Feasible: the mother fully understands how to prepare the artificial milk and has all the necessary equipment<br>• Affordable: the financial cost is accessible to the family<br>• Sustainable : sustainable over time<br>• Safe: no danger to the child's life |

### *V.5.3. General principles for monitoring feeding of exposed infants*

Monitor growth at each follow-up visit by:

- Measurement of weight, height, brachial circumference and head circumference
- Transfer of these measurements to the corresponding growth curves (WHO 2007)
- Assessment of nutritional status

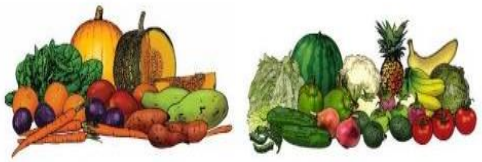
The feeding arrangements for exposed infants are described below:

***Table 32 :*** *Feeding exposed infants*

| Age | Feeding methods |
|---|---|
| **0-6 months** | Exclusive breastfeeding for the first 6 months or<br>Exclusive replacement feeding (artificial milk) for up to 6 months of life, if family living conditions permit. |
| **6-12 months** | **Continued breastfeeding**<br>- Continue breastfeeding<br>- Introduce a suitable, sufficient and balanced supplementary diet (see feeding figure on food)<br>- Introduce one new food at a time and ensure that it is tolerated before introducing another new food.<br>- Give 4-6 meals a day, including milk<br>- Give vitamin A twice a year and, if necessary, add other multi-vitamin complexes. |
| **12-24 months** | - **Continued breast-feeding if child is infected**<br>- **Stop breastfeeding at 12 months if child not infected**<br>- 4-6 meals a day, including snacks between the main meals.<br>- Vitamin A twice a year and, if necessary, add other multi-vitamin complexes |

**Messages clés sur l'alimentation de l'enfant : Aliments 5 étoiles**

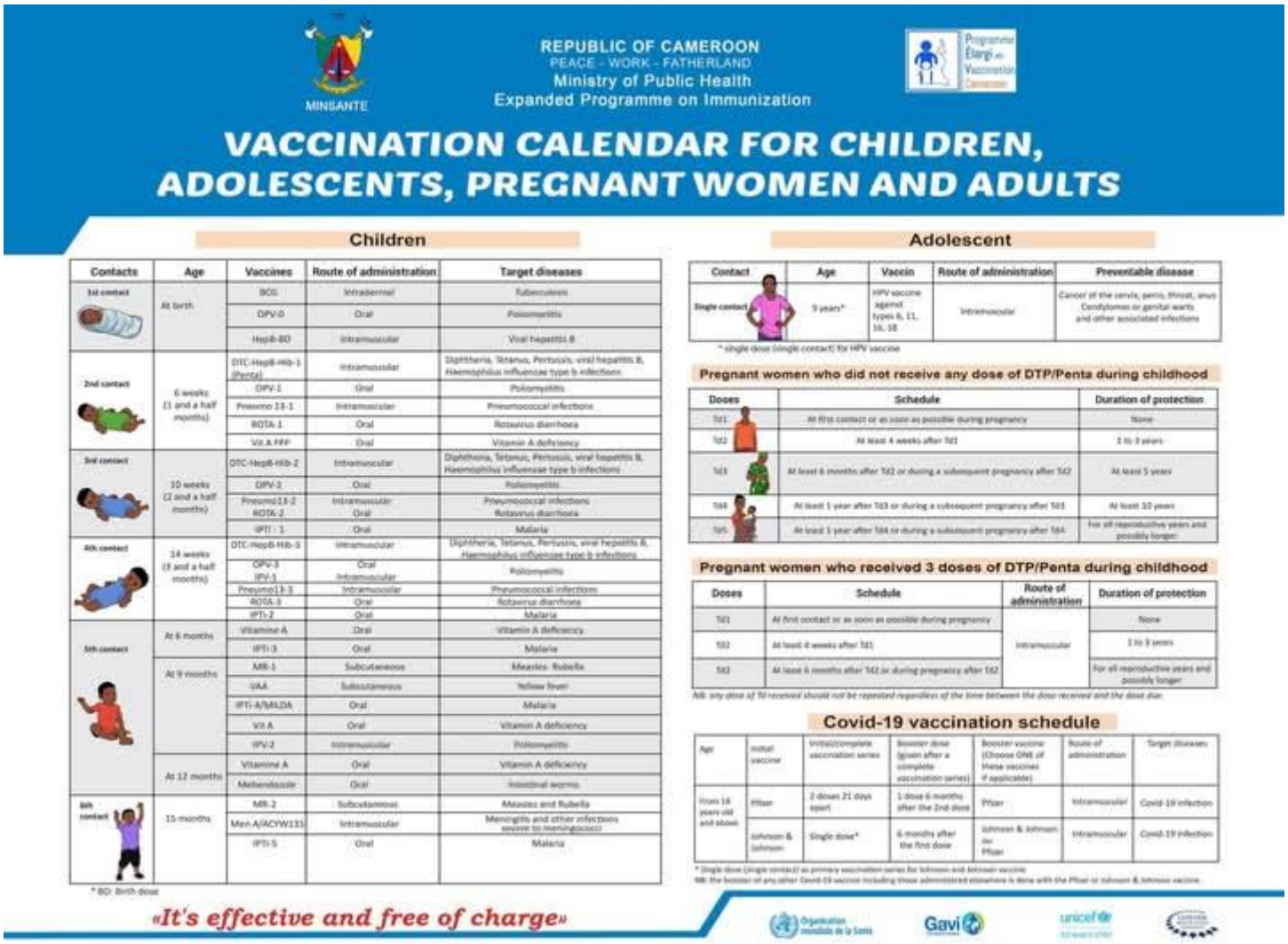
*Tout bon régime doit être adéquat en qualité en quantité et inclure des aliments riches en énergie (par exemple, bouillie épaisse de céréale additionnée d'huile); de la viande, du poisson, des œufs ou des légumes secs; et des fruits et légumes*

| N° d'ordre | Variétés d'aliments | Exemples d'aliments locaux | Rôles |
|---|---|---|---|
| 01 | Aliments d'origine animale 1 étoile*; | (Viande, poulet, poissons, foie), et œufs, lait et produits laitiers  | ***Aliments de construction*** : Ce sont des aliments qui favorisent la croissance de l'individu |
| 02 | Aliments de base 2 étoiles **; | (Maïs, blé, riz, mil et sorgho); racines et tubercules (manioc, pommes de terre)  | ***Les aliments énergétiques :*** Ce sont des aliments qui donnent la force (énergie) |
| 03 | Légumineuses 3 étoiles***; | (Haricots, lentilles, pois, arachides) et graines (sésame)  | ***Aliments de construction*** : Ce sont des aliments qui favorisent la croissance de l'individu |
| 04 | Fruits et légumes 4 étoiles **** | Riches en vitamine A (mangue, papaye, fruit de la passion, oranges, feuilles vert-foncé, carottes, patate douce jaune et potiron), et autres fruits et légumes (banane, ananas, pastèque, tomates, avocat, aubergine et chou)  | ***Les aliments de protection*** ce sont des aliments qui protègent contre les maladies et permettent de se maintenir en bonne santé |
| 05 | Les huiles 5 étoiles ***** | huile de palme, huile d'arachide   | ***Les aliments énergétiques*** Ce sont des aliments qui donnent la force (énergie) |

## V.6. Exposed Infants Vaccination

The following recommendations should be applied to HIV exposed infants (Table 33).

***Table 33**: Vaccination schedule for children*



REPUBLIC OF CAMEROON
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Ministry of Public Health
Expanded Programme on Immunization

MINSANTE

# VACCINATION CALENDAR FOR CHILDREN, ADOLESCENTS, PREGNANT WOMEN AND ADULTS

## Children

| Contacts | Age | Vaccines | Route of administration | Target diseases |
|---|---|---|---|---|
| 1st contact | At birth | BCG | Intradermal | Tuberculosis |
| | | OPV-0 | Oral | Poliomyelitis |
| | | HepB-BD | Intramuscular | Viral hepatitis B |
| 2nd contact | 6 weeks (1 and a half months) | DTC-HepB-Hib-1 (Penta) | Intramuscular | Diphtheria, Tetanus, Pertussis, viral hepatitis B, Haemophilus influenzae type b infections |
| | | OPV-1 | Oral | Poliomyelitis |
| | | Pneumo 13-1 | Intramuscular | Pneumococcal infections |
| | | ROTA-1 | Oral | Rotavirus diarrhoea |
| | | Vit A FPP | Oral | Vitamin A deficiency |
| 3rd contact | 10 weeks (2 and a half months) | DTC-HepB-Hib-2 | Intramuscular | Diphtheria, Tetanus, Pertussis, viral hepatitis B, Haemophilus influenzae type b infections |
| | | OPV-2 | Oral | Poliomyelitis |
| | | Pneumo13-2 ROTA-2 | Intramuscular Oral | Pneumococcal infections Rotavirus diarrhoea |
| | | IPTI - 1 | Oral | Malaria |
| 4th contact | 14 weeks (3 and a half months) | DTC-HepB-Hib-3 | Intramuscular | Diphtheria, Tetanus, Pertussis, viral hepatitis B, Haemophilus influenzae type b infections |
| | | OPV-3 IPV-1 | Oral Intramuscular | Poliomyelitis |
| | | Pneumo13-3 | Intramuscular | Pneumococcal infections |
| | | ROTA-3 | Oral | Rotavirus diarrhoea |
| | | IPTi-2 | Oral | Malaria |
| 5th contact | At 6 months | Vitamine A | Oral | Vitamin A deficiency |
| | | IPTi-3 | Oral | Malaria |
| | At 9 months | MR-1 | Subcutaneous | Measles- Rubella |
| | | VAA | Subcutaneous | Yellow fever |
| | | IPTi-A/MILDA | Oral | Malaria |
| | | Vit A | Oral | Vitamin A deficiency |
| | | IPV-2 | Intramuscular | Poliomyelitis |
| | At 12 months | Vitamine A | Oral | Vitamin A deficiency |
| | | Mebendazole | Oral | Intestinal worms |
| 6th contact | 15 months | MR-2 | Subcutaneous | Measles and Rubella |
| | | Men A/ACYW133 | Intramuscular | Meningitis and other infections severe to meningococci |
| | | IPTi-5 | Oral | Malaria |

* BCG: Birth dose

## Adolescent

| Contact | Age | Vaccin | Route of administration | Preventable disease |
|---|---|---|---|---|
| Single contact | 9 years* | HPV vaccine against types 6, 11, 16, 18 | Intramuscular | Cancer of the cervix, penis, throat, anus Condylomas or genital warts and other associated infections |

* single dose (single contact) for HPV vaccine

### Pregnant women who did not receive any dose of DTP/Penta during childhood

| Doses | Schedule | Duration of protection |
|---|---|---|
| Td1 | At first contact or as soon as possible during pregnancy | None |
| Td2 | At least 4 weeks after Td1 | 1 to 3 years |
| Td3 | At least 6 months after Td2 or during a subsequent pregnancy after Td2 | At least 5 years |
| Td4 | At least 1 year after Td3 or during a subsequent pregnancy after Td1 | At least 10 years |
| Td5 | At least 1 year after Td4 or during a subsequent pregnancy after Td4 | For all reproductive years and possibly longer |

### Pregnant women who received 3 doses of DTP/Penta during childhood

| Doses | Schedule | Route of administration | Duration of protection |
|---|---|---|---|
| Td1 | At first contact or as soon as possible during pregnancy | Intramuscular | None |
| Td2 | At least 4 weeks after Td1 | | 1 to 3 years |
| Td3 | At least 6 months after Td2 or during pregnancy after Td2 | | For all reproductive years and possibly longer |

NB: any dose of Td received should not be repeated regardless of the time between the dose received and the dose due.

### Covid-19 vaccination schedule

| Age | Initial vaccine | Initial/complete vaccination series | Booster dose (given after a complete vaccination series) | Booster vaccine (Choose ONE of these vaccines if applicable) | Route of administration | Target diseases |
|---|---|---|---|---|---|---|
| From 18 years old and above | Pfizer | 2 doses 21 days apart | 1 dose 6 months after the 2nd dose | Pfizer | Intramuscular | Covid-19 infection |
| | Johnson & Johnson | Single dose* | 6 months after the first dose | Johnson & Johnson or Pfizer | Intramuscular | Covid-19 infection |

* Single dose (single contact) as primary vaccination series for Johnson and Johnson vaccine
NB: the booster of any other Covid-19 vaccine including those administered elsewhere is done with the Pfizer or Johnson & Johnson vaccine

«It's effective and free of charge»

### Vaccine differences for HIV infected infants

- Vaccinate against measles at 6, 9 and 15 months;
- Give the Calmette-Guérin (BCG) vaccine at birth unless there are clear signs of severe HIV infection;
- Live vaccines (e.yellow fever, measles, BCG): contraindicated in cases of major immunosuppression (advanced disease).

**HIV-exposed children, infants and children infected with HIV should receive all routine vaccines recommended in the national immunisation schedule, except where they are severely immunocompromised. Exposed infants should receive an additional dose of measles at 6 months of age.**

Exposed children can be removed from the cohort as follows:

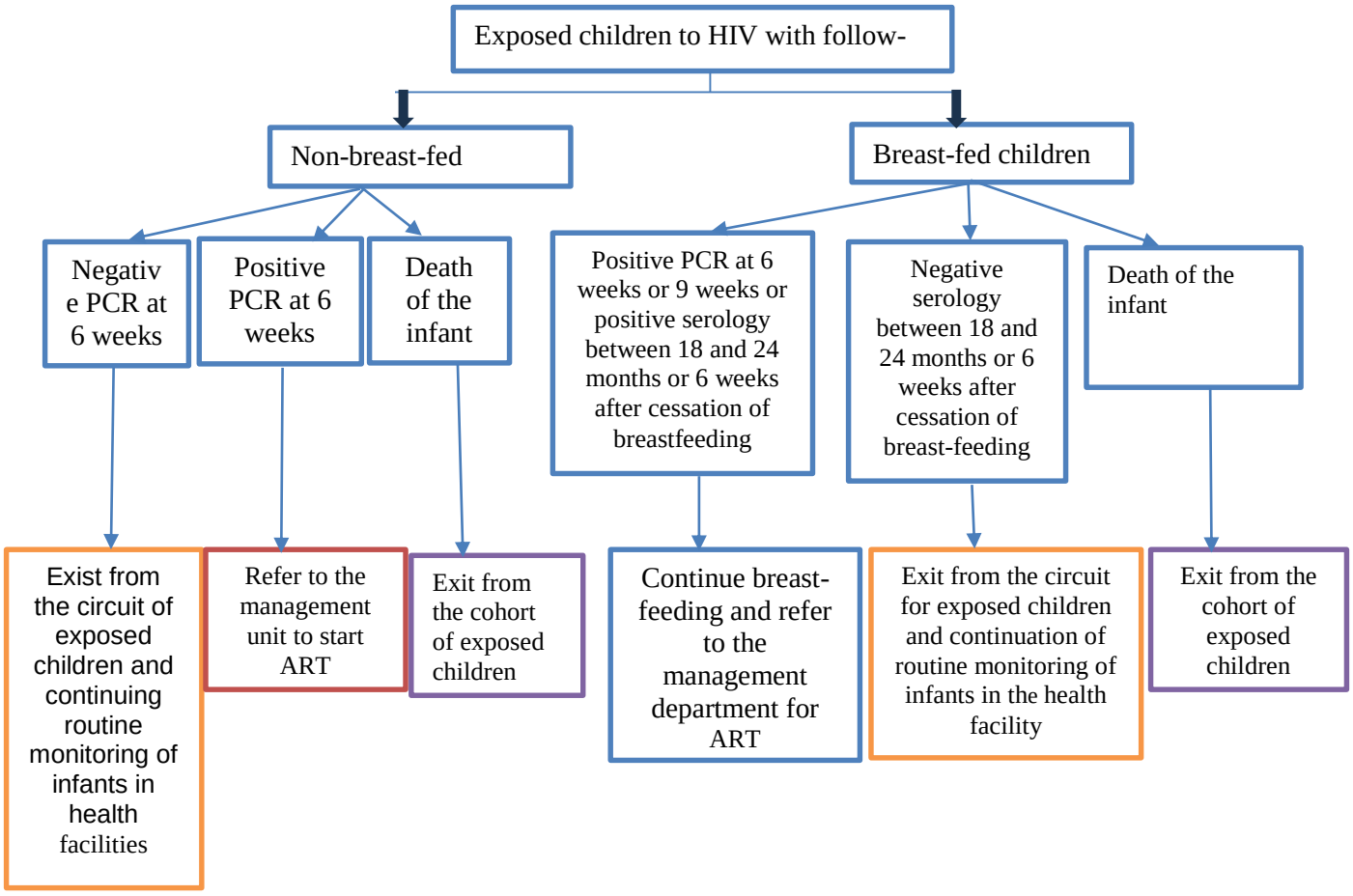



***Figure 6**: Exit procedures from the follow-up programme for exposed Infants*

- The exposed child is confirmed to be free of HIV infection at the end of the 18-24-month follow-up period and exit cohort to be followed up as any other child of the same age;
- The exposed child is confirmed to be HIV-infected and is referred for initiation and monitoring of long-term antiretroviral treatment;
- The exposed infant is nowhere to be seen and all attempts to find him have been unsuccessful;
- The exposed infant died.

In all cases, exit from the programme must be appropriately documented in the register for longitudinal follow-up.

# CHAPTER 4: CARE FOR CHILDREN AND ADOLESCENTS INFECTED WITH HIV

## I. MAIN INTERVENTIONS FOR CHILDREN AND ADOLESCENTS

### ❖ Prevention

**In the community and in health facilities**

| Who is affected | What can be done? |
|---|---|
| **Children exposed to HIV** | • Exclusive, protected breastfeeding or exclusive artificial feeding<br>• Vaccination at birth according to EPI: HBV, Polio 0, BCG<br>• Measles vaccination at 6 months then 9 months<br>• Growth monitoring<br>• Postnatal HIV prophylaxis |
| • **Adolescents & young people not infected with HIV**<br>• **Adolescents & young victims of GBV**<br>• **Adolescents & young people (aged 15-24) infected with HIV**<br>• **Parents as guardians** | • Promoting correct condom use<br>• Social and behavioural change,<br>• Awareness-raising, screening and treatment for GBV<br>• Pre-exposure prophylaxis for MSM, FSW and sexually active or emancipated adolescents<br>• Post-exposure prophylaxis, Sexual and reproductive health<br>• Reducing risk among IDUs and DUs: opioid substitution treatment, management of overdoses,<br>• HPV vaccine for girls<br>• FP |

### ❖ Identification

**In the community and in health facilities**

| Who is affected | What can be done? |
|---|---|
| **Exposed children (born to HIV-positive mothers)** | • Targeted HIV screening initiated by the healthcare provider at entry points according to the health pyramid;<br>• Screening for index cases ;<br>• Family screening ;<br>• Assessment of nutritional status ;<br>• Linkage to prevention/care services;<br>• Disclosure of serological status |
| • **Adolescents & young people not infected with HIV**<br>• **Adolescents & young victims of GBV**<br>• **Adolescents & young people (aged 15-24) infected with HIV**<br>• **Parents as guardians** | • Screening initiated by parent-clients and/or the care provider<br>• Community screening, Self-testing for 18-year-olds and over<br>• Screening through social networks (promotion screening through certain social groups)<br>• Screening of index cases<br>• Link to the prevention service or to the care service |

## ❖ Clinical management

### In the community and in health facilities

| Who is affected | What can be done ? |
|---|---|
| • **Children and adolescents infected with HIV**<br>• **Parents or guardians** | • Assessment of nutritional status, Clinical assessment (WHO classification);<br>• Search for tuberculosis and other comorbidities;<br>• Initiation of ARV treatment ;<br>• Therapeutic education, adherence ;<br>• Psychosocial support ;<br>• Infant and Young Child Feeding (ANJE);<br>• Mental Health Assessment,<br>• Disclosure of HIV status |
| • **Adolescents & young people not infected with HIV**<br>• **Adolescents & young victims of GBV**<br>• **Adolescents & young people (aged 15-24) infected with HIV**<br>• **Parents as guardians** | • Clinical evaluation according to national guidelines<br>• Screening for tuberculosis and other co-morbidities<br>• Preparation for ARV treatment or therapeutic education<br>• Initiation of ARV treatment<br>• Adherence assistance, Psychosocial support<br>• Mental health screening and treatment<br>• Prevention : CTX, INH<br>• Sexual and reproductive health<br>• Anal care for key populations<br>• Specific peer support |

## ❖ HIV care for children and adolescents with advanced HIV infection

**In the community and in health facilities**

| Who is affected | What can be done ? |
|---|---|
| • **HIV-infected children & adolescents aged <5 years**<br>• **Adolescents and children aged ≥ 5 years,** | • CD4 count ;<br>• ***Screening for OIs***: TB (LF-LAM, GenExpert), Cryptococcus (Ag) and acute malnutrition (WHO growth curves);<br>• ***Early treatment of co-morbidities***: tuberculosis, severe pneumonia, acute malnutrition, cryptococcal meningitis, severe bacterial infections;<br>• Optimising ART ;<br>• ***Support for adhesion***: home visits;<br>• ***Prevention***: Prophylaxis with CTX, INH, Fluconazole, Vaccination according to specific need;<br>• Peer support or young teen champion;<br>• Sexual and reproductive health |

## ❖ Monitoring HIV-infected children and adolescents on ART

**In the community and in health facilities**

| Who is concerned | What can be done ? |
|---|---|
| • **Children & Adolescents infected with HIV**<br>• **Parents or guardians** | • Optimisation of ARV treatment regimen<br>• Clinical monitoring (growth, vaccinations)<br>• ***Nutritional monitoring***: nutritional assessment and education<br>• Management of co-morbidities<br>• Adherence<br>• ***Biological monitoring of response to ART:*** VL every 6 months. -Pharmacovigilance<br>• ***Management of treatment failure***: Monitoring of resistance to ARVs (resistance tests eligibility).<br>• Mental health assessment and management<br>• Sexual and reproductive health<br>• Psychosocial support (APS),<br>• Peer support or the young teen champion<br>• Transition from the teenage department to the adult department |

## ❖ Creating a supportive environment for HIV-infected children and adolescents

### In the community, health centres and NGOs

| Who is concerned | What can be done ? |
|---|---|
| • **Children exposed to HIV/ HIV-infected children**<br>• **Parents or guardians** | • Creating child-friendly spaces<br>• Ensuring the availability of commodities<br>• Fighting discrimination and stigmatisation<br>• Assessing the child's needs with view to improve the quality of care provided<br>• Establishing a two-way link between social services and the community<br>• School support<br>• Legal protection |
| • **Adolescents & young people not infected with HIV**<br>• **Adolescents & young victims of GBV**<br>• **Adolescents & young people (aged 15-24) infected HIV**<br>• **Parents as guardians** | • Creating appropriate, user-friendly spaces for teenagers and specific young people<br>• Ensuring the availability of commodities<br>• Fighting discrimination and stigmatisation<br>• Assessing the needs of adolescents and young people with view to improving the quality of their care<br>• Establishing a two-way link between social services and the community<br>• Support for income-generating activities for teenagers and young people who have dropped out of school<br>• Legal protection<br>• information and education tools<br>• Breaking barriers to access to quality HIV care and services |

*HIV care for adolescents and young people specifically infected with HIV in the advanced stages of the disease and follow-up with ART are carried out in the same way as for adolescents.*

## II. NATURAL HISTORY OF HIV/AIDS INFECTION IN CHILDREN.

MTCT is the main cause of HIV infection in children. Although there are several ways in which HIV can be transmitted to children, over 90% of children acquire the virus perinatally:

• Vertical HIV transmission (from mother child)
• Sexual transmission adolescents or during sexual abuse,
• Blood-borne transmission (transfusion contaminated blood or blood products, lack of asepsis during injections and scarification)

*1. UNICEF. HIV Statistics - Global and Regional UNICEF DATA, 2023*

### Clinical course of the infection

The natural history describes spontaneous evolution of the disease in the absence of treatment. In children, the disease progresses rapidly because their immune systems are immature and less effective than those of adults. The mortality rate observed is higher among HIV-infected children in Africa because of frequency of intercurrent infections, malnutrition, absence of a definite diagnosis, delays identifying children, and inadequate access to basic primary healthcare related to HIV and ART. In absence of prevention of vertical transmission, the majority of HIV-infected children develop HIV-related symptoms as early as six months of age, and the disease rapidly progresses to death in 53% of children in the first 2 years of life and 75% at 5 years of life.

***Table 34**: Mortality rates among untreated HIV-infected children*

| Ages | Mortality rate among untreated HIV-infected children |
|---|---|
| **At 1 year of age** | 34% |
| **2 years old** | 53% |
| **At 5 years** | 66-75% |
| **At 10 years old** | 85% |

***Marie-Louise Newell and al, HIV Lancet 2004; 364: 1236-43***

### Progressive forms

There are 2 progressive forms paediatric HIV infection:

### Rapidly evolving form: fast progressors

Infection occurs in early pregnancy, before the baby's immune system is established, and HIV infection hinders the baby's subsequent maturation by impairing the immune system's ability to control viral replication. A form with a poor prognosis, rapidly progressive and characterised by early mortality in the first year of life in the absence of treatment, with frequent spastic encephalopathy.

### The slowly evolving form: slow progressors

Infection occurs later, in the perinatal period or during breast-feeding. The course of the disease is similar to that in adults, the most common form, with first symptoms appearing in children around the age of 8.

## III. DIAGNOSIS OF HIV CHILDREN AND ADOLESCENTS

The test used to diagnose HIV infection vary according to the age of the child. Screening infants under the age of 18 months: early diagnosis of HIV in exposed children (see chapter 3 on PMTCT).

- The provider must obtain the consent of the adolescent and the informed consent of the parent or legal guardian.
- Adolescents should receive pre-test advice using age-appropriate communication tools and;
- adolescentss can be tested directly for HIV if they are sexually active or emancipated (head of household, married).

- if the test is negative, post-test counselling can be used to pass on key preventive messages at this age,
- if the test is positive, early treatment can begin.

Screening should be carried out in user-friendly areas health facilities or in the community. Be careful under-age adolescents: the results should preferably be given in the presence of an adult. If the adolescent does not wish to inform his parents, ask him to bring an adult of his choice (anticipate this choice during the pre-test).

## IV. INITIAL CLINICAL AND BIOLOGICAL ASSESSMENT

### IV.1. First medical consultation

A relationship of trust needs to be established with the child, his parents and the medical team;
**Two-stage consultation (except for infants and very young)**

#### *IV.1.1. With the parent/guardian alone,*

It allows you to :

• Determine whether the child is an orphan (or not), and whether he or she has been informed of this;
• Find out what explanations the patient has received about their illness;
• Find out whether the child's guardian has HIV;
• Ask questions that may be sensitive in the presence of the child;
• Agree on what will be said to the child.

#### *IV.1.2. With the child and his/her parent/guardian*

• Open the medical file (check that adult's address and telephone number have been filled in; contact two referees);
• Questioning :

- history of prevention of vertical transmission,
- main medical history (tuberculosis, malnutrition, hospitalisations) ;

• Complete clinical examination of child, including weight and height;
• Prescription of additional tests if necessary and Cotrimoxazole (CTX);
• Clear explanations of the summary of the consultation and the next steps (next appointment, referral to therapeutic education (TE), pharmacy, advisor, etc.).

## IV.2. Clinical assessment of different needs of children and adolescents

- Assess psychosocial needs and discuss appropriate treatment options (counselling, pre-therapeutic education, etc.) with the child/adolescent or the parent/guardian.
- Consider factors that may influence retention on ART:
    - Where do children and adolescents live?
    - Who are his family members? Who lives with him ?
    - Who is informed of the child or adolescent's diagnosis?
    - What is attitude of family members to the disease and its treatment?
    - Who is responsible administering the treatment to the child or adolescent?
    - Where will the medicines be stored?
- Discuss possible side effects and what to do if they occur
- Provide advice on sexual and reproductive education for adolescents
- Open a standard medical file and assign to the patient a unique identification code (ART code in accordance with national guidelines);
- Assess the child's and adolescent's clinical condition and enter key information in the patient's medical record at the first visit. This involves :
    - ✓ Socio-demographic information about the child and adolescent (in accordance with the medical record);
    - ✓ ATCD
    - ✓ Anthropometric measurements: height, weight, BMI, cranial and brachial perimeter (children under 5) and use to assess nutritional status
    - ✓ Vital signs: Temperature, BP, Heart rate, Respiratory rate, Pulse;
    - ✓ Assessing vaccination status ;
    - ✓ A full clinical examination, including TB screening;
    - ✓ Mental health and drug use assessment;
    - ✓ Determine the clinical stage of the infection according to WHO.

## IV.3. WHO stage classification of HIV-infected children and adolescents

The clinical and biological examination should enable the provider to classify the patient according to the WHO's 4 clinical stages in order to guide management as part of the "differentiated care" approach.

***Table 35**: Clinical classification of paediatric HIV/AIDS (World Health Organization, 2007)*

| **Stage 1** | **Stage 2** |
|---|---|
| ◆ **Asymptomatic**<br>◆ **Persistent generalised lymphoadenopathy (adenopathy > 1 cm persistent in at least two Anatomic sites (excluding inguinal adenopathy)**<br>◆ **Recurrent or chronic ENT infections (otitis media, otorrhea, sinusitis, sore throat) (current episode and at least one other episode within the last 6 months)** | • **Hepatosplenomegaly**<br>• **Prurigo**<br>• **Nail fungal infections**<br>• **Cheilitis of the commissures**<br>• **Linear gingival erythema**<br>• **Extensive *molluscum contagiosum***<br>• **Diffuse papillomavirus infection**<br>• **Recurrent oral ulcers (current episode and at least one other episode in the last 6 months)**<br>• **Unexplained bilateral parotid hypertrophy**<br>• **Zona**<br>• **Recurrent or chronic ENT infections (otitis media, otorrhea, sinusitis, sore throat) (current episode and at least one other episode within the last 6 months).** |
| **Stage 3 :**<br>• **Moderate malnutrition (up to - 2 DS) unexplained or unresponsive to standard management**<br>• **Persistent unexplained diarrhoea (14 days or more)**<br>• **Persistent unexplained fever (37.5°C, intermittent or constant, lasting more than 1 month)**<br>• **Persistent oral candidiasis (after 6-8 weeks of age)**<br>• **Oral hairy leukoplakia**<br>• **Acute ulcerative gingivitis or periodontitis**<br>• **Tuberculosis of the lungs or lymph nodes**<br>• **Recurrent severe bacterial pneumonitis (current episode and at least one other episode in the last 6 months)**<br>• **Symptoms/pathologies for which a confirmatory test is required**<br>• **Symptomatic lymphocytic interstitial lung disease**<br>• **HIV-associated chronic lung disease, including bronchial dilatation** | **Stage 4**<br>■ Severe malnutrition (≥ - 3 SD)/cachexia unexplained or unresponsive to standard management<br>■ Pneumocystis<br>■ Severe recurrent presumed bacterial infections (such as empyema, pyomyositis, osteoarticular infection or meningitis, excluding pneumonitis) (current episode and at least one other episode in the last 6 months)<br>■ Chronic herpetic infections (cutaneous or orolabial lasting more than one month, or visceral)<br>■ Oesophageal, tracheal, bronchial or pulmonary candidiasis<br>■ Extra-pulmonary tuberculosis<br>■ Kaposi's sarcoma<br>■ CMV infection (retinitis or other organ damage after 1 month of age)<br>■ Central nervous system toxoplasmosis (after 1 month age)<br>■ Extra-pulmonary cryptococcosis (including meningitis)<br>■ HIV encephalopathy<br>■ Symptoms/pathologies for which a confirmatory test is required<br>■ Disseminated endemic fungal infection (coccidioidomycosis, histoplasmosis)<br>■ Disseminated atypical mycobacterial infection<br>■ Chronic cryptosporidiosis (with diarrhoea)<br>■ Chronic isosporosis<br>■ Cerebral lymphoma or non-Hodgkin's B lymphoma<br>■ Progressive multifocal leukoencephalopathy<br>■ HIV-related cardiomyopathy or nephropathy |

| | |
|---|---|
| **Unexplained anaemia (< 8 g/dl), neutropenia (< 500/mm3) and/or chronic thrombocytopenia (< 50,000/mm3)** | |

NB. Propose CD4 testing for all newly diagnosed HIV+ patients, including children.

## V. CLASSES ANTIRETROVIRAL AGENTS

There are 4 classes of ARV available in Cameroon. Each class of ARV acts by blocking a stage in the virus replication cycle. The different classes available in Cameroon are shown in the table below:

***Table 36**: ARV and therapeutic classes*

| N° | Therapeutic classes | Mechanism of action | Example of molecules |
|---|---|---|---|
| **1** | Nucleoside and nucleotide reverse transcriptase inhibitors (NRTIs) | Prevent formation viral DNA from viral RNA (inhibition of TI)<br>Active on HIV-1 and HIV-2<br>HBV: 3TC, FTC and TDF | ABC (Abacavir)<br>AZT (Zidovudine)<br>3TC (Lamivudine)<br>FTC (Emtricitabine)<br>TDF (Tenofovir) |
| **2** | Non-nucleoside IT inhibitors (NNRTIs) | Prevent formation viral DNA from viral RNA (inhibition of TI)<br>INACTIVE on HIV-2 | EFV (Efavirenz) |
| **3** | Protease inhibitors (PIs) | Protease inhibitor<br>Active on HIV-1 and HIV-2 | ATV (Atazanavir)<br>LPV/r (Lopinavir/Ritonavir)<br>DRV (Darunavir)<br>R (Ritonavir) |
| **4** | Integrase inhibitors (IN) | Inhibit HIV integrase Active on HIV-1 & HIV-2 | DTG (Dolutegravir)<br>RAL (Raltegravir) |

## VI. INITIATION OF ARV TREATMENT

**The objectives of antiretroviral treatment are:**

- Long-term suppression of viral load;
- Restore and maintain immune function (CD4 count);
- Promote healthy growth and harmonious development in children and adolescents;
- Prevent complications
- Reduce HIV-related mortality ;
- Improve living comfort.

The treatment must be powerful, easy to take and better tolerated in order to minimise the risk of selection of resistant strains. The use of simplified, less toxic and more practical treatment regimens in the form of fixed-dose combinations is recommended for first-line ART.

The choice of treatment must take into account age, previous history, the existence of co-morbidities and any drug interactions. It must be adapted to the type of virus (HIV-1, HIV-2 and group O).

## VI.1. Initiation of ART in children and adolescents

### Where and who can initiate ART?

**WHERE**: health facilities **BY WHOM**: only health professionals trained in HIV care are authorised to initiate ART

### Who should be started on ARV treatment?

- ARV treatment should be initiated in all HIV-infected patients, regardless of their clinical status.
- As part of the "TEST AND TREAT" programme, additional tests are required before starting ARV treatment.

Dolutegravir (DTG)-based protocols are recommended as preferred first-line ARV treatment protocols for all HIV-infected children and adolescents.

-Children should be started on ABC/3TC+DTG

Monitoring of dolutegravir-based protocols: weight, glycaemia, blood pressure

### How do you initiate ARV treatment?

The parent and child must be "prepared" before the start of treatment so that they:

- Understand the benefits and challenges of treatment;
- Know the principles of administering and taking ARV treatment;
- Report difficulties or side-effects;
- Be trained in the administration of treatment if they are the child's parent/guardian, particularly if the adult concerned is not HIV-positive;
- Seek the opinion of the child/adolescent or parent/guardian and respond to their concerns.

### What are stages involved in ART initiation?

- Identify the optimised first-line protocol according to age and weight;
- Choose the correct formulation ;
- Prescribe the right dose ;
- Agree when to take ARVs.

To ensure that adolescents achieve ART goals, adolescent-friendly health services will need to be put in place (adolescent-friendly service), providers will need to be appropriately trained and there will need to be a focus on support for age-appropriate disclosure, adherence and retention in care, including peer support.

The optimised 1st line ARV protocols for children and adolescents according to age and weight are given in the following tables:

***Table 37:*** *First-line protocol for neonates, children and adolescents*

| Weight | Preferential ART schemes | Dosage | |
|---|---|---|---|
| **≥6 kg-24.9 kg** | ABC/3TC/DTG | ABC/3TC/DTG (tablet 60 mg/30 mg/5 mg) | |
| **≥3kg-5, 9 kg** | ABC/3TC +DTG* | ABC/3TC (120 mg/60 mg) dispersible tablet | DTG (10 mg tablet) |
| **24-29.9 kg** | ABC/3TC+ DTG | | DTG (50 mg tablet) |
| **≥ 30 kg** | TDF/3TC/DTG | TDF/3TC/DTG (300 mg/300 mg/50 mg tablet) | |

*ABC (Abacavir), AZT (Zidovudine) contraindicated cases of anaemia, 3TC (Lamivudine), TDF (Tenofovir, TDF after 10 years or> 30 kg requires regular monitoring every 6 months of renal function urine dipstick and creatinine, EFV (Efavirenz) is contraindicated in patients with a psychiatric history or in children under 10 years of age, DTG **(Dolutegravir 50 mg), DTG*(Dolutegravir 10 mg).*

***Table 38****: Protocol dosages by weight range in children*

| NAME GENERICS | PRESENTATION | NUMBER OF TABLETS PER WEIGHT RANGE (kg) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3 - 5,9 | | 6 - 9,9 | | 10 - 14 | | 14 - 19,9 | | 20 - 24,9 | | 25 - 34,5 | |
| | | M | S | M | S | M | S | M | S | M | S | M | S |
| Abacavir/Lamivudine (ABC/3TC) | 120/60 mg cp *(Dispersible)* | 0,5 | 0,5 | 0,5 | 1 | 1 | 1 | 1 | 1,5 | 1,5 | 1,5 | - | - |
| | 600/300 mg cp | - | - | - | - | - | - | - | - | - | - | 0,5 | 0,5 |
| Zidovudine/Lamivudine (AZT/3TC) | 60/30 mg cp *(Dispersible)* | 1 | 1 | 1,5 | 1,5 | 2 | 2 | 2,5 | 2,5 | 3 | 3 | - | - |
| | 300/150 mg cp | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| Tenofovir/Lamivudine/Dolutegravir (TLD) | 300/300/50 mg cp | - | - | - | - | - | - | - | - | - | - | 1 | |
| pALD ABC/3TC/DTG | 60/30/5 mg cp | - | - | 3 | - | 4 | - | 5 | - | 6 | - | - | - |
| Abacalam/Lamivudine/Dolutégravir (ABC/3TC/DTG) | 60 mg/30 mg/5 mg | - | - | 1,5 | 1,5 | 2 | 2 | 2,5 | 2,5 | - | - | - | - |
| Nevirapine (NVP)* | 50 mg/5 ml syrup | 5 ml | 5 ml | - | - | - | - | - | - | - | - | - | - |
| | 50 mg cp *(Dispersible)* | 1 | 1 | - | - | - | - | - | - | - | - | - | - |
| Efavirenz (EFV) | 200 mg cp | - | - | - | - | - | - | - | - | - | 1,5 | - | 2 |
| Lopinavir/ritonavir (LPV/r) | 100/25 mg cp | - | - | - | - | 2 | 1 | - | - | - | - | - | - |
| Lopinavir/ritonavir (LPV/r) | 200/50 mg cp | | | | | | | 1 | 1 | 1 | 1 | 1,5 | 1,5 |
| Atazanavir (ATV) | 200 mg | | | | | | | | 1 | | 1 | | 1,5 |
| Dolutegravir (DTG) | 10 mg cp | 0,5 | | 1,5 | | 2 | | 2,5 | | | | | |
| | 50 mg cp | | | | | | | | | 1 | | 1 | |

***Nevirapine (NVP) is reserved for HIV-exposed children only.***

## VI.2. Preparing children and adolescents for ART

Preparing children and adolescents for ART must be tailored to their age, their specific needs and their clinical condition.

- Verification of the positivity of the test in the newly tested child or adolescent according to the national HIV screening algorithm, and if necessary, a new HIV screening test according to national guidelines.
- ARV treatment should be started as soon as possible (ideally within 7 days) in any child or adolescent infected with HIV, whatever their clinical stage.
- Biological tests are not a prerequisite initiating ART and should not delay its start.
- Interventions in therapeutic education, support for adherence to ART, peer education, sex education and mental health assessment for HIV-infected children and adolescents must be provided.
- Appropriate support should be given to children and adolescents with mental health, substance abuse or other potential barriers to initiating or adhering to ART.
- CD4 counts should be taken at the start of ART if available.

### Pre-therapeutic education

Pre-therapeutic education is essential to encourage acceptance and adherence to ARV treatment, with full knowledge of the diagnosis on the part of the parent or guardian and the child (depending on age).

It must be provided by any service provider: clinician in collaboration with the psychosocial support worker or educator, support worker involved in the patient's care circuit.

Pre-therapeutic education should focus on the following elements:

- Clearly explain the purpose of antiretroviral treatment and why it should be started as soon as possible and continued for life;
- Explain treatment procedures (drugs to be taken, dosage, frequency of administration, how to measure the quantities to be administered, route of administration, possible side-effects, etc.), monitoring and adherence (see TE chapter).

It is necessary to explain to parents/guardians the benefits of this involvement for them, for the child and for the rest of the family unit (lifelong treatment, easier choice of diet, screening and care for the rest of the family).

### Analysis of any additional tests

***NB: No additional tests are required for ART initiation.***

If the child has a biological check-up since the last consultation:

- Read the results and explain them to the parent and adolescent;
- Record them in the summary sheet of additional examinations.

## VI.3. Initiation of ART in cases of co-infection

In the event of co-infection, the timeframes for initiating ARVs should be considered as described below, and the following suggestive signs should point to the following actions:

- It is essential to treat any OI or other progressive pathology before initiating ARV treatment in certain cases of TB, in order to limit the development of an immune reconstitution inflammatory syndrome (IRIS).
- In the case of TB/HIV co-infection, ARV treatment must be initiated at the time of diagnosis within two weeks of starting anti-tuberculosis treatment, regardless of the CD4 count.
- Initiation of ART should be delayed for at least 04 weeks (and initiated within 08 weeks) after the start of treatment for TB meningitis. Corticosteroids should be considered as an adjunct to the treatment of TB meningitis.
- Immediate initiation of ARVs is not recommended for adults and adolescents living with HIV who have cryptococcal meningitis because of the high risk of mortality, and should be postponed for 4-6 weeks from initiation of antifungal treatment.

# VII. MONITORING OF HIV-INFECTED CHILDREN AND ADOLESCENTS ON ART

## VII.1. Organisation of child and adolescent follow-up

Monitoring of children and adolescents must be systematic, planned and regular. Children should not just be seen when they are ill. It is essential to have a longitudinal follow-up form, which will be used throughout the follow-up.

### *VII.1.1. Clinical follow-up*

#### a) Frequency

Clinical monitoring should be monthly for the first six months following initiation of ARV treatment, then **quarterly** for all children and adolescents who are stable on ARV treatment.

#### b) Objectives

- Monitor growth and adapt ARV doses;
- Early detection of therapeutic failure (clinical, immunological and virological);
- Prevent non-adherence by means TE, announcement process and psychological follow-up;
- Establish a relationship of trust with the child, which will facilitate the carer-child relationship in adolescence.

#### c) Details of a typical paediatric consultation for a child infected with HIV

**Questioning: particular attention should be paid to**:

- If the referring adult is well and still has time to look after the child;
- If the child's carer has changed: is the carer trained in administering treatments (does the carer know why they should be given);
- If the child has presented with significant pathologies, even if the problem has been resolved on the day of the consultation;

- If the child eats well, sleeps well, does well at school and has not changed his or her behaviour recently;
- Symptoms or complaints on the day of the consultation:
- During planned/scheduled consultations, the child is rarely ill, but may present with an intercurrent pathology;
- Has the child been in contact with a TB patient? This question should be asked systematically to determine whether active TB should be investigated or whether preventive treatment with isoniazid (INH) should be proposed.
- In the case of teenagers, they will first be seen with their parents and then a physical examination will be carried out in the absence of their parents, where we will take the opportunity to talk about sexual and reproductive health.

**Nutritional assessment (weight/height/growth curve)**:

- The vital signs and curves must be taken at registration (triage) by trained nursing staff and presented to the doctor/consultant for interpretation.

**Psychological assessment:** this regular assessment enables us to quickly identify and address any psychological problems that these children and teenagers may be experiencing.

**Full clinical examination** :

- Systematic clinical examination of all areas, including ENT

### *VII.1.2 Laboratory monitoring*

Viral load is vital for monitoring the efficacy of ARV treatment in children and adolescents, and enables early detection of treatment failure. It should be prescribed twice a year up to the age of 24 months, to prevent ARV resistance, which is common in children and adolescents.

In the event of a poor virological response:

- A VL check-up should be carried out 3 months later, after adherence has been reinforced and ARV dosage adjusted if necessary;
- If the control VL is still unsuppressed, the treatment must be changed. Other tests may be carried out if necessary.

### *VII.1.3 Follow-up timetable and package of services of children/adolescents on ART*

- **Follow-up calendar**
  - Monthly follow-up visits for the first 6 months of ART
  - Quarterly follow-up visits if VL is suppressed.
  - VL check at 6 months and every 6 months for two years
  - CD4 count monitoring in advanced disease
- **Package of services at each follow-up visit:**
  - Weighing and measurements
  - Clinical and neurological examination

- Screening for tuberculosis
- Assessment of ARV tolerance
- Adherence assessment and support
- Prescribing and dispensing ARVs and CTX
- Nutritional and psychosocial support
- Mental health assessment
- Sexual and reproductive health assessment for adolescents
- Specify the date of the next appointment

## VII.2. Management of treatment failure

### *VII.2.1. Definition of therapeutic and virological failure*

Therapeutic failure may be clinical, immunological and/or virological. Viral load is used to confirm treatment failure (persistence of a viral load > 1000 copies/ml after 6 months of well-managed ART).

A rise in viral load on ART means that (before considering switching to another drug because of treatment failure) we must first rule out the causes of a transient rise of VL: poor adherence (temporary cessation of treatment), intercurrent infection, vaccination, pregnancy.

Measuring VL gives patients the opportunity to understand, monitor and motivate themselves to adhere to their treatment. Advice on adherence should explain the implications of a **suppressed (or even undetectable) VL**.

Viral load values can be grouped into three broad classes:

- **Undetectable viral load**: VL <50 RNA copies/ml, indicating control of viral replication;
- **Viral suppression or Suppressed viral load**: VL ≤1000 RNA copies/ml,
- **Virological failure**: VL >1000 copies/ml, indicating either a lack of adherence/interruption of treatment (especially for viremia ≥6 Log RNA copies/ml) or a proven failure of the current treatment (after confirmation of this viral load on a second consecutive sample taken 3 months apart after reinforcement of adherence assistance).

The table below shows the characteristics of the failures

***Table 39:*** *Clinical, immunological and virological definitions treatment failure*

| Types | Features |
|---|---|
| **Clinical failure** | **Children and adolescents**:<br>New or recurrent clinical event indicating severe or advanced immunodeficiency after 6 months of effective treatment. |
| **Immunological failure** | **Adolescents**:<br>CD4 count of 200 cells/mm3 or less following clinical failure or persistent CD4 count of less than 100 cells/$mm^3$.<br>**Children under 5**:<br>Persistent CD4 count below 200 cells/$mm^3$.<br>**Over 5 years old**:<br>Persistent CD4 count below 100 cells/$mm^3$ |
| **Virological failure** | Viral load > 1000 copies/ml determined by 2 consecutive measurements 3 months apart, with adherence support following the first virological test, at least 6 months after the start of treatment (well conducted and well observed). |

The figure below shows the algorithm for interpreting the viral load

VIRAL LOAD INTERPRETATION ALGORITHM

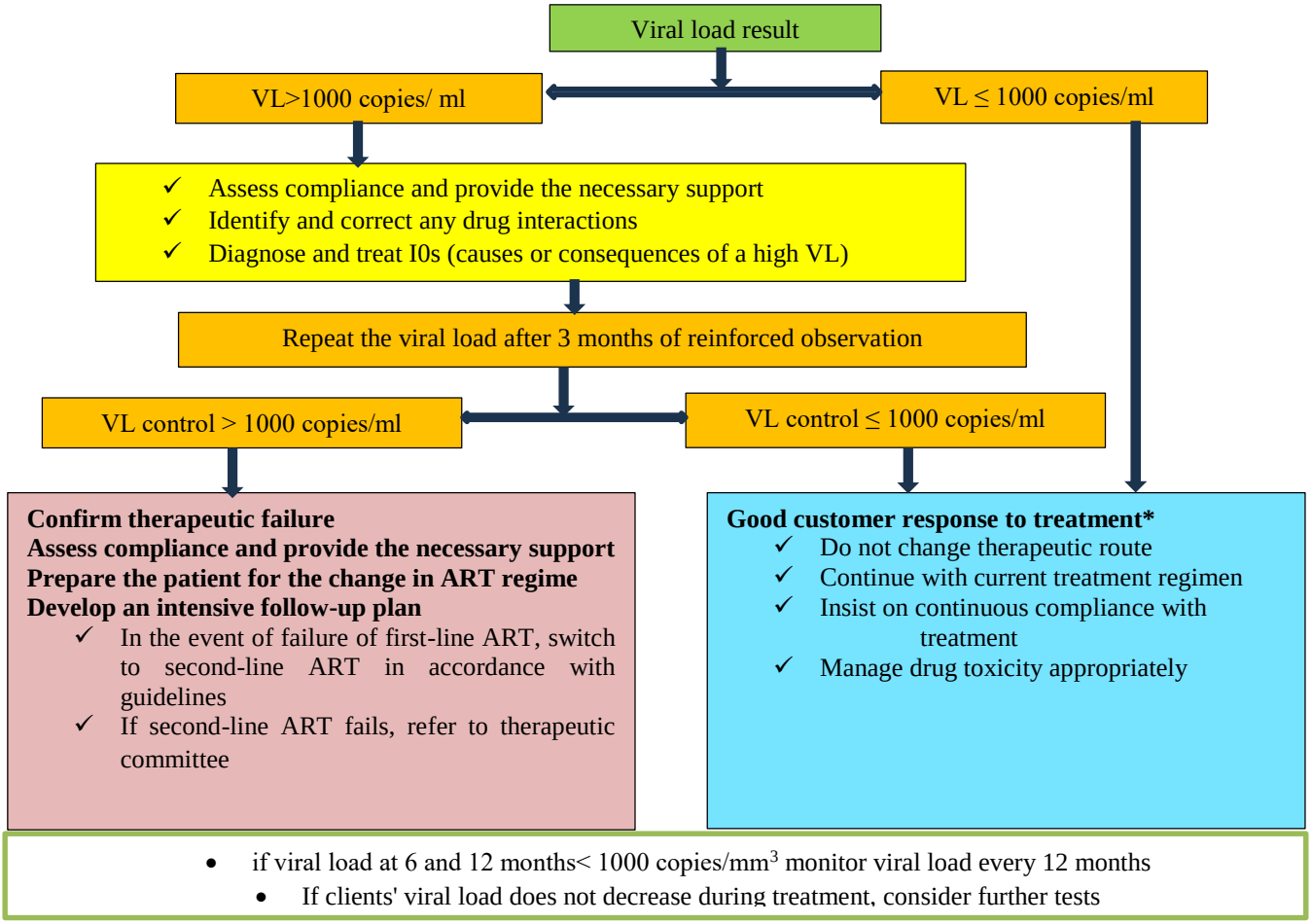



***Figure 7**: Viral load interpretation algorithm*

### *VII.2.2. Causes of treatment failure*

**Viral factors**

- Acquired drug resistance: patients can develop resistant mutations to ARV if maximum adherence (≥ 95%) is not maintained.
- Transmitted resistance to ARV: patients may be infected by an ARV-resistant virus during their initial exposure or reinfected by a drug-resistant virus during their therapy.

**Non-viral factors**

HIV treatment failure can occur when plasma ARV levels do not reach therapeutic levels, which may be due to:

**Host factors :**

- Poor adherence with ART ;
- Malnutrition ;
- Malabsorption of medicines ;
- Choice of initial ART regimen, low potency or inappropriate dosage;

- Drug interactions.

### *VII.2.3. ARV substitution and switch*

**Substitution** is the replacement of one or two ARV drugs in a regimen by another drug in the same class, usually because of:

- Toxicity/adverse drug reactions
- Co-morbidity
- Drug interaction...

**The "switch"** is considered as the passage from a first line protocol to a second line protocol or from a second line protocol to a third line protocol.

#### a) 2nd line protocol

The second-line protocol consists in combining two NRTIs with a ritonavir-boosted PI (LPV/r or ATV/r) in children, adolescents and adults.

choice of NRTI for second-line treatment is determined by the NRTI used treatment. If **ABC + 3TC or TDF + 3TC** were used, **AZT + 3TC** should be used as part of second-line treatment and vice versa.

Atazanavir is only used from the age of 6**.**

The 2nd-line protocols for children, adolescents and adults are set out in the table below:

***Table 40:*** *2nd-line protocol children and adolescents*

| Populations | 1st line protocol failure | 2nd line |
|---|---|---|
| **< 20 kg** | ABC/3TC+ DTG | AZT/3TC+ LPV/r |
| **20 and 30 kg** | ABC/3TC+ DTG | AZT/3TC+ LPV/r (ATV/r) |
| **>30 kg** | TDF/3TC/DTG<br>TDF/3TC/EFV | AZT/3TC + LPV/r (or ATV/r)<br>ABC/3TC + LPV/r (or ATV/r) |
| **TB/HIV co-infection** | If LPV/r-based regimen: switch to DTG-based regimen (with additional dose of DTG 50 mg) and, if this is not possible, adjust LPV/r dose through super boosting (i.e. increase ritonavir dose: ratio LPV:RTV=1)<br>If ATV/r-based diet: replace ATV/r with DTG (with an additional dose of DTG 50 mg) | |

### *What should be done before starting 2nd-line ARV treatment in HIV+ children and adolescents?*

- Explain the significance of the viral load result;
- Discuss with the child, adolescent and their family (i) the reasons that may have led to failure of 1st line ARV treatment and (ii) the steps to be taken to avoid failure of 2nd line treatment;
- Review patient's antiretroviral history ;
- Explain the details of the new treatment (when to take the medication, how much to take, how to measure these quantities, when to take the medication, etc.).

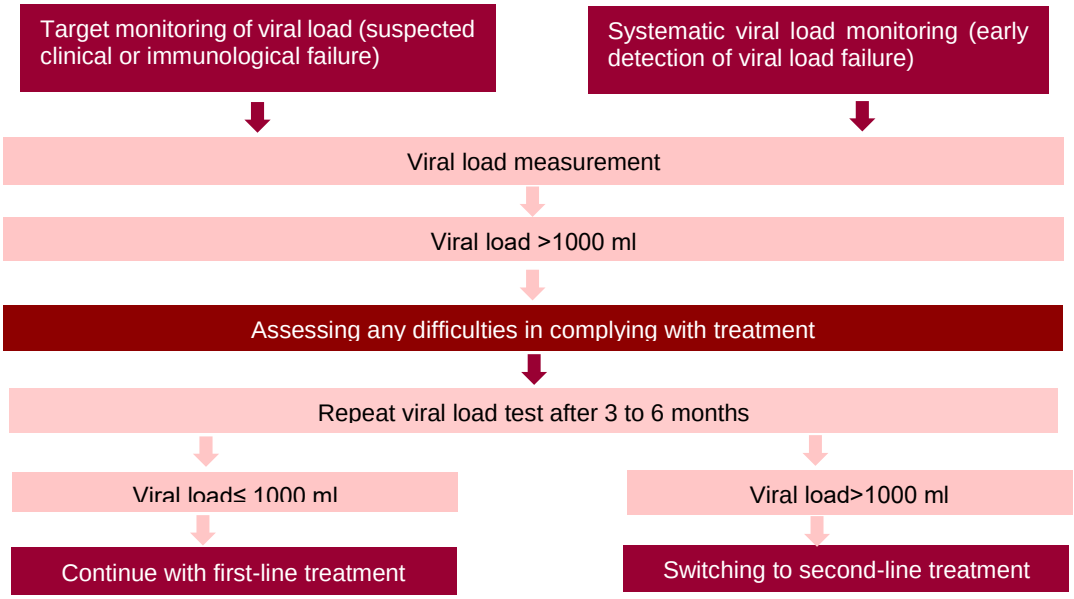
(e.g. in relation to meals, possible side effects and what to do in the event of side effects);

- Adherence, tolerance, drug interactions and psychosocial problems ;
- Check the child and his family understand these arrangements and any new measures to be taken;
- Providing treatment.

### *Management of second-line treatment failures:*

Patients who fail 2nd-line treatment have limited options. Failure of 2nd-line treatment must be confirmed in accordance with national guidelines by a new viral load after reinforcement of adherence (high VL algorithm). These patients require monthly adherence assessments and psychological support.

***Figure 8**: Algorithm therapeutic failure, WHO 2019*




- If VL≤ 1000 copies, maintain the same ARV treatment regimen
- If VL>1000 copies, **request an HIV ARV resistance test** and on receipt of the results of this test, document and summarise the treatment history in the patient's medical record, then present it to the ARV resistance committee for case study and prescription of the 3rd line treatment regimen.

### b) 3rd line treatment

Third-line treatment refers to the antiretroviral treatment offered to patients in the event of second-line treatment failure.

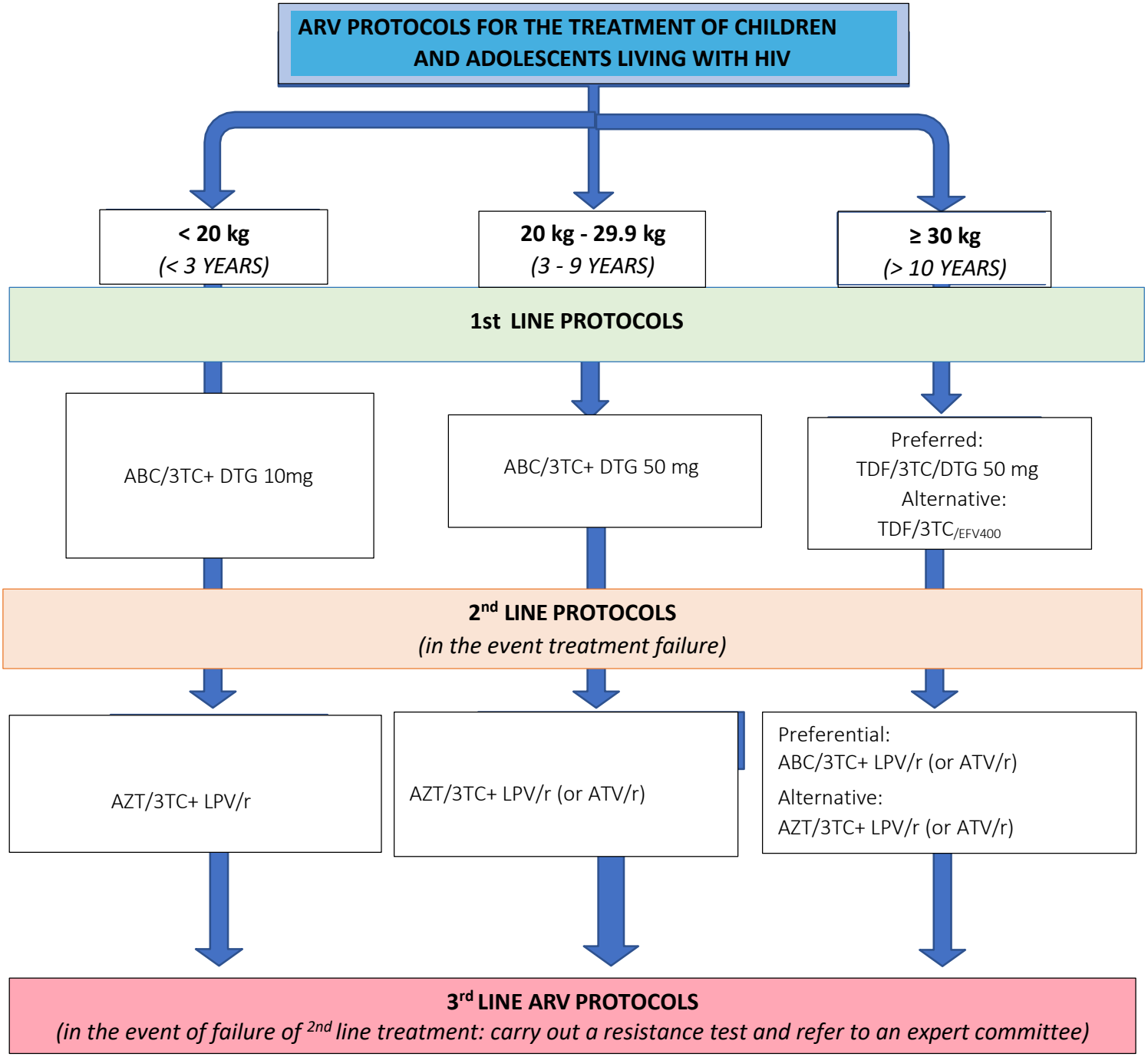
The management of cases of failure of 2nd or 3rd line treatment will be guided by **the resistance profile (genotyping)**. However, 3rd line protocol must include new ARVs with: **2th generation PI (DRV/r), INI (RAL or DTG)**.

***Table 41:*** *Summary of different ARV protocols for naive patients*

| Population | 1re line | 2nd line | 3rd line |
|---|---|---|---|
| **Children, teenagers and adults (including FEC and FAP)** | **2 NRTIs+ DTG** | **2 NRTIs+ (ATV/r or LPV/r)** | **DRV/r + DTG± 1-2 NRTIs ( *consider genotyping optimising ART*)** |

***NB:*** *It is worth pointing out that the genotype alone can be misleading in the absence of a full history of previous treatment, including the protocol (molecules) and duration of treatment, because mutations in previous drugs are archived once the drug pressure has been removed. This can be misleading as long as we do not carry out resistance testing after each* protocol.

## Summary of protocols for children




**3TC** : Lamivudine

**ABC** : Abacavir

**AZT**: Zidovudine

**ATV/r**: Atazanavir/ritonavir

**EFV**: Efavirenz

**DTG**: Dolutegravir

**LPV/r** : Lopinavir/ritonavir

**TDF** : Tenofovir

## VII.3. Feeding of infected child

***Table 42:*** *Nutrition of infected children*

| Age | Asymptomatic children | Symptomatic children | |
|---|---|---|---|
| | **(ration increased by 10%)** | On ARV treatment (ration increased by 30%) | |
| **0-6 month** | - Exclusive breastfeeding for the first 6 months or<br>- Exclusive replacement feeding (artificial milk) for up to 6 months of life, family living conditions permitting. | | |
| **6-12 month** | **Continued breastfeeding**<br>- Continue breastfeeding<br>- Introduce a suitable, sufficient and balanced supplementary diet (see food figure).<br>- Introduce one new food at a time and ensure that it is well tolerated introducing another new food.<br>- give 4-6 meals a day, including milk<br>- Give vitamin A twice a year and, if necessary, add other multivitamin complexes. | | |
| **12-24 month** | - **Continued breastfeeding**<br>- 5-6 meals a day, including snacks between the main meals.<br>- Vitamin A a year and, if necessary, add other multivitamin complexes | - **Continued breastfeeding**<br>- 6-8 meals a day, including snacks between the main meals.<br>- Give multivitamin complexes | |
| **2-5 years** | - 4-5 meals a day including snacks between the main meals<br>- Vitamin A twice a year and, if necessary, add other multivitamin complexes | - 5-6 meals a day, including snacks between main meals<br>- Vitamin A twice a year and, if necessary, add other multivitamin complexes | |
| **more 5 years** | - 3-4 meals a day, including snacks between the main meals.<br>- Vitamin A twice a year and, if necessary, add other multivitamin complexes | - 4-5 meals a day, including snacks between the main meals<br>- Vitamin A twice a year and if is required, add other multivitamin complexes | - |

# CHAPTER 5: CARE FOR ADULTS LIVING WITH HIV

Since 2016, Cameroon has subscribed to the WHO's "Test and Treat" recommendation, which recommends starting antiretroviral treatment for all people living HIV, regardless of their WHO clinical stage and CD4 count. Antiretroviral treatment should be started within seven days of diagnosis, and preferably on the same day as the HIV diagnosis. In order to offer targeted services according to clinical presentation, all PLHIV should be classified according to WHO at time of the initial assessment. Similarly, after at least twelve months on ART, people living with HIV will be classified as **PLHIV on stable ART or not**, in order to meet the specific needs of each patient in terms of treatment and follow-up, and to improve their care by offering differentiated care targeted at HIV services. The differentiated service offer makes it possible to reduce the frequency of follow-up, thereby minimising the costs and time associated with visits to health facilities. They also enable resources to be concentrated on patients who require special attention.

## I. MAIN INTERVENTIONS ADULTS LIVING WITH HIV

### ❖ Prevention

**In the community and in health training centres**

| Who is concerned | What can be done? |
|---|---|
| **Non-infected adults**<br>**-Key populations**<br>**- Victims of GBV**<br>**-HIV+ adults** | -Communication for social and behavioural change<br>-Screening as prevention<br>-Correct use of condoms and lubricants<br>-STI screening and treatment<br>- Vaccination for HBV-negative patients<br>Pre-exposure prophylaxis (MSM, HIV-negative FSW aged 21 and over)<br>-Post-exposure prophylaxis<br>-ART as prevention<br>-Risk reduction: distribution of syringes and needles, opiate substitution , management of overdoses<br>Preventing gender-based violence (GBV) |

### ❖ Screening

**In the community and in health training centres**

| Who is involved | What are the interventions |
|---|---|
| **Non-infected adults**<br>**-Key populations**<br>**- Victims of GBV** | CDV, CDIP, Community screening, Self-testing<br>-Screening through social networking strategy<br>-Link to prevention and treatment<br>-Screening for cervical cancer<br>-Screening of index cases (check whether this has been done), Family screening |

| | |
|---|---|
| **- HIV+ adults** | |

## ❖ Clinical management

In the community and in health training centres

| Who is concerned | What can be done? |
|---|---|
| **Non-infected adults**<br>**-Key populations**<br>**- Victims of GBV**<br>**- HIV+ adults** | - Clinical evaluation<br>-Evaluation of other IOs<br>- Assessment of Chronic Non-Communicable Diseases (CNCD)<br>- Pre-therapeutic education (elements to be covered)<br>- ARV treatment<br>- Preventive treatment (cotrimoxazole, INH/3RH, fluconazole)<br>- Treatment of co-infections and co-morbidities<br>- Mental Health Assessment |

## ❖ Management of co-infections and co-morbidities

| Who is concerned | What can be done? |
|---|---|
| **-Adults uninfected**<br>**-The key populations**<br>**- Victims of GBV**<br>**- HIV+ adults** | -General care: promotion of hygienic and dietary measures, sex education<br>-Cotrimoxazole prophylaxis<br>-Prevention (preventive treatment), diagnosis and management of tuberculosis<br>-Management of viral hepatitis B&C<br>-Management of malaria<br>Management of co-morbidities (smoking, hypertension, diabetes, dyslipidemia, cervical cancer, mental health problems)<br>-Management of sexually transmitted infections |

## ❖ Management of advanced HIV disease

In the community and in health training centres

| Who is concerned | What can be done? |
|---|---|
| **-Any adult with a CD4 <200/mm3 or WHO clinical stage 3 or 4**<br>**-Patients new to antiretroviral treatment**<br>**-Patient in therapeutic failure**<br>**Patient who has discontinued antiretroviral treatment and re-entered care** | -Screening for opportunistic infections such as tuberculosis, cryptococcosis, toxoplasmosis, CMV, etc.<br>-Preventive treatment with Fluconazole<br>-Chemoprophylaxis with cotrimoxazole<br>-Management of diagnosed opportunistic infections |

## ❖ Monitoring patients on treatment

**In the community and in health training centres**

| Who is concerned | What can be done? |
|---|---|
| **-Uninfected adults**<br>**-Key populations**<br>**- Victims of GBV**<br>**- HIV+ adults** | -Biological monitoring of response to ARV treatment: VL, CD4, etc.<br>-Monitoring and reporting of drug toxicity: Creatinine, Transaminases, Haemoglobin, Glycaemia according to therapeutic protocol...<br>Follow-up of treatment failures<br>-Monitoring HIV resistance to ARVs<br>-Monitoring and reporting drug interactions |

### ❖ Creating a favourable environment

In the community and in health training centres

| Who is concerned | What can be done? |
|---|---|
| **Non-infected adults**<br>**-Key populations**<br>**- Victims of GBV**<br>**- HIV+ adults** | -Combating stigma and discrimination<br>-Preserving confidentiality<br>-Social and legal support<br>-Permanent availability of inputs<br>Functional reference and counter-reference system<br>-Strengthening the technical platform<br>-Strengthening coordination<br>-Strengthening the quantity and quality of human resources |

## II. INTERVENTIONS FOR ELDERLY PEOPLE LIVING WITH HIV/AIDS

### ❖ Prevention

**In the community and in health training centres**

| Who is concerned | What can be done? |
|---|---|
| **- Elderly men aged 50 and over**<br>**- Ederly people Living with HIV**<br>**-Carers (family members and friends)**<br>**-Key population 50 and over**<br>**-Vulnerable elderly population aged 50 and over** | -Communication for social and behavioural change<br>-Correct use of condoms<br>-Sexual Health<br>-Positive prevention<br>Risk reduction: self-medication, polypharmacy<br>Pre-exposure prophylaxis for key populations<br>-ART as prevention<br>-Nutritional advice |

## ❖ Screening

**In the community and in health training centres**

| Who is concerned | What can be done? |
|---|---|
| **- Elderly men aged 50 and over**<br>**- Ederly people Living with HIV**<br>**-Carers (family members and friends)**<br>**-Key population 50 and over**<br>**-Vulnerable population aged 50 and over** | -HIV screening<br>-Tuberculosis screening<br>-Diabetes screening: measurement of fasting blood glucose levels (capillary or venous) once a year<br>-Screening for hypertension: blood pressure measured at least every six months<br>-Cervical cancer screening for all women over the age of 25<br>Screening for other co-morbidities in PLHIV (anal cancer, primary liver cancer in chronic carriers of viral hepatitis, prostate cancer)<br>Screening for functional disorders and loss independence in the over-65s (WHO ICOPE)<br>-Assessment of nutritional status |

## ❖ Clinical management

In the community and in health training centres adherence, checking blood sugar levels and blood pressure, dispensing ARVs and other medicines for chronic illnesses,

## ❖ Monitoring PLHIV

| Who is concerned | What can be done? |
|---|---|
| **- Elderly men aged 50 and over**<br>**-Ederly people Living with HIV**<br>**-Carers (family members and friends)**<br>**-Key population aged 50 and over**<br>**-Vulnerable population 50 and over** | Treatment of tuberculosis, hypertension, diabetes, cervical and anal and other co-morbidities<br>-Treatment of opportunistic infections ;<br>-Treatment of hepatitis and STIs<br>-Help adherence (therapeutic education)<br>-Initiation and maintenance of ARV treatment<br>-Mental health/palliative care<br>-Psychosocial support<br>-Nutritional assessment and management |

## ❖ PSD in the elderly

**In the community and in health training centres**

| Who is concerned | What can be done? |
|---|---|

| | |
|---|---|
| **- Elderly men aged 50 and over**<br>**-Ederly people Living with HIV**<br>**-Carers (family members and friends)**<br>**-Key population 50 and over**<br>**-Vulnerable population aged 50 and over** | Differential clinical follow-up according to patient category :<br>o New ARV initiations without comorbidities;<br>o New ARV initiations with existing comorbidities prior to HIV diagnosis;<br>o Newly diagnosed PLHIV with other co-morbidities (hypertension, diabetes, cervical cancer, etc.);<br>o Non-stable elderly people living with HIV with controlled co-morbidities ;<br>o Non-stable elderly people living with HIV with complicated co-morbidities;<br>o Older people living with stable HIV without co-morbidities;<br>o Older people living with stable HIV with co-morbidities<br>-Nutritional monitoring: assessment, nutritional advice and education<br>-Biological monitoring of response: VL, CD4, creatinine, transaminases, haemoglobin, blood glucose, etc.<br>-Monitoring ARV resistance<br>-Monitoring pharmacovigilance<br>adherence<br>Psychological follow-up |

### ❖ Creating a favourable environment

In the community and in health training centres

| Who is concerned | What can be done? |
|---|---|
| **- Elderly men aged 50 and over**<br>**-PLHIV**<br>**-Carers (family members and friends)**<br>**-Key population 50 and over**<br>**-Vulnerable population aged 50 and over** | -Social support: food, medical and family support (discouraging abuse and stigmatisation, promoting good practice, encouraging sharing of HIV status)<br>-Adapting ergonomics to functional limitations in the home<br>Creating a user-friendly space in the health training centre<br>-Combating stigmatisation and discrimination<br>-Capacity building for service providers, technical platforms, reference vs. reference system |

## III. INITIATION OF ARV TREATMENT

The aim of ART is to achieve and maintain virological suppression in order to :

- Restore and maintain immune function to reduce opportunistic infections and other HIV-related conditions
- Minimising the development of resistance to treatment
- Improving quality of life
- Reduce new infections by using treatment as a means of prevention
- Reducing morbidity and mortality due to HIV/AIDS

The 1st treatment should be the most potent, the easiest to take and the best tolerated, in order minimise the risk of selection of resistant strains. The use of simplified, less toxic and more practical treatment regimens in the form of fixed-dose combinations is recommended for first-line ART. The choice of treatment should take into account the patient's age, previous history, co-morbidities and possible drug interactions. It must be adapted to the type of virus (HIV-1, HIV-1 group O HIV-2).

The medical reasons for delaying start of antiretroviral treatment are listed in the table below.

| Reason | Action |
|---|---|
| **Symptoms of tuberculosis (cough, night sweats, fever, recent weight loss)** | Check symptomatic clients for TB before starting ART.<br>• If TB has been ruled out, start ART and TB preventive therapy (after ruling out other contraindications to TB preventive therapy).<br>• If TB diagnosed, start anti-TB treatment and defer ART |
| **Diagnosis of susceptible or drug-resistant TB (pulmonary TB), abdominal tuberculosis or TB lymphadenitis)** | Delay initiation of ART as follows:<br>• Start ART within 2 weeks of starting anti-tuberculosis treatment,<br>•<br>• In cases of tuberculous meningitis, defer treatment for 4 to 8 weeks when the patient's symptoms improve and the anti-tuberculosis treatment is tolerated. |
| **Cryptococcal antigen (CrAg) positive in the absence of symptoms or signs of meningitis and if the lumbar puncture is (PL) negative for cryptococcal disease (CM).** | There is no need to delay antiretroviral treatment. ART can be started immediately. |
| **Confirmed cryptococcal meningitis** | • Postpone treatment until the antifungal treatment has lasted 4 to 6 weeks. |
| • Clients already on antiretroviral treatment should NOT have their treatment interrupted if they are diagnosed with any of the above conditions. | |

**Key points**

- Delays in starting up ART should be kept to a minimum.
- Screening for tuberculosis, cryptococcal meningitis and other opportunistic infections prior to initiation of antiretroviral therapy is important, as these conditions may necessitate delaying the initiation of antiretroviral therapy.

- When a patient is virally suppressed and adheres to treatment, HIV cannot be transmitted to his or her sexual partner(s). This is known as "undetectable = non-transmissible (I=I)".

## III.1. Initial clinical and biological assessment

In order to make an appropriate diagnosis for the holistic management of newly HIV-positive patients, health care staff must:

1. **Ensure that the 3-test algorithm has been followed or repeat the HIV test** on the same patient to confirm the result. If the HIV test is positive, you should :
2. **Preparing the patient ;**
3. **Open a standard medical file and assign a unique identification to the patient** (Unique code complying with national directives) ;
4. **Provide psychological care** (counselling, pre-therapy education, etc.) to help patients accept their status and ART;
5. **Assess** patient's **clinical condition** and **enter the** key **information** in the patient's medical record at the first visit;
6. **Prevent and treat opportunistic infections** where appropriate.

### *III.1.1. Initial clinical assessment of PLHIV*

The first visit is an opportunity to establish a meaningful relationship between the patient and the provider, who should communicate expectations openly and without judgement. Patients in the active file should a full physical examination and appropriate laboratory tests if indicated. However, it is not necessary to have laboratory results in order to place clients on ART.

The results of this initial assessment will be recorded in a medical record (electronic or paper) to facilitate long-term follow-up. The table below summarises the initial clinical assessment.

***Table 43:*** *Initial clinical assessment for PLHIV*

| | **Details** |
|---|---|
| **Medical history** | • Find out about symptoms caused by coexisting illnesses, whether HIV-related or not, and co-morbidities requiring immediate intervention.<br>• History of tuberculosis and tuberculosis contacts (intensive search for TB cases) |
| | Personal history<br>• Date of first positive HIV test<br>• Look for and document a history of co-morbidities: TB, cryptococcal meningitis, hypertension, diabetes, kidney and liver disease, etc.<br>• Investigate the use of drugs, including traditional medicines (plants), which may interact with ARVs, and INH chemoprophylaxis.<br>• Document history ARV (including PEP, PMCT and PrEP).<br>• Drug allergies, in particular allergy to sulphonamides.<br>• Toxicological, gynaecological, surgical history, etc. |

| | |
|---|---|
| | • Establish the nutritional history and the adequacy of the household's nutritional intake and food security.<br>Family history of chronic illness or cancer |
| **Psychosocial history** | • Assess psychosocial needs and discuss appropriate treatment options (counselling, pre-therapeutic education, etc.)<br>• Determine the presence of any mental health problems, including previous treatment for mental illness and any current symptoms of depression.<br>• Assess the possibility of disclosure (to close family and trusted sexual partners) and the presence of self-stigmatisation.<br>• Look for substance use including alcohol, tobacco and injecting drugs.<br>• Identify and begin to address potential barriers to adherence |
| **Sexual and reproductive health history** | • Look for current symptoms and history STIs;<br>• Take a history of pregnancy, family planning and cervical cancer screening<br>• Discuss pregnancy intentions and contraception needs.<br>• Encourage contact tracing and HIV testing for sexual partners and all children under the age of 15 of women infected with HIV or whose serological status is unknown. |
| **Vital signs and anthropometric measurements** | • Take and record anthropometric measurements (weight, height, abdominal circumference, chest size) and vital signs (temperature, pulse, blood pressure, heart rate and respiratory rate).<br>• BMI for adults and use z-scores for children. |
| **General examination** | • Look for (i) pallor or jaundice (conjunctivae and palms), (ii) swollen lymph nodes (cervical, axillary, etc.), (iii) Kaposi's sarcoma lesions or oral leukoplakia candidiasis (mouth), (ivdrug-induced eruptions, shingles, atherosclerosis, atherosclerosis, atherosclerosis, atherosclerosis or atherosclerotic lesions.<br>dermatitis, pruritic papular eruptions (PPE), folliculitis, etc. |
| **Systemic examination** | • CNS, abdomen, respiratory, cariovascular, genitourinary, anorectal, prostate (men ≥ 45 years), cervix |
| **In total** | List the differential diagnosis and management plan for each problem (including investigations, treatment, referral and follow-up).<br>• Assign and document the WHO clinical stage and manage the diseases presented.<br>• Differentiate between patients with advanced disease and those who clinically well, in order to guide the intensity of monitoring. |

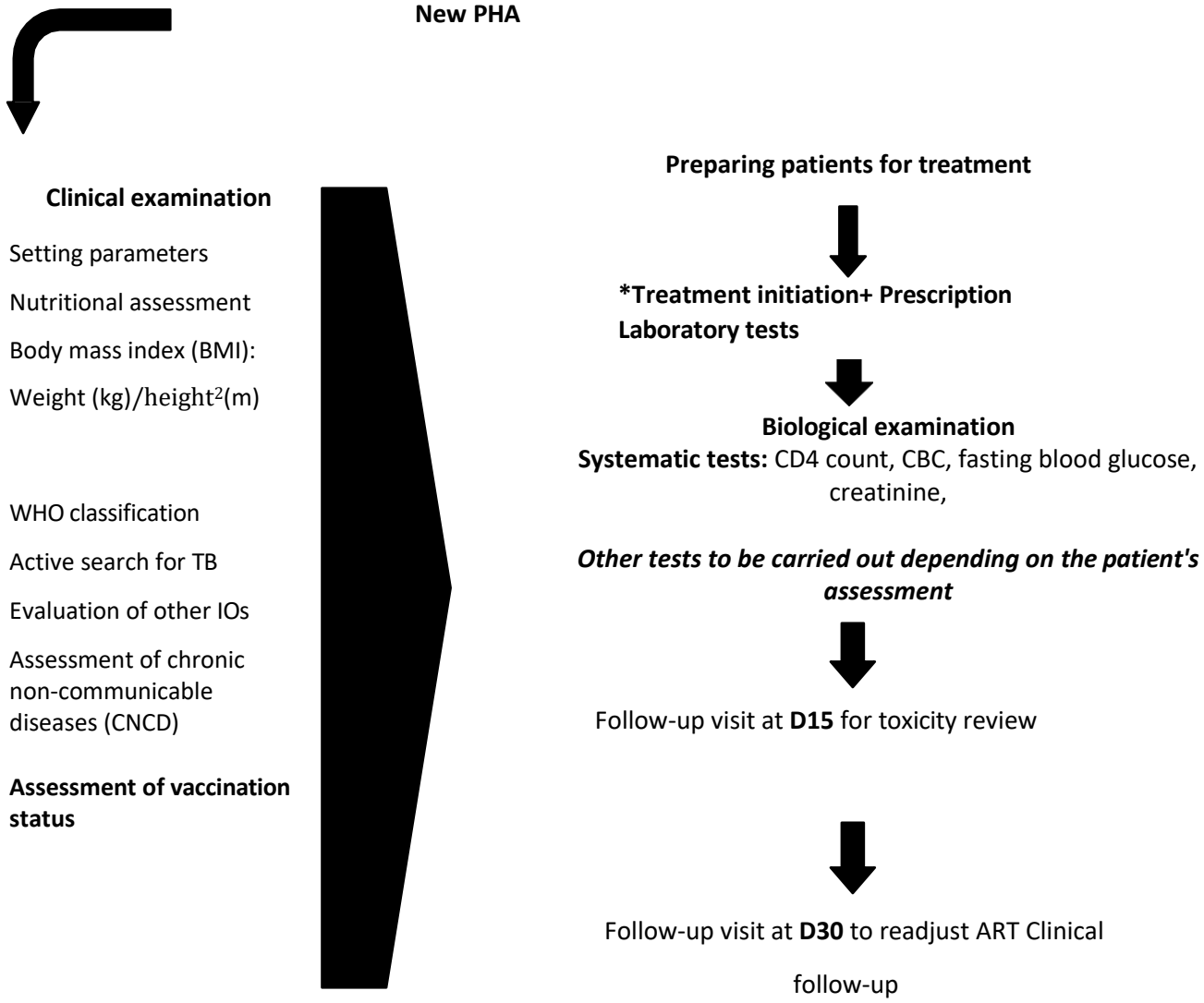
### *III.1.2. Initial assessment of laboratory tests for PLHIV*

Biological testing is not a prerequisite for initiating ART. It should not delay initiation of ART. The performance of laboratory tests depends on the presence and/or type of presumed concomitant disease. However, a positive HIV test result should be confirmed and documented prior to initiation of ART for all patients using the current HIV screening algorithm.

It is not possible for all health facilities offering antiretroviral treatment offer all the laboratory tests recommended for the treatment and monitoring PLHIV. If a health facility does not have the capacity carry out a test on, arrangements must be made to ensure that it can do so.

be taken to collect and transport samples to a local or regional reference laboratory.

The figure below summarises the initial clinical and biological assessment.




## III.2. Preparing ART

Preparation for treatment should be tailored to the patient's age, gender, needs and clinical condition. It includes HIV education and counselling, including identification of likely barriers to adherence, discussion of support strategies to overcome potential barriers to adherence, and an individualised adherence plan. Therapeutic education, including adherence support, will be provided at all stages of the patient's circuit by healthcare staff, counsellors (PSAs, mother mentors) or ARV dispensing agents (see chapter on adherence and psychosocial management).

## III.3. Classification according to WHO stage

The clinical and biological examination should enable the provider to classify the patient according to the WHO's 4 clinical stages, in order to guide management as part of the "differentiated careapproach. PLWHA in stages 1 and 2 will benefit from less intensive models of care, while those classified in stages 3 and 4 will benefit from intensive models (see chapter on care provision).

***Table 44**: Classification according to WHO stage*

| | |
|---|---|
| **Stage 1**<br>• **Asymptomatic patient.**<br>• **Persistent generalised adenopathy accompanied by fever** | **Stage 2**<br>• Weight loss< 10% of body weight.<br>• Minor mucocutaneous manifestations (seborrhoeic dermatitis, prurigo, onychomycosis, recurrent mouth ulcers, angular cheilitis).<br>• Herpes infection (shingles) within the last five years.<br>• Recurrent upper respiratory tract infections |
| **Stage 3**<br>• **Weight loss ≥10% of body weight.**<br>• **Chronic unexplained diarrhoea lasting more than a month.**<br>• **Prolonged unexplained fever lasting more than a month.**<br>• **Oral thrush.**<br>• **Oral hairy leukoplakia.**<br>• **Pulmonary tuberculosis in previous year.**<br>• **Severe bacterial infections (e.g. pneumonia).** | **Stage 4**<br>• AIDS cachectic syndrome<br>• Chronic diarrhoea (>1 month) or unexplained chronic asthenia and unexplained prolonged fever (>1 month)).<br>• Pneumocystis.<br>• Cerebral toxoplasmosis.<br>• Cryptosporidiosis with diarrhoea > 1 month.<br>• Extrapulmonary cryptococcosis.<br>• Cytomegalovirus with organ involvement other than of the liver, spleen or lymph nodes.<br>• herpetic infection > 1 month, or visceral whatever its duration.<br>• Progressive multifocal leukoencephalopathy.<br>• Any widespread endemic mycosis (such as histoplasmosis, coccidioidomycosis).<br>• Candidiasis of the oesophagus, trachea, bronchi or lungs.<br>• Generalised atypical mycobacteriosis.<br>• Non-typhoidal Salmonella septicaemia.<br>• Extrapulmonary tuberculosis.<br>• Lymphoma.<br>• Kaposi's sarcoma.<br>• HIV encephalopathy |

## IV. ARV CLASSES

There are 4 classes of ARV available in Cameroon. Each class of ARV acts by blocking a stage in the virus replication cycle. The different classes available in Cameroon are shown in the table below:

***Table 45**: ARVs and therapeutic classes*

| N° | Therapeutic classes | Mechanism of action | Example of molecules |
|---|---|---|---|
| **1** | Nucleoside and nucleotide reverse transcriptase inhibitors (NRTIs) | Prevent the formation viral DNA from viral RNA (inhibition of TI) Surplus assets HIV-1 (most widespread) and HIV-2 HBV: 3TC, FTC and TDF | **ABC (Abacavir)** **AZT (Zidovudine)** **3TC (Lamivudine)** **FTC (Emtricitabine)** **TDF (Tenofovir)** |
| **2** | Non-nucleoside inhibitors of Reverse transcriptase (NNRTI) | Prevent the formation viral DNA from viral RNA (inhibition of TI) INACTIVE on HIV-2 | **EFV (Efavirenz)** |
| **3** | Protease inhibitors (PIs) | Inhibits Protease Active on HIV-1 and HIV-2 | **ATV/r (Atazanavir)** **LPV/r (Lopinavir/Ritonavir)** **DRV/r (Darunavir)** **R (Ritonavir)** |
| **4** | Integrase inhibitors (IN) | HIV integrase Active on HIV-1 and HIV-2 | **DTG (Dolutegravir)** |

**Key points**

The nucleotide reverse transcriptase inhibitors (NRTIs) recommended for first-line treatment are tenofovir disoproxil fumarate (TDF) and lamivudine (3TC) or emtricitabine (FTC).

- Patients with an estimated glomerular filtration rate (eGFR) of <50ml/min/1.73m2 or renal impairment should generally be started on abacavir (ABC) instead of TDF in the first-line setting, provided they do not have chronic hepatitis B virus infection.
- Tenofovir can cause renal failure. It is recommended that serum creatinine be checked every year.
- ABC may cause hypersensitivity reaction.

Integrase strand transfer inhibitors (NRTIs), of which DTG is the preferred choice because it offers a high barrier to resistance and is well tolerated. It is available in a fixed-dose formulation and can be taken once a day.

- DTG causes a slight increase in serum creatinine (usually <30 µmol/L) due interference with tubular creatinine secretion; however, this does not represent a decline in renal function.
- DTG is associated with greater weight gain than other treatments. It is necessary to monitor the weight curve, as it may be significant in some patients taking DTG.

NNRTIs

- Efavirenz (EFV) remains a therapeutic option for patients who tolerate DTG poorly, or when DTG is contraindicated.
- EFV 400 mg is virologically non-inferior to EFV 600 mg and has a slightly improved side-effect profile.

Three combinations of protease inhibitors (PIs) are available in Cameroon: lopinavir (LPV), atazanavir (ATV) or darunavir (DRV), each administered with a low dose of ritonavir (RTV; indicated as /r) for pharmacokinetic boosting.
- DRV has the highest barrier to resistance of any drug in this class and is the preferred third-line PI in combination with ritonavir.
- ATV/r and DRV/r have a better side-effect profile than LPV.
- LPV/r is the only PI combination that can be used with rifampicin-based anti-tuberculosis treatment, but the dose of LPV/r must be doubled. Outside this indication, we advise against doubling the dose of LPV/r.

## IV.1. Initiation of ART adults

Rapid initiation of ART reduces the risk of opportunistic infections and HIV transmission to HIV-negative partners. Therapeutic education must precede initiation of treatment - the table below shows the distribution of first-line protocols. Initiation of ART can take place in a health facility or in the community in the CBOs identified and in collaboration with the tutoring health facilities.

***Table 46:*** *1st-line protocol for adults*

| Populations | Preferential treatment | Alternative treatment | Special situations |
|---|---|---|---|
| **Adults** | TDF/3TC/DTG | TDF/3TC+ $_{EFV400}$ | AZT/3TC+ $_{EFV400}$ |

### Tuberculosis preventive therapy (TPT)

All clients who are starting ART or who are already on ART and have not yet received TB preventive treatment should consider receiving TPT. Before starting TPT, the possibility of active TB should be ruled out by a clinical assessment for TB. If the client is asymptomatic, there is no need to delay the start of preventive anti-TB treatment. TPT and ART can be started on the same day. It is not necessary to perform a tuberculin skin test (TST) before starting TPT.

## IV.2. Initiation and Dispensing of ARV

In order to relieve, reduce waiting times and offer a differentiated model of care, ARVs can be dispensed in the health facility or in the community (see **Table 46**).

*Table 47: Place of ARV dispensing*

| In the health facility (HF) | In the Community |
|---|---|
| - Health facilities only (monthly)<br>- Unstable patients<br>- New patients<br>- HF<br>- Stable patients every 3 or 6 months depending availability of ARVs | Every 3 months for stable patients (excluding children, adolescents and pregnant women) through CBOs (see community dispensing strategy documents 2018-2022). Or in private pharmacies |
| | Initiation in the community: in the CBOs identified in collaboration with the tutoring health facilities |

# V. FOLLOW-UP OF PATIENTS ON ART

Follow-up includes scheduled clinical appointments, unscheduled clinical assessments for patients with concerns or complaints, routine laboratory checks and as required.

## V.1. The first six (06) months after starting ART

After initiation of antiretroviral therapy, patients should be closely monitored to assess :

- ARV tolerance (detecting adverse drug reactions) ;
- Treatment adherence (eliminating obstacles treatment adherence)
- A possible IRIS;
- Identify potential opportunistic infections.

Follow-up of PLHIV during the first few months should be intensive, as mortality is high in the first 03 months in patients with advanced HIV infection (CD4 less than 200 cells/mm3), or who have a comorbidity. A reasonable follow-up schedule for most patients is 2 weeks and 4 weeks after starting ART.

**The service package for each clinical visit is as follows:** a complete physical and neurological examination, as for all patients. The elements of follow-up for patients on ART are: **Clinical visits; dispensing visits; Biological assessment through viral load and Adherence Support**.

*Table 48: Differentiated follow-up of patients beyond the first 6 months of antiretroviral treatment*

| **Unstable patient on ART** | |
|---|---|
| Patients with any of the following conditions:<br>• On treatment for< 12 months.<br>• Any active OI (including tuberculosis) in the previous 6 months.<br>• Poor adherence with scheduled clinical visits over the previous 6 months.<br>• Most recent VL≥ 1000 copies/ml.<br>• Children under 2 | |
| **Care package** | • Standard care package<br>• Case management to remedy the reasons. |

| | |
|---|---|
| **Objective of the consultancy** | ⧫ ART is the most important treatment for staying healthy and leading an active life.<br>⧫ Antiretroviral treatment reduces the risk of HIV transmission to other people. |
| **Frequency of monitoring** | • Every 1 to 3 months, on the basis of a clinical examination.<br>• Additional visits if necessary to address any medical or psychosocial concerns.<br>• If VL is detectable at 6 months, the patient should receive reinforced adherence and management of the reason(s) for the detectable viral load, with close follow-up until viral suppression is achieved.<br>• Patients with confirmed viral suppression may be followed every 3-6 months depending on the needs of the patient and the judgement of the clinician. |

***Table 49**: Differentiated follow-up of patients beyond 12 months of antiretroviral treatment*

| **STABLE patients on ART** | |
|---|---|
| Patients on antiretroviral treatment must have obtained all the following results<br>• Have been on their current antiretroviral treatment for≥ 12 months.<br>• No active disease at present or in the last 12 months (patients well-controlled chronic diseases should not be excluded).<br>• Adherence to scheduled clinical visits during the previous 12 months.<br>• VL≤ 1000 copies/ml over the last 12 months.<br>• Please note that the client's category may change at any time, so it is necessary to a reassessment at each visit. Clientsmust be categorised at each visit and managed according to their status. | |
| **Care package** | • Standard care package<br>• Reassessment of criteria at each clinical visit. |
| **Location** | • Clinical examination and prescription of antiretroviral treatment from any antiretroviral service delivery point; at levels of the health facility<br>• Dispensing ARVs between clinical appointments, which may take place in an institution or in the community |
| **Objective of the consultancy** | • Encourage the patient to continue with what works.<br>• Remember that any major life event or change daily routine could interfere with adherence. |
| **Frequency of monitoring** | • Clinic appointments should be made at intervals.<br>• ART must be renewed every 3 months (through rapid management in the health facility or distribution at community level). Oral contraceptives and condoms should be distributed with ART.<br>• Additional visits, if necessary, to address any medical or psychosocial concerns.<br>• Closer monitoring can be organised according to the patient's preferences. |

## V.2. Summary of clinical and laboratory monitoring of PLHIV on antiretroviral treatment

The table below summarises the minimum recommended schedule for routine monitoring PLHIV. Additional clinical and laboratory monitoring should be carried out whenever clinically indicated in the table below: Summary of clinical and laboratory follow-up for PLHIV

***Table 50**: Summary of clinical and laboratory monitoring*

| | Visit initial | Preparation to ART | After ART | | | | | | | ≥ 6 months | 12 month |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **RDV** | | Every week | S2 | S4 | M2 | M3 | M4 | M5 | M6 | Every 6 to 12 months if patient STABLE | |
| **Anamnesis and physical examination** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | At each clinical visit | |
| **Evaluation support for adherence** | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Each visit | |
| Screening for TB | ✓ | Intensive search for TB cases at every visit | | | | | | | | | |
| **CD4 count** | | • **initiation,**<br>• **AVM**<br>• **Lost-to-follow up found** | | | | | | | | | |
| **VL** | | • a VL at 6 months and then every year thereafter in the event of cancellation.<br>• For any patient with a viral load detectable during routine monitoring, follow the algorithm for monitoring high viral load. | | | | | | | | | |
| **Serum AgCr** | | If the CD4 count is≤ 200 cells/mm3 then only the case of clinical suspicion of cryptococcal meningitis. | | | | | | | | | |
| **Test of pregnancy** | | At each visit for women of childbearing age | | | | | | | | | |
| **Syphilis** | | initiation and then every year if risk. However, on a routine basis for FEC and key populations | | | | | | | | | |
| **HBsAg** | | initiation, or if clinical signs appear followed a vaccination for all patients whose screening is negative | | | | | | | | | |
| **Ac HVC** | | If IDU or if necessary | | | | | | | | | |
| | Initial | M1 | M2 | M3 | M4 | M5 | M6 | M12 | | | |
| **Hb (or CBC)** | | ✓ | | | | | | ✓ | | | |
| **Urinary protein** | | ✓ | | | | | ✓ | ✓ | | | |
| **Creatinine levels** | | ✓ | | | | | | ✓ | | | |
| **Blood glucose** | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | |
| **Profile lipidic** | | ✓ | | | | | | ✓ | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Test of HIV resistance** | Resistance testing is recommended in the event therapeutic failure confirmed by second-line treatment or in the event of seroconversion in clients on PreP. | | | | | | | |

| | | |
|---|---|---|
| **Cervical cancer** | All women should be screened for cancer. HPV screening every two years for HIV-positive women of childbearing age (or every year if using the VIA-VILI (Visual Inspection for Cervical Cancer) test).<br>with Acetic Acid (VIA)-VILI (Visual inspection using Lugol Iodine). | |

## V.3. Standard package of care for people living with HIV

All PLHIV should benefit from a package of services to improve quality of life, prevent HIV transmission and prevent disease progression and mortality. The standard package of care for PLHIV includes: ART; HIV education and counselling; screening and prevention specific opportunistic infections; positive health, dignity and prevention services.

screening and support in the event of gender-based violence (GBV) or intimate partner violence (IPV). The standard package of care should always be applied using a patient- and family-centred approach to the care of PLHIV.

***Table 51**: Components of the standard care package for PLHIV*

| | |
|---|---|
| **RDRV** | • **Initiation of antiretroviral treatment**<br>• **Assessment adherence, advice and support.**<br>• **Monitoring (clinical and laboratory)** |
| **Positive health, dignity and prevention; screening for gender-based violence (GBV) and intimate partner violence (IPV); and HIV .** | • Advertisement<br>• Screening for index cases<br>• Use of condoms<br>• Family planning<br>• Screening, prevention and treatment of STIs<br>• Advice and support adherence<br>• Pre-exposure prophylaxis for HIV-negative sexual partners.<br>• GBV/HIV screening and support<br>• HIV education/counselling |
| **Screening and prevention of opportunistic infections** | • Preventive treatment with cotrimoxazole<br>• Tuberculosis (TB)<br>o Intensified case-finding<br>o Preventive treatment of tuberculosis<br>o Antiretroviral treatment for patients co-infected with TB and HIV<br>• Cryptococcal meningitis |
| **Reproductive health services** | • STI screening and treatment<br>• Family planning services<br>• Maternal health care<br>• Screening for cervical cancer |
| **Screening and management of non-communicable diseases (NCDs).** | • Hypertension<br>• Diabetes<br>• Dyslipidemia<br>• Chronic kidney disease<br>• Other MNT |

| | |
|---|---|
| **Mental health screening and care** | • Depression<br>• Anxiety<br>• Stress<br>• Trauma |

| | |
|---|---|
| | • Alcohol and drug use/dependence |
| **Nutritional services** | • Evaluation<br>• Advice and education<br>• Care and support |

## V.4. Antiretroviral therapy in adults

Uninterrupted antiretroviral treatment and strict adherence will make it possible to maintain an undetectable VL level, thereby damage to the body's immune system and reducing AIDS-related morbidity and mortality, as well as the risk of sexual and vertical transmission of HIV.

ART readiness criteria can be used to identify issues that need to be addressed at the time of ART initiation. Same-day ART initiation has additional benefits for HIV prevention (e.g. for pregnant and breastfeeding women, and for the HIV-positive partner in the case of pregnancy or childbirth), and is associated with better retention, viral suppression and efficacy of treatment, retention, viral suppression and survival.

The various protocols are summarised in the table below.

***Table 52**: Summary of different ARV protocols for naive patients*

| Population | 1re line | 2nd line | 3rd line |
|---|---|---|---|
| **Children, teenagers and adults (including FEC and FAP)** | **2 NRTIs+ DTG** | **2 NRTIs+ (ATV/r or LPV/r)** | **DRV/r+ DTG± 1-2 NRTIs ( *consider genotyping for optimisation of ART*)** |

# VI. MANAGEMENT OF TREATMENT FAILURE

### a) Monitoring and modifying antiretroviral treatment

- The aims of clinical and biological monitoring during ART are to identify and treat intercurrent disease, assess and manage adverse drug reactions and evaluate response to treatment.
- The recommendations for routine biological monitoring are described in table 52. However, additional tests should be ordered whenever there is a clinical suspicion that a biological test result may affect patient management.
- Indications for switching ART include optimising treatment for patients with undetectable viral load, managing adverse reactions or toxicity, drug interactions, co-morbidities and treatment failure.
- Optimisation of treatment for patients whose viral load is suppressed by a
- Dolutegravir has been shown to be safer and more effective than efavirenz and LPV/r, and is now preferred as a first-line treatment for children, adolescents and adults.
- In Cameroon, most adults have switched to a diet containing DTG.

Patients starting antiretroviral treatment must be informed of the potential side effects of this treatment and of any other drugs prescribed. Adverse events can have a significant impact on patient adherence and must be identified promptly and managed aggressively. All adverse events should be reported to the MHPD using existing pharmacovigilance tools.

The most common significant ADRs associated with ARVs that may require drug substitution are summarised in the table below.

***Table 53**: Common and significant adverse drug reactions*

| ARV | Adverse drug reaction | High-risk situations/Comments |
|---|---|---|
| **INTIs** | | |
| **ABC** | Hypersensitivity to ABC | Do not renew the prescription |
| **AZT** | Anaemia, neutropenia | Risk factors: CD4 cells< 200 cells/mm3; BMI < 18.5 (or body weight < 50 kg); anaemia at baseline; concomitant use of other drugs.<br>with similar adverse effects (cotrimoxazole, gancyclovir, ribavirin), |
| | Lactic acidosis | Risk factors: Pregnancy; obesity |
| | Lipoatrophy | Risk factors: Low CD4 count |
| **TDF** | Renal dysfunction | Risk factors :<br>Underlying renal disease; age> 60 years; BMI < 18.5 (or body weight < 50 kg); diabetes; hypertension; concomitant use of PIs or nephrotoxic drugs.<br>Avoid in patients with CrCl< 50ml/minute there no suitable alternative required to treat HIV/HBV co-infection if the<br>TAF is not available. |
| **INNTIs** | | |
| **All the NNIT** | Eruption (NVP>>EFV>ETR) | Managing the eruption |
| **EFV** | Side effects on SNC | Risk factors: Pre-existing psychiatric disorder |
| | Gynecomastia | Switch VFE to an alternative and consult a doctor if the gynaecomastia does not improve. |
| **IP** | | |
| **All PI boosted by Ritonavir** | Gastrointestinal intolerance (LPV/r>DRV/r>ATV/r) | Consult us for a recommendation on an alternative diet |
| | Dyslipidaemia (LPV/r>DRV/r>ATV/r) | Risk factors: Obesity; sedentary lifestyle; diet rich in saturated fats and fatty acids.<br>cholesterol |
| **ATV/r** | Hyperbilirubinemia | This only requires a drug substitution<br>if the cosmetic effect of jaundice is likely to interfere with patient adherence. |
| **DRV/r** | Skin rash/hypersensitivity | Risk factors: allergy to sulphonamides |

| ARV | Adverse drug reaction | High-risk situations/Comments |
|---|---|---|
| **INSTI** | | |
| **All INSTI** | Weight gain | Risk factors: women; concomitant use of TAF (Tenofovir alafenamide fumarate)<br>Providing advice healthy eating and physical activity to maintain a healthy weight. |
| | Eruption skin/hypersensitivity | Visit |
| **DTG** | Insomnia | Give in the morning; if there is no improvement, try giving with a low-fat meal or on an empty stomach. |

- **Change ARV due to drug interactions**

At each visit, patients should be asked about any other medicines they are taking (including over-the-counter medicines and herbal remedies). Some common drugs have specific drug interactions that may dose adjustment or substitution of the ARV or other interacting drugs.

It is advisable to check for interactions each time you start taking a new drug.

- **Change ARV in event of treatment failure**

Viral load is the test of choice for monitoring response to antiretroviral treatment and identifying treatment failure.

The first viral load test should be performed six months after the start of treatment for all people living with HIV. Treatment failure should be suspected when a new or recurrent HIV-associated condition indicative of severe immunodeficiency (WHO stage III or IV) develops after at least 6 months of antiretroviral treatment. Treatment failure must always be confirmed by a VL examination.

The frequency of systematic VL monitoring for specific populations is as follows:

- Adult age: at 6 months after the start of ART, then at 12 months and
- Every year before making a drug substitution

Persistent low-level viremia (PLLV) is defined as viremia between 50 and 999 copies/ml on two consecutive measurements. These patients are at increased risk of progression to treatment failure, development of resistance and death, and therefore require a management approach similar to that for patients with a VL ≥ 1,000 copies/ml.

Lack of adherence is the most common cause of treatment failure. According to the viral load monitoring algorithm, adherence must be resolved BEFORE treatment failure confirmed. All adherence problems must be resolved before switching to a new regimen, otherwise the patient will quickly fail the new regimen and soon no viable antiretroviral treatment options.

An exception to this rule can be made when the treatment itself is the main cause of poor adherence (for example, the side effects of one of the ARVs are unmanageable, such as severe diarrhoea with LPV/r which does not improve with symptom management), in which case it may be necessary to modify the treatment to allow perfect adherence.

Chapter 5 provides detailed advice on preparing, assessing and supporting adherence.

### b) Definition therapeutic and virological failure

Treatment failure is suspected when a patient has an elevated VL ≥ 1,000 copies/ml after at least 6 months of antiretroviral therapy. Treatment failure is only confirmed when the VL is1,000 copies/ml after assessing and treating adherence or other reasons for the elevated VL and after repeating the VL after at least 3 months of improved adherence to allow viral re-suppression.

Therapeutic failure may be clinical, immunological and/or virological. Viral load is used to confirm treatment failure (persistence of a viral load > 1000 copies/ml after 6 months of well-managed ART). In the absence of viral load, we can use immunological criteria such as CD4 count to confirm treatment failure.

A rise in viral load on ART means that (before considering switching to another drug because of treatment failure) we must first rule out the causes of a transient rise in VL: poor adherence (temporary cessation of treatment).

Measuring VL gives patients the opportunity to understand, monitor and motivate themselves to adhere to their treatment. Advice on adherence should explain the implications of a **suppressed (or even undetectable) VL**.

Viral load values can be grouped into three broad classes:

- **Undetectable viral load**: VL <50 RNA copies/ml, indicating control of viral replication;
- **Viral suppression or suppressed viral load**: VL <1000 RNA copies/ml,
- **Virological failure**: VL ≥1000 copies/ml, indicating either non-adherence/interruption of treatment (especially for viremia ≥6 Log RNA copies/ml) or established failure of the current treatment (after confirmation of this viral load on a consecutive sample taken after a 3-month interval).

The table below shows the characteristics of the failures

*__Table 54__: Clinical, immunological and virological definitions treatment failure*

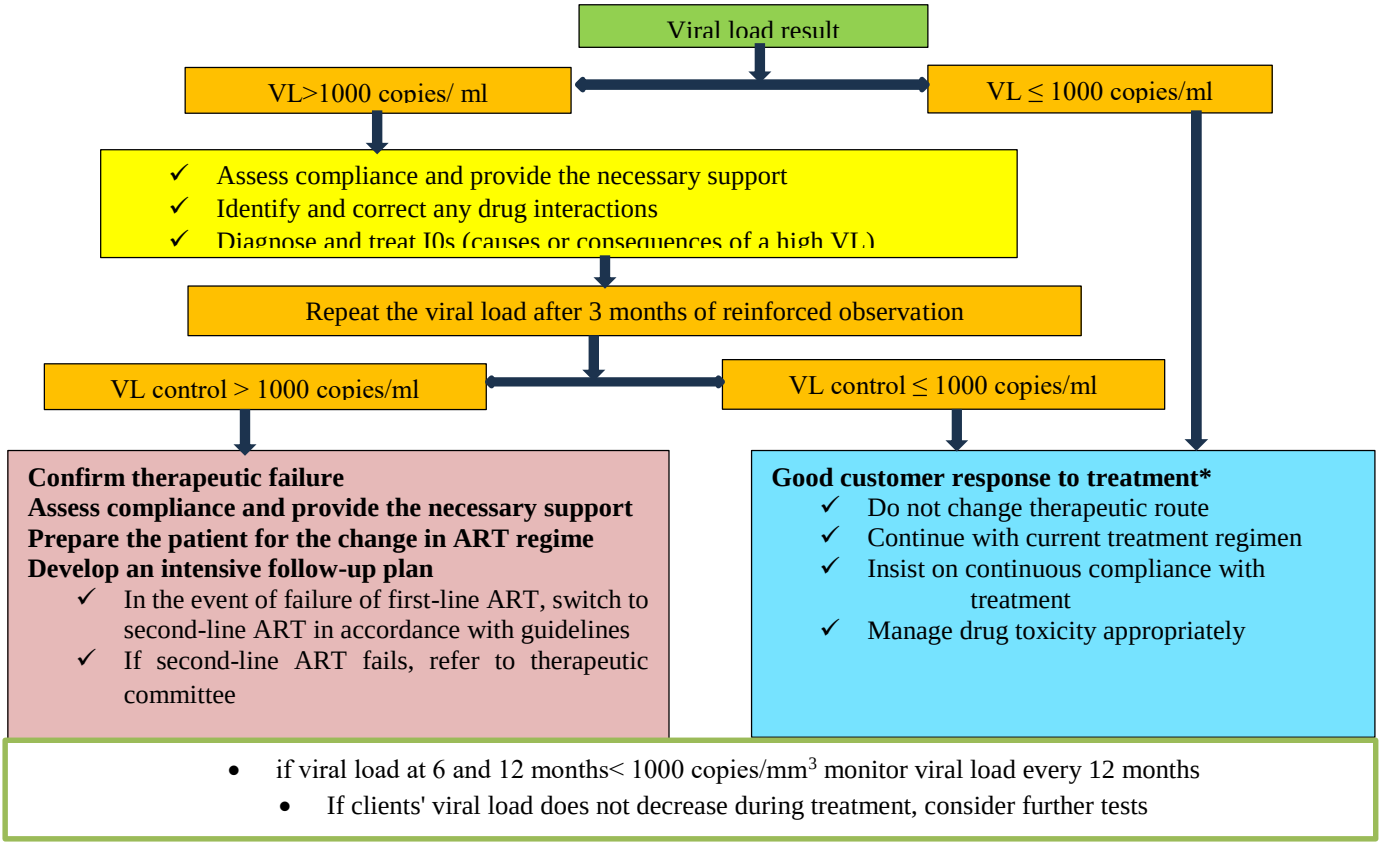
| Types | Features |
|---|---|
| **Clinical failure** | **Children** :<br>New or recurrent clinical event indicating severe or advanced immunodeficiency after 6 months of effective treatment.<br>**Adults and teenagers:**<br>New or recurrent clinical event indicating severe immunodeficiency after 6 months of effective treatment. |

| | |
|---|---|
| **Immunological failure** | **Adults and teenagers**:<br>CD4 count of 250 cells/mm3 or less following clinical failure or persistent CD4 count of less than 100 cells/mm³.<br>**Children under 5** :<br>Persistent CD4 count 200 cells/mm³.<br>**Over 5 years old** :<br>Persistent CD4 count 100 cells/mm³ |
| **Virological failure** | Viral load ≥ 1000 copies/ml determined by 2 consecutive measurements 3 months apart, with adherence support following the first virological test, at least 6 months after the start of treatment (well-conducted and well-administered). observed). |

The figure below shows the algorithm for interpreting the viral load

***Figure 9:*** *Viral load interpretation algorithm*

VIRAL LOAD INTERPRETATION ALGORITHM



### c) Causes of treatment failure

**Viral factors**

- Acquired drug resistance: patients can develop resistant mutations to ARVs if maximum adherence (≥ 95%) is not maintained.
- Transmitted resistance to ARVs: patients may be infected by an ARV-resistant virus during their initial exposure or reinfected by a drug-resistant virus during their therapy.

**Non-viral factors**

HIV treatment failure can occur when plasma ARV levels do not reach therapeutic levels, which may be due to :

**Host factors :**

- Poor adherence with ART;
- Malnutrition.
- Malabsorption of medicines;
- Choice of initial ART regimen, low potency or inappropriate dosage ;
- Drug interactions.

### d) ARV substitution and switch

**Substitution** is the replacement of one or two ARV drugs in a regimen by another drug in the same class, usually because of the following:

- Toxicity/adverse drug reactions
- Co-morbidity
- Drug interaction...

**The "switch"** is considered as the passage from a first line protocol to a second line protocol or from a second line protocol to a third line protocol.

### e) 2nd line protocol

The second-line protocol consists of combining two NRTIs with a ritonavir-boosted PI (LPV/r or ATV/r) in children, adolescents and adults.

choice of NRTI for second-line treatment is determined by the NRTI used in first-line treatment. If **ABC + 3TC or TDF + 3TC** were used, **AZT+ 3TC** should be used for second-line treatment and vice versa.

Atazanavir is only used in children 6 and over.

The 2e protocols children, adolescents and adults are set out below:

*__Table 55__: 2nd-line protocol adults, including Pregnant women (PW)and Breastfeeding women (BW)*

| Populations | 1st line protocol failure | 2nd line |
|---|---|---|
| **Adults** | • **TDF/3TC/DTG**<br>• **TDF/3TC/EFV** | • **ABC/3TC+ LPV/r (or ATV/r)** |

| Populations | 1st line protocol failure | 2nd line |
|---|---|---|
| | | • AZT/3TC+ LPV/r (or ATV/r) |
| **TB/HIV co-infection** | • If LPV/r-based regimen It is preferable to switch to a DTG-based regimen (with an additional dose of DTG 50 mg) and, if this is not possible, an adjustment of the LPV/r dose through super boosting (which involves increasing the ritonavir dose so that the LPV : RTV ratio=1<br>• ATV/r-based diet: it is preferable to replace ATV/r with DTG (with an additional dose of DTG 50 mg). | |

***What should be done before starting 2nd-line treatment in adults?***

- Identify the causes that may have led failure of first-line treatment;
- Strengthening TVE;
- Explain the details of the new treatment (when to take it, how much to take, how to measure these quantities, when to take the medication in relation to meals, possible side-effects and what to do if side-effects occur);
- Providing treatment.

***Management of second-line treatment failures :***

Patients who fail 2nd-line treatment have limited options. Failure of 2nd-line treatment must be confirmed in accordance with national guidelines by a new viral load after reinforcement of adherence (VL algorithm). These patients require monthly assessment of adherence and encouragement to improve it by all necessary means, including assessment and appropriate management of any mental illness.

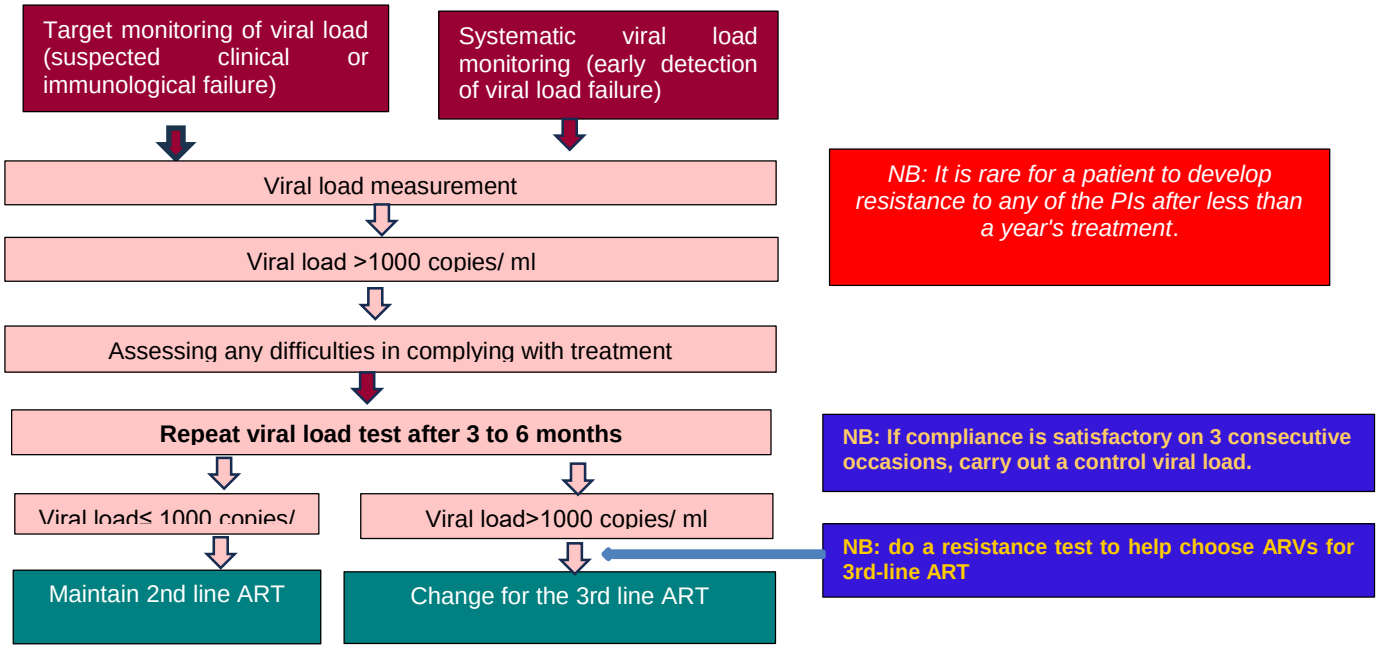



***Figure 10**: Interpretation of the targeted viral load*

- If VL≤ 1000 copies, maintain the same ARV treatment regimen

- If VL>1000 copies, **request an HIV ARV resistance test** and, on receipt of the results of this test, prepare a summary of the patient's file and present it to the regional ARV resistance committee of the referral CTA for case review and prescription of the 3rd line treatment regimen.

### f) 3rd line treatment

Third-line treatment refers to the antiretroviral treatment offered to people living with HIV in the event of second-line treatment failure.

The management of cases of failure of 2th or 3th line treatment will be guided by **the resistance profile (genotyping)**. However, 3rd) line protocols must include new ARVs with : **2th generation PI (DRV/r), INI (RAL or DTG)**.

The choice of treatment will take account of sensitive molecules. These cases should be managed by reference CTAs and expert committees.

**NB:** It is worth pointing out that the genotype alone can be misleading in absence a full history of previous treatment, including the protocol (molecules) and duration of treatment, because mutations in previous drugs are archived once the drug pressure has been removed. This can be misleading as long as we do not carry out resistance testing after each protocol.

## VII. SPECIAL SITUATIONS

The following situations may lead to a change in treatment protocol

| Special situations | Adaptation (protocol and dose) |
|---|---|
| **TB/HIV co-infection under TLD** | Take 1cp of TDF/3TC/DTG plus an additional 1cp of DTG (50 mg) 12 hours after the TLD.<br>continue the additional dose of DTG (50 mg) for up to 2 weeks after the end of anti-tuberculosis treatment |
| **TB/HIV co-infection under TLE 400** | Maintain TLE 400 at the same dose (if still effective) |
| **Patients with co HIV moborditis/renal failure** | Avoid TDF in the protocol and use ABC/3TC instead, |
| **HIV/hepatitis B co-morbidity** | Always keep the TDF in their protocol, even when moving to the second line |
| **HIV/hepatitis C co-morbidity** | Avoid AZT in their protocol |
| **TB/HIV co-infection 2nd line ATV/r or LPV/r regimen** | • If protocol based ATV/r who have never received DTG, change ATV/r to double-dose DTG until 2 weeks after the end of anti-TB treatment (and keep the patient on this protocol)<br>• If the protocol is based ATV/r that has already received DTG, change the ATV/r to LPV/r + RTV.<br>• If the protocol is based on LPV/r, increase the RTV until a ratio of 1/1 is obtained. |

Treatment interruption is defined as the cessation of one or more courses of ARV treatment within a given period:

- **CAT after stopping≤ 1 month**reinforce adherence, continue the same protocol;
- **CAT after stopping> 1 month**: reinforce adherence and continue with the same protocol. Treatment will be monitored in the same way as at initiation.

When treatment must be stopped, the entire combination must be interrupted to avoid the development of resistance to the molecules being maintained**.** In all cases, support and assistance with adherence will be provided by a trained consultant.

The continuum of care HIV infection ranges from linkage to treatment, patient engagement and retention. However, this process is not dynamic and is marked by periods when patients disengage from the care system. The disengaged patient is therefore alive, but is no longer on ARV treatment.

The table below sets out a number of ways in which this situation can be remedied.

***Table 56**: Care re-engagement strategy*

| Action to be taken | Re-engagement strategies |
|---|---|
| **Identification of disengaged PLHIV through tools (registers, files...)** | • Tracking through home visits and telephone calls;<br>• Encouraging patients to return to Fosa<br>• Identify the reasons for disengagement,<br>• Supporting the return of patients<br>• Breaking down barriers<br>• Review the attitudes negative of (discrimination, stigmatisation)<br>• adherence<br>• Initiate the same ARV protocol before the interruption for a period of one month<br>• Suggest screening for index cases<br>• Take viral load readings according to the national algorithm<br>• If possible, have a CD4 test before re-employment |
| **Improvement of reporting tra nsfers and deaths** | |
| **Make sure that transferred patients are indeed taken in in the receiving health facilities** | |
| **Classification of patients by category to improve follow-up** | |

**Service continuity**

- It is recommended that PLHIV be provided with community support to improve retention in care.
- Interventions need to be implemented to trace people who have disengaged from care and provide support for re-engagement.

- Care providers are not doctors, trained midwives and nurses can maintain ART.
- Trained and supervised community health workers can provide ARV treatment between regular clinical visits for patients established in care.

# CHAPTER 6: PHARMACOVIGILANCE OF ARV TREATMENT

Pharmacovigilance (PV) is defined as the science and activities relating to the detection, assessment, understanding and prevention of adverse drug reactions or any other drug-related problem, including prescribing errors, misuse and abuse of medicines.

Good pharmacovigilance practice enables risks and risk factors to be identified as quickly as possible in order to avoid or minimise harm. In general, in the event of serious and potentially fatal toxicity or hypersensitivity, ART should be discontinued until symptoms have resolved and a substitution protocol can be safely instituted.

Drug resistance to ARVs is the progressive reduction in the efficacy of a drug in the treatment of HIV infection. It is the result of mutations that occur in the viral genome due to low drug pressure (lack of adherence).

## I. SCOPE OF PHARMACOVIGILANCE

The scope of pharmacovigilance has grown remarkably in recent times, and includes the following areas:

- Adverse effects or events ;
- Medication errors ;
- Counterfeit and substandard medicines ;
- Drug ineffectiveness ;
- Misuse and/or abuse of medicines;
- Drug interaction.

### I.1. Undesirable effects and side effects of medicines

The WHO defines **an adverse** drug **reaction (ADR**) as "a noxious and unintended response to a medicinal product, which occurs at doses normally used in humans for prophylaxis, diagnosis or therapy of disease, or modification of physiological function". **A side effect** is an unintended effect of a health product that occurs at doses normally used in humans and is related to the pharmacological properties of the medicinal product. When a side effect is deleterious (harmful), it becomes an undesirable effect, i.e. an undesired effect. The possibility of the occurrence of undesirable effects represents a risk, which must be weighed against the therapeutic efficacy, in other words the expected benefit for the patient.

Active (or proactive) safety monitoring means that active measures are taken to detect undesirable events. This monitoring is carried out by the National pharmacovigilance Comittee. Active post-treatment and event monitoring can be carried out by interviewing patients directly or by reviewing patient records. The most comprehensive method of active pharmacovigilance is cohort event monitoring. This is an adaptable and powerful method for obtaining comprehensive, high-quality data. Other active surveillance methods include the use of

registries, referral records and analysis of laboratory results.

***Table 57:*** *Classification of adverse drug reactions*

| Intensity | Description |
|---|---|
| **Minimal** | antidote or treatment is required; hospitalisation is not necessary. not prolonged. |
| **Moderate** | A change in treatment is necessary (e.g. change in dosage, the addition of a drug), but not necessarily the discontinuation of the drug; hospitalisation may be prolonged or the patient may have to take a new drug.<br>specific treatment may be necessary. |
| **Grave** | An adverse drug reaction is potentially life-threatening and requires the patient to stop taking the medicine or drug and seek medical attention.<br>specific treatment of adverse drug reaction. |
| **Lethal** | The adverse drug reaction contributes directly or indirectly to the patient's death. |

***Table 58****: Major side effects of ARVs and steps to take*

| ARV | Major toxicity | CAT |
|---|---|---|
| **INTIs** | | |
| **ABC** | • Hypersensitivity reaction | • Do not use in the presence of this gene (HLA B5701)<br>• Monitoring of transaminases (ASAT, ALAT) |
| **AZT** | • Anaemia, neutropenia<br>• Acidosis lactic acidosis orsevere hepatomegaly with steatosis;<br>• Lipoatrophy or lipodystrophy ; Myopathy | • Substitute with TDF or ABC<br>• Check CBC for anaemia and neutropenia |
| **TDF** | • Chronic or acute kidney disease (Fanconi syndrome)<br>• Reduction of the density mineral density<br>• Acidosis lactic acidosis or severe hepatomegaly hepatic steatosis | • Monitoring renal function (creatinemia)<br>• Monitoring of transaminases (ASAT, ALAT)<br>Replace with AZT or ABC. Do not initiate TDF if creatinine Cl <50 ml/min, uncontrolled hypertension, untreated diabetes or renal disease. |
| **INNTIs** | | |
| **EFV** | • Persistent CNS disorders (dizziness, insomnia and nightmares) or mental disorders (anxiety, depression and mental confusion), Convulsion<br>• Hepatotoxicity, gynecomastia<br>• Hypertriglyceridemia is hypercholesterolaemia<br>• Reactions skin reactions or severe hypersensitivity reactions | • Using DTG<br>• Monitoring of transaminases (ASAT, ALAT)<br>• Preferably taken at bedtime<br>• Do a lipid profile<br>• For severe hepatotoxicity, change class to IP/r or integrase inhibitor (DTG) |
| **NVP** | • Hepatotoxicity<br>• Skin rash, hypersensitivity (Stevens Johnson) | • Monitoring of transaminases (ASAT, ALAT)<br>• In the event moderate hepatotoxicity, replace with EFV including children aged 3 and over. |
| | | • In case of severe hepatotoxicity, substitute with a different ARV class such as PI/r or a integrase |

| | | |
|---|---|---|
| **ATV/r** | • ECG abnormalities (PR and QRS prolongation)<br>• Indirect hyperbilirubinemia<br>• Renal lithiasis | • Take care when using drugs that can prolong the QT<br>• Substitute with LPV/r or DRV/r.<br>• In the event of contraindication to PI/r and failure of NNRTIs, switch to integrase inhibitors. |
| **IP** | | |
| **LPV/r** | • ECG abnormalities (PR and QRS prolongation, torsade de pointe)<br>• Hepatotoxicity, Pancreatitis ; diarrhoea<br>• Dyslipidemia | • Take care when using drugs that can prolong the QT<br>• If LPV/r is used as 1st line treatment in children, use RAL or DTG if available (children over 6 years of age), otherwise EFV, NVP or ATV/r. If LPV/r is used as 2nd line therapy in adults (failure of NNRTI), replaced by an integrase inhibitor (DTG). |
| **DRV/r** | • Hepatotoxicity<br>• Reactions skin reactions or severe hypersensitivity reactions | • Monitoring transaminases<br>• Replace with ATV/r or LPV/r. If used in 3rd line, options are limited.<br>• In case of hypersensitivity, substitute with a different class such as an integrase inhibitor. |
| **IN** | | |
| **DTG** | • Hepatotoxicity ; hyperse nsitivity reaction<br>• Insomnia<br>• Depression<br>• Non-closure of the neural tube<br>• Hypertension<br>• Lipid disorders (NAMSAL study)<br>• Obesity, hyperglycaemia → Risk factors risk factors Hypertension*(Journal Dovepress Study of KASOMA Mutebi in Uganda) | • Substitute with EFV or IP/r<br>• Take the tablet in the morning or substitute with IP/r or RAL<br>• Systematic blood pressure monitoring<br>• Systematic weight gain |
| **RAL** | • Rhabdomyolysis, myopathy, myalgia<br>• Hepatitis<br>• Rash skin severe or hypersensitivity reaction | • Stop ARVs until symptoms subside, then replace with IP/r. |

## I.2. Main interactions between ARVs and other drugs and management of adverse reactions

Drug interactions occur when one drug alters the concentration of another drug in the blood, or when two drugs taken together have additive (1+1=2), synergistic (1+1=3) or antagonistic (1+1=0) effects.

### *I.2.1. Monitoring DTG toxicity*

*Recommendation No. Monitoring DTG toxicity*

The following clinical elements are useful to consider:
• Appropriate advice on lifestyle and dietary changes for anyone who is putting on weight;
• use routine blood pressure to assess hypertension, with particular attention to the risk of hypertension during pregnancy;
• monitoring and treatment of metabolic parameters - glucose and lipid monitoring if routinely available; and
• monitoring of weight and associated complications as part of active or routine surveillance.

### *I.2.2. Drug-Drug interactions*

Some ARVs are more at risk of drug interactions than others. NNRTIs, and more particularly PIs, are at risk of interacting with other drugs.

The interactions listed below are not exhaustive. They have been selected on the basis of the risks involved and the frequency with which they are prescribed.

### *I.2.3. Main interactions between ARVs and associated drugs*

| Pathology associated with HIV infection | Interactions | What to do |
|---|---|---|
| **Tuberculosis** | **Rifampicin and Dolutegravir**<br>Plasma concentration may be measured to validate the dosage. | Doubling the dosage of dolutegravir (50 mg x2/d) (subject to absence of a mutation)<br>resistance to anti-integrases). |
| **Cancer** | **Zidovudine and anticancer drugs**<br>(myelotoxicity)<br>**TDF and methotrexate, pemtrexed, cyclophosphamide, or platinum salts** | Monitoring renal function |
| **Diabetes** | **Dolutegravir and metformin** | Monitoring of the<br>Adjustment of dosage of the metformin |
| **Oesogastroduodenal disorders** | **PPIs and most ARVs** | Take the two medicines 2 and 6 hours |
| **Asthma** | ● **Budesonide, fluticasone and Ritonavir.** | Only the beclomethasone is authorised. |
| **Dyslipidemia** | **Simvastatin, atorvastatin and ARV** | ● Prefer pravastatin or rosuvastatin |

| | | |
|---|---|---|
| | | ● Use statins with caution in cases of direct antiviral treatment of hepatitis C.<br>● Consider interrupting the treatment with statins. |
| **Cardiovascular diseases** | ● **Anticoagulants oral and ARVs**<br>● **Ritonavir and amiodarone.**<br>● **The dihydropyridines and ARVs** | ● Check INR is recommended with oral anticoagulants.<br>● Dihydropyridines must be initiated at the lowest dose |

## II. NOTREPORTING OF ADVERSE REACTIONS

Spontaneous reporting of adverse events (AEs) linked to medicines and other health products is the basis of any pharmacovigilance system. Notifiers of adverse events (AEs) are: healthcare professionals in the public, private or military sector, the pharmaceutical industry, the general public, learned societies, the consumer protection society, the Anti-Poison Centre, medical biology laboratories and the Institut Agronomique. It is compulsory for health professionals or manufacturers who become aware of adverse drug reactions to report them.

### II.1. Procedures for reporting adverse events

The notification concerns any suspected Adverse Event relating to any health product, occurring under normal conditions of use. It includes the following information about the case :

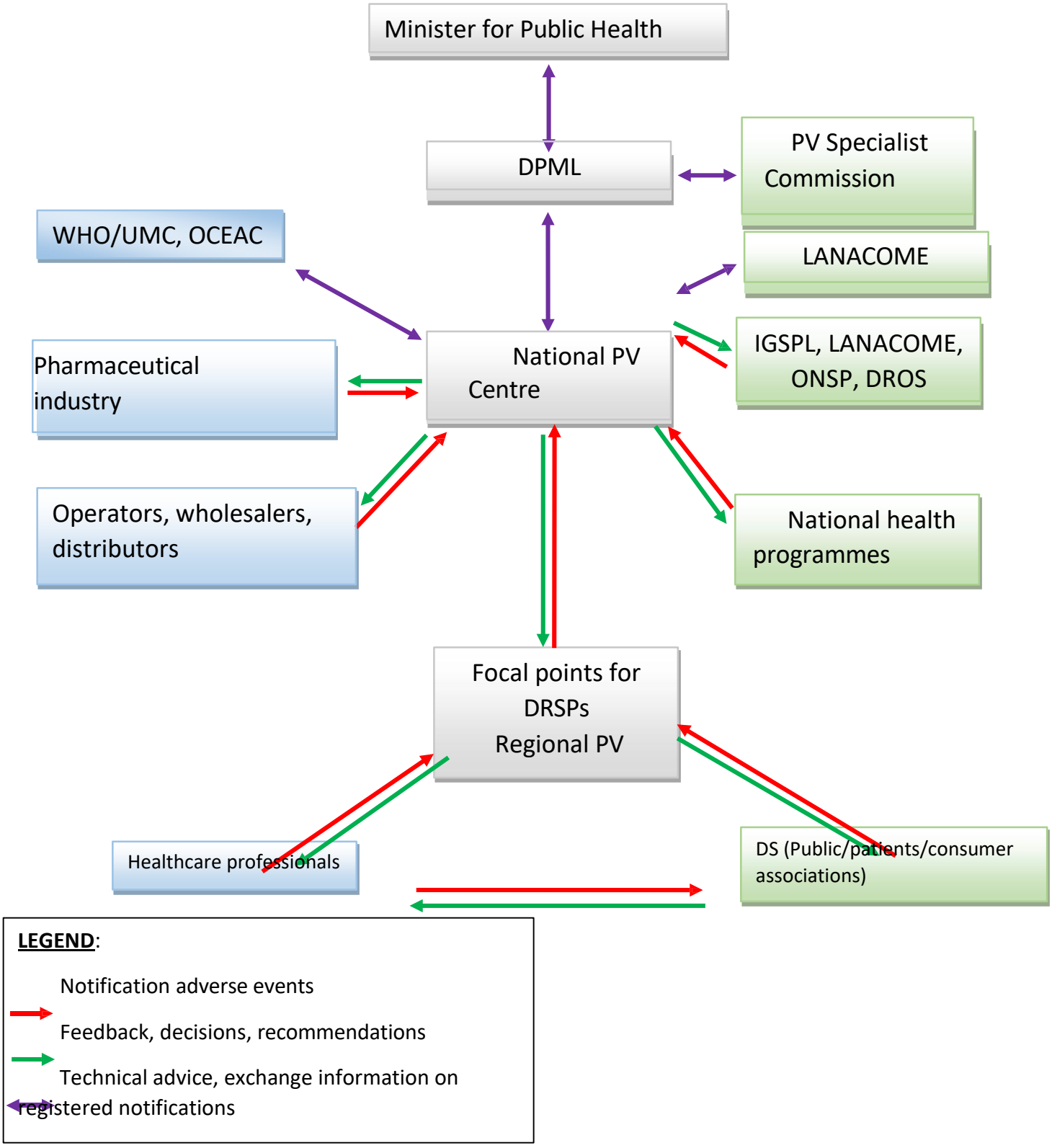
- The patient: identification and socio-economic characteristics, clinical history;
- Adverse events (AEs) associated with medicines and healthcare products;
- Suspect drug or health product Date treatment started and stopped;
- The notifier.

For medicinal products placed on the market: Serious adverse drug reactions must be reported to the national pharmacovigilance committee within 7 calendar days in the event of death or life-threatening conditions, and within 15 days of becoming aware of other serious reactions.

Notifications may be sent by any means of communication, including the **CNPV** website **www.dpml.cm - Telephone; - Fax; - Post; - On-site consultation**.

Non-serious adverse reactions must be reported quarterly to the Department of Medicines and Pharmaceuticals; pharmaceutical companies can also obtain a quarterly report from the CNPV on the adverse reactions to the medicines they market.

## II.2. Adverse event reporting circuit diagram



## III. HIV DRUG RESISTANCE

HIV resistance to antiretroviral drugs is defined as the ability of the virus to replicate despite the presence of antiretroviral drugs. Resistance is therefore due to a reduction or loss of the antiretroviral drug's ability to block replication of the virus. genotypic resistance test is the one approved clinical use. It identifies resistance mutations in the reverse transcriptase (RT), protease and integrase genes,

There are **three types of HIV resistance to antiretrovirals:** (i) natural resistance (e.g. HIV-2 and HIV-1 groups N and O, resistant to NNRTIs (EFV, NVP); (ii) primary or transmitted resistance or pre-treatment following transmission of already resistant strains; (iii) secondary or acquired resistance generally due to poor adherence, insufficient plasma concentrations of ARVs (malabsorption and drug interactions) and the use of incorrect combinations of ARVs.

### III.1. Resistance test indications

- Confirmed virological failure of 2$^{de}$ lines of ARV treatment in adult patients,
- First-line failure (if protease inhibitors are used) in children;
- Seroconversion as part of PrEP prior to initiation of ART.

### III.2. Purpose of genotypic resistance testing

The HIV genotypic antiretroviral resistance test detects the **presence of mutations** in the viral genome that reduce the sensitivity of the virus compared with that observed in a wild-type virus. The aim of resistance testing is to guide the choice of antiretroviral molecules for an optimal therapeutic combination, to limit any inappropriate changes in treatment, and to preserve second- and third-line protocols. For best use in clinical practice, the test must be interpreted by clinicians who are equipped to make therapeutic changes.

### III.3. Sample collection and transfer to the reference laboratory

The clinician who prescribes the resistance test sends the patient to the laboratory for sampling, after completing the resistance (mandatory). This form can be obtained by contacting the laboratory. The Health facilities that have an agreement with the reference laboratories may take samples on site and send them to the laboratory in accordance with the terms of the agreement.

**Results must be delivered within** one month of receipt of the samples at the laboratory.

## III.4. Interpreting the resistance test

There are two aspects to the interpretation of genotypic resistance tests: A virological interpretation, which is carried out at the reference laboratory by the expert virologist in the field of resistance tests, and a clinical interpretation, which is carried out by the prescribing clinician or the therapeutic committee in charge of the patient.

Virological interpretation is based on an analysis of the mutation profile and viral subtype, taking into account certain clinical conditions, the patient's therapeutic history and immunological and virological parameters. A report is sent to the clinician with one or more proposals for the most effective therapeutic combinations.

The prescription will be the subject of a multi-disciplinary discussion

# CHAPTER 7: ADHERENCE, RETENTION AND PSYCHOSOCIAL SUPPORT

Psychosocial management, adherence to ART and retention in care remain crucial to the therapeutic success of PLHIV and contribute to achieving the UNAIDS 95/95/95 targets by 2025. Poor adherence, psychosocial care and patient retention could lead to higher costs not only for the individual, but also for national antiretroviral treatment programmes. Indeed, when patients fail their treatment, they have to switch to second- and even third-line drugs, which are more expensive. It is therefore essential to implement effective measures to facilitate adherence and retention in the continuum of care.

## I. ADHERENCE TO ART

The standard definition of adherence is taking 95-100% of the right drug, in the right way, at the right time and in the right dose (the 4 Bs: right drug, right dose, right time and right way, according to Peterson et al., 2000). Adherence requires an informed choice, a relationship of trust between patient/family/care provider and the implementation of evaluation procedures for better monitoring of patients on ART.

### I.1. Adherence assessment procedures

Several reliable procedures for assessing adherence to ART are available to improve patient monitoring at treatment sites. These include :

- Indirect adherence assessment procedures
- The face-to-face adherence self-assessment session;
- Counting pills using self-reported adherence without physically counting patients' tablets;
- The visual analogue scale.
- Direct adherence assessment procedures
- Physical pill counting
- Use of viral load results

**SOP 1: Face-to-face adherence self-assessment session (**Suitable for adolescents aged 15 to 19 and adults)

To carry out this self-assessment session, the healthcare provider must:

- Always introduce the adherence self-assessment session using language that normalises non-adherence (e.g. it is difficult...) in order to gain the patient's trust and help resolve problems of social desirability.

- Then the self-assessment questionnaire comprising 04 closed questions.

| Self-declared adherence (always start with standardising language) | | |
|---|---|---|
| **01** | Do you sometimes have trouble remembering to take your medication? | 0=No, 1=Yes |
| **02** | When you feel better, do you ever stop taking your medication? | 0=No, 1=Yes |
| **03** | When you think back over the last 4 days, did you forget any of the following?<br>doses? | 0=No, 1=Yes |
| **04** | Sometimes when you feel unwell after taking the medicine,<br>do you stop taking them afterwards? | 0=No, 1=Yes |

In this caseadherence refers to the week or month preceding the interview.

- After the interview, the service provider concludes the assessment as follows:
    - If the patient answered "no" to all 04 questions, adherence is good; 03 points **> 95%**.
    - If the patient answered "yes" to 01 question, adherence is moderate/passable; 02 points = **75-95%**.
    - If the patient answered "yes" to 02 or more questions, adherence is low; 01 point < **75%**.
- Carry out the TVE according to the results of assessment;
- Documenting the activity ;
- Negotiate the next appointment.

### SOP 2: Pill counting using self-reported adherence without physically counting patients' tablets

While maintaining the introduction to the interview using standardisation language as in SOP1, the provider should present the pill counting questionnaire using self-reported adherence. Then administer the pill counting questionnaire without doubting the patient's answers.

| | Questions | Yes or No | Number of forgotten tablets |
|---|---|---|---|
| **01** | Have you forgotten any of your doses these 04 days ? | | |
| **02** | Have you forgotten any of your doses these 07 last days-last week ? | | |
| **03** | Have you forgotten any of your doses in the last month? last (30 days)? | | |
| **04** | Overall, can you estimate the total number of tablets you may have missed in the last month? | | |

**NB:** Remember that events vary from one patient to another, so the assessment will depend on the patient's ability to remember.

- If the client can only remember what happened in the previous 4 or 7 days, you stop at this point and assess their adherence with treatment over the last four or seven days.
- In this case, adherence refers to the week (if the client can only remember one week) or the month preceding the interview.

Calculate the percentage adherence using the formula below**:**

**Number of tablets taken / Number of tablets that were supposed to be taken X 100 = % adherence**

Adherence is then estimated as follows:

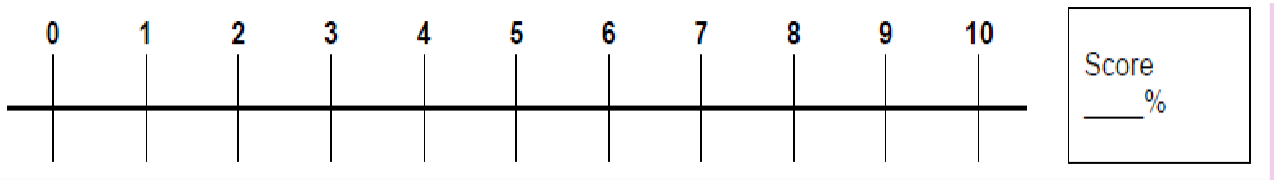
- If the patient has obtained a score of 95% or more, their adherence is good;
- If the patient has obtained a score between 70 and 95%, their adherence is moderate/passable;
- If the patient scores less than, adherence is poor.
- Carry out the TVE according to the results of assessment;
- Documenting the activity ;
- Negotiate the next appointment.

### SOP 3: Visual Analogue Scale **(**suitable for teenagers and adults**)**

This is one of the pain assessment scales first used in 1921 by Hayes and Patterson. It is often used in clinical research settings to measure the intensity or frequency of various symptoms. It has also been used assess patient adherence with treatment for various chronic diseases, including HIV.

The care provider must :

- Always introduce the adherence self-assessment session with language that normalises non-adherence, in order to gain the patient's trust and help him or her to resolve problems of social desirability.
- Next, present the scale to the patient and explain its interpretation. Mention and check that the patient has understood correctly, as shown in the figure below:




When patients are asked to estimate the amount of ARVs they have taken in the last month. The patient may point to :

- A mark at the right end where you can see the number ten (10) which means that the patient has taken each dose of their medication;
- A mark in the middle where you see the number five (5) means that the patient has taken about half their medicine;
- A mark at the left end where there is the number zero (0) means that the patient has not taken any medication.

Then ask the patient to put a mark on this line between 0 and 10 to describe the best estimate of the amount of medication taken in the last month. Adherence is then estimated as follows :

- If the patient has obtained a score of 95% or more, their adherence is good;
- If the patient's score is between 75% and, adherence is moderate;
- If the patient's score is less than, adherence is poor;
  - Carry out the TVE according to the results of assessment;
  - Documenting the activity ;
  - Negotiate the next appointment.

### SOP 4: Use of viral load results

The use of viral load results is considered to be the most direct method of assessing adherence. Here, viral load is measured to describe whether a patient is compliant or not.
If VL less than 1000copies/mm3, declare the patient compliant

If VL greater than 1000 copies/mm3, declare the patient non-compliant

## I.2. Obstacles to adherence

Adherence is a lifelong process. Obstacles to adherence should be discussed with the patient/parent or guardian before antiretroviral treatment is started.

*Table 59: Obstacles to adherence, by factor*

| Types of factors | Various obstacles |
|---|---|
| **Individuals** | • Forgetting doses<br>• Changes to daily routines<br>• Mental health (depression)<br>• Lack of interest or desire to take medication<br>• Consumption of substances or alcohol<br>• Travel<br>• Domestic violence<br>• Lack of shared status within the family and with the child<br>• Cultural, traditional or spiritual beliefs<br>• Lack of funding/transport to return to the clinic<br>• Living alone; lack of social support from family and/or friends<br>• Illiteracy<br>• Misunderstanding of the therapeutic regimen or efficacy of ART<br>• Self-stigmatisation |
| **Clinics** | • Knowledge of serological status<br>• Duration of ARV treatment<br>• WHO Stadium<br>• VL |
| **Drug-related** | • Undesirable effects<br>• Complex dosage regimens and dietary restrictions<br>• Taste<br>• Quantity of tablets<br>• Dosage frequency |
| **Linked to the healthcare system** | • Care provider workload<br>• ARV discontinuation<br>• Staff not trained in EAC/CAT Psychosociale<br>• Long distance home-health facility;<br>• Inability to pay the direct or indirect costs of care<br>• Unsuitable timetables<br>• Stigma and discrimination |

Specific population groups face particular challenges in terms of adherence, and these issues need to be taken into account when implementing recommended interventions.

*Table 60: Obstacles to adherence according to sub-populations*

| Population | Obstacles |
|---|---|
| **Pregnant and post-partum women** | ◆ Pregnancy and the post-partum period pose major biological, social and economic problems that are likely to affect adherence to ART.<br>◆ Nausea and vomiting<br>◆ Incorrect use of antiretrovirals,<br>◆ No sharing of status with partners<br>◆ Fear of stigmatisation and discrimination |
| **Teenagers** | ◆ Psychosocial problems such as peer pressure, perceived need to conform and inconsistent daily routines. |

| Population | Obstacles |
|---|---|
| | ◆ For adolescents in transition from paediatric to adult services, additional challenges may take on increased responsibility for their own care, problems with disclosure to peers or partners, difficulties navigating the healthcare system, lack of links between paediatric and adult services, and insufficiently qualified healthcare workers.<br>◆ Stigmatisation, Self-stigmatisation |
| **Infants and young children** | • Successfully treating a child requires the commitment and involvement a responsible parent/guardian.<br>• Parents and other family members of children living with HIV may themselves be living with HIV, and sub-optimal HIV care and treatment for family members could result in sub-optimal care for the child.<br>• Lack of nutritional support,<br>• Limited choice of paediatric preparations,<br>• Bulky load of tablets or pill size,<br>• Frequent dosing needs and difficulty swallowing tablets<br>• Stigmatisation, Self-stigmatisation |
| **People with mental health problems and drug addicts** | • Poor adherence with ART<br>• Forgetfulness, poor organisation and inadequate understanding treatment plans<br>• Alcohol consumption<br>• Stigma<br>• Self-stigmatisation |

## I.3. Strategies for eliminating barriers adherence

Once potential barriers have been identified, patients/parents/carers need to be helped to overcome them. Interventions and strategies include :

- Refer patients to support groups and discussion groups in the community or in the hospital;
- Identify family/community members for support;
- Link the patient with social support services - transport, food, etc;
- Use of pillboxes or ARV reminder calendars;
- Repeat adherence to ensure proper understanding key issues;
- Use illustrated teaching materials to help with understanding, depending on the problems identified;
- Plan frequent appointments at the health facility to closely adherence with treatment;
- Keep medicines in places where they can be easily seen;
- Encourage patients to go to health facilities that are geographically close them;
- Share HIV status with supportive family/community members,
- Offering after-hours services ;
- Use mobile technologies (e.g. text messaging by mobile phone) to remind clientsof appointments

N.B: Individual and group counselling should be offered to carers. Where appropriate, children should be included in support groups or therapeutic classes. Adolescents should be included in support groups or clubs once they have been fully informed of their HIV status.

**Adherence counselling**

The patient's/guardian's level of understanding will determine the number of adherences before starting antiretroviral treatment.

To optimise support adherence to ART among adolescents, it will be necessary to:

- Evaluate adherence and provide the necessary support at each follow-up visit or at every opportunity;
- Ensure the continuous availability of appropriate ARVs at the site;
- Organise service hours to offer the possibility of obtaining ARVs outside normal service hours, particularly for adolescents with schooling constraints;
- Setting up teen-friendly services
- Encourage adolescents and discuss treatment adherence during each support group session;
- Train and involve adolescent champions or peer educators in activities to assess and improve adherence to ART;
- Always innovate to motivate teenagers to take their treatment properly.

## I.4. Advice and support adherence during the first six months of ART

All new patients on ART need careful monitoring of adherence and support to they achieve viral suppression. This is particularly important in the context of rapid initiation of ART.

- **If there is no adherence**

Group or individual counselling at each visit;

- Review the patient/guardian's knowledge of HIV and correct any gaps;
- Review patients/carers' understanding how to administer antiretroviral treatment (dosage, schedule, frequency) and correct any shortcomings;
- Exploring any major or recent changes in the patient's/guardian's daily life that could disrupt adherence;
- Update patient location and contact information ;
- Encourage the patient/carer to continue with the support systems discussed and implemented prior to ART.

### In the event inadequate or poor adherence

Individual counselling at each visit until adherence is good (preferably by someone trained in adherence counselling).

- Assessing and eliminating potential barriers to adherence;
- Examine the patient/guardian's knowledge of HIV and remedy any shortcomings;
- Examine the patient/guardian's understanding of the administration of ART (dosage, schedule, frequency);
- Raise any concerns the patient/guardian may have about antiretrovirals, other medicines and appointment times;
- Exploring any major or recent changes in the patient's/guardian's daily life that could disrupt adherence;
- Update patient location map and contact information ;
- Examine the effectiveness of support systems already in place;
- Encourage the introduction of additional standard and enhanced support systems, including the provision of additional information as required, the appointment of a case manager and the consideration of DOTs (Directly Observed Treatment).
- Reinforcing advice and support for patients with a suppressed viral load, as obstacles may arise to adherence.

### Follow-up of patients with high viral load (≥ 1000 copies/mm3)

Care recipients on ART with a viral load> 1000 copies/mm3 are suspected of ART failure. They should be enrolled in adherence-boosting sessions to improve their ART outcome or to confirm treatment failure.

The care recipient will have to attend a minimum of three sessions to reinforce adherence, i.e. one session per month, followed by an evaluation of the process.

If the successive results of the adherence assessment are good at the end of the 3 months, the patient will be considered to have completed his or her adherence enhancement sessions and will immediately have to do the control VL.

If the patient has not completed the 3 adherence-boosting sessions, schedule a fourth session and plan to collect a control viral load.

Once the control VL result has been obtained, patients with a control VL < 1000 copies/mm3 will be advised continue with the current ARV protocol while maintaining the good adherence achieved.

For patients with a control VL > 1000 copies/mm3, failure will be confirmed and it will be explained to them that their ART is no longer effective because the virus has already developed resistance to the current ART.

For patients on 1$^{st}$ line treatment, the provider will prescribe a 2$^{(nd)}$ line ART regimen, which will be started immediately after an EAC session.

For patients on 2nd line treatment, if treatment failure is confirmed, they will be asked to undergo resistance testing, the results of which will guide the prescription of 3rd line treatment. (See figure below)

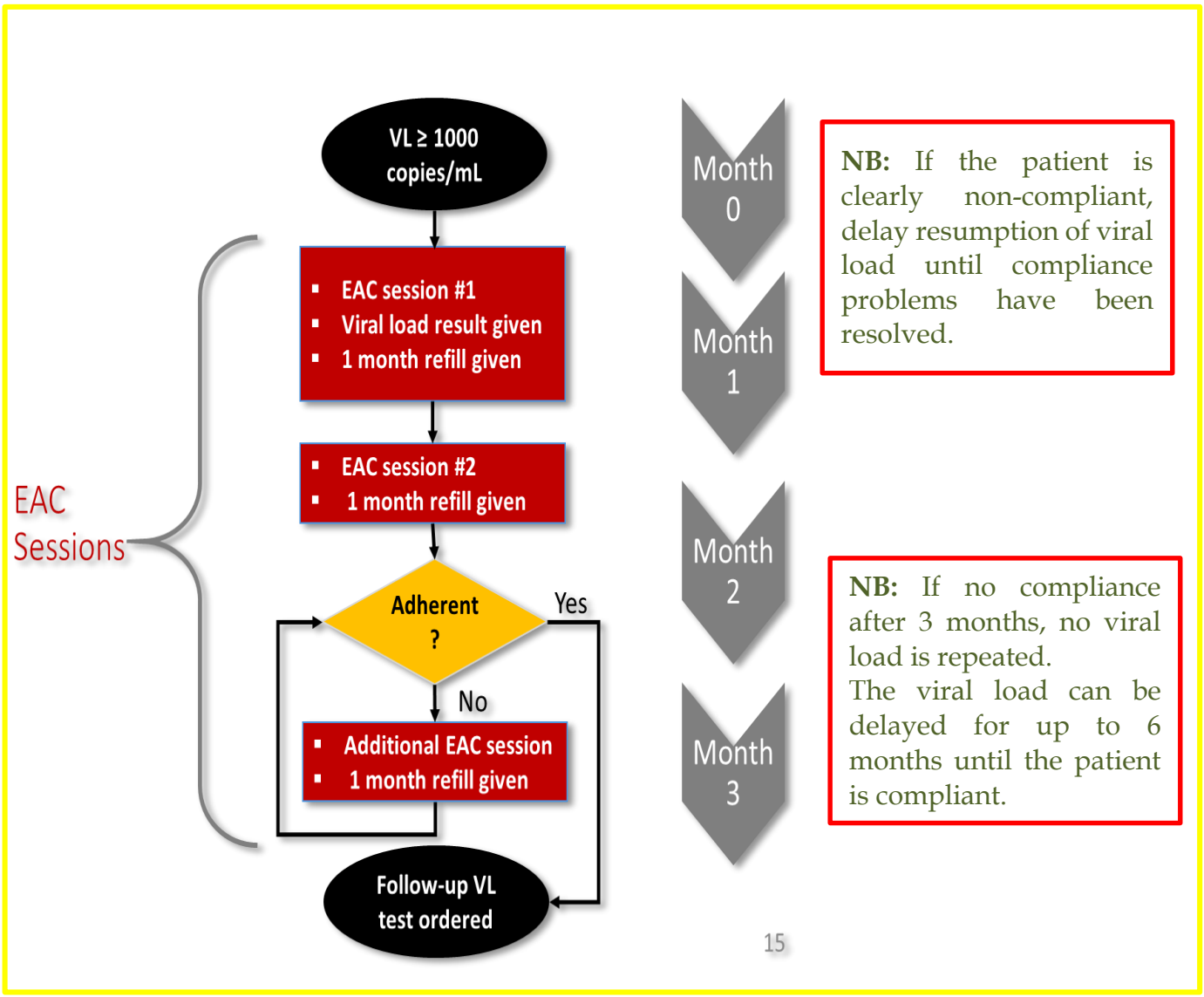


***Table 61:*** *Description of the stages in the advice sessions on reinforcing adherence*

| Sessions | Activities to be carried out by the service provider |
|---|---|
| **1st adherence reinforcement session** | Communicating the results of the high VL<br>Explain to patients the impact of a high VL on their health and the process they will have to go through in the future<br>Discuss with the patient the possible reasons for the high VL Discuss with the patient possible solutions to improve the situation<br>Agreeing with patients they need to do to improve their adherence with ART once they have returned home<br>Agree a date for the next session |
| **2nd adherence reinforcement session** | Welcoming the patient<br>Assess patient adherence since the last appointment<br>Document the result of this adherence assessment as "good, average or poor" as appropriate<br>Discuss with the patient whether the circumstances that led to the initial high VL persist or have changed.<br>Discuss with the patient any new circumstances that could lead to or maintain poor adherence, and the solutions to be found Agree with the patient he/she should now do to improve adherence with ART once he/she has returned home<br>Agree a date for the next session |
| **3rd adherence support session** | Welcoming the patient<br>Assess patient adherence since the last appointment<br>Document the result of this adherence assessment as "good, average or poor" as appropriate<br>Discuss with the patient whether the circumstances that led to the initial high VL persist or have changed.<br>Discuss with the patient any new circumstances that could lead to or maintain poor adherence, and the solutions to be found Agree with the patient he/she should now do to improve adherence with ART once he/she has returned home<br>Agree on the date of the appointment for the VL check |
| **Control session** | Summarise the results of successive adherence assessments<br>If three "good adherences" are obtained, explain to the patient why this performance was achieved, and he/she must now do the control VL.<br>Accompany the patient to collect the blood sample for the control VL<br>Inform the patient that they will be contacted as soon as the results of the VL check available.<br>Encourage patients to continue with good practices that will help them achieve good adherence<br>Saying goodbye to the patient |
| **Reporting of test results Test viral load presentation session** | Invite the patient to come and find out the results of their VL check-up<br>If the result of the control VL is < 1000 copies/$mm^3$, tell him that his control VL has been deleted and give him an appointment for another VL to be carried out in 6 months' time.<br>If the control VL result is again > 1000 copies/$mm^3$, tell him that his ART has failed and that he must switch to a 2(nd)) line ART regimen to achieve ART efficacy.<br>Start preparing patients initiation and long-term follow-up 2nd line ART<br>As soon as the patient is ready, dispense 2nd-line ART and explain the details of the treatment. |

| Sessions | Activities to be carried out by the service provider |
|---|---|
| **Prescription and introduction of long-term monitoring of ARV treatment for 2nd line**<br><br>**Special case of confirmed failure of ARV treatment of 2nd line** | Monthly follow-up appointments for 2th line ART<br>Inform the patient that the next VL will be carried out 6 months after the start of this 2nd line ART.<br><br>If the control VL is> 1000 copies/mm3<br>Invite the patient to present and explain their result and tell them that they must switch to the 3(rd)) line ART regime<br>Filling in the resistance test request forms and directing them to the laboratory indicated for taking the sample required for the test and forwarding the sample to the reference laboratory.<br>On receipt of the resistance test result, invite the patient to present the result and begin therapeutic education.<br>When the patient is ready, prescribe and dispense 3rd line ART<br>Give monthly treatment follow-up appointments and inform the patient that the next VL will due 6 months after the start of the 3(rd)) line treatment.<br>Tell the patient that you are available to help with any concerns they may have about their ART, and say goodbye. |

## II. RETENTION

The HIV care cascade includes HIV testing, linkage, initiation antiretroviral treatment and retention on antiretroviral treatment to achieve viral suppression.

Factors that can influence patient retention in terms of access to services include the direct costs of accessing services, ARV stock-outs, the absence of a monitoring system, co-morbidities and forgetfulness.

### II.1. Identification, search and support for absent patients, SOP

Each treatment centre/unit dispenses ARVs to patients must have a system for identifying patients who have missed an appointment.

Interruption of ART may lead to a rebound in viral load and clinical progression of HIV.

- Any patient who misses an appointment and interrupts treatment is defined as a "defaulter";
- Any patient who stops treatment for 90 consecutive days or more is defined as "lost to follow-up".

As far as possible, the care team should try treatment within a short timeframe. Patients who return after being lost to follow-up should be assessed for any OIs and re-engaged in care.

Health facilities must collaborate with the CBOs operating in their area in order to facilitate the search for patients lost to follow-up and for defaulters.

## II.2. Retention of infected children in the care system

Each health facility must set up a system for monitoring and retaining children on ARV treatment. This system must involve all staff (healthcare providers and PSAs) and parents/guardians in order to optimise the quality of the services offered. Retention of infected children must also involve retention agents or psychosocial counsellors (PSAs), who are given responsibility for the day-to-day monitoring of HIV-positive children. Each retention agent must have a cohort of children and a diary to document their follow-up appointments, as well as telephone credit and transport costs for tracing missed appointments.

To this end, the retention agent must:

- Make a list of the children expected each day;
- Call parents/guardians to remind them of the appointment;
- At the end of each consultation day, identify which children have attended and which have missed their follow-up visit;
- Use this list to trace missed appointments by telephone and/or home visits;
- Appropriately document the results of the research for each of these children ;
- Receive any patient who has been traced and found at the health centre for an assessment of the reason for the missed appointment, provide appropriate counselling and update records.

## II.3. Retention in the adolescent care system

- **Set up "teen-friendly services**" Solicit their opinions on:
    - Creating a space that's friendly and conducive to them;
    - Adapting the timetable of services to take account of other demands in life;
    - Setting up a system using preventive and curative care services;
    - Planning and facilitating care activities.

- **Organising the adolescent care system**

Group adolescents by age group or area of interest and arrange for them to be seen at the health facility on the same day:

- Organise appointments so that adolescents can benefit from as many services as possible when they come to the health facility for their follow-up visit;
- Discuss with them the services they would like to receive during their follow-up visit to the health facility.

- Organising and facilitating support group activities
- Organise a support group for young teenagers and another for older teenagers;
- Discuss with them the organisation and facilitation of support group activities, diversifying them as much as possible and encouraging their active participation;
- Encourage teenagers to innovate and create during support group sessions;
- Consider organising camps for them outside the health facility or study visits to places that are conducive to their development;
- Involve teenage champions or peer educators in facilitating support group sessions.

# III. PSYCHOSOCIAL SUPPORT

## III.1. Psychological care

Psychological support is an ongoing process that begins at the time of HIV diagnosis and continues through support services not always provided by the medical sector. PLHIV are confronted with serious psychological problems and existential crises at a time when their coping resources are compromised by their weakened state of health. By observing and listening to the psychological processes and their hazards, the trained psychologist/care provider identifies the nature of the mechanisms at play in so-called normal and/or pathological psychological functioning, and suggests a course of action.

## III.2. Qualities required psychological support and/or therapeutic patient education

- **Ability to build trust:** active listening, showing interest
    - Empathy: understanding what the person is feeling without necessarily feeling the same emotions;
    - Self-control: understanding the reactions of clientsand their families and controlling your own reactions;
    - Neutrality and tolerance: non-judgement, overcoming your own prejudices and stereotypes,
    - Clarity and precision: master the knowledge of the subject and explain it;
    - Ability to work in a team;
    - Commitment: availability, keeping one's word; responsibility;
    - Knowing your limits: knowing how to stop and how to refer;
    - Respect for confidentiality ;
    - Mastery of communication technique...

- **Assessment of psychological abilities**
    - Recognition of signs of psychological distress (careless dress, crying, shifty eyes, etc.);
    - Identifying the person's capacity for psychological resistance, by asking them about their reactions to difficult life events they have already experienced, sexuality, etc.
    - Respect for intimacy and privacy (avoid discussing intimate subjects if they are of no interest to the support or if the person does not wish to do so).

# IV. THERAPEUTIC PATIENT EDUCATION

## IV.1. Definition

**Therapeutic education is a learning process** that enables patients to **acquire skills** that will help them to **maintain** or **improve** their quality life. In paediatrics, it is carried out with the child and/or his/her parent/guardian.

It prepares **children/adolescents** for announcement of their HIV-positive status, so that they can be linked to treatment, and at any other time in the life of a person living with HIV for whom there is a risk of a slackening in their treatment. It provides support during the transition to adolescence.

Its aim is helping patients and their families to:

- Understanding your illness and treatment;
- Cooperating with carers ;
- Living as healthily as possible;
- Maintaining or improving quality of life;
- Taking charge of your health;
- Acquire and maintain the resources needed to manage life with the disease as effectively possible.

It is important put in place an education procedure that will make it easier care providers to carry out the ECP.

**Pre-therapeutic** education consists of:

- **Explain** :
    - The aim of the treatment;
    - Reasons why treatment should be started immediately and continued over a long period;
    - Treatment details (name of the product, dose, presentation, frequency administration, route of administration and possible side effects);
    - The link achieving results from ARV treatment, which depends on the quality adherence;
    - The consequences of poor adherence (HIV MTCT, onset of OIs, HIV resistance to ARVs, death);
    - Treatment monitoring procedures (clinical and biological monitoring).
- Identify any factors likely interfere with treatment and discuss possible solutions;
- Ask the client to commit to taking the treatment;

- Express his/her (the provider's) willingness to support the client as far as possible.

## IV.2. Therapeutic education operating procedures

therapeutic patient education procedure has 04 stages:

- Educational diagnosis ;
- Education ;
- Implementation ;
- Assessment.

### SOP 1 : Educational diagnosis

The care provider must :

- Organise a meeting with the patient in a setting that ensures confidentiality;
- Introduce yourself and explain the reasons for the interview;
- Obtaining the patient's consent ;
- Talking to the patient to make the right diagnosis;
- Ask questions exploring the following dimensions: biological **(**what's wrong with them?); social and professional (what do they do?); psycho-affective (how do they feel?); cognitive (what do they know about their illness?); motivational (what are their plans?);
- Diagnose or identify the skills the patient needs to live better with his or her illness;
- Design or build an education with the child that meets his or her needs as closely as possible;
- Summarise the session ;
- Negotiate another appointment if necessary.

### SOP 2: The Education

The care provider must:

- Negotiate the patient's commitment or agreement to work together on the skills and educational objectives to be acquired by the patient at the end of the education programme, and on the means to be used by the educator to enable the patient achieve the determined skills (this contract may be verbal or in writing);
- Go through the education with the patient and agree on the start of implementation of the plan.

### SOP 3: Implementation

The care provider must:

- Organise a meeting with the patient in a setting that ensures confidentiality;
- Introduce yourself and explain the reasons for the meeting;
- Introduce the aim of the session and make the link with the previous session;
- Ask the patient to talk about their knowledge and experience of the subject;
- Validate the patient's knowledge and, if necessary, add new knowledge
- Check the patient's understanding ;
- Working with patients transfer or use their knowledge in their daily lives
- Summing up ;

- Make the link with the next session and make an appointment with the patient;
- Document the activity using the appropriate tools.

**NB** *:*

- *Involving and negotiating with parents/guardians if the patient is a child/adolescent;*
- *The use of a learning is essential, especially for children;*
- *Skills can be acquired after 1 or more sessions.*

### SOP 4: Assessment

At the end of the education cycle, the care provider must:

- Assessing patient skills and satisfaction;
- Make an educational decision with the patient based on the results of the assessment;
- Encourage the patient to join a support group;
- Congratulate the patient on their confidence and perseverance;
- Summarise the session ;
- Document the activity using the appropriate tools;
- Negotiate another appointment if necessary.

## IV.3. Practice of the trained clinical psychologist/care provider

During the psychological consultation, after the patient has been welcomed and put at ease, it is important to return to the assessment through:

- Exploration and categorisation with the client/guardian couple and the client alone: the history of the illness, experiences, antecedents, psychological aspects, socialisation, knowledge of one's status and acceptance.

Following this initial interview, a diagnosis will be made and an indication given of the course of action to be taken, and the topics below may be addressed depending on the problem identified.

- The reorganisation of interviews on:
  - Information about HIV status or preparation for the announcement of HIV status;
  - Adherence to ART ;
  - Life skills (self-esteem, assertiveness, power over one's life;
  - Adolescent love life and sexuality;
  - The existence of risk-taking and antisocial behaviour;
  - The existence of behavioural problems (anxiety, depression, etc.)

Disclosure of HIV status must be individualised, taking into account the child/adolescent, the parent(s), the family, the household and the community.

## IV.4. Psychosocial support depending on the population

### ❖ Psychosocial support for children undergoing ARV treatment

Psychosocial support for children undergoing ARV treatment is essential if the treatment is to be effective. Children must find this a source of motivation to accept their diagnosis, to take their treatment relentlessly and to greater responsibility for achieving their life goals. To achieve this, each health facility needs to set up a psychosocial care team made up of clinical psychologists, social workers, social anthropologists, peer educators and social educators.

**The elements of the psychosocial support system for children and adolescents to be put in place in health facilities are:**

- Systematic, personalised counselling for all children and their parents at the time of HIV testing and at each follow-up visit to the health facility;
- Announcing the diagnosis of HIV infection children at the appropriate age (starting at around 7 - 8 years and ending at around 12 years);
- The creation and enrolment of children in support groups/therapeutic classes by age group (0 - 5 years involves parents; 6 - 9 years; 10 - 14 years and 15 - 19 years);
- Regular organisation of support group activities;
- The organisation of camps or study visits to services or institutions that work for the development of children and in particular adolescents;
- The pair-education system involving "child or adolescent champions" in the process of building up and providing psychological support to their peers;
- The use of **appropriate** and validated **tools** reinforce adherence to ART by children/adolescents and/or their parents/guardians.

## Announcement for children

Disclosing HIV status to children is a challenge for parents/carers and healthcare providers. Disclosure is **an ongoing process** rather than an isolated event. It starts with a relationship of trust that parents (guardians) and/or healthcare workers build with the child, in which the child is always told the truth, in a positive way. Adults struggle to know when and how to tell children that they are infected, often struggling to find the right words.

Advantages of advertising

| For the child | For the parent/guardian |
|---|---|
| • **Perhaps relieved to learn the cause of his illness**<br>• **Can feel more confident**<br>• **May have a greater say in medical care decisions**<br>• **Can reduce the disruptive behaviour**<br>• **Can adherence with treatment**<br>• **Can improve social functioning and school results** | • Relieves stress and anxiety that accompany secrecy and disappointment<br>• Opportunity to develop a relationship of trust and more open communication with the child |

## Obstacles to advertising

- Fear that the infected child will inappropriately disclose his or her HIV status, particularly in families where the diagnosis is closely monitored;
- Fear of stigmatisation, rejection and loss of support from family/community;
- Desire to protect the child, concern for the child's future;
- Possibility that the burden learning about one's HIV status leads to depression or other mental health problems;
- Feelings of guilt and shame that can prevent HIV-infected carers from disclosing their own infection to their child.

**Assessment readiness to announce**

| The child | The parent or guardian |
|---|---|
| • **Is the child symptomatic ?**<br>• **Is he taking any medication?**<br>• **How old is the child?**<br>• **Does the child live with a sick parent or family member?**<br>• **Does the child ask questions about HIV?**<br>• **Does the child seem distressed, anxious or worried?**<br>• **- Is the child sexually active and at risk of contracting or transmitting HIV?** | • Has he been tested for HIV?<br>• Is it infected ? Symptomatic ?<br>• Is he taking any medication?<br>• Are any adults in the household infected HIV? Who knows ?<br>• Are the other children in the household infected HIV? Who knows ?<br>• How many family members taking HIV-related medication?<br>• Are treatments generally available in the community?<br>• Does the child know anyone in the community who is open about their HIV status?<br>• Are there any risks to the family (isolation, discrimination) in the event of inadvertent disclosure?<br>• Are there any resources in the community children - a youth group and/or adults from the community? with whom they can talk? |

The announcement process begins at the age of 3/4, with discussions with the guardians/parents. The ultimate goal is for children to know their HIV status by the age of 10/11, and to be informed in a safe and positive way.

- Final disclosure of HIV status to the child is an essential and ongoing process regular monitoring, and an age-appropriate disclosure plan should be established for all children. Disclosure should be carried out by the guardian with the help of the healthcare team.
- The announcement is made by the guardian in the presence of health staff. There may be concerns about the effect of the disclosure on the child and the family, and these should be considered and resolved beforehand;
- Parents/guardians must be prepared to answer the child's questions at home, as the whole family may worry about the possible consequences of stigmatisation in the community if the family secret is revealed.

**The process of disclosing HIV status to children and adolescents** Disclosing HIV status to children and adolescents should take into account their age, psychosocial maturity and family, social and clinical context.

***Table 62:*** *The process telling children/adolescents their HIV status*

| Depends on the following factors | Registration procedure |
|---|---|
| • **The child's age**<br>• **The child's maturity**<br>• **The childs experience, they already know**<br>• **The child's personality**<br>• **The child's medical history**<br>• **Whether or not the child is already taking ARVs**<br>• **The health of other family members**<br>• **The family** | Private and confidential location<br>• Planned<br>• Progressive<br>• Continue. |

### ❖ Psychosocial support for adults on ARV treatment

This is a therapeutic support approach based on a care-giver-patient relationship centred on the infected and/or affected adolescent, with the aim of ensuring continuity of care in liaison with the social environment. It can take several forms, including clinical interviews with diagnostic and therapeutic aims, family interviews and group activities.

It consists of :

- Listen sympathetically (make room for the spoken and unspoken word);
- Helping people to become aware (identifying their problem, making choices and supporting them in making and implementing decisions);
- Supporting you through difficult times and good times

### ❖ Psychosocial support for HIV+ PW

The question facing this mother following childbirth is whether ART and all the preventive measures she has taken since pregnancy and HIV infection will be sufficient to protect the child from HIV infection. As far as possible, you should answer her questions and give her all the support she needs to the best of this waiting period.

- **Sharing your HIV status with your partner or any other person**

A trained counsellor/care provider can help a client develop a plan for sharing information about their HIV status. This involves exploring the options of who and when to tell. This sharing can help to combat stigma and encourage family or community members to know their own HIV status.

Informing sexual partners an individual's HIV infection is not only an effective way of stopping HIV transmission, but also enables partners to access care and support. The main process informing partners of an individual's HIV infection is partner notification.

- **How to discuss notification/sharing of HIV status among adults?**

- Ask the patient if they have shared their HIV test result or if they are willing to reveal it to anyone;
- Discuss the problems of sharing HIV status;
- Assess whether you are ready to share your HIV status and with whom;
- Assess social support and needs (refer to support groups);
- Provide skills for sharing HIV status (repetition can help);
- Help the patient to draw up a plan for sharing his or her HIV status if the time is not right;
- Encourage the partner to consider getting tested and to explore the obstacles. As couples may have different HIV statuses, it is important for the partner to be tested;
- Reassure the patient that you will keep the result confidential and that sharing HIV status is voluntary.

- **If the patient does not want to share his result:**
  - Make sure that the results remain confidential;
  - Exploring the difficulties and obstacles to sharing status;
  - Address fears and lack of skills (help in providing skills);
  - Keep motivating the client ;
  - Advise the client not to harm others;
  - Offer help with notification (e.g. talking to the spouse);
  - Suggest another appointment and more help if needed (e.g. trained advisers or peers)
  - Therapeutic education.

**NB:** For women, discuss the potential advantages and disadvantages of sharing a positive result and of involving and testing male partners.

# CHAPTER 8: ADVANCED HIV DISEASE AND OPPORTUNISTIC INFECTIONS

## I. ADVANCED HIV DISEASE

- Advanced HIV disease (AVD) is defined for adults, adolescents and children aged 5 and over as any patient in WHO clinical stage 3 or 4 or with a CD4 count of less than 200 cells/mm3;
- Any HIV-infected child under the age of 5 is considered to have advanced HIV disease**, with the exception of** children over 2 years of age who have been continuously on ART for more than a year and are clinically stable.

This definition includes newly-diagnosed HIV-positive patients, as well as patients who have failed treatment or who have been lost to follow-up and returned to ART.

Suggest CD4 testing for all newly diagnosed HIV+ patients, including children, all patients lost to follow-up treatment, and all patients classified as WHO stage 3 or 4.

- For people resuming treatment after an interruption or after a therapeutic failure developing advanced HIV disease, for these patients, it is necessary to:

- Carry out a full clinical assessment;
- Offer the complete package of services;
- Intensive biological monitoring ;
- Perform viral load test (patient fails).

### I.1. Advanced HIV disease adults

#### i. *Causes of morbidity and mortality in adults with advanced HIV disease*

The main causes of morbidity and mortality in adults with advanced HIV disease are: tuberculosis, severe bacterial infections, invasive fungal infections (cryptococcal disease, histoplasmosis), toxoplasmosis and *Pneumocystis jiroveci* pneumonia.

#### ii. *Assessment of advanced disease*

The best indicator of the stage of the disease and the immediate risk of death is the CD4 lymphocyte count< 200cell/mm3; in the absence of CD4, consider WHO clinical stages **III and IV.**

#### *iii. Provision a care package*

A package of interventions including screening, treatment and/or prophylaxis for major opportunistic infections, rapid initiation of ARVs and support to reinforce adherence should be offered to anyone with advanced HIV disease.

**Remarks :**

- The care package for pregnant and breastfeeding women with advanced HIV disease is the same as for those who are not;
- Patients already on ARVs with advanced disease should not stop their treatment. (with the exception of cryptococcosis).

***Table 63**: Care package for people with advanced HIV disease*

| Domains | Intervention | CD4 count | Adults and teenagers nts | Children |
|---|---|---|---|---|
| **Screening and diagnosis** | Xpert MTB/RIF on sputum as the first diagnostic test for tuberculosis in symptomatic patients | Whatever the result | Yes | Yes |
| | LAM urine test the diagnosis of tuberculosis in patients signs and symptoms of the disease | ≤100 cells/mm$^3$ or whatever the result if Stage III or IV | Yes | Yes* |
| | Screening for cryptococcal antigen (CrAg) | ≤ 100 cells/mm$^3$ | Yes | No |
| **Prophylaxis and presumptive treatment** | Cotrimoxazole prophylaxis | WHO clinical stage III or IV. Regardless of or the result of the CD4 count | Yes | Yes** |
| | Preventive treatment of tuberculosis INH (FEC and children≤ 15 years) 3HP (PLHIV >15 years) | Whatever the result | Yes | Yes$^{\#}$ |
| | Preventive treatment with fluconazole | < 100 cells/mm$^3$ | Yes | Not applicable (screening not recommended) |
| **Introduction to ART** | Delay initiation of ART if the clinical signs and symptoms are suggestive of tuberculosis, or cryptococcal meningitis | Whatever the result | Yes | Yes |
| **Support tailored to observance** | Tailor-made advice to ensure adherence to the development of a care package for the disease, including home visits where possible | < 200 cells/mm$^3$ | Yes | Yes |

### I.1.1 Screening and management of tuberculosis in PLHIV

Tuberculosis is preventable and curable. It is the leading cause of morbidity and mortality among people living with HIV, and can occur at any stage HIV immunodepression, regardless of CD4 lymphocyte levels, and defines a transition to the AIDS stage according to the CDC classification, or to WHO stage III (pulmonary tuberculosis) or stage IV (extrapulmonary tuberculosis).

- Active search for tuberculosis in PLHIV and diagnosis of tuberculosis

Clinical signs and symptoms suggestive of TB: These are mainly the cardinal signs and symptoms, which are: cough of any duration, fever, night sweats, weight loss, etc.
Loss of appetite, fatigue, dyspnoea, chest pain and haemoptysis are common symptoms.

In PLHIV, the presence even one of the signs/symptoms mentioned above should raise the suspicion of tuberculosis. Fever and weight loss are more common in PHAs with very advanced immunosuppression than in HIV-negative patients.
For this reason, it is important for service providers to :

- Look for TB at all points of entry and, if suspected, request both TB and HIV tests for people who do not know their HIV status;
- Actively search for TB in PLHIV at every contact with services;
- Prevent the transmission of TB by implementing infection control measures;
- Initiate tuberculosis chemoprophylaxis according to the above-mentioned protocols for PLWHA in whom active TB has been eliminated.

### I.1.2 Screening and management of Meningeal Cryptococcosis in PLHIV

- For any PHA presenting with a meningeal syndrome or chronic headache, a lumbar puncture with measurement of CSF opening pressure and a rapid cryptococcal antigen test is recommended as the preferred diagnostic approach.

Screening for cryptococcal disease is recommended prior to initiation or reinitiation of ARVs in adults and adolescents living with HIV with a CD4 count of less than 100 cells/mm3.

Cryptococcal meningitis is one of the main causes of mortality in HIV-infected adults, both before and after initiation of ART. The search for cryptococcal meningitis should be systematic if the CD4 count is less than 200 cells/mm3, and should include screening for serum cryptococcal antigen.

In patients with cryptococcal meningitis, immediate initiation of ART is not recommended due to the high risk of developing life-threatening IRS with central nervous system involvement.

*Table 64: ECP for Cryptococcal meningitis*

| **Diagnosis :**<br>**Screening :**<br>**Detection of Cryptococcus Neoformans antigen (Ag Cr) in CSF OR culture of LCROu**<br>**Positive ink microscopy** |
|---|
| Primary prophylaxis: systematic antifungal treatment for cryptococcal infection is not recommended in PLHIV with CD4 < 200/mm3 prior to initiation of ART, when the cryptococcal antigen is negative or when the antigenic status is unknown.<br>(Testing Ag Cr must be systematic) |
| Treatment :<br>1. induction (2 weeks): 5-Fluorocystosine 100 mg/kg/day in 3 to 4 doses per day by mouth + fluconazole 1200 mg per day in one dose by mouth or IV in adults or 12 mg/kg/day in children and adolescents.<br>2. consolidation phase (for 8 weeks): Fluconazole 800 mg/day orally in adults or 6 to 12 mg/kg/day in children and adolescents<br>3. Maintenance phase: Fluconazole 200 mg/d in adults or 6mg/kg in children and adolescents for at least 12 months. Consider stopping treatment if CD4 count > 200 cells/mm$^3$ on 2 successive samples taken 6 months apart and VL suppressed/<br>undetectable over the same period. |

**Alternative protocols for induction phase only**

• Amphotericin B deoxycholate (1.0 mg/kg/day) + Fluconazole (1200 mg/day) in adults or 12mg/kg/day in children and adolescents.

• Or amphotericin deoxycholate 1 mg/kg/day IV+ 5-flourocytosine 100 mg/kg/day orally for 7 days then fluconazole 1200 mg/day in adults or 12 mg/kg/day in children and adolescents for 07 days.

### I.1.3 Screening and management of Pneumocystis (PCP) in PLHIV

Pulmonary pneumocystis is an infection caused by a parasite, *Pneumocystis jiverocii*. It occurs in patients with severe immunodepression.

*Table 65: Treatment of pneumocystis*

| **Management of Pneumocystis** |
|---|
| Diagnosis |
| • Presumptive: CD4 count < 200/mm3 with acute respiratory distress syndrome (dyspnoea/desaturation) Cough of any duration. Radiology (image of miliaria).<br>• Definitive: RDS (cough of any duration and dyspnoea) and diagnosis based on cytological examination of sputum (80% sensitivity), bronchoalveolar lavage (sensitivity > ) or biopsy of respiratory tissue taken by bronchoscopy (sensitivity>). |
| Primary prophylaxis<br>• All PLHIV with CD4 count≤ 200 mm3 Cotrimoxazole: 1 dose of 800/160 per day<br>• Alternative in case allergy to Cotrimoxazole |

| |
|---|
| o Atovaquone (1500 mg/day PO with meals) +/- Pyrimethamine (75 mg 1x/week) + Folic acid (25-30 mg 1x/week)<br>Dapsone (Disulone® 50 to 100 mg/d) (look for G6PD deficiency) +/- Pyrimethamine (75 mg 1x/week) + Folic acid (25-30 mg 1x/week)<br>• Stop if immune restoration or VL suppressed/undetectable more than 3 months |
| Treatment and duration<br>• Cotrimoxazole (TMP/SMX) :<br>3 x 5 mg/kg/day not to exceed 12 ampoules/day if by IV for severe forms; O if pers OS<br>6 cps at 800/160 mg divided into 3 daily doses<br>Adjuvant treatment: prednisone no later than 72 hours after initiation of CTX for a period of 05 days, if Pa02 < 10 kPA or < 70 mmHg (rule out TB before any corticosteroid therapy).<br>• the event of allergy to Cotrimoxazole<br>o Atovaquone oral suspension 2 x 750 mg/day po (with a meal) or<br>o Dapsone 1 x 100 mg/day in case of G6PD deficiency for 21 days then secondary prophylaxis |

### I.1.4 Screening and management of cerebral toxoplasmosis in PLHIV

Toxoplasmosis is a disease caused by the *Toxoplasma gondii* parasite. In people living with HIV, clinical manifestations occur as part of a reactivation of cysts that have remained quiescent. Toxoplasmosis usually occurs when the CD4 count is below 200/mm3 and in the absence of specific prophylaxis. The most common sites of infection are the brain and eyes.

***Table 66:*** *Treatment of cerebral toxoplasmosis*

| **Management of cerebral toxoplasmosis** |
|---|
| Clinical picture: acute onset associated with fever, headache, neurological signs of focalization, sometimes altered state of consciousness.. |
| Serology is not useful. |
| Diagnosis: Cerebral imaging (CT or MRI) with and without injection of contrast medium reveals cocardial images (image of annular contrast with<br>central hypodensity corresponding to abscesses). |
| Primary and secondary prevention is based on CTX 800/160 mg. Secondary prophylaxis may be discontinued if the CD4 count> 200/mm3 and/or undetectable viremia during<br>6 months. |
| Curative treatment :<br>• Attack treatment lasting 8 weeks.<br>• The course of cerebral toxoplasmosis is rapidly favourable with appropriate treatment. In the absence of a favourable outcome after at least 2 weeks of trial treatment, the diagnosis should be reconsidered.<br>• 1st intention :<br>o Pyrimethamine (100 mg on days 1 and 2 then 1 mg/kg/d, i.e. 50 to 75 mg/d) + Sulfadiazine (100 mg/kg/d, divided into 4 doses with a maximum of 6 g/d) + folinic acid 25 mg/d |

| Management of cerebral toxoplasmosis |
| --- |
| o intolerant to sulphonamides, replace Sulfadiazine with Clindamycin (DALACINE 40mg/kg/d or 1.6 g-2.4 g/d in 3 to 4 doses IV or PO).<br>• Alternative<br>o Cotrimoxazole 800/160 mg: 2cp x 3/d |
| Adjuvant Therapy :<br>Folinic acid (25 mg/dr)<br>• Anticonvulsant treatment if there is a history or presence of comitial seizures.<br>• Corticosteroid therapy in cases severe periwound oedema.<br>• Motor physiotherapy should be started early if there is a motor deficit. |

## I.2. Advanced HIV disease children

*The* major *causes* of morbidity and mortality in children under 5. These causes are pneumonia (including *Pneumocystis* jirovecci pneumonia), tuberculosis, severe bacterial infections, diarrhoeal diseases and severe acute malnutrition. Although not an infection, severe acute malnutrition is a frequent consequence of advanced HIV infection and a major risk factor for death.

### I.2.1. STOP AIDS" concept

The aim of this concept is to prevent or halt the progression of the infection to AIDS. The most frequent or most serious opportunistic infections (OIs) need to be detected, treatment for these OIs initiated as early as possible, optimised ART initiated rapidly and measures taken to prevent progression to AIDS.

Prevention for children's health includes measures specific to HIV infection and non-specific measures.


**Screen= Screen Treat**

**Optimize= Optimiser**

**Prevent = Prévenir**

| | |
|---|---|
| **Screening** | |
| **TB** | • Search for signs and symptoms of tuberculosis using available screening tools (algorithms, SOPs, TB guides and HIV guides)<br>• If the TB screening is positive, use the following diagnostic tests to confirm tuberculosis if necessary<br>- Xpert in stools, sputum or other fluids (CSF, ascites, pleural fluid),<br>- If CD4< 200 LF-LAM (urine LAM or TB LAM) |
| **Cryptococcal infection in adolescents** | Test for cryptococcal antigens serum, plasma or blood (blood CrAg)<br>If positive, perform a lumbar puncture |
| **Malnutrition** | • Weight for size<br>• Size age<br>• Brachial perimeter in children aged 2-5 years |
| **Treat** | |

| | |
|---|---|
| **TB, infection, severe bacterial, severe pneumonia, cryptococcal meningitis, severe acute malnutrition** | In accordance with national directives |
| **Optimize** | |
| **Rapid initiation of ART** | Preferably on the same day or no later than seven days after diagnosis with optimal treatment regimens |
| **Advice initiating ART** | In accordance with national guidelines |
| **Prevent** | |
| **Pneumocystis jirovecii pneumonia** | Cotrimozaxole prophylaxis |
| **TB** | TB preventive treatment (3HP for PLHIV) > 15 years and INH for FEC and PLHIV ≤15 years |
| **Cryptococcal meningitis in adolescents** | Preventive treatment with fluconazole cryptococcal antigen positive or if CD4 count <100 C/mm3 |
| **Vaccinations** | • Pneumococcal vaccine<br>• Human papillomavirus<br>• Measles |

## A. Screening and diagnosis

| Pathology | Screening/diagnosis<br>0-4 years | 5-9 years | 10-14 years |
|---|---|---|---|
| **TB** | **Screening** | | |
| | • Contact with a PTB+ case<br>• Cough regardless of duration<br>• Fever<br>• Stunted growth<br>• Lymphadenopathy | • Contact with a PTB+ case<br>• Cough regardless of duration<br>• Fever<br>• Stunted growth<br>• Lymphadenopathy | • Cough regardless of duration<br>• Fever<br>• Weight loss<br>• Night sweats<br>• Lymphadenopathy |
| | **Diagnosis** | | |
| **Cryptococcal meningitis** | **Screening** | | |
| | Not specified | Not specified | -If CD4 available and <100/mm$^3$ : cryptococcal antigen (CrAg) assay in blood or urine |

| Pathology | Screening/diagnosis<br>0-4 years | 5-9 years | 10-14 years |
|---|---|---|---|
| | | | --If CD4 available and <100/mm$^3$ cryptococcal antigen ( CrAg ) assay in blood or urine<br>if CD4 not available: presence of neurological signs such as headaches, impaired consciousness |
| | **Diagnosis** | | |
| | | | -Lumbar puncture for CrAg or microscopy with Indian ink staining if CrAg not available<br>Probable meningitis if neurological signs present+ absence LP + CrAg positive in the blood |
| **Acute malnutrition (AM)** | **Screening** | | |
| | Wt/ Ht < -2 Z<br>Bilateral pedal edema<br>MUAC <12.5 cm (from 6 months of age) | Wt/ Ht < -2 Z (if Height ≤ 120 cm)<br>Wt/ Ht < 80%<br>Bilateral pedal edema | Wt/ Ht < -2 Z (if Size ≤ 120 cm)<br>Wt/ Ht < 80%<br>Bilateral pedal edema |
| | **Diagnosis** | | |
| | Moderate AM (MAM) if<br>Wt/ Ht ≥ -3 Z and < -2 Z **or**<br>MUAC ≥ 11.5 cm and < 12.5 cm **and**<br>absence of oedema | MAM if<br>Wt/ Ht ≥ -3 Z and < -2 Z **or**<br>MUAC ≥ 11.5 cm and < 12.5 cm **and** absence of oedema | MAM if<br>P/T ≥ -3 Z and < -2 Z **or**<br>MUAC ≥ 11.5 cm and < 12.5 cm<br>**and** absence of oedema |
| | Severe AM (SAM) if<br>Wt/ Ht < -3 Z **or**<br>MUAC < 11.5 cm **Or**<br>presence of bilateral pedal oedema | SAM if<br>Wt/ Ht < 70% **or**<br>MUAC < -3 Z **Or**<br>presence of pedal nutritional oedema | SAM if<br>Wt/ Ht < 70% **or**<br>MUAC < - 3 Z **or**<br>presence of bilateral nutritional oedema |

**Treatment**

| Pathology | 0-4 | | | 5-9 | 10-14 |
|---|---|---|---|---|---|
| **TB** | RHEZ for 2 months then HR for 4 months | | | | |
| | | **RHZ (75/50/ 150 mg)*** | **E (100 mg)*** | **HR (75/50 mg)*** | Since 2022, the WHO has recommended **the use of faeces** for the diagnosis of **pulmonary TB in children** with signs and symptoms of pulmonary TB using the Xpert MTB/RIF Ultra |
| | | 2 | | 4 | |
| | **4-6 kg** | 1 | 1 | month | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **7-10 kg** | 2 | 2 | 2 | 40-54 kg | 3 | 3 |
| | **11-14 kg** | 3 | 2 | 3 | 55-70 kg | 4 | 4 |
| | **15-19 kg** | 4 | 3 | 4 | >70 kg | 5 | 5 |
| | **20- 24 kg** | 5 | 4 | 5 | | | |
| *Cp dispersible | | | | | | | |

| | | | |
|---|---|---|---|
| **Cryptococcal meningitis** | 1- Fluconazole (12 mg/kg/day, max 1200 mg) + Flucytosine (100 mg/kg/day) for 2 weeks, **then** 800 mg of Fluconazole per day from the 3rd to the 10th week<br>2- Amphotericin B deoxycholate (1 mg/kg/day) + Flucytosine (100 mg/kg/day) for 7 days **then** Fluconazole (12 mg/kg/day, max 1200 mg) up to the 2nd week then **(** 6-12 mg/kg/day, max 800 mg) Fluconazole daily from the 3rd to the 10th week<br>Plan secondary prophylaxis at the end of treatment | | |
| **PCP** | Cotrimoxazole (TMP/SMX) 15-20 mg/kg/day IV or oral, for 21 days | | |
| **Pneumonia Severe bacterial infections** | Amoxicillin –clavulanic acid (500 mg +62.5 mg)<br>-Ampicillin 100 – 200 mg/kg/day IV in 3 injections + Gentamycin 3 – 5 mg/kg/day IM or IV in 2 injections 5 to 7 days OR<br>-Ceftriaxone: 50 - 75 mg/kg IV in 1 or 2 injections **OR**<br>- Cefotaxime: 150-200 mg/kg IV in 3 or 4 injections<br>- Oxygen therapy if severe respiratory distress | | |
| | -Ceftriaxone: 50-75 mg/kg in 1 or 2 doses **OR**<br>- Cefotaxime: 100-200 mg/kg in 3 or 4 doses **OR**<br>- Cefuroxime: 100-150 mg/kg in 3 doses | | |
| **Acute malnutrition** | CNF chapter offers of services | | |

## B. Delayed initiation of ARVs optimised

- **Optimisation**= The right treatment, in the right formulation, at the right dose and at the right time (see section "Clinical care and treatment").

Although rapid initiation of ARVs within 07 days of diagnosis is a priority, especially for children over 5 years of age, children requiring hospitalisation for severe acute malnutrition, tuberculous meningitis and other illnesses need to be clinically stabilised first.

| Weight | 1st line | 2e line |
|---|---|---|
| **3-20 kg** | ABC+ 3TC+ DTG 10 | AZT + 3TC + LPV/r |
| **20-30 kg** | ABC+ 3TC+ DTG 50 | AZT + 3TC + LPV/r (ATV/r) |
| **>30 kg** | TDF+3TC+ DTG 50 | AZT + 3TC + LPV/r (ATV/r) |

- Time to initiation of ARVs

| Disease | Time for introduction of ARVs |
|---|---|
| **Tuberculosis** | 2 to 8 weeks (neuromeningeal location) |
| **Cryptococcal meningitis** | -2 to 4 weeks Amphotericin+ Fluconazole<br>- 4 to 6 weeks if Fluconazole alone taken orally in high doses |
| **Severe acute malnutrition** | 1 to 2 weeks |

# II. OTHER OPPORTUNISTIC INFECTIONS

## II.1. Oesophageal candidiasis

- TB treatment is the same for children whether or not they are infected with HIV.
- The treatment of severe pneumonia in infants is very different if they are living with HIV: PCP.
- Cryptococcal meningitis is in children, but common in adolescents.
- Malnutrition: the main cause of death. Treatment is the same for children whether or not they are infected with HIV.

Fluconazole and itraconazole interact with ARVs.

***Table 67:*** *1st-line treatment for oesophageal candidiasis*

| Management of oesophageal candidiasis |
|---|
| Presumptive diagnosis: Recent onset of dysphagia and vomiting<br>Diagnosis of certainty: FOGD endoscopy with biopsy (histology) |
| Fluconazole: 200 mg/day po for 14-21 days |
| Or Itraconazole: 100-200 mg/d po (oral solution on an empty stomach) for 10-14 days. |

## II.2. Herpes simplex virus (HSV) infection

| Diagnosis : HSV PCR/cell culture/antigen test/cytodiagnosis |
|---|
| **Severe herpetic manifestations in AIDS*: aciclovir IV 10 mg/kg/8h for 14-21 days.** |
| **If resistant to aciclovir: foscarnet 90 mg x 2/d.** |
| **Herpetic meningoencephalitis: aciclovir IV 15 mg/kg/8h for 21 days.** |

## III. PREVENTION OF OPPORTUNISTIC INFECTIONS

The prevention of OIs through chemoprophylaxis is a strategy aimed at using drugs in PLHIV to reduce occurrence of opportunistic infections (primary prophylaxis) or the recurrence of a previously treated and controlled infection (secondary prophylaxis). Early initiation of ART is the most important preventive strategy for reducing the incidence and high mortality associated with these diseases.

The table below provides information on the drugs used according to the opportunistic infections to be prevented.

| | Indication | Dosage | Duration of treatment | Targets | Conditions |
|---|---|---|---|---|---|
| **Cotrimoxazole** | Bacterial infections and *Pneumocystis* pneumonia *Jirovecci* | 10 mg/kg/day | | From 6 weeks age | / |
| • **INH** | Tuberculosis | 10 mg/kg/day (max 300 mg) for 6 months | | For the PW and children 12 Months ≤ 15 years | No active TB |
| • **HP** | | 300/300 1cp/week for 12 weeks | | For people living with HIV> 15 years | |
| **Fluconazole** | Cryptococcal meningitis | 6 mg/kg/day (max 200 mg) for 12 months | | 10-14 years (teenagers) | -CrAg positive blood and no meningitis -after 10 weeks of treatment for cryptococcal meningitis |
| **Vaccinations** | | According to the EPI calendar Except RR1 at 6 months (instead of 9 months) | | 0-23 months 9 years old | No advanced disease for live vaccines: BCG, RR, Oral Polio, Rotavirus, VAA |
| **MILDA** | Malaria | / | | All | / |
| **Albendazole/ Mebendazole** | To intestinal | | | 0-4 years | / |

## III.1. Cotrimoxazole prophylaxis

- Given the high prevalence of bacterial infections and malaria, Cotrimoxazole prophylaxis should be initiated and continued regardless of CD4 or WHO clinical stage.
- Cotrimoxazole prophylaxis should be given to all PLHIV with active tuberculosis, regardless of CD4 count.

Cotrimoxazole (CTX) prophylaxis is an inexpensive and cost-effective way of reducing morbidity and mortality among people living with HIV. It protects against: Pneumocystis pneumonia (PCP), toxoplasmosis, diarrhoea caused by *Isospora belli* and *Cyclospora sp,* malaria and certain bacterial infections, including bacterial pneumonia and urinary tract infections.

### A. Criteria for initiation and discontinuation of CTX prophylaxis

Initiation and discontinuation of CTX prophylaxis takes into account age, viral load (VL), CD4 count and adverse events.

The universal option of cotrimoxazole prophylaxis is being considered in high-prevalence countries with a high infant mortality rate linked to infectious diseases and with limited healthcare infrastructures.

***Table 68**: Criteria for starting and stopping CTX prophylaxis*

| | Initiation criteria | Stop criteria |
|---|---|---|
| **Teenagers and HIV+ adults** | Regardless of the CD4 count as of confirmation of HIV infection | VLs suppressed<br>Undesirable side effects |

* When initiating CTX prophylaxis, healthcare staff must inform the PLHIV, parents and guardians, verbally or in writing, of the side effects (skin manifestations) associated with CTX, and advise them to stop taking CTX and go to the nearest clinic if they suspect that CTX is having an adverse effect.

In the event of allergy to CTX, if the CD4 count is <200 cells/mm3 (or CD4% <14%), give **dapsone 100 mg once a day**. However, dapsone should be discontinued once the viral load is undetectable on two consecutive samples, as dapsone can cause anaemia.

### B. Cotrimozaxole dosage for prophylaxis

The dosage for adults is one tablet of 800/160 or 960 mg per day (or 2cp of 400/80 mg per day).

| Weight | Dosage mg/d (based on 4 mg TMP/kg) | Drinkable suspension 240 mg/5 ml | Adult tablet 480 mg |
|---|---|---|---|
| **< 5 kg** | 16 to 20 mg per day | 2.5 ml | ¼ cp |
| **5 - 15 kg** | 40 mg | 5 ml | ½ cp |

| Weight | Dosage mg/d (based on 4 mg TMP/kg) | Drinkable suspension 240 mg/5 ml | Adult tablet 480 mg |
|---|---|---|---|
| **16 - 20 kg** | 60 mg | 10 ml | 1 cp |
| **21 - 30 kg** | 80 mg | 10 ml | 1 cp |
| **>30 kg** | 160 mg | - | 2 cp |

## III.2. Tuberculosis preventive treatment (TPT)

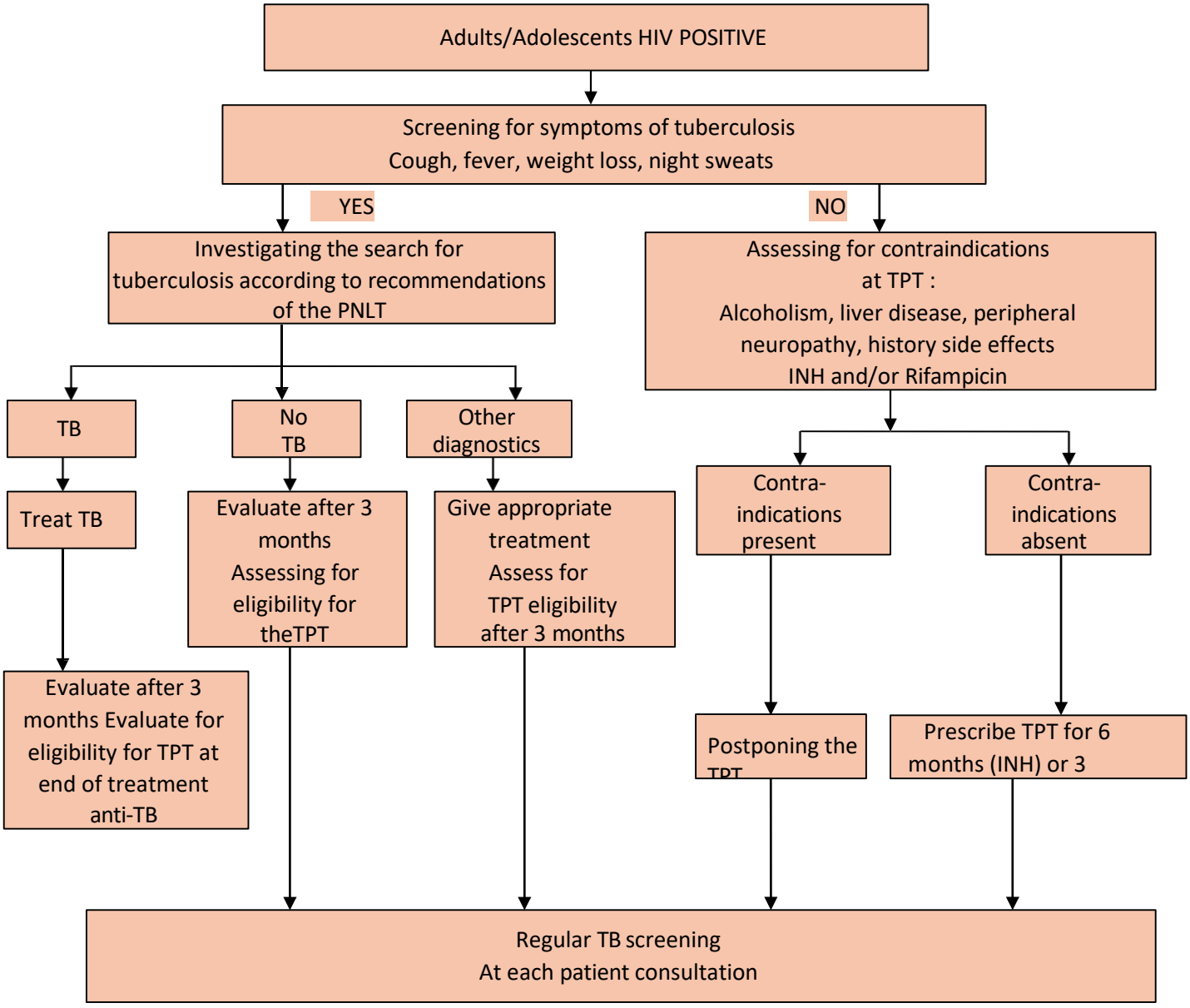
Adults and adolescents living with HIV in whom active tuberculosis has been eliminated must receive preventive treatment for tuberculosis. This treatment must also be given to those on ARV treatment, to pregnant women and to those who have previously been treated for tuberculosis, regardless of the degree of immunosuppression and even if the tuberculosis infection test is not available.

Although ART reduces the likelihood of developing TB disease, the incidence of TB among PLHIV on antiretroviral therapy is still 10 times higher than in the general population, with an annual risk of TB disease among PLHIV of 10 to 30%. TPT reduces the risk of tuberculosis in PLHIV by at least 60%. Combined with ART, the risk reduction is greater than 80%. This prophylaxis consists of administering Rifapentine and Isoniazid (HP) once a week for 3 months. For pregnant women and children aged between 12 months and 15 years, the protocol is INH one dose a day for 6 months. The short 3-month regimen of Rifapentine and Isoniazid (3 HP) is not yet recommended for children< 15 years, pregnant women or women of childbearing age.

All PLHIV should be screened for TB by looking for signs/symptoms suggestive of the disease and any notion of infection at each visit to a health facility.

TPT and antiretroviral treatment can be initiated safely at the same time in people living with HIV. Isoniazid is safe during pregnancy and breast-feeding.

## Algorithm for tuberculosis screening and management of HIV-positive adults and adolescents with TPT



## A. TPT eligibility

HIV-infected adults eligible for TPT are those who:

- Not on anti-tuberculosis treatment;
- Asymptomatic for tuberculosis ;
- Do not abuse alcohol ;
- Have no history of psychosis, convulsions or neuropathy;
- Not contraindicated by isoniazid or Rifapentine

## B. Care arrangements for adults at the TPT

TPT for people living with HIV is given once progressive TB has been ruled out. A single negative screening is sufficient to start prophylaxis.
The recommended duration of TPT depends on the protocol. The combination Rifapentine-Isoniazide (HP) is used for PLHIV > 15 years, one dose per week for 3 months. FEC and children 15 are started on INH daily for 6 consecutive months. Prophylaxis coverage is 2 years. There is no evidence that TPT should be renewed.

Precautions: people starting TPT with INH must be warned of the possible adverse effects of isoniazid: (i) hepatitis (iiperipheral neuropathy and (iii) skin rash.

## C. Dosage of TPT to be prescribed

### 1) TPT at INH

The dose of INH is 5 mg/kg/day, with a maximum dose of 300 mg. Pyridoxine (vitamin B6) must be systematically combined with INH, i.e. a dose of 25 mg/day.

| Weight range (kg) | Daily dose INH (100 mg tablets) |
|---|---|
| **2 - 3,4** | 1/4 cp |
| **3,5 - 4,9** | 1/2 cp |
| **5 - 7,4** | 3/4 cp |
| **7,5 - 9,9** | 1 cp |
| **10 - 14,9** | 1 ½ cps |
| **15 - 19,9** | 2 cps |
| **20 - 29,9** | 3 cps |
| **≥ 30** | 3 cps |
| **PS: combine Pyridoxine (Vitamin B6) at 25 mg/day (or 12.5 mg/day if< 3 kg).** | |

### 2) TPT to HP

Three months of weekly Rifapentine plus Isoniazid (12 doses) of (3HP) are indicated only for adult men and post-menopausal women.

- > 14 years old

| Weight range (kg) | 30-35 kg | 36-45 kg | 46-55 kg | 56-70 kg | >70 kg |
|---|---|---|---|---|---|
| **Isoniazid 300mg** | 3 | 3 | 3 | 3 | 3 |
| **Rifanpentine 150 mg** | 6 | 6 | 6 | 6 | 6 |

* The 300 mg formulation can be used to reduce the number of tablets.

## D. Follow-up of TPT prophylaxis

Patients supplied with TPT during their monthly visits. Patients on TPT should have a monthly clinical assessment including:
The table below summarises the different conditions for assessing the cessation or resumption of TPT.

***Table 69:*** *Follow-up to initiation of TPT (6INH or 3HP) complete the information for HP*

| Scenario | Actions |
|---|---|
| **Suspicion of active TB** | Stop TPT immediately and refer the PLHIV to a health facility that provides comprehensive care for TB cases |
| **Poor adherence with prophylaxis** | • Temporary interruption of TPT, the service provider must:<br>○ Find out why treatment was interrupted;<br>○ Advise patients on the importance of TPT;<br>○ Look for signs/symptoms suggestive of active tuberculosis<br>○ If the patient is asymptomatic and there are no signs of tuberculosis, continue the TPT and add the missed doses to cover the total duration, i.e. 6 months.<br>• Interruption of the TPT for more than 3 consecutive months:<br>○ Stopping TPT<br>○ Find out why treatment was interrupted<br>○ Advise patients on the importance of IPT<br>○ Look for signs/symptoms suggestive of active tuberculosis<br>○ If the patient is asymptomatic and there are no signs tuberculosis, repeat the TPT for the recommended duration.<br>○ Any interruption of treatment for the second: TPT stopped for any length of time. |
| **Hepatotoxicity** | • Investigate and stop TPT if TB is confirmed |
| **Skin rash** | • If the rash is mild, stop the TPT until rash disappears and restart under supervision.<br>• Serious or severe: stop the TPT immediately and refer the patient to hospital as a matter of urgency. |

| | |
|---|---|
| **Peripheral neuropathy** | • Assess the severity and speed of progression.<br>• Inform the patient that the neuropathy may be due to HIV and/or TPT.<br>• Inform the patient that neuropathy ceases at end of treatment with TPT. |

| Scenario | Actions |
|---|---|
| | If symptoms of neuropathy are mild, continue TPT, provide counselling and treat:<br>Increase the dose of pyridoxine from 25 to 100 mg per day and for adults, prescribe amitryptiline 25 mg to be taken on the same day as the treatment.<br>night if neuropathy unbearable.<br>• If difficulty walking or excessive pain: stop TPT and treat |
| **Convulsions or psychosis** | • Stop TPT and refer |

# CHAPTER 9: CO-INFECTIONS AND CO-MORBIDITIES

## I. COINFECTIONS

### I.1. Prevention, screening and management of TB/HIV co-infection

Tuberculosis is preventable and curable. It is the leading cause of morbidity and mortality among people living with HIV, and can occur at any stage of HIV immunodepression, regardless of CD4 lymphocyte levels, leading to a transition to the AIDS stage according to the CDC classification, or to WHO stage III (pulmonary tuberculosis) or stage IV (extra pulmonary tuberculosis).

- Active search for tuberculosis in PLHIV and diagnosis of tuberculosis.

There are clinical signs and symptoms suggestive of TB: These are mainly the cardinal signs and symptoms of : Cough of any duration, fever, night sweats, weight loss, etc. Loss of appetite, fatigue, dyspnoea, chest pain and haemoptysis are also common.

In PLHIV, the presence of even one of the signs/symptoms mentioned above should raise the suspicion of tuberculosis. Fever and weight loss are more common in PLHIV with advanced immunodepression than in HIV-negative patients.

For this reason, it is important for service providers to:

- Look for TB at all entry points and, if suspected, request both TB and HIV tests for people who do not know their HIV status;
- Actively search for TB in PLHIV at every contact with services;
- Prevent the transmission of TB by implementing infection measures;
- Initiate tuberculosis chemoprophylaxis (3HP) for PLHIV in whom active TB has been eliminated.

**Look for TB regularly (at every visit). In PLHIV, the presence of a single sign should prompt a search for TB.**

All adults and adolescents living with HIV should be screened systematically on the basis of any of the following symptoms: Cough of any duration, fever, weight loss or night sweats.

Molecular tests such as Gene-Xpert, TrueNat, TB-AML, etc. can be used to diagnose tuberculosis in PLHIV.

In HIV-infected children under the age of ten, systematic screening for tuberculosis should be offered using one of the following warning signs: Cough of any duration, fever, low weight gain, adenopathy, or close contact with a person suffering from tuberculosis

All PLHIV with active tuberculosis (susceptible TB or MDR-TB) should start anti-tuberculosis treatment immediately, and ARV treatment within two to eight weeks of starting anti-tuberculosis treatment if the latter is well tolerated, regardless of CD4 count and clinical stage.

### I.1.1. Active search for tuberculosis in people living with HIV

Active search for TB is carried out using a screening form and is based on the following as seen onthe table below:

***Table 70**: Diagnostic methods for tuberculosis*

| Resources | Descriptions/Results |
|---|---|
| **The clinicals** | Signs and symptoms |
| **Microscopy (bacteriological diagnosis)** | • Essential examination.<br>• As koch Bacilus excretion is intermittent, 2 consecutive sputum tests are recommended. A single positive sputum smear result is sufficient to establish that a patient presents a smear-positive tuberculosis and start treatment. |
| **GeneXpert MTB Ultra** | • Molecular technique for rapid diagnosis of TB and to test sensitivity to rifampicin |
| **TB LAMP (in the absence of xpert and positive samples forwarded for the sensitivity to rifampicin)** | Qualitative PCR test to detect koch Bacilus in biological fluids |
| **TB LAM (urine LAM or LF-LAM)** | • Urine test<br>• Allows screening for tuberculosis in cases advanced disease (CD4≤ 200/mm3) |
| **Le Truenat MTB RIF** | • Molecular technique for rapid diagnosis of TB and to test sensitivity to rifampicin |
| **Chest X-ray** | • Referral test, but does not provide certainty, as pulmonary TB can take many forms radiological abnormalities. |
| **The culture** | Reserved for patients with GeneXpert RR+ tests and the follow-up of MDR patients. |

### I.1.2 Management of TB/HIV co-infected patients

Tuberculosis can occur during the first few months of antiretroviral treatment, either because of **a failure to diagnose it** when the patient is started on treatment, or because of **immune reconstitution Inflamatory syndrome (IRIS)**, as a **sign of failure of antiretroviral treatment.**

### I.1.3 Anti-tuberculosis treatment for people infected with HIV

Anti-tuberculosis treatment is just as effective for people living with HIV as for those who are HIV-negative.

***Table 71:*** *Treatment regimens for anti-tuberculosis drugs*

| Category | Sensitive TB treatment regimens |
|---|---|
| **New case of TB** | • PLHIV never previously treated with anti-tuberculosis drugs or treated for less than a month<br>• Duration of 6 months treatment in two phases:<br>✧ Intensive phase lasting 2 months and comprising 4 molecules (RHEZ);<br>✧ 4-month continuation phase with 2 molecules (HR). |
| **Restatement*** | • PLHIV who have previously taken anti-tuberculosis drugs for a month or more and also PLHIV who have either relapsed, failed treatment or been lost to follow-up.<br>• Total duration of 6 months: **6 {RHEZ} in** two phases separated by the follow-up assessment:<br>❖ 3 months of daily RHEZ<br>❖ Follow-up assessment (decision to continue depending on GeneXpert results)<br>❖ 3 months of daily RHEZ |
| **TBMR** | The current treatment protocol for multidrug-resistant tuberculosis is a short, completely oral regimen lasting 9 to 11 months and divided into 2 phases:<br>- An intensive phase lasting 4 to 6 months, comprising: Bedaquiline (Bdq), Moxifloxacin (Mfx), Pyrazinamide(Z), Isoniazid(H), Ethambutol(E), Clofazimine (Cfz), Prothionamide (Pto)<br>- A continuation phase comprising: Levofloxacin (Lfx), Pyrazinamide (Z), Ethambutol (E), Clofazimine (Cfz), The duration of the continuation phase will remain fixed at 5 months, regardless of the duration of the intensive phase.<br>- The treatment regime is as follows **4-6 Bdq Mfx Pto H> Cfz E Z/5Mfx Cfz E Z** |
| **The other cases** | The sick<br>- No clear history of previous anti-tuberculosis treatment<br>- Have already been treated, but have a negative smear/culture for pulmonary tuberculosis or (TPB -) have extrapulmonary tuberculosis (EPT)<br>• Same treatment regimen as new cases |

| | |
|---|---|
| | **Neuromeningeal and oesteoarticular TB, the duration of treatment will 12 months (2 months of RHEZ and 10 months of RH)** |

*Classify as reprocessing and treat as such after a rifampicin-sensitive GeneXpert test.

### I.1.4 Antiretroviral treatment in TB/HIV co-infected patients

All HIV-positive patients with active tuberculosis are eligible for lifelong ART, regardless of the stage of their HIV infection or their CD4 count. ART should be started as soon as possible.

ART will be initiated as follows:

- TB revealing HIV infection or ARV-naïve HIV patients: start with anti-tuberculosis drugs first, then add ART 2 to 8 weeks later.

***Table 72**: Time to initiate ART*

| **Diagnosis of TB in ART-naïve PLHIV: time to initiate ART** | |
|---|---|
| **Progressive TB** | • Start ART within 2 weeks of starting anti-tuberculosis treatment |
| | • Start ART between 2 and 8 weeks from the start of treatment anti-tuberculosis drugs |
| **Multidrug-resistant TB** | • Start ART within 2 to 4 weeks of starting second-line anti-tuberculosis treatment |
| **PW HIV positive with active (progressive) TB** | • Start anti-tuberculosis treatment on the same day<br>• Then start ART 2 weeks later. |
| **Tuberculous meningitis, whatever the level of CD4** | • Delay ART for up to 8 weeks after starting anti-tuberculosis treatment |

The risk of IRIS should be taken into account when ART is introduced early and at a low CD4 count. Systemic corticosteroid therapy may be considered to treat symptomatic IRIS, at a dose and for a duration that will depend on the therapeutic response.

- If TB is discovered in patients already on ART, treatment must be adapted.
- ARV protocols

In the event therapeutic failure confirmed by 2 VLs> 1000 copies/ml (according to the algorithm), the 2nd line protocol is required.

### I.1.5 Drug interactions with rifampicin

Rifampicin reduces the levels of PIs and NNRTIs.

***Table 73:*** *Interactions of rifampicin with antiretrovirals*

| ARV | Interactions | Comments |
|---|---|---|
| **EFV** | Moderate reduction in blood levels | Do not increase dose |
| **PI** | Significant reduction in blood levels | Avoid combining or doubling the booster dose |
| **DTG** | Moderate reduction in blood levels of DTG | Adjust the dose (change to 2 doses per day of DTG) |

### I.1.6 Special case children

A child infected with HIV is around 6 times more likely to die from TB. HIV infection increases the rate of progression and severity of all forms of TB.
Consequently, HIV/TB co-infection must be systematically sought:

- Screen all children with tuberculosis for HIV infection or exposure, using HIV serology.
- All HIV-infected children with symptoms suggestive of TB and all children at WHO clinical stage 3 or 4 should be systematically investigated for TB.

#### *I.1.6.1. Diagnosis of TB HIV-infected children*

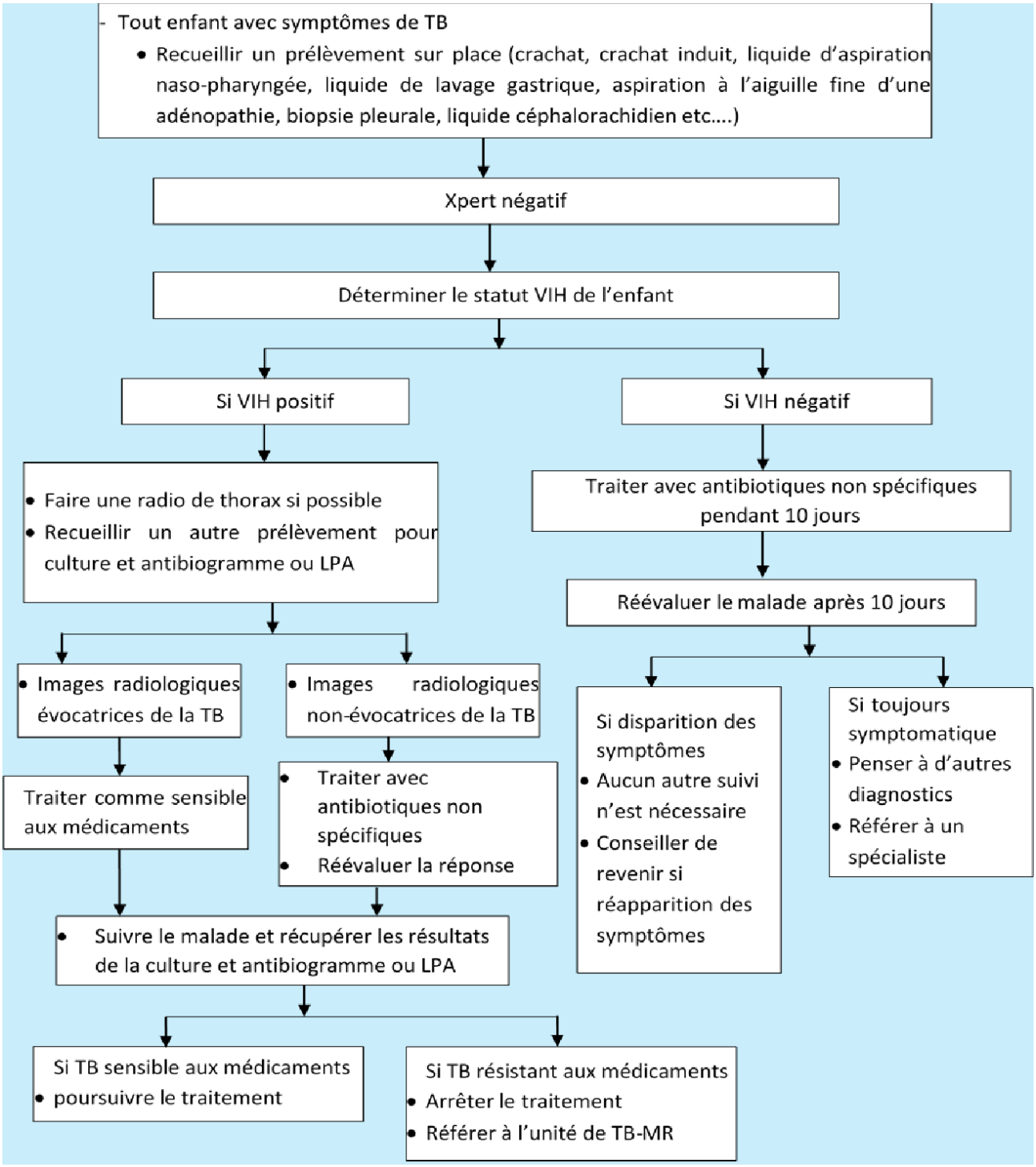
**Diagnostic confirmation is difficult**, most often microscopy (pauci bacillary disease) and a non-specific chest X-ray.
The presumptive diagnosis of an HIV-infected child is based on:

- A suggestive clinical sign (cough of any duration, fever, weight loss);
- A tuberculosis microscopy count should be done for any suspected case ;
- Non-response to appropriate-spectrum antibiotic therapy;
- A suggestive X-ray image and
- An advanced or severe stage of WHO immunodepression (or clinical stage 3 or 4 outside the TB criteria).

**presumptive clinical signs in children:**

- Cough or for any duration,
- Weight loss/malnutrition/altered general state
  Or growth retardation,
- Fever
- Notion of Contact with Adult TB

## ALGORITHM FOR DIAGNOSIS AND MANAGEMENT OF TB IN CHILDREN IF XPERT XPERT ULTRA NEGATIVE



### *I.1.6.2. ARV treatment for TB/HIV co-infection in children*

Any child with active TB should start anti-tuberculosis treatment immediately and ARV treatment within 2 weeks and always within the first 8 weeks after starting anti-tuberculosis treatment if this treatment is well tolerated, whatever the CD4 count and clinical stage.

HIV-infected children with active tuberculosis:

- Children under 3: 2 NRTIs+ PI boosted/r
- Children aged over 3 : 2 NRTI+EFV

HIV-infected children on ARVs with active tuberculosis: Modifications to be made to the ARV regimen:

***Table 74:*** *ART children co-infected with TB/HIV*

| Initial plan | Regiem adapt |
|---|---|
| **2 NRTI + DTG** | • TDF/3TC/DTG 1 tablet in the morning and 1 DTG 50 tablet in the evening<br>• 2 weeks after stopping anti-TB, stop 2nd tablet of DTG<br>• Or TDF/3TC/EFV (1tb per day)<br>2 NRTI + integrase inhibitor DTG |
| **2 NRTI + LPV/r** | 2 NRTI+ LPV/r<br>If the regimen contains LPV/r : Add ritonavir to the regimen so that there is a 1:1 ratio between the dose of LPV and that of RTV. |

## I.1.7 Special case of HIV+ pregnant women / Breastfeeding women / exposed infants

Care of an infant born to a mother with tuberculosis

***Table 75****: Special case of PW HIV+/BFW/EI*

| PW and Breastfeeding women at risk of complication | How to exclude TB in newborns |
|---|---|
| • **Diagnosis of TB in the third trimester of pregnancy.**<br>• **In the absence of a good clinical response to treatment and/or**<br>• **The sputum smear test came back positive.** | • Carrying out a clinical examination<br>• postnatal examination of the placenta for calcifications (if placental calcifications, endometrial samples must be obtained 72 hours of delivery and sent to the laboratory for Koch Bacilus culture and histological examination). |

**Can a mother with TB breastfeed her baby?**

**Practical note**: All mothers, including those on anti-tuberculosis treatment and/or infected with HIV, should be encouraged to breastfeed their child.

## I.2. Immune reconstitution inflammatory syndrome (IRIS)

IRIS encompasses all the inflammatory manifestations that occur when an excessive and inadequately regulated immune response to infectious or non-infectious antigens is reconstituted in an individual following a phase of immunosuppression.

IRIS may occur one week or several months after the introduction of ART, with patients developing either a recurrence or progression of tuberculosis or new signs of another opportunistic disease within the first few weeks after the introduction of ART.

**The IRIS event**

- This is worsening of the clinical status of HIV-positive patients after the start of ART.
- After starting ART, the immune system begins to recover
- As a result, inflammatory symptoms and signs worsen in the presence of opportunistic infections.
- The syndrome can occur in:
    - Patients already on treatment for opportunistic infections at the start of antiretroviral treatment: **paradoxical IRIS;**
    - Patients with unrecognised opportunistic infection at the time of initiation of ART: **unmasked IRIS.**

## I.3. What is the IRIS in tuberculosis?

- The clinical picture includes :
    - Enlarged lymph nodes
    - A fever
    - Worsening of pulmonary infiltrates on chest X-ray
    - An increase in pleural effusions
    - Meningitis or an increase in the size of cerebral tuberculomas can be life-threatening.

*Table 76: IRIS support*

| How to diagnose IRIS at course of tuberculosis? | the IRIS's support? |
|---|---|
| **Diagnostic exclusion** | |
| **Other possible causes clinical worsening of tuberculosis must be ruled out, namely**<br>**• Multidrug-resistant tuberculosis**<br>**• Alternative diagnoses, for example bacterial pneumonia** | • Most patients can be treated on an outpatient basis<br>• Non-steroidal anti-inflammatory drugs may be prescribed<br>• ART should be continued unless there is a risk of life-threatening |

| | |
|---|---|
| **pneumocystis, Kaposi' sarcoma, etc :**<br>**• Poor adherence to treatment**<br>**• Malabsorption**<br>**• Drug toxicity** | • If there is risk of life-threatening illness, the patient must be admitted to hospital urgently.<br>• Corticosteroid therapy may be necessary in the case of severe reactions. |

**NB:** IRIS due to tuberculosis is rarely fatal. Early initiation of ART patients with low CD4 counts can prevent IRIS due to tuberculosis, since mortality is high if ART is delayed.

## I.4. Management and prevention of HIV/hepatitis B and C co-infection

HIV infection alters the natural history of HVL and HBV/HDV infections, favouring progression to chronic forms and rapid progression to complications (cirrhosis and hepatocellular carcinoma). The therapeutic objective eradication of the virus in the case of HVL, suspension of viral replication in the case of HBV in order to achieve regression of fibrosis and prevention of complications.

### I.4.1. HIV-HBV co-infection

The prevalence of chronic HBV infection (HBsAg+ or HBV DNA+) in PLHIV is poorly documented in our setting, but is thought to be 8-10% (CAMPHIA 2017). Viral hepatitis B can be effectively prevented by vaccination. As a result, it is essential to systematically carry out full serological and virological screening for HBV in all PLHIV (whether treated or not), with titration of anti-HBs antibodies or testing HBV DNA and delta co-infection where appropriate, to be repeated annually, in parallel with the application of preventive measures including HBV vaccination.

The poor prognostic factors in HIV/HBV co-infection are:

- Low CD4 count ;
- The persistence of AgHbe ;
- Multiple infections (HVL, HDV);
- Consumption.

These factors must be identified and taken into account in the treatment decision process.

### *I.4.1.1. How is HBV infection diagnosed and assessed in cases HIV/HBV co-infection?*

***Table 77**: Assessment of HBV infection in cases of HIV/HBV co-infection*

| **How to diagnose and assess HBV infection in cases of co-infection HIV/HBV** | |
|---|---|
| **Systematics** | HBsAg and anti-HBc as well as anti-HBs (vaccination) |
| **HBsAg positive** | • Test for anti-delta antibodies.<br>• Assessment of the severity of hepatitis B and the virological profile. |
| **Anti-HBc positive and HBsAg negative** | Testing for HBV DNA (viral load) rule out possibility of occult hepatitis B, particularly if transaminases are elevated. |

### *I.4.1.2. Assess liver damage in cases of HIV-HBV co-infection.*

***Table 78**: Liver disease in HIV/HBV co-infection*

| **liver damage in cases of HIV-HBV co-infection** | |
|---|---|
| **When** | • Elevated transaminases and HBV viral load (> 2,000 IU/ml) |
| **Why** | • Determine the stage of the disease, the risk of progression to cirrhosis and its complications<br>• inflammatory necrotic activity and fibrosis, and<br>• Helping to make therapeutic decisions |
| **How to** | • Fibrotest<br>• Abdominal ultrasound and measurement of α-fetoprotein to look for direct or indirect signs of cirrhosis and hepatocellular carcinoma.<br>which can occur at any stage HBV infection. |

### *I.4.1.3. When should co-infection treatment be started?*

Initiation of ART is recommended for all HIV-positive individuals co-infected with HBV, regardless of CD4 count. ART should contain Tenofovir+ Lamivudine (TDF/3TC) or Tenofovir+ Emtricitabine (TDF/FTC) in HBV co-infected individuals. Discontinuation of ART should be avoided due to the high risk of HBV virological rebound and hepatic decompensation following hepatitis B reactivation. In the event of treatment failure, if possible, maintain TDF/3TC and add a PI/r. Therefore, in patients aged 10 years or over:

- 1st line: TDF/3TC/DTG or TDF/3TC/EFV;
- 2nd line TDF/3TC+ATV/r or LPV/r.

### *I.4.1.4. How should treatment be monitored?*

***Table 79:*** *Treatment follow-up*

| Examinations | Frequency |
|---|---|
| **Transaminases** | J14 M1and M3 then quarterly |
| **VL** | 6 months and once a year |
| **HBeAg** | If it was positive |

### *I.4.1.5. When and who should be vaccinated among people living with HIV?*

***Table 80****: Vaccination in cases of HIV/HBV co-infection*

| Vaccine | How to |
|---|---|
| **Hepatitis B vaccine** | -If HBsAg negative, anti-HBc negative and anti-HBs negative).<br>• Revaccination should be considered for HIV-infected individuals with a sub-optimal response to a first HBV vaccination (anti-HBs Ac < 10 IU/L). |

## I.4.2. HIV/HVL co-infection

The seroprevalence HVL infection in HIV-infected patients has varied greatly depending on the studies carried out in Cameroon.

### *I.4.2.1. Diagnosis and assessment HVL infection*

***Table 81****: Diagnosis and assessment liver damage*

| How is a biological and virological diagnosis made? | |
|---|---|
| **Anyone infected with HIV should be tested for HVL antibodies using the latest generation ELISA test.** | |
| **Ac anti-HVL are positive** | Does not necessarily mean that the condition is progressive |
| **Viral load ( Viral RNA)** | Essential for diagnosis and treatment decisions |
| **Genotyping** | is not essential to initiating but desirable for the type and duration of treatment. |
| **Initial assessment** | • AST, ALT, GGT, PAL, total and conjugated bilirubin, blood albumin ;<br>• CBC, platelets ;<br>• TP ;<br>• HCV RNA (PCR techniques) ;<br>• HBsAg (and anti-delta Ab if HBsAg positive) ;<br>• α-fetoprotein (in cases of severe F3 fibrosis or F4 cirrhosis), Abdominal ultrasound |

It is important to emphasize that a normal transaminase level does not rule out the existence of lesions, sometimes severe. If treatment for HIV is indicated, Efavirenz should also be avoided and referred to a specialist centre.

### *I.4.2.2. Treatment of HIV-HVL co-infection*

Among the different classes of antiretroviral drugs, NNRTIs and PIs are mainly metabolised by the liver (via cytochromes), unlike NRTIs, with exception of ABC, which is also metabolised in the liver. The pharmacological properties of NNRTIs and PIs may be significantly altered in the presence of cirrhosis, with potential consequences in terms of both antiretroviral efficacy and toxicity.

The key objective is achieved an undetectable HIV viral load under antiretroviral treatment, as this is associated with less progression of liver fibrosis. The duration of treatment is more often prolonged in cases of HIV-HVL co-infection. Depending on the kinetics of viral hepatitis C decay, the duration of treatment in the case of co-infection may be 48 weeks in the case of genotype 2 or 3 (compared with 24 weeks the case of mono-infection) and 72 weeks in the case of genotype 1 and 4 (compared with 48 weeks in the case of mono-infection).

**Pangenotypic regimens currently available for adults aged 18 and over**

- **Sofosbuvir+ Velpatasvir for 3 to 6 months**
- **Sofosbuvir+ Daclatasvir for 3 to 6 months**
- **Sofosbuvir+ Ledispavir for 3 to 6 months**

## II. COMORBIDITIES

ARV treatment has reduced HIV-related morbidity and mortality and transformed HIV into a chronic disease requiring lifelong care. Co-morbidities including physical and mental health conditions and drug use disorders are common among PLHIV. Comprehensive HIV care includes combination HIV prevention, promotion of general health and well-being, maintenance of quality of life and screening, antiretroviral treatment, and prevention and management of co-infections and co-morbidities.

## II.1. General care for people living with HIV

| |
|---|
| 1) PLHIV should engage in regular physical activity. |

The comprehensive care package to be provided to adolescents and adults living with HIV includes a range of interventions:

- Psychosocial counselling and support ;
- Disclosure and notification of partners;
- Cotrimoxazole prophylaxis ;
- Counselling, screening and preventive therapy for tuberculosis;

- Prevention of common fungal infections;
- Prevention of sexually transmitted infections and reproductive health needs, including cervical cancer prevention and screening;
- Nutrition ;
- F amily planning ;
- prevention of mother-to-child transmission of HIV;
- water sanitation and hygiene (WASH).

## II.2. Overview of the key elements of general care in the continuum of care for PLHIV

| Service | At the time of HIV diagnosis | At the time of initiation to care and to the ART | Under ART | In the event treatment failure and change of ART regime | Re-introduction to ART following an interruption of care |
|---|---|---|---|---|---|
| **General care** | | | | | |
| **Preparing initiation to ART** | ✓ | ✓ | | | |
| **WHO clinical staging Past and present HIV-related conditions** | ✓ | ✓ | | ✓ | ✓ |
| **Preparation, assessment and adherence support** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Current medications** | | ✓ | ✓ | ✓ | ✓ |
| **Pregnancy status Family planning and contraception** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Asistance with status disclosure and partner notifcation** | ✓ | ✓ | | | |
| **Counselling on risk reduction and HIV prevention approaches** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Screening, prevention and management non-communicable diseases** | | ✓ | ✓ | ✓ | ✓ |
| **Screening and management of mental health and drug addiction problems** | | ✓ | ✓ | ✓ | ✓ |

| Service | At the time of HIV diagnosis | At the time of initiation to care and to the ART | Under ART | In the event treatment failure and change of ART regime | Re-introduction to ART following an interruption of care |
|---|---|---|---|---|---|
| **Counselling and Psychosocial support** | | | | | |
| **Pain management** | | ✓ | ✓ | ✓ | ✓ |
| **Nutrition Assessment and counselling** | | ✓ | ✓ | ✓ | ✓ |
| **Infant and child nutrition** | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Assessment of the nutrition, growth and development of children and adolescents** | | ✓ | ✓ | ✓ | ✓ |
| **Preventing and treating co-infections** | | | | | |
| **Preventive treatment with cotrimoxazole** | | ✓ | ✓ | ✓ | ✓ |
| **Intensified screening of tuberculosis cases** | | ✓ | ✓ | ✓ | ✓ |
| **Tb Preventive treatment** | | ✓ | | ✓ | ✓ |
| **Screening for cryptococcal infection and fungal prophylaxis, if applicable** | | ✓ | | | ✓ |
| **Hepatitis B and C Screening** | | ✓ | | ✓ | ✓ |
| **Malaria prevention (LLINs and prophylaxis)** | | ✓ | ✓ | ✓ | ✓ |
| **Screening for sexually transmitted infections** | | ✓ | ✓ | ✓ | ✓ |

| | | | | | |
|---|---|---|---|---|---|
| **Cervical Cancer prevention and screening** | | ✓ | ✓ | ✓ | ✓ |

| Service | At the time of HIV diagnosis | At the time of initiation to care and to the ART | Under ART | In the event treatment failure and change of ART regime | Re-introduction to ART following a interruption of care |
|---|---|---|---|---|---|
| **Assessment of vaccine-preventable diseases other HBV and HCV infection** | | ✓ | ✓ | | ✓ |

## II.3. Malaria and HIV

For PLHIV who have simple plasmodium *falciparum* malaria, the Artesunate + Sulfadoxine-Pyrimethamine combination should be avoided if they are already on cotrimoxazole, and the Artesunate+ Amodiaquine combination should be avoided if they are being treated Efavirenz or Zidovudine.

PLHIV are more likely to have high parasitaemia and consequently to develop severe malaria. Key interventions in the fight against this disease include early diagnosis, ACT-based treatment, the use of impregnated mosquito nets, IPT and other vector control measures (spraying of breeding sites).

## II.4. Sexually transmitted infections (STI) and HIV

HIV infection promotes the transmission of STIs, increasing their frequency, worsening the clinical picture and reducing the response to treatment due to reduced immunity.

Given the difficulty people have in accessing care, the inadequacy of the technical facilities in outlying health facilities, the weakness of the data collection and management system, and in the light of the analysis of the different approaches to the management of STIs, a syndromic approach to the management of STIs has been developed in Cameroon.

- **Primary prevention**

As far as prevention is concerned, there is a minimum package of activities depending on the level of the health pyramid. There are a number of ways of doing this: educational talks, counselling, promotion of condom use, behaviour change communication, etc. (see *National Guide to the Management of Sexually Transmitted Infections in Cameroon).*

Support is important to emphasize that a syndrome can be caused by several germs. This means that when a patient suffers from a particular syndrome, they must be treated for all the common STIs that cause the syndrome in question.
The prescription of treatment must be accompanied by advice on prevention, recommendations on notification and treatment of the partner(s), encouragement to use condoms and adherence with treatment.

| Syndrome | Diseases/germs involved | Syndromic treatment |
|---|---|---|
| **Genital ulceration** | Syphilis<br>*(Treponema pallidum)*<br>Chancroid<br>*(Haemophilus ducreyi)*<br>Genital herpes<br>*(Herpes simplex virus)* | Benzathine penicillin: 2.4 million I.M single dose<br>+ Erythromycin 500 mg 2cp x2/d x10 days<br>+ Aciclovir 200 mg 1tb x 5/day x **or**<br>Valaciclovir 500 mg x 2/day x 10 day (1000mgx 2/day if immunocompromised).<br>+ Local care (with iodised polyvidone or aqueous eosin x 7 days) |
| **Urethral discharge** | Gonorrhoea<br>*(Neisseria gonorrhoeae)*<br>Chlamydia<br>*(Chlamydia trachomatis)* | Azithromycin 250 mg 2tab on D1, 1tb/day D2-D5<br>+<br>Ceftriazone 250 mg IM single dose<br>+<br>Metronidazole 500 mg: 4tabs as a single dose |
| **Recurrent or persistent urethral discharge after treatment** | Trichomoniasis<br>*(Trichomonas vaginalis)*<br>Mycoplasma infections *(M. genitalium, hominis)* | |
| **Vaginal discharge** | Candidiasis<br>*(Candida albicans)*<br>Trichomoniasis<br>*(Trichomonas vaginalis)*<br>Bacterial vaginosis<br>Gonococcal disease<br>(Neisseria gonorrheae)<br>Chlamydia *(Chlamydia trachomatis)*<br>Mycoplasma infections | Metronidazole: 2 g single dose orally<br>+<br>Nystatin ova 100,000 IU/d: 1 ova in the evening at bedtime x 14 days + Azythromycin 500 mg 2tab + Ceftriazone 250 mg IM as a single dose |

| | | |
|---|---|---|
| **Lower abdominal pain or pelvic pain** | • Chlamydia<br>• Gonorrhoea<br>• Mycoplasma infections<br>• Anaerobic germs | Azythromycin 500 mg 2tab + Ceftriazone 250 mg IM single dose<br>**+**<br>Metronidazole 500 mg x 3 d x 14 days<br>+ |
| **Syndrome** | **Diseases/germs involved** | **Syndromic treatment** |
| | | Ibuprofen 400 mg 1tab x 2/D x 5 days maximum or Paracetamol 500 mg 2cp x 3/D<br>+<br>Bed rest |
| **Swelling of the scrotum** | Chlamydia<br>Gonorrhoea | Azythromycin 500 mg 2tab + Ceftriazone 250 mg IM single dose |
| **Oropharyngeal syndrome** | Syphilis<br>Gonorrhoea<br>Herpes<br><br>Chlamydia | Azithromycin 500 mg 2tab single dose<br>+<br>Ceftriazone 250 mg IM single dose<br>Aciclovir IV 5 mg/kg/8h or 200 mg x 5/d *po* for 10 days<br>+<br>Mouthwash with oral iodised poly-vidone for 07 days |
| | Condylomata | ◆ Cryotherapy<br>◆ 5 fluorouracil<br>◆ Liquid nitrogen<br>◆ Electrocoagulation<br>◆ Cimetidine |

| | | |
|---|---|---|
| **Anorectal syndrome** | -Anal discharge<br>- Anal pain<br>- Anal growth<br>- Anal ulceration<br>- Anal itching<br>- Tenesmus (painful contractures of the anal sphincter)<br>- Footprints (false urge to have a bowel movement) | ◆ Local care (with iodised polyvidone or aqueous eosin x 7 days)<br>◆ Referral to a doctor |

*Concept of oral-genital relations

- **Vaccination for people living with HIV**

Vaccinations are an important component of the HIV care package and PLHIV must be assessed to determine whether they can be vaccinated at all stages of their care.

Vaccines are generally safer and more effective in people living with HIV who are receiving antiretroviral treatment, as well as in people who are not severely immunocompromised, particularly when their CD4 count is above 200 cells/mm3.

# CHAPTER 10: NON-COMMUNICABLE DISEASES

- The assessment and management of cardiovascular risk must be carried out for all PLHIV in accordance with standard procedures recommended for the general population.
- Strategies for preventing and reducing the risk of cardiovascular disease by addressing modifiable factors such as blood pressure, smoking, obesity, poor dietary habits and physical activity must apply to all PLHIV.
-

PLHIV are at high risk of developing a number of non-communicable diseases (NCDs), including cardiovascular disease, diabetes, chronic respiratory disease and certain types of cancer. The recognised risk factors are (i) exposure to ART and its toxicity (ii) HIV itself, as well as immune dysfunction and inflammation associated with HIV or co-infections (e.g. CMV, HCV).

Appropriate management of co-morbidities, which include Non-transmissible chronic disease (NTCDs), Central Nervous System disorders and sexual disorders, is increasingly integrated into the overall care of PLHIV.

## I. PREVENTING THE RISK OF CARDIOVASCULAR DISEASE (CVD)

Preventing the risk of cardiovascular disease involves:

- Privileging the use of protocols that are less likely to cause metabolic abnormalities,
- Longitudinal follow-up of PLHIV on DTG to assess weight and body mass index
- Screen for risk factors and assess the impact on metabolic comorbidities and cardiovascular diseases.

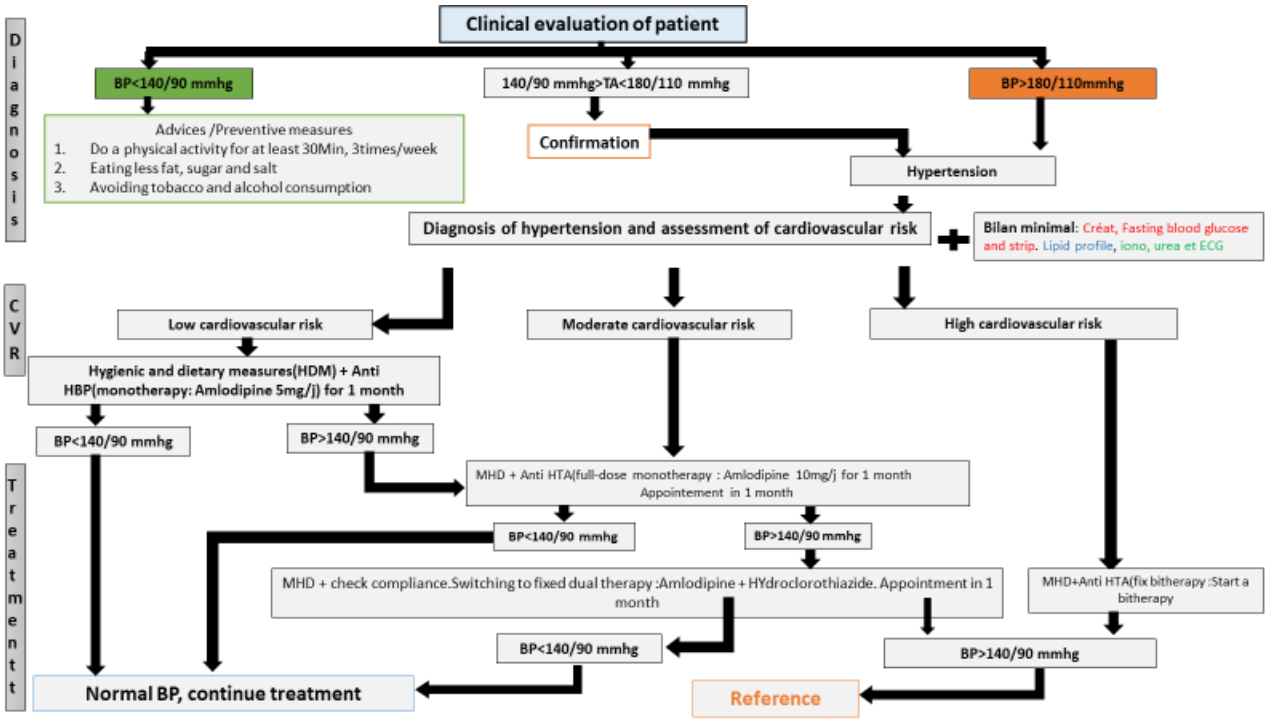
### a) *Smoking*

People living with HIV and those who smoke need to be helped to stop gradually. Stopping smoking reduces the risk of developing tobacco-related illnesses, slows the progression of existing tobacco-related diseases and increases life expectancy by an average of ten years.

### b) *Hypertension*

Repeated blood pressure measurements should be used for early diagnosis. Engaging in physical activities while respecting healthy-dietary measures and envisage taking antihypertensives, targeting blood pressure levels < 140/90 mmHg. The algorithm for the diagnosis and management of Hypertension is summarized in the diagram below:

***Hypertension ALGORITHM***




### c) *Diabetes*

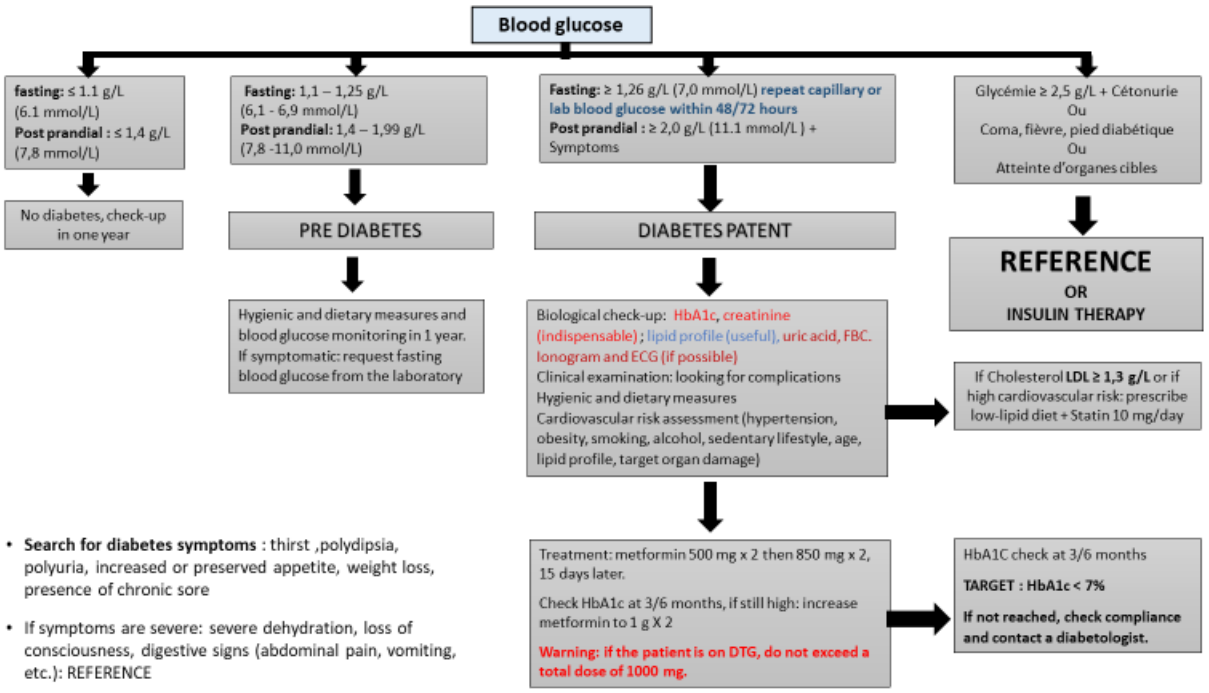
Blood sugar monitoring is important (fasting blood sugar NV ≤ 1.10 g/l). Type 2 diabetes may be underestimated by HbA1c values in people living with HIV and on ART, particularly when treatment includes Abacavir.

Glucose intolerance increases cardiovascular morbidity and mortality and increases the risk of developing diabetes by 4-6 times. Affected patients should adopt dietary measures, and their cardiovascular risk factors should be assessed and managed.

*Table 82: Treatment objectives*

| |
|---|
| Glycaemic level (HbA1c < 6.5-7% without hypoglycaemia, fasting blood sugar between 4-6 mmol (73-110 mg/dl), prevention of long-term complications. |
| Treatment with acetylsalicylic acid (75-150 mg/dl) should be considered in any diabetic patient with a high VLD risk and if blood pressure is controlled. |
| Screening for diabetic nephropathy and retinopathy is identical to that carried out in the non-HIV diabetic population. |
| A consultation with a diabetologist is recommended |

***The screening and management algorithm is summarised in the diagram below:***




NB: *Metformin may aggravate lipoatrophy. Similarly, a reduction in dose should be considered for people with moderate CKD, or those receiving DTG.*

### d) *Dyslipidaemia*

A high level of LDL-c is associated with an increased risk of cardiovascular disease. Reducing weight, increasing physical activity and stopping smoking are likely to improve HDL-c levels. However, a statin is the first-line treatment of choice.

Anyone with known cardiovascular disease or type 2 diabetes or at high risk of cardiovascular disease should be treated with statins, regardless of their serum lipid levels.

***Table 83**: Statins*

| | With PI | With NNRTI |
|---|---|---|
| **Atorvastatin: 10-80 mg/d** | Startat low dose (v) (max: 40 mg) | Consider higher doses |
| **Pravastatin: 20-80 mg/d** | Consider higher doses | Consider higher doses |
| **Side effects of statins: Gastrointestinal disorders, headaches, insomnia, rhabdomyolysis (rare) and toxic hepatitis** | | |

## II. CERVICAL CANCER

- Usual test HPV DNA positive then, if L-SIL lesion, conservative treatment or watch and wait, but for H-SIL lesion: ablative treatment or hysterectomy as appropriate.
- It is recommended that regular screening for cervical cancer should be carried out from the age of 25 in women living with HIV, and that screening should be stepped up between the ages of 25 and 49. However, when the tools are available for the management of post-menopausal women, PLHIV aged between 50 and 65 who have never been screened should also be a priority.
- Regular screening every 3 to 5 years is recommended when HPV DNA detection is used for primary screening for cervical cancer in PLHIV.

Cervical cancer is caused in the vast majority of cases *by HPV* infection. Women living with HIV have a higher risk of developing precancerous lesions and cervical cancer. As a result, all HIV-infected women should receive cancer screening and regular follow-up.

Vaccination against *HPV* (for all children aged 9) and management of cervical cancer is the same as for people not infected with HIV.

***Table 84**: Cancer management*

| Pathologies | Targets | Examination carried out | Frequency screening | Comments |
|---|---|---|---|---|
| **Anal cancer** | MSM<br>People with HPV-associated dysplasia<br>Condylomata | Rectal examination +/- biopsy with cytological examination of anal tissue | 1-3 years | proctoscopy if normal anal cytology analysis |
| **Breast cancer** | Women from 50-aged 70 | Mammography | 1-3 years | |
| **Cervical** | HIV-positive women > 21 years old and/or sexually active | FVL | 1-3 years | |
| **Cancer colorectal** | People between 50 and 80 years | Hemocult colonoscopy | 1-3 years | |
| **CHC** | HVC carriers HVB or | Ultrasound dosage alpha fetoprotein) | All every 6 months | |

## III. MENTAL HEALTH AMONG PLHIV

Assessment and management of depression should be included in the package HIV services offered to patients living with HIV.

Mental health encompasses our emotional, psychological and social well-being. It affects the way we think, feel and act.

People living with HIV are at high risk of mental disorders, nervous system disorders and substance use disorders.

Depression is one of the most common mental health co-morbidities in PLHIV. People living with HIV who suffer from depression have a low probability of adherence and retention in care. Management of depression improves the mental health and general well-being of these patients.

### III.1. Mental state assessment

In the case of any HIV+ patient on ARV treatment and/or those around them (family), the healthcare provider must assess the patient's mental state by asking the questions listed in the screening tool below in order to detect and resolve common mental disorders.

The patient goes to the health facility for consultation and

**Mental health screening**

| Questions | Answers | |
|---|---|---|
| **1- Have you lost your appetite or had difficulty digesting food?** | Yes = 1 | |
| **2- Do you often have headaches, feel tired or have trouble sleeping?** | Yes = 1 | |
| **3- Do you have trouble thinking clearly or making decisions?** | Yes = 1 | |
| **4- Are you easily frightened, unhappy or do you cry more than usual?** | Yes = 1 | |
| **5- Have you lost interest in things like your appearance, your daily activities or getting on with your life?** | Yes = 1 | |

Evaluation score between 0-2 :
**NORMAL**

Do nothing

Evaluation score between 3-7:
**ANORMAL**

Refer to a psychologist or other staff trained in mental health

***Figure 11** : Mental state assessment algorithm*

**NB:** Each question requires a YES/NO answer.
Each **YES** answer is worth **one point** and each **NO** answer is worth **zero points**, except **question 5** which is worth **3 points**. The total number of possible points is therefore seven (7),

- **Score from 0 to 2 points**= normal case= no action required;
- **Score of 3 to 7 points** = abnormal case = refer to psychologist or other staff trained in mental health for further assessment and treatment.

## III.2. HIV-related mental health problems

### a- Depression

The symptoms of major depression are chronic (at least 2 weeks) and have an impact on the patient's life.

***Table 85:*** *Management of depression*

| Depression |
|---|
| • A higher prevalence of depression has been reported among people living with HIV (20-40% versus 7% in the general population).<br>• Significant unfitness and poorer response to HIV treatment |
| Screening and diagnosis :<br>• Persistent sadness and lack of interest in daily activities.<br>• Loss of appetite, weight lost.<br>• Insomnia with early awakening, severe fatigue, difficulty concentrating or making decisions<br>• Suicidal ideation: Efavirenz is associated with a higher risk<br>• |
| Exclude any other cause of depression: announcement of seropositivity, hypothyroidism, intolerance to Efavirenz (associated with insomnia, nightmares, memory loss), recent death in the family, etc. |
| Support :<br>• Replace EFV with another ARV for people diagnosed with depression<br>• Medication is recommended for people with suicidal thoughts, repeated episodes of depression and inadequate response to psychological support alone.<br>• All patients on antidepressants also benefit from psychological support.<br>• The duration of treatment varies from 3 to 6 months, but some people will need long-term treatment.<br>• Weekly consultations are necessary for the first month to symptoms, side-effects and medication renewal. Treatment should always be stopped gradually. |

### b- Drug abused including drug addiction

Substance use is a common reason for poor adherence. Drug management involves regular supportive counselling. The pathologies encountered in these patients are (i) dependence, (ii) depression and (iii) acute psychosis.

### c- Confusion.

Confusion, disorientation in time and space, consciousness disorders and concentration problems can occur in PLHIV. There are many possible causes, such as cerebral toxoplasmosis, meningitis or encephalitis, or the effect of a virus on the brain.

Efavirenz (rare). Identification and treatment of the underlying cause is essential. The direct effects of HIV will improve with ART.

### d- HIV/AIDS-related dementia

Dementia is a chronic and progressive syndrome. it can occur at any age; it is more common in the elderly.

**Symptoms:** Memory deficit due to abstract thinking and judgement; loss of attention and concentration; episodic confusion; distrust; motor imbalance, agitation, lack of coordination or urinary incontinence.

**Differential diagnosis:** Biological (urea and electrolytes, thyroid function, etc.) and/or radiological medical/neurological examination to rule out other etiologies.

**Management:** Treatment of pathological states with psychosocial support - frequent reminders of the patient's place and time to reduce confusion; assessment ability carry out daily tasks; reducing stress among carers in long-term care.

### e- Mental and behavioural disorders in children and adolescents

Frequently encountered disorders are: developmental disorders and emotional disorders.

**Symptoms:** Excessive overactivity, excessive inattention, disobedience, provocative and/or disturbed behaviour, sadness, fear, anxiety and/or excessive irritability.

**Support :**

- Organise a meeting with the patient and parent/guardian in a setting that ensures confidentiality
- Not blaming the child/adolescent for their disorder and/or behavior.
- Encourage the child's good relationship with his family, teachers and peers, as this will help to achieve the desired results.

Helping parents and teachers to better understand the child's/adolescent's behaviour

# CHAPTER 11 : SERVICES

## I. DIFFERENTIATED SERVICE DELIVERY


Differentiated Service Delivery (DSD), previously known as "differentiated care", is a person-centred approach. It simplifies and adapts HIV services and responds to the needs of people living with HIV and vulnerable to the disease. It aims to optimise the resources available in healthcare systems.

The principles of differentiated service delivery apply to prevention, screening, initiation, care and monitoring of antiretroviral treatment. They also ensure the integration of HIV-related care and the management of co-infections and co-morbidities.

In addition to the clinical needs of people living with HIV, the provision of differentiated services considers specific populations and contexts. This includes meeting the needs of children and adolescents, pregnant and breastfeeding women and key populations.

## II. STANDARDS QUALITY HIV SERVICE DELIVERY

Quality of care focuses on the effectiveness of services in achieving the desired health outcomes.

Quality HIV services should :

- Provide patient-centred care ;
- Provide safe, acceptable and appropriate clinical and non-clinical services and;
- Promote efficient and effective use of resources.

In addition, HIV services must focus on:

- Positive user experiences and attention to patient concerns;
- Measuring and reducing stigma and discrimination, particularly in health services;
- To promote and maintain a culture of quality in programmes and organisations providing services.

Details of the DSD are contained in the 2023 DSD Operational Guide.

## II.1. Differentiated HIV Testing service

With the aim of improving access to healthcare services, differentiated care in its HIV screening section ensures that HIV-positive people are rapidly identified and put on treatment. HIV screening models take three elements into account: mobilisation, testing and linkage to prevention and treatment services.

***Table 86:*** *The three components of a screening service*

| Mobilisation | Testing | Linkage |
|---|---|---|
| **Mass/Group**<br>**Networked**<br>**Notification of partners and screening around index cases** | Health Facility<br>Community (CBO, DIC, Campaign)<br>Self-testing | Orientation<br>Support<br>Incentives<br>ART initiation<br>User-friendly services<br>Traceability/Documentation |

* Self-testing is a screening modality that can be used in health facilities or in the community. It is listed here as an independent screening model.

### *II.1.1. Recommended differentiated HIV Testing service models*

It is important to have different approaches for reaching people who escape conventional HIV testing. The different approaches or models for differentiated testing in the health facility and in the community are summarised in the table below:

***Table 87:*** *Delivery models for differentiated HIV testing services*

| Health Facility | Community |
|---|---|
| ✓ **Provider initiated testing and counselling (PITC)**<br>✓ **Index case screening**<br>✓ **HIV self-testing (HIVST)**<br>✓ **Family screening** | ✓ Index case Testing<br>✓ Targeted community HIV testing for<br>✓ Family-based testing<br>✓ HIV self-testing (HIVST)<br>✓ Network-based HIV testing |

All HIV screening models must be provided in accordance with the WHO's 5Cs: Consent, Confidentiality, counselling, Correct test results and Connection or linkage with prevention services, care and treatment.

### *II.1.2. Definition of differentiated HIV testing service models*

#### a) Provider initiated testing and counselling (PITC)".

To minimise missed opportunities for screening, the healthcare provider systematically initiates a rapid HIV diagnostic test for patients at risk: those who have had risky sexual behaviour, a sexually transmitted infection (STI), tuberculosis, malnutrition, pregnant and breastfeeding women and blood donors. The provider refers patients to prevention or treatment services based on the test results.

#### b) Index case testing

Index case testing is an approach to testing the contacts of an HIV-positive person (the index case): these include sexual partners, biological children and anyone with whom a needle has been shared. These contacts are offered HIV screening services either by the index case or by healthcare provider.

#### c) HIV self-testing (HIVST)

This is a process in which a person takes their own sample (oral fluid or blood), performs an HIV and interprets the result, often in a private setting, alone or in the presence a trusted person (WHO 2015).

Self-testing, in the case of a reactive test, does not confirm a positive diagnosis for HIV. It must therefore be confirmed using the national algorithm for HIV screening in a health facility. People at constant risk of exposure to HIV (index case partners, high-risk sexual behaviour, key/vulnerable populations) whose HIV self-test result is non-reactive are advised to repeat the test every three months.)

Key/vulnerable populations) and whose HIV self-test result is non-reactive to repeat the test every three months).

#### d) Family Testing

An approach that offers targeted screening to family members and other household members of a person living with HIV who has recently been diagnosed or is already in care.

#### e) Targeted community-based HIV testing

This model targets an individual or a group of people belonging to priority populations with limited access to healthcare services. In this model, providers (health facilities, CBOs) reach all population groups that are underserved or that use health services.

The beneficiaries of this model include people living in conflict zones, victims of stigmatisation and discrimination and key/vulnerable populations.

#### f) HIV testing via a social network

According to the WHO (November 2019) * a social network is a group of people who share common relationships or behaviours; this includes sexual partners, injection drug-user partners as well as social contacts. Social network-based approaches to HIV testing are an extension of partner-based HIV testing services. The principle is that a trained provider asks people living with HIV or people who are HIV-negative but at persistent risk of HIV infection to encourage and invite people in their network to take part in voluntary HIV testing.

### *II.1.3. Models of differentiated HIV testing services by population group*

Differentiated HIV testing services are designed and provided to meet the different HIV testing needs of individuals or groups of people.

Therefore, providing differentiated HIV testing services saves resources, promotes equity and maximises links with post-test services.

***Table 88:*** *Differentiated service delivery models for HIV testing by population group*

| Differentiated HIV screening services model | Types of population | Key considerations |
|---|---|---|
| **Screening and advice initiated by the service provider (DCIP)** | • All people at all points of entry to the health facility: tuberculosis, STI, viral hepatitis, ANC, maternity, malnutrition, blood bank, paediatrics, emergency, etc. | • Obtaining client consent<br>• Respect of confidentiality<br>• Integrating HIV screening with other health services |
| **Screening by index case** | • Sexual partner(s) of PLHIV<br>• Children under 15 whose mother is HIV-positive and who have never been tested for HIV<br>• Person sharing drug injection equipment with a PLHIV | • The type of notification for HIV testing services varies according to the population concerned<br>• Assessment of violence between the index case and his/her intimate partner(s)<br>• Active referral of people to a health facility for confirmatory testing and linkage to HIV prevention or care and treatment services |
| **Family screening** | Family members (sexual partners and biological children) and other household members of a person living with HIV | • Obtain the consent of one or both parents<br>• Assessment of intimate partner violence<br>• Active referral of people to a health facility for confirmatory testing and linkage to HIV prevention or care and treatment services |
| **Self-testing for HIV (ADVIH)** | • Key populations: MSM, MSM, transgender, drug users and injecting drug users;<br>• Partners and clientsof key populations ; | • Available to those aged 18 and over<br>• Assessing the vulnerability of beneficiaries |

| Differentiated HIV screening services model | Types of population | Key considerations |
|---|---|---|
| | • Partners of PLHIV ;<br>• Partners of pregnant women ;<br>• Young people (18-24 and over) in vulnerable situations;<br>• Men in vulnerable situations | • Necessity of procedures for confirmatory testing and referral to care |
| **Targeted community screening for HIV** | • Key populations and clients of sex workers<br>• Adolescents and young people at risk<br>• Refugees/displaced persons/truckers<br>• Men in uniform<br>• People living in areas of high HIV prevalence and in areas that are difficult to access | • Obtain prior approval from local authorities<br>• Assessing the risk of contamination<br>• Target mobilisation by peers<br>• Need for procedures for confirmatory testing and referral to care |
| **HIV screening via a social network** | Key population (FSW, MSM and IDU) and young people aged 18 to 24 | The seeds (peers/recruiters) recruit members of the network whose serological status is unknown or negative and refer them for a screening test using a coupon. |

### *II.1.4. Link with HIV prevention, care and treatment services*

The link with care and prevention services helps to limit new HIV infections by putting patients on treatment quickly. The liaison process must be active and respected by care providers (clinics and CBOs). Liaison can take place: by referral within the health facility (intra-HF) or between two health facilities; by referral between the community and the health facility. For all types of link, close monitoring must be carried out to ensure that clients have received services.

### *II.1.5. Referral to HIV prevention services for clientswho test negative*

People who test negative HIV should be referred to prevention services on the same day to prevent future infection. Combined prevention programmes have a lasting impact on reducing new infections. Prevention services must be person-centred. It includes the following elements

- Identifying people at risk of HIV infection
- Determining the combined prevention package best suited to them, taking into account the risk factors they present and their preferences in terms of prevention services.

***Table 89**: Package of prevention services by intervention*

| Interventions | Prevention services package |
|---|---|
| **Biomedical** | Condoms, lubricants, PrEP, PEP, PMTCT, screening and treatment for STIs and tuberculosis, family planning, cervical cancer screening and treatment. |
| **Behavioural** | Advice on :<br>• Risk reduction<br>• Sex education<br>• Social and behavioural change Mental health assessment and management |
| **Structural** | • Promotion of an enabling environment to reduce stigma, discrimination and GBV, respect for human rights, community empowerment, including ownership and leadership<br>• Continued availability of HIV testing and treatment products and inputs at district level |

**N.B.: There is no single prevention model: an individual's needs and preferences may change over time.**

### *II.1.6. Referral to HIV care and treatment services for clients who test positive*

Linkage to treatment means putting a person who has been tested HIV+ in contact with the CAT service, with a view to initiating ARV treatment. The aim is to accompany the newly HIV-positive patient as soon as possible to integrate HIV care and treatment services. The link to treatment and initiation of treatment must therefore take place within a maximum of seven days in the same health facility and within 30 days referrals between 2 health facilities or from the community to the health facility.

## II.2. Differentiated treatment service

This approach assessing the condition of patients in order to determine the level of care they need and to offer them appropriate services. The components of **differentiated delivery of ART** must be considered from four angles (who, what, how, where).

### a) When is ART provided (frequency of consultations)?

- Recommend less frequent visits to collect medication (3-6 months) for people who are stable on ART.
- Extending or adapting service hours is a simple way of remedying access problems for certain clients.

### b) Where is ART dispensed (location)?

- Decentralise services closer to patients' homes (health facilities or CBOs). The time and cost of travelling to the clinic, coupled with persistent problems of stigma, remain obstacles to retention and prolonged viral suppression.
- Decentralisation of HIV care is a strategy that can reduce both congestion in health facilities and the financial burden PLHIV. It should be seen as a way of increasing access to and retention in care.

### c) Who provides the differentiated ART service (the service provider)?

The service is provided by staff from the health facility or a trained community player

### d) What services should be offered (set of services)?

- Stable patients have different needs when it comes to treatment renewal visits, clinical consultations or psychosocial support. E.g For ART renewal visits: counselling (individual or group) and TB research should be given priority.

### *II.2.1 ART delivery models*

ART delivery models should be adapted according to the following three elements:

- **Clinical characteristics of clients** (stable, non-stable, comorbidity/co-infections);
- **Sub-population** (adults, children, adolescents, pregnant and breastfeeding women, key populations, etc.);

- **Context** (e.g. urban/rural, occupation).

### *II.2.2. Differentiation on the basis of clinical characteristics*

On the basis of clinical characteristics, clientscan be defined as **stable**, **non-stable** and **suffering from co-morbidities or co-infections**. Clients will move from one category to another.

Stable patients on ART have the following characteristics:

- **On ARVs for at least six months,**
- **No active disease (this not include well-controlled chronic diseases);**
- **Has a good understanding of adherence after good adherence counselling**.
- **Has evidence of therapeutic success; suppressed viral load less than 6 months old**. If VL not available: CD4> 200/mm3 in adults and >350/mm3 in children, or weight gain or absence of symptoms of current infection.

**After the first 12 months on ART, patients who are stable in care will be seen every 3 to 6 months** and then, if they so wish, referred to an CBOs close to their home to continue dispensing ARVs in accordance with the guidelines.

On the other hand, if a client is non-stable or has co-morbidities or co-infections, they should benefit from increased monitoring and support. Non-stable clients may have a high viral load or other characteristics, such as mental health problems, or may have recently started ART, which classifies them as
"not stable".

| | Non-stable patients | Patients stable under care | |
|---|---|---|---|
| | | Adults | Special cases |
| **Definitions** | The presence <u>at least one</u> of these criteria defines an unstable patient<br>• Patients with advanced disease (WHO stage 3 and 4);<br>• Under treatment for less than 12 months;<br>• Presence of an active OI (including TB) in the last 6 months; | Stable patients on ART have the following characteristics;<br>• **Have been on ARVs for at least 12 months,**<br>• **Have no active disease.** This does not include well-controlled chronic conditions, | **Pregnant women**: if she was already on ART and stable before the current pregnancy<br><br>**Nursing women:** in case of of recent VL<1000 |

| | Non-stable patients | Patients stable under care | |
|---|---|---|---|
| | | Adults | Special cases |

| | | | |
|---|---|---|---|
| | • Evidence of poor adherence in the last 6 months;<br>• VL ≥1000 copies/ml ;<br>• BMI< 18.5 | • have **a good understanding of adherence** after good adherence counselling.<br>• **have evidence of therapeutic success; suppressed viral load dating from less from 6 months.** If VL not available: CD4> 200 in adults and >350 in children, or weight gain or absence of symptoms of infections in progress | copies/ml and PCR 1 of a negative child between 6 and 8 weeks old<br><br>**Adolescent:** if stable and psychosocial follow-up |
| **Where** | Health facilities | • Health facilities<br>• CBO s (Community community of ARVs) | |
| **Follow-up** | • Every month<br>• Monthly dispensing of ARVs | • Clinic every 6 months<br>• Dispensing ARVs every 3 months, or even 6 months depending on the case (justified long journeys, military personnel, patients in conflict zones, the elderly, exposed areas) | |
| **Care package** | **Monthly follow-up**, although additional visits are necessary in the event of medical and/or psychological pathologies.<br>○ Assessment and clinical follow-up and paraclinical (biological) in accordance with guidelines<br>○ Prophylaxis with INH or Cotrimoxazole<br>○ Systematic screening and mangement for opportunistic infections<br>○ Psychosocial care<br>○ Intensification<br>○ Therapeutic education | **Quarterly monitoring**<br>○ Assessment and clinical follow-up/reassessment stability criteria at each visit<br>○ TPT and Cotrimoxazole prophylaxis<br>○ Systematic search for tuberculosis<br>○ Assessment of adhesion<br>○ Therapeutic education<br>○ Assessment of viral load (once a year) or CD4 if VL not available every 6 months<br>○ Renewal of prescription and supply of ARVs every 3 or 6 months | |

| | Non-stable patients | Patients stable under care | |
|---|---|---|---|
| | | Adults | Special cases |
| | ○ Assessment of safety and efficacy of treatment with genotyping as required<br>○ Reinforcing adherence assistance<br>○ Refer patient for appropriate treatment if necessary | | |
| **What to do** | If the patient becomes If the patient is "stable" after 6 months of ART, he is followed up at the hospital according to the follow-up model for "stable" patients. | If the patient becomes "Non-stable again, he or she is returned to the hospital for the follow-up model corresponding to that for "Non-stable" patients. | |

NB: Since HIV infection is a chronic disease, some **"stable** clients may become "unstable". They should therefore receive psychological counselling and regular viral load monitoring for a short, intensive period.

Subject in good general condition who has just started ART

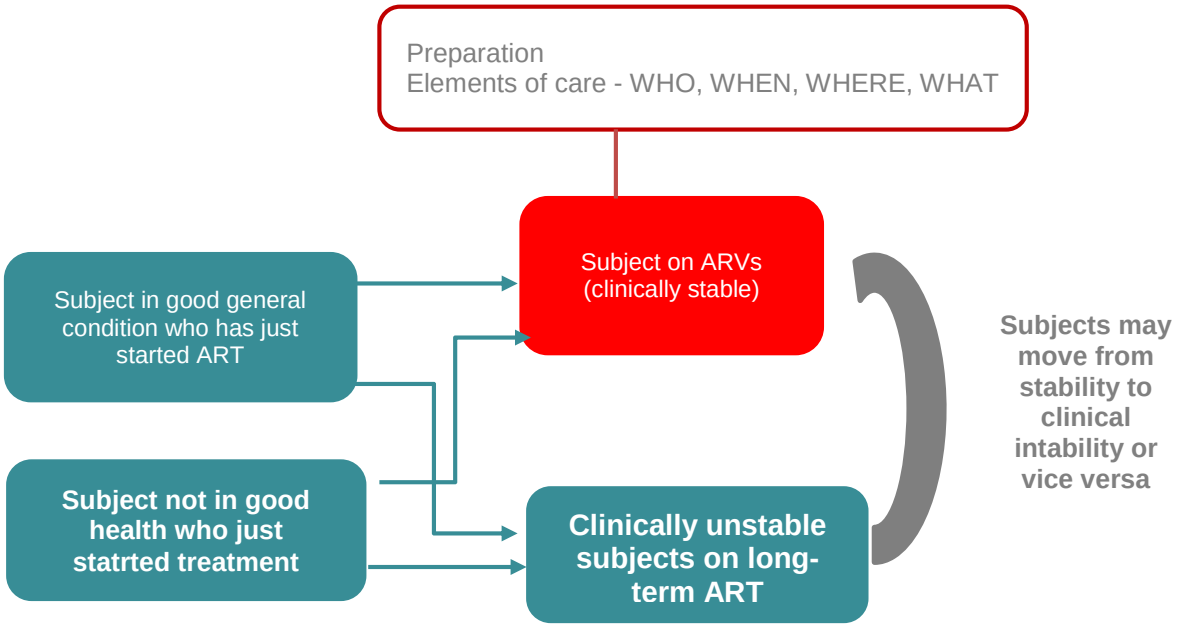



***Figure 12**: Transitions between subject categories in the case of differentiated delivery of ART*

### *II.2.3. Differentiation on the basis of sub-population*

ART provision should be differentiated not only on the basis of clinical characteristics, but also taking into account the challenges of sub-populations, including:

- Women, including pregnant and breast-feeding women;
- The men ;
- Teenagers and children ;
- Key populations such as MSM, FSW, TG and IDU.

Each sub-population requires a tailored and comprehensive programme of healthcare services to overcome their unique challenges.

One of these innovations could, for example, consist of defining specific days or times set aside for the renewal of treatment for certain sub-populations, which would enable healthcare providers and counsellors to focus on the specific medical and psychological needs of this population. For example, this would enable more effective use to be made of available tools tailored to children and adolescents, as opposed to routine visits to the health facility.

***Table 90:*** *Summary of DSD components by sub-population*

| Pillars | Specific populations | | | |
|---|---|---|---|---|
| | **Children and teenagers** | **Pregnant women and breastfeeding** | **Key population** | **Men** |
| **As for** | During opening hours and after hours | During opening hours and after hours | During opening hours and after hours | During opening hours and extra opening hours |
| **Where** | HF<br>Community, in a friendly setting | HF | HF<br>Community | HF<br>Community |
| **Who** | Healthcare providers<br>Communiy workers<br>Trained peers | Healthcare providers<br>Community workers<br>(mentor mother) | Healthcare providers<br>Community workers<br>Trained peers | Healthcare providers<br>Stakeholders community |
| **What** | -Renewal of ARV/CTX/TPT<br>-Screening for TB<br>-psychosocial support<br>-clinical consultation | -Renewal of ARV/CTX/TPT monthly or every 3 months if established on treatment<br>-Advice on FP<br>Prenatal check-up<br>-VL<br>-Initial Balance Sheet (IB)<br>-Monitoring Report (MR)<br>-Adherence support<br>- Psychological support | -Renewal of ARV/CTX/TPT<br>-psychosocial support<br>-Screening for TB<br>-clinical consultation<br>-Prevention services | -Renewal of ARV/CTX/TPT<br>-<br>psychosocial support<br>-Screening for TB<br>-clinical consultation |

### a) DSD of ART in pregnant and breastfeeding women;

With a view to eliminating mother-to-child transmission of HIV/AIDS, it is essential to ensure that all HIV-positive pregnant and breastfeeding women are on treatment and that their viral load is suppressed. The DSD recommended HIV-positive PWs provides for care recipients to receive all the services required as appropriate, while promoting synchronised care of the mother-child couple.

### b) DSD of ART in children

It is important to remember that any infected child aged between 0 and 5 years, regardless of their clinical condition, is classified as having advanced HIV disease. However, different services are only offered to established children over the age of two.

***Table 91**: Summary of D2SD components for children*

| | Dispensing ARVs | Clinical consultation | Psycho-social support |
|---|---|---|---|
| **WHEN** | ➢ **≥ 2 and < 5 years**<br>- Every month (for first 6 months after initiation of ART), then<br>- every three months (if viral load suppressed) | **≥ 2 and <5 years**<br>- Every month (during 6 months following initiation of ART), then<br>- every three months (if viral load suppressed) | - Every month |
| | ➢ **From 5 to 9 years old**<br>- Every month for first 6 months after initiation of ART), then<br>- every three months (if viral load suppressed) | ➢ **From 5 to 9 years old**<br>- Every month during 6 months after initiation of ART), then every three months (if viral load suppressed) | |
| **WHERE** | Health Facility | Health Facility | - HealthFacility<br>- Community |
| **WHO** | - Pharmacist<br>- Pharmacy Clerk | - Doctor<br>- Nurse<br>- Midwife | - Healthcare providers<br>- Psychologist<br>- PSAs<br>- Counsellors and Peers<br>- Mother mentor |
| **WHAT** | - Renewal ARVs, CTX, TPT<br>- EPI vaccination | - Physical examination<br>- Processing OIs<br>- Follow-up report | - Adherence support<br>- Psychological support<br>- Food support/nutritional advice |

### c) Providing services to adolescents living with HIV

HIV affects adolescents in a variety of ways, in addition to the particularities of adolescence. One of the gaps in HIV care and treatment services for adolescents is the provision of psychosocial counselling for HIV-infected/affected adolescents and their carers.

It is important for healthcare staff/providers to acquire the knowledge and skills needed to provide ongoing psychosocial counselling to HIV-positive children/adolescents and their carers, and to address issues related to care and treatment adherence.

**Health services tailored to teenagers**

- Services adapted to the needs of adolescents should be implemented in HIV services to ensure the commitment of young people and better results.
- Community-based approaches can improve adherence and retention in care for adolescents living with HIV.
- Adolescents need to be informed of the potential benefits and risks of their HIV status to others. In addition, they need to be empowered and supported in determining whether, when, how and to whom to disclose.
- Psychosocial interventions must be provided for all adolescents and young people living with HIV

## II.3. Services for adolescents living with HIV

Health care for adolescents and young people covers three aspects: (i) promotion, (ii) prevention and (iii) clinical management/care. The interventions and health services for adolescents, most of which are included in the High Impact Intervention Package (HIIP), are presented in the table below:

| HIV | Violence prevention and injuries | Sexual health and genetics/maternal care |
|---|---|---|
| • **HIV testing and counselling**<br>• **PMTCT**<br>• **Antiretroviral treatment**<br>• **Information on contraception** | • Caring for teenage victims of violence<br>• Clinical care for survivors of sexual assault<br>• Education to prevent road accidents | • Menstrual hygiene<br>• Perinatal care for the young teenage mother<br>• Contraception<br>• STI prevention and treatment<br>• Post-abortion care |
| **Mental health** | **Use of psychoactive substances** | **Nutrition** |
| • **Management of emotional and behavioural disorders** | • Assessment and management the consumption alcohol or drugs (including during | • Iron and folic acid supplement |

| | | |
|---|---|---|
| • **Self-harm/suicide management** | pregnancy) and disorders related to their use | • Health education for teenagers and parents on a healthy diet<br>• Assessing BMI in relation to age |
| **Physical activities** | **Tobacco control** | **Management of common ailments** |
| • **Health education for teenagers and parents physical exercise** | • Health education<br>• Withdrawal aid and treatment | • Treatment of common illnesses using existing protocols |

Concerning the dispensing of ARVs to stable clients who are members of support groups/adherence clubs that meet quarterly.

Health facility or CBO staff can use existing support groups or create new ones for ART-related DSD. Clubs reduce clinic waiting times, provide peer support and offer more flexibility (e.g. they can meet on Saturday mornings for working adults, students in schools).

The group must have between 05 and 25 members, and the targets are:

- **Community**: stable teenagers aged 15 to 19 and adults;
- **In health centres**: stable adolescents aged between 10 and 19, adults and pregnant women.

## II.4. Support group for teenagers (aged 10-19)

### ▪ Special considerations :

The adolescent support group has the following objectives:

- Successfully controlling and maintaining viral load suppression in adolescents living with HIV;
- To help HIV-infected teenagers understand that living with HIV is not inevitable, but that they can still live life to the full and feel good about their HIV status;
- Provide HIV-infected adolescents with information that reinforces messages self-acceptance rather than blaming others for their HIV status. The information also aims to encourage them to get rid of anger taking responsibility for their lives, be motivated and committed to taking control of their treatment (adherence and retention support);
- Assess, prevent and treat adherence problems such as social, economic, behavioural, cognitive and emotional barriers;
- Giving hope, reducing stigma and empowering teenagers to focus on the future.

- **Special considerations for implementation**

The facility has different groups of adolescents living with HIV on ART who know their HIV status (with full disclosure of their HIV status). An adolescent support group is subdivided into **adolescent** or **classes** using the age **10-14** and **15-19**.

All members of the teenage support groups come on the same day and then go to their specific meeting place according to their age for the teenage classes.

The aim of the club groupings is to share the knowledge they have acquired in the past. The teenage champions manage classes of teenagers divided between them on a rotating basis; each class of teenagers will have two teenage leaders at a time. Each group is made up a minimum of 5 people and a maximum of 15.

- **Focal person for the teenage support group:**

The health centre has an adolescent support group focal point who ensures that meetings are organised in accordance standard adolescent club norms.

- **Teenage Champion**

Adolescent living with HIV and with a suppressed viral load, able to openly share their status with others, willing to be trained and to provide support to their peers. Teenage champions receive training in peer mentoring and leadership, which gives them confidence in carrying out their duties and reinforces their status as role models for other teenagers.

- **Why teenage ?**

**To meet the diversity of age-related needs**.

Teenage classes are also used to select appropriate health education topics for teenage class meetings.

Adolescents who started ARV treatment at a young age and have been on it for some time may need to focus more on adherence, nutrition and positive living, while some topics may be relevant to new members or may be less interesting to older people. In addition, the older group is in a period of engagement in intimate relationships, some are already sexually active, but may be unable to discuss issues such as family planning,

protected sexual relations, more intimate relations, disclosure to the partner, due to the presence of younger members.

Teenage classes give members the opportunity to discuss freely the experience in their daily lives without fear of being laughed at by the older group.

***NB**: For the time being, the support group for adolescents only concerns patients on ART.*

### The four basic elements of adolescent support group services

- **Teenage : 10-14 years**

***Table 92**: Summary of DSD components for adolescents aged 10-14 years*

| | Dispensing ARVs | Clinical consultation | Psycho/Social Support |
|---|---|---|---|
| **WHEN** | Every 3 months | Every 6 months | Every 1 - 3 months |
| **OR** | Group meetings | HF | Community group meeting |
| **WHO** | - Pharmacist<br>- Pharmacy attendant PSAs under the supervision of the pharmacist | Healthcare provider | - Healthcare provider<br>- Psychologist<br>- Teenage champion<br>- Teen club leader |
| **WHAT** | - RDRV<br>- CTX<br>- TPT<br>- Condoms/family planning | - Physical examination<br>- Viral load<br>- OIs treatment<br>- Health education<br>- Measurement of clinical parameter,<br>- Screening, including screening for Tuberculosis and STIs | - Individual adherence strategies<br>- Peer-led health<br>- Weaving relationship with peers<br>- Games and social games |

- **Teenage : 15-19 years**

***Table 93:*** *Summary of PSD components for adolescents aged 15-19*

| | Dispensing ARV 3 | Clinical consultation 1 | Psycho/Social Support 2 |
|---|---|---|---|
| **WHEN** | - Every 3 months | - Every 6 months | - Every 1 - 3 months |
| **OR** | Group meetings | HF | Group meetings<br>Community |
| **WHO** | Pharmacist<br>Pharmacy attendantA<br>PS<br>Social workers | Healthcare provider | Healthcare provider<br>Psychologist Teenage champion Teen club leader |
| **WHAT** | ART<br>CTX<br>TPT<br>Condoms/family planning | Physical examination<br>Viral load sample (every year)<br>Measurement of clinical parameters,<br>Screening, including screening for tuberculosis and STIs<br>OIs management<br>Health Education | Individual adherence<br>Peer-led health education<br>Weaving relationships with peers<br>Games and social games |

- Interventions to support adherence to treatment such as peer education, telephone messages and reminder devices should be provided to patients on ART.

## II.5. Transition of adolescents to adult care

Transition is when the adolescent moves from the paediatric care unit (dedicated to children and adolescents) to the adult care unit to continue ART and any other health care.

Not all people with HIV will be ready for the transition at the same age. Start the process early (age 18), continue this preparation until the end of adolescence and implement the transition from the beginning of the twentieth year.

It is important to implement a transitional procedure to ensure a safe transition.

## Standard operating procedures for the transition of adolescents to adult service

The procedure for transitioning adolescents from the paediatric ART service to the adult ART service will include the following steps:

- Preparing for the transition ;
- The transition.

### *II.5.1 Preparing for the transition*

Healthcare providers in the paediatric ART service must

- Review patient's medical history with them and encourage them to ask questions;
- Ensure that the teenager fully understands his or her diagnosis, treatment, the need for good adherence and the need to live positively with the situation;
- Enrolment in adolescent peer support groups ;
- Organise educational talks for adolescent patients preparing for the transition, during which the transition and its implications are constantly refreshed;
- Encourage older teenagers to take responsibility for themselves by keeping their appointments and being compliant with medication;
- Invite staff from the adult ART service to take part from time to time in educational talks in the paediatric ART service so that they are better informed about the characteristics of adolescent patients and their specific needs;
- Supporting teenagers to help adult patients find their way;
- To provide the necessary support to the adult care service to set up a young adult support group which will be responsible for the initial reception and support of adolescents who have graduated from the pediatric care service;
- Involve peer educators or young champions in planning and facilitating care and support activities for adolescents;
- Provide support to parents/guardians so that they understand the changing nature of their role in their teenager's care and the teenager's interest in moving towards a confidential relationship between them and their care provider.

### *II.5.2 The transition itself*

Accompanying the well-prepared teenager who is eligible for the adult care service;

- Give it to a peer educator or a service provider trained in handling transition cases;
- Reassure the teenager who is eligible of their esteem and availability to continue to provide support and to ask for regular updates;
- Provide the adult care department with an up-to-date summary of their care in the paediatric department;
- Saying goodbye to the young person who is eligible and to their new care team;
- Promote enrolment in the young adult support group;
- And follow up.

## II.6. Providing services to older people living with HIV

Access to antiretroviral treatment on a large scale has reduced prevalence and, above all, enabled people living with the virus to live longer.

Elderly or senior citizen: according to the WHO, a person over the age of 65. In the case of certain chronic diseases, such as HIV infection, the effects of ageing appear earlier, and people over 50 are already considered to be elderly. However, older people remain sexually active, and it is important to emphasise this fact and take it into account when treating them.

### *II.6.1 Behaviour change communication*

- Addressing these people with prevention messages and promoting HIV screening;
- Map out the places where older people can be found for mass awareness and education sessions;
- Organise awareness-raising sessions aimed solely at the elderly, without mixing them with young people and adults;
- Promote healthy sexuality by gender (focus disorders in the elderly such as sexual weakness in men and vaginal dryness in women).

### *II.6.2. Risk factors for chronic diseases in PLHIV: alcohol, tobacco, diet, physical inactivity*

**Alcohol: Recommend** reducing excessive alcohol consumption.
**Smoking:** Informing tobacco smokers about the health benefits of giving up smoking.
**Power supply: Recommend,**

- Reduce your intake of cooking salt;
- Reduce animal fats ;
- Reduce sugary drinks ;
- Encourage the consumption of fruit, vegetables and fish.

**Sedentary lifestyle: recommending** physical activity for people living with HIV

### *II.6.3. Screening for functional disorders and loss autonomy in the over-65s (WHO ICOPE)*

The elderly face several functional problems that require support from family members or friends.

Geriatric problems tend to appear after the age of 65, even in people living with HIV, which is why an active search must be carried out at every refilling visit on:

- Autonomy ;
- Mobility (falls) ;
- Cognitive ;
- Nutrition: thinness (BMI less than 18) or involuntary weight loss of 5% or more of current weight should also trigger a more thorough investigation;
- Mood disorders (feelings of depression, despair; loss interest or pleasure in doing things);
- Polymedication: review all the medicines taken by the patient and look for any interactions. In some cases, it may be necessary to reduce the doses, or even stop certain medicines being taken, particularly those that are unnecessary, not beneficial or harmful to the patient (de-prescribing);
- Aadherence: the patient's ability to take the treatment correctly must be checked and, if in doubt, a family member or other close friend may be called in, depending on the patient's wishes;
- Cancers: screening for other cancers common in the elderly (prostate and cervical cancer) should be discussed regularly.

Monitoring and managing the problems of the elderly requires a multidisciplinary team (doctor, social worker, dietician, physiotherapists, psychologist, nurses, etc.) and close coordination with the patient's family and friends. Local health workers (doctors and nurses) are responsible for screening and offering the minimum package of services to elderly patients with co-morbidities, following national protocols; complex cases will be referred to health facilities with adequate technical resources.

## II.7. Differentiation according to socio-economic context

The differentiation of HIV care services takes into account the context in which the client is seeking access care (e.g. an urban or rural environment, a low- or high-burden area, an area in the grip of a security crisis).

Although the majority of documented models of differentiated ART delivery come from high-prevalence settings, the principles of the building blocks can also be applied in other contexts and existing models can be adapted to the local epidemic and the local social and political environment.

The prevalence of HIV among a specific population in a given geographical environment (e.g. rural or urban) determines the concentration of clients and should influence the choice of a differentiated ART delivery model. For example, a large number of adolescents may justify the formation of a group close to home or a dedicated paediatric day at the health facility.

## II.8. Nutrition and HIV

***Table 94:*** *Nutritional advice in the event of symptoms linked to HIV or treatment*

| Complications | Nutritional advice |
|---|---|
| **Diarrhoea (liquid stools > 3 times/day)** | • Don't stop eating. Favour foods that promote good digestion: white rice, bread, cooked carrots, bananas. Avoid raw, spicy or very fatty foods and dairy products.<br>• Drink plenty to avoid dehydration. Drink water, soup or rice water. Avoid drinking tea or coffee.<br>• **Eliminate alcohol and tobacco**. |
| **Loss of appetite** | • Eat your favourite foods frequently in small quantities to stimulate your appetite. Avoid foods that give you gas or fizzy drinks that can cause bloating.<br>• Drink alot, especially between meals.<br>• Eliminate alcohol and tobacco.<br>• Take light exercise, breathing deeply (e.g. walking). |
| **Nausea and vomiting** | • Eat sitting down and wait 1 hour before lying down after eating. Eliminate very fatty foods, preferring dry and salty foods, which are often well tolerated in cases of nausea.<br>• Drink plenty of fluids, preferably between meals, even if you are vomiting.<br>• Eliminate alcohol and tobacco. |

| Complications | Nutritional advice |
|---|---|
| **Pain in the mouth/throat leading to difficulty in eating** | • Favour soft, easy-to-swallow foods: creams, yoghurts, soups, avocado, pumpkin, banana, papaya, minced foods.<br>• To swallow drinks, use a straw.<br>• Eliminate soft drinks and alcohol.<br>• Avoid spicy, irritating (dry) or acidic foods.<br>• In the case of candidiasis, limit sweet foods (sugar, honey, sugary drinks), which can aggravate the condition. |

Some ARVs are taken without meals. The table below summarises how ARVs are taken according to diet.

*Table 95: Nutrition and treatments HIV infection*

| Frequently used medicines | Recommendations on eating habits |
|---|---|
| **ABC, FTC, 3TC, NVP, AZT, EFV** | With or without meal |
| **LPV, RTV, TDF** | With a meal |
| **Cotrimoxazole** | Drink plenty of water throughout treatment. |

**Care and nutritional support for symptomatic and asymptomatic children living with HIV**

| Age | Asymptomatic children | Symptomatic children | |
|---|---|---|---|
| | | On ARV treatment | No ARV treatment |
| **0-6 month** | - Exclusive breastfeeding for the first 6 months<br>- Take your child's weight once a week for up to 1 month, then once a month.<br>- Plot and monitor the weight curve in the health record,<br>- Record the child's eating habits in the health record, | | |
| **6-12 month** | **Continued breastfeeding**<br>-Give a meal of cereals and/or vegetables enriched with fruit.<br>- Give vitamin A twice a year and, if necessary, add other multivitamin complexes.<br>- Take your child's weight once a month up to 12 months, then once every 3 months.<br>- Plot and monitor the weight curve in the health record,<br>- Record the child's eating habits in the health record, | | |
| **12-24 month** | **Continued breastfeeding**<br>- 4-6 meals a day, including snacks between the main meals.<br>- Vitamin A, twice a year and, if necessary, add other multivitamin complexes<br>- Take your child's weight a month up to 12 months, then once every 3 months.<br>- Plot and monitor the weight curve in the health record,<br>- Record the child's eating habits in the health record, | **Continued breastfeeding**<br>-5-7 meals a day, including snacks between the main meals.<br>- Take your child's weight a month up to 12 months, then every 3 months.<br>- Plot and monitor the weight curve in the health record,<br>- Record the child's eating habits in the health record,<br>- Give multivitamin complexes | **Continued breastfeeding**<br>-6-8 meals a day, including snacks between the main meals.<br>- Give the multivitamin complexes a month until the child is 12 months old, then once every 3 months.<br>- Plot and monitor the weight curve in the health record,<br>- Visit mode in the child's health record, |
| **2-5 years** | 5-7 meals a day, including snacks between the main meals<br>- Vitamin A twice a year and, if necessary, add other multivitamin complexes<br>- Take your child's weight once a month up to 12 months, then once every 3 months.<br>- Plot and monitor the weight curve in the health record, | | |

| Age | Asymptomatic children | Symptomatic children | |
|---|---|---|---|
| | | On ARV treatment | No ARV treatment |
| | - Record the child's eating habits in the health record, | | |
| **more than 5 years** | 6-8 meals a day, including snacks between the main meals.<br>Vitamin A twice a year and, if necessary, add other multivitamin complexes<br>- Take your child's weight once a month up to 12 months, then once every 3 months.<br>- Plot and monitor the weight curve in the health record,<br>- Include the child's eating habits in the health record | | |

# CHAPTER 12: MONITORING AND EVALUATION

Coordination and monitoring and evaluation at all levels in line with the 2024-2030 national strategic plan to combat HIV/AIDS will help to achieve the desired results:

i) Better achievement of national objectives;
ii) Contributing to the achievement of UNAIDS 95-95-95 targets;
iii) Harmonisation and standardisation of monitoring and evaluation procedures and tools;
iv) Quality data collection and analysis.

The main mechanisms and resources listed in the table below for each level of the health pyramid will be used to ensure that coordination, monitoring and evaluation are fully successful:

| MONITORING AND ASSESSMENT | | | |
|---|---|---|---|
| **LEVEL** | **RESOURCES** | **ACTORS** | **COORDINATION AND MONITORING-EVALUATION MECHANISMS** |
| **Health Facility** | Carry out performance evaluation<br>Use of performance indicators | HD<br>TFPF<br>OSA<br>RTG AIDS-TB | Data validation<br>Assessing the quality of care |
| **Community** | Carry out performance performance<br>Use of performance indicators | HD community FP)<br>Dialogue structures<br>DTC (Regional Council and Local councils)<br>SCO<br>CBO<br>TFP | Data validation<br>Data quality assessment |

Monitoring and evaluation of the strategy includes all actions that will make it possible, on the one hand to check that service providers are adhering to the guidelines and, on the other hand, to measure the impact of the recommended approaches on the programme's objectives. The monitoring of activities will be based on the institutional and logistical framework of the health response and the HIV monitoring and evaluation system.

## I.1. Routine monitoring in health facilities and CBOs

Monitoring of the strategy is based on the regular reporting system.

- ✓ The data is collected daily using primary physical tools (data collection registers) or electronic tools (EMR, Dama, Vindata, etc.). They are collected by the staff in charge of data collection under the supervision of the treatment unit Coordinator.
- ✓ Data abstraction is carried out at the end of each month by the statistician (ACRR) or any other person with this responsibility.
- ✓ The data (clinical and logistics) are validated at the health facility level by a team made up of the Major, the ACRR and any other person involved in the data production and management process (ANC, Laboratory, etc) under the supervision of the Coordinator.
- ✓ Validated data are used for decision-making at the health facility level and entered into the DHIS2 software.

The monitoring and evaluation plan will specify in greater detail all the tools, actors and indicators that will ensure the achievement of the results as specified in the national strategy.

## I.2. Supportive supervision (DQA, SQA, GSM)

These are continuous educational training tools, Supportive supervisions, will be carried out the one hand by the CTA and Care and treatment unit tutor coordinators and the other hand by: the stakeholders, and the the health district services. This exercise is done on quarterly basis and every six months to the healthcare structures of the Health Districts by the implementing partners, the RTG, the RDPH and the technical services of MoH. The supervisory bodies have as aim to monitor the implementation of the guidelines and provide support to health care providers.

# CHAPTER 13: HUMAN RIGHTS

Promoting the human rights of people living with HIV (PLHIV) is essential to ensure their dignity, equitable access to healthcare and social inclusion. It requires an integrated approach combining legal advocacy, education, community support, legal services and research. Concerted efforts at all levels, from local to global, are essential to create an inclusive and rights-respecting environment for PLHIV.

Activities and procedures to promote the human rights of PLHIV, with concrete examples and references below show the effectiveness of these initiatives in various contexts around the world.

## I. ADVOCACY AND LEGAL REFORM

### I.1 Adoption of anti-discrimination laws

We must promote and support the adoption of specific national laws prohibiting discrimination based on HIV status.

### I.2 Review of existing legislation/Monitoring and reform laws, regulations and policies relating to HIV

Carry out campaigns to revise existing laws that criminalise PLHIV, including HIV transmission laws. Human rights groups and legal research (Canadian HIV/AIDS Legal Network, 2017) influence the revision of HIV transmission criminalisation law in some countries.

Strengthen existing community-level monitoring programmes by supporting their scaling up, ensuring that peer legal assistants become observers who report cases and linking them to risk mitigation committees to ensure that specific situations are dealt with quickly.

Integrate community monitoring wherever possible into service delivery programmes through peer educators, legal assistants and community volunteers working in health facilities.

Develop an advocacy plan to begin to address key policy, regulatory and legal barriers to HIV and TB services for key and vulnerable populations. This plan should identify achievable short-term advocacy goals and define a longer-term strategy to address the detrimental effects of criminalisation of key populations.

# II. EDUCATION AND SENSITISATION

## II.1 Training programmes for healthcare professionals

Training sessions on human rights, medical ethics and non-discrimination are essential for healthcare professionals to help them better manage related issues.

Some educational programmes on human rights for healthcare workers have improved their attitudes towards PLHIV (Human Rights Watch, 2018).

- **Training health workers in human rights and ethical issues**

Include modules on stigma, discrimination, human rights and ethics in all in-service training for HIV and TB service staff.

Mobilise the Ministries of Higher Education and Health to ensure that teaching on HIV, tuberculosis, stigma, discrimination, human rights and ethics is an integral part of initial training programmes in nursing and medical schools.

Put in place mechanisms to ensure regular dialogue between health workers and vulnerable populations at local level on the results of community level monitoring, so that specific concerns are identified and addressed in a timely manner.

- **Legal education ("Know your rights")**

- Include legal education in the routine training of peer educators and provide them with legal education materials so that they can sensitized the populations they work with.
- Set up a legal assistants programme with assistants from all vulnerable populations to ensure that those most at risk of human rights abuses receive legal information and are linked to legal and other assistance services where necessary.
- Ensure that legal education materials are easily accessible to key and vulnerable populations, including distributing them through community organisations, health facilities, websites and social networking platforms.

## II.2 Public sensitisation campaigns/sensitisation among legislators and law enforcement agencies

Large-scale awareness campaigns help educate the public about the rights of PLHIV and combat stigmatisation. The "Undetectable= Untransmissible " (U=U) campaign helped to reduce stigma by informing the public that PLHIV on effective treatment do not transmit the virus (Prevention Access Campaign, 2019)

- Sensitization activities must continue to be stepped up to reach the majority of law enforcement officers, lawyers and prison guards, at least in high-prevalence areas.
- A strategy should be developed and implemented to engage legislators on HIV, PLHIV and human rights issues, and to raise awareness on the detrimental effects on key public health objectives.

- Concerted efforts should be made to include representatives of key populations in sensitization activities to law enforcement officers, legislators, lawyers and prison guards. For maximum effectiveness, it is imperative that these programmes lead to direct contact and exchange with key populations.

- Modules on HIV, tuberculosis, key populations and human rights, gender (gender norms and gender identity, sexual diversity) should be developed and integrated into the curricula of the police academy and other training institutions for law enforcement officers, prosecutors and judges (Revised Five-Year Plan 2020-2024 for a comprehensive response to human rights barriers to accessing HIV, tuberculosis, malaria and cervical cancer services in Cameroon).

### II.3 Reduction of gender-based discrimination, harmful gender norms and violence against women and girls in all their diversity, in relation to HIV.

- Intensify efforts to vulgarise laws and policies designed to protect adolescent girls and young women from harmful social and cultural practices. Greater, collaborative, well-coordinated efforts are needed to fill this gap, particularly between government and civil society partners.

- Support community-based organisations working with women and girls to monitor the implementation of the provisions of the penal code prohibiting acts such as forced marriage, sexual abuse and assault, female genital mutilation and breast ironing.

- Community organisations, technical and financial partners and the NACC should extend the coverage of the integrated approach to care and prevention of gender-based violence among key populations.

## III. LEGAL SUPPORT AND ADVOCACY SERVICES

### III.1 Provision of free legal services

Establishing free legal clinics for PLHIV can help them assert their rights and fight discrimination (Human Rights Watch, 2018).

- Recruit and train paralegal assistants and paralegals from of vulnerable populations communities to improve the legal literacy of these communities, document cases of violations and report them to a central monitoring system at community level, and link victims to legal and other services.

- Recruit and support lawyers in additional regions, including English-speaking regions, to provide legal services and improve coverage.

- Extend legal services to prisoners, DU and MSM to areas not currently covered, particularly those most affected, by putting in place mechanisms for public monitoring committee.

- Exploit the possibilities of setting up strategic litigation measures to contest problematic legal and regulatory provisions that interfere with the health and other rights of key and vulnerable populations.

## II.3 Training of human rights defenders

Training local human rights defenders on the rights of PLHIV and other protection mechanisms available helps to combat HIV-related criminalisation.

# IV. COMMUNITY INVOLVEMENT AND PSYCHOSOCIAL SUPPORT

## IV.1 Community support groups

To create and assist community support groups for PLHIV, enabling the exchange of experiences and build capacity, thereby improving the quality of life of PLHIV.

## IV.2 Sensitisation among community and religious leaders

We need to involve community and religious leaders in the fight against stigma and the promotion of the rights of PLHIV.

### IV. 3 Eliminating stigma and discrimination in all contexts

Develop and extend programmes aimed at reducing stigma and discrimination in all context to all regions and most especially, where there is significant population displacement.

Do coordinated national communication campaigns to reduce HIV-related stigma and discrimination, based on the results of the Index Stigma study.

Guarantee non-discriminatory healthcare provision.

# V. RESEARCH AND DOCUMENTATION

## V.1 Collecting data on human rights violations

Set up mechanisms to document and report human rights violations against PLHIV, which will provide a database for advocacy.

## V.2 Participatory research with PLHIV

Involve PLHIV in research on their own needs and rights, in order to develop appropriate policies and programmes, which will enable data on stigma to be collected and local policies to be influenced (Index Stigma study, 2020).

# APPENDICES

| ***Process for disclosing HIV serostatus to children and adolescents I think we can append this table as it appears in the ETP guide for children.*** | | |
|---|---|---|
| ***Steps*** | ***The subjects*** | ***Age*** |
| Preparing the parent/guardian to announce the status to the child/teenager | *- Identify eligibility criteria status announcements*<br>*- Assessment of the parent/guardian's barriers to disclosure (the why, when and how of progressive disclosure)*<br>*- Obtain informed consent from the parent/guardian to involve the child/adolescent in the process*<br>*- Assessment of the child's questions/communication with the tutor (notion of confidentiality and adherence)* | |
| Preparing the child for the announcement of the status | *-Visit the hospital and talk to them about*<br>*-Existence of a microbe, in the body, in the blood*<br>*-Treatment possible, but long term*<br>*-The microbe will stay, but it can be put to sleep* | ***3-6 years*** |
| ***Partial announcement*** | *-Visit to the health facility/community (friendly environment)*<br>*-Immune system (green soldiers protect us from yellow germs)*<br>*-Action of HIV (the red virus attacks the green soldiers and the yellow germs that come)*<br>*-Action of ARVs (the drugs weaken the red virus, green soldiers become strong again and ensure that we are protected against yellow germs)*<br>*-Opportunity to grow, to study* | *7-9 years* |
| ***Stage before full announcement*** | *- Name HIV/AIDS/ARVs and review the immune system, the action of HIV, the action of ARVs*<br>*Transmission methods*<br>*--Possibility getting married and having children* | *10-12 years* |
| ***Full listing*** | *Respect for the disclosure triangle (Parent/Guardian +Child+ Paediatric care provider)*<br>*- The child/adolescent knows his/her HIV status* | *10-12 (earlier if the tutor)* |
| ***SR*** | *Explanations on the Growing up like an adolescent advert on sexuality*<br>*Demonstration of male and female condoms*<br>*The male and female reproductive system and family planning* | *13-19* |
| ***Post-announcement follow-up*** | *Dealing with any signs of psychological distress* | *13-19 years* |
| | *Transition consultation (Move from the paediatric ward to the adult)* | *15-19 years* |

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